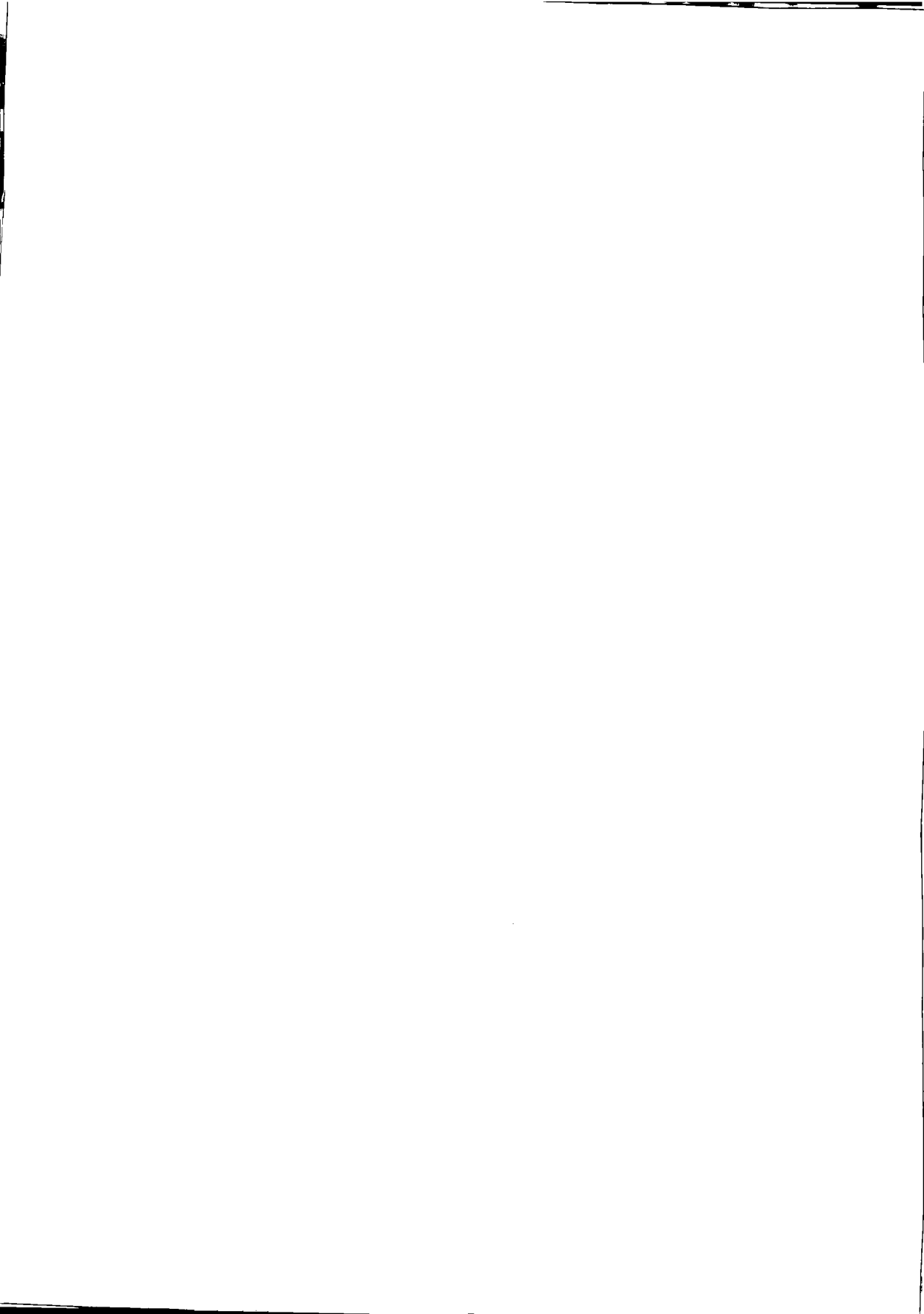


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**THE  
SIXTH  
FIVE YEAR  
PLAN**

**1983-88**

**PLANNING COMMISSION,  
GOVERNMENT OF PAKISTAN**

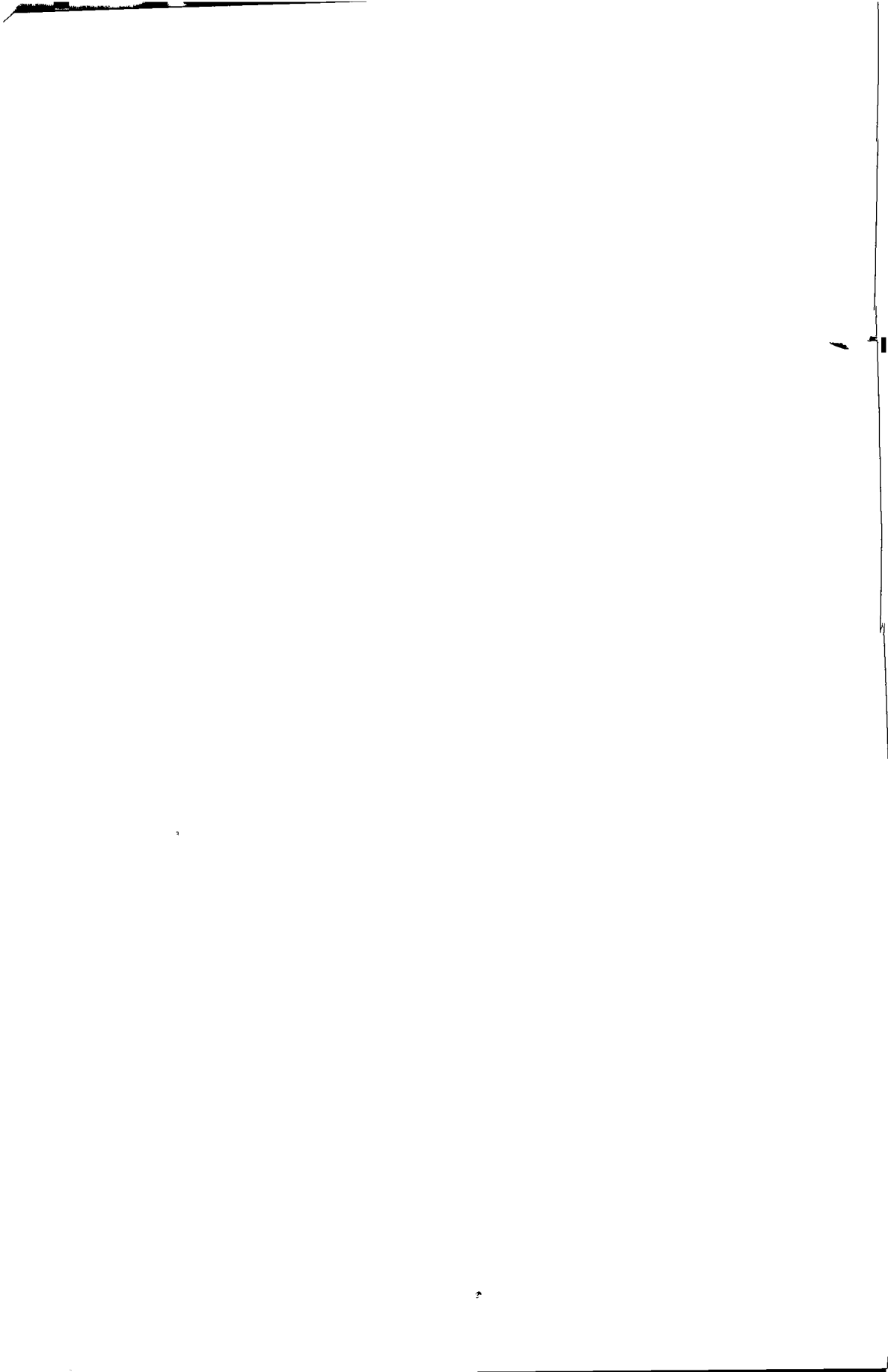


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PART I

**BASIC ECONOMIC  
FRAMEWORK**

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*In order that ye may  
Not despair over matters  
That pass you by,  
Nor exult over favours  
Bestowed upon you.*

*Al-Hadid  
(LVII-23)*

## CHAPTER I

### SUCSESSES AND FAILURES OF PLANNED DEVELOPMENT

**P**AKISTAN'S Sixth Five Year Plan has to be viewed in the perspective of a sustained development effort extending over a period of more than on-third of the century. there is an essential underlying continuity between various plans and non-plan periods, suggestive of a unified drive. Yet each plan is unique in its character, derived from a critical evaluation of the past, concern regarding neglected aspects of development and an identification of the possibilities opening up in the future.

2. During the period since 1947, when Pakistan gained independence and inherited an economy which was widely regarded as an "economic wasteland", considerable progress has been made both in terms of growth in GNP and structural change in the composition of output. Development of social services and the programmes for inducing modernization of rural life have indeed lagged behind improvements in physical output, but these concerns have moved up high on the agenda in recent years. Saving and investment rates, while improving steadily over the years, have remained below the full potential generated by growth in the economy. High dependence on foreign concessional loans and grants, providing a push to the development effort during the sixties, has been brought down to a manage-

able 3 per cent of the G.N.P., without recourse to large commercial borrowing. Inflation, threatening to get out of control during the mid-seventies, has been brought down to a single-digit rate.

3. There were indeed mistakes made and opportunities missed on various occasions during this long drive towards self-sustaining growth with social justice and equity. People of Pakistan have been strongly self-critical and quick to suggest corrections in policies. We have learnt from these mistakes. Possibly the results would have been much better, if the course of development was more smooth and balanced. Nevertheless, the nation can find some satisfaction in the overall record of progress for the period.

4. The flow of goods and services from economic activities within the country—gross domestic product—has expanded almost five-fold in real terms; and *per capita* income, the most commonly used criterion of the stage of development and rate of progress, has more than doubled, from less than Rs. 1,800 at today's prices in 1950 to the level of about Rs. 4,000 in 1982-83. The average growth rate for the period 1950 to 1983 has been 5.1 per cent per annum. The *per capita* income growth was at about half of this rate, as a result of relentless increase in the pressure of population. Population stands at 87 million in mid-1983. This is 2½ times the level of 34 million people recorded in the 1951 census residing in the present territory of Pakistan. Population-wise, one and-a-half new Pakistan have been born and brought up to enjoy double the *per capita* income of every Pakistani at the beginning of our national independence.

5. Hidden behind this long term growth average are periods of high growth intervened by stretches of virtual stagnation. The fifties were characterised by the initial difficulties of breaking the age-long stagnation in the economy. A high rate of industrialization and considerable institutional progress were accompanied by the neglect of agriculture. Agriculture was, and still remains, the largest sector of the economy. Lack of growth in agricultural output reduced per capita availability of food, resulting in a sizable food deficit and kept overall income growth low, so that *per capita* income growth was negligible during this period.

6. The sixties witnessed a focus on policy support for agriculture together with the introduction of incentives for private investment in industry. In retrospect, the incentives were probably too lavish, even wasteful. However, at that stage the paramount national concern was to overcome the inertia and get the economy moving. These new policies, in combination with the basic institutional frame built during the earlier years, resulted



in a remarkable acceleration in the pace of development during this period. With the success achieved in initiating the process of rapid growth in the economy, doubts started emerging concerning the impact of purely growth-oriented policies on the distribution of income and wealth in the society.

7. The Third-Five Year Plan, while taking note of the remarkable success of the Second Plan, addressed itself to the question of social justice and suggested various reforms. However, the intervention of disturbing factors, notably the postponement of Aid-to-Pakistan Consortium in July 1965 and the Indo-Pakistan war in September 1965, imparted urgency to the short term task of maintaining the growth momentum of the economy in a hostile climate. The longer term perspective of social change was again neglected. By the close of the decade, the dissatisfaction with the existing policies and become quite visible and more extreme solutions were advanced. In erstwhile East Pakistan, the distribution issue assumed a regional dimension and together with other political factors resulted in its separation in 1971.

8. During 1972 to 1977, a policy of widespread nationalisation was followed, more in the spirit of vengeance against the private sector than as a policy of national reconstruction, without due regard to the administrative and managerial capacity at the disposal of the public sector. Together with other factors, especially the first round of steep increase in energy prices, this led to a period of stagnation and slide-back in the economy. An attempt to counter the poor physical performance of the domestic economy by increasing the public sector investment in large and high visibility projects with the help of relatively short term borrowing from the OPEC countries, littered the country with a large number of incomplete projects, commitments for investment which could not be backed by resources, and a rate of inflation which threatened to tear the fabric of economic stability.

9. The stabilisation programme during the period 1978-83 has successfully restored the growth momentum of the economy, stabilised and brought down the rate of inflation and imparted some balance to the investment pattern in the economy.

10. Average growth rate since the advent of the sixties has been 5.7 per cent per annum in GDP and 6.1 per cent per annum in GNP. The difference is on account of the remittances from Pakistani workers abroad. During this period, agriculture maintained a growth rate of 4 per cent per

annum, while large scale manufacturing has been growing at an annual rate of 7.6 per cent per annum.

11. The above analysis of the longer term growth experience indicates the following broad conclusions :

- Economic growth has acquired the character of a regular feature in the economy of Pakistan. It is no longer a struggle to overcome the stagnation in the economy. The task is to optimise the level of growth alongwith the achievement of other socio-economic objectives and to maintain a high annual growth rate to support distribution policies.
- High growth periods are associated with emphasis on agriculture and a constructive partnership between the public and the private sectors. Sound economic polices and efficient management of resources are the key inputs for steady expansion in the economy, together with economic and political stability.

12. The structure of output and activity has undergone a dramatic change. The share of agriculture sector in GDP has fallen to almost half, from 55 per cent in 1948 to 29 per cent in 1982-83. There has been a corresponding doubling in the share of manufacturing and an even more pronounced increase in the organised industrial sector, comprising large scale manufacturing, mineral, construction, electricity and gas, the shares of which have risen from 4 per cent to 22 per cent. Large scale manufacturing alone has increased from a negligible 1 per cent at the end of the forties to acquire a respectable share of 13 per cent in the early eighties. Within the large scale manufacturing, considerable diversification has taken place. The country has moved from the first phase of industrialisation focusing on easy consumer goods industry to more sophisticated basic and heavy engineering goods. The latter include chemicals, chemical fertilisers, ship-building, assembly-cum-manufacturing of cars, tractors trucks and rolling stock for the railways, telephone and tele-communication equipment and a host of other engineering equipment and components. The first steel mill of the country has moved into partial production and would be completed by June, 1984.

13. The decline in the share of agriculture represents diversification of the economy through rapid development of supporting sectors. It is in no way an indication of slow growth in agriculture itself. Since the advent of

the sixties, agricultural growth rate has been higher than the rate of increase in population, a feat only a few developing countries have been able to perform during the preceding two decades. The deficit in wheat has been wiped out and a small exportable surplus has emerged, being utilized at present mainly for improving the size of the reserve stocks. In foodgrains as a whole, including rice, Pakistan is already an exporter of some reckoning. Wheat surplus has been achieved at a domestic consumption level of 121 kg. *per capita*.

14. Yields per acre in agriculture have risen substantially. Wheat yields have gone up by 80 per cent from 922 kg. to 1660 kg. per hectare and cotton yields have doubled from 516 kg. to 1042 kg. per hectare. Considerable diversification has taken place with the addition of crops and activities which were previously insignificant as also a widespread change from a variety of foodgrains to cash crops. Even more pronounced has been the change in the methods of cultivation and the input package. The extensive use of chemical fertilizers and growing mechanization make agriculture today a very different occupation from the rural scene at the time of independence. Tractor is emerging as the symbol of agriculture, replacing the plough. The use of other mechanical devices is also on the increase.

15. Development has also been reflected in a marked increase in the ratio of savings and investment to national income. The economy has graduated from a stage where savings and investments were in the range of 5 to 10 per cent of GNP. The present saving rate of about 12.6 per cent and investment rate of about 15.5 per cent represent a qualitative change, though the situation in these aspects is far from satisfactory.

16. The balance of payments of present Pakistan areas was weak during the fifties, reflecting considerable dependence on a single export commodity, *viz*, cotton. The situation deteriorated further as a result of non-devaluation decision of 1949 and the orientation of cotton textiles industry towards domestic cloth consumption. Initially, foreign exchange reserves accumulated during the Korean war period (sterling balances) were utilised to meet the deficits. Later, foreign assistance was used for financing the deficits. At some stage, foreign assistance flow into (then west) Pakistan constituted 7 to 8 per cent of regional output level. The export drive since the sixties has created a fairly dynamic export sector, accounting now for roughly 9 per cent of G.N.P. with manufactures being half of total exports. Import substitution, particularly in food and fertilizers, has contained real growth in imports to roughly one-half that of exports since 1977. Despite a

large increase in energy import bill on account of the tripling of oil prices in the second round during the late seventies, and despite a worsening of the terms of trade by 23 per cent during the period 1978–83 alone, the current account balance of payments deficit has been contained to a level of around one billion dollars about 3.5 per cent of G.N.P.

17. Even in the case of social development, where the progress leaves much to be desired, various quality of life indices clearly depict a significant improvement over the years.

- The *per capita* calarie intake gone up to 2664 kcl in 1983, which is 99 per cent of the recommended minimum level. There is thus not much incidence of malnutrition.
- The crude death rates have dropped to one-third of the level prevalent at independence.
- Life expectancy at birth has increased from 37 to 55 years since 1950.
- The enrolment of boys in primary schools has increased by 188 per cent and of girls by an even higher figure of 450 per cent since 1960.
- As many as 374 rural health centres and 6490 basic health units and other primary health facilities have been set up to increase the outreach of health care into the rural population.
- More than one-third of villages in Pakistan have been electrified.

18. Major failure of the development process, in retrospect, has been in the ability and determination to pursue an effective population policy. The population growth has persisted as a result of the relative success in bringing down the death rate to 11 per thousand. Meanwhile, the birth rate remains high, over 40 per thousand. The meagre efforts so far made in improving social services have been lost in the avalanche of continuing increase in population. While population growth remains a major factor affecting the ratio of population covered by essential amenities of life, there is considerable justification in the popular perception that there would have been greater well-being if the development process had laid appropriate stress on considerations of social and regional balance.

19. A really focused attempt to extend the coverage of social amenities to the neglected areas and sections of population, particularly among vast rural communities, has emerged as the most significant task for future development the situation in highly unsatisfactory. The proportion of

population which is barely able to read and write is not more than one quarter. This is likely to prove the most important constraint on future progress unless corrective action is taken urgently. The infant mortality remains as high as 90 per thousand of live births. No enlightened approach to planned parenthood can be based on the prevailing certainty that 10 out of every thousand children would die before reaching the age of four. Pure drinking water is not available to 78 per cent of the rural population. No meaningful health programme can function with high morbidity resulting from polluted water. In a number of cases, no water is available in the area and has to be brought from long distances, subjecting our women to the drudgery of daily travelling for miles to get water for the family. Half of the village population finds its access to the market blocked by the absence of roads. Two-thirds of the villages are deprived of electric power to set up even small workshops.

### The Fifth Plan Years

20. The Fifth Five-Year Plan was completed in June this year. It has proved to be remarkably successful in consolidating the over-stretched development programmes in the public sector and in sharpening development priorities and re-introducing Plan discipline. A preliminary evaluation report on the Fifth Five-Year Plan has been produced, showing that over 90 per cent of the Plan targets were achieved during a period of extraordinary external difficulties and rapidly deteriorating terms of trade, which together took away roughly \$ 750 million a year from the Pakistan's economy or, in other words, imposed an overall tax of 2 per cent on our GNP. Despite the deepest world recession in the last few years and faltering economies in the developing world during this period, it should be a matter of some satisfaction that policies of financial discipline and better economic management introduced during the last five years have succeeded in :

- maintaining a consistent GDP growth of over 6 per cent a year ;
- converting huge food deficits into a modest food surplus ;
- lowering the inflation rate from an average of 16% five years ago to around 5% in year 1982-83 ;
- consolidating over-extended investment programmes and sharpening our investment priorities ;
- accelerating the development of less-developed regions, particularly Baluchistan, which witnessed an acceleration of five times in its development expenditure over this period ;

- reviving industrial growth rate to over 9% a year and liberalising some of the industrial controls and incentives ;
- electrifying more villages during the last five years than in the previous 30 years ; and
- extending social safety nets for the poorest 20% of the population, both through the introduction of the Zakat system and because of a major inflow of remittances to lower income groups.

21. There were two spheres, however, in which the performance was rather disappointing during the Fifth Plan period. First, total investment declined as a percentage of GNP from 16.4% in 1977-78 to 15.5% in 1982-83. Second, there was not sufficient long-term investment either in physical infrastructure or in human resource development. This has created shortages of energy, telephones, water and other infrastructure and resulted in a very low level of educational literacy and poor health facilities. During the last year of the Fifth Plan, 1982-83, a special programme was undertaken to redress some of the gaps in the social sectors : on the present assessment it can be predicted that there will be a six-fold increase in primary schools, three-fold increase in children's immunization, five-fold increase in trained midwives for villages, two and a half times increase in village electrification and a significant acceleration in rural roads and rural water supply. This special effort has created some of the basic institutional framework and the necessary momentum for a decisive acceleration in social sectors during the Sixth Plan period.

*Lo! Allah enjoineth on you  
Adl and Ihsan.*

*Al-Nahl  
(XVI-90)*

## CHAPTER 2

### DEVELOPMENT STRATEGY OF THE SIXTH PLAN

**T**HE Sixth Plan aims at rapid and equitable development of the country. The benefits of growth must be widely shared by the people.

2. The plan is based on the following main premises :
  - (a) It is necessary to combine a strong production base with an equally strong social conscience.
  - (b) Rapid economic growth is crucial for Pakistan's future; without it we can only redistribute poverty. But economic growth is a necessary, not a sufficient condition for changing the daily lives of the people.
  - (c) Economic growth cannot benefit the poor unless it reaches the poor and unless majority of the population participates in economic life. The Plan, therefore, provides not only for a general agricultural advance but for small farm production; not only for overall industrial growth but for small and

medium industries as well; not only for progress in general but protection for the most vulnerable groups in society.

3. The Plan is expressed not so much in abstract aggregates as in programmes of development for various sectors, regions and sections of society; not so much in terms of GNP growth rate and saving and investment targets as in terms of benefits to the ordinary people.

### Basic Framework

4. The basic framework of the Plan can be summarised fairly simply :

- Its basic approach is to help the poor emerge from their poverty. Its policies would enable them to earn or obtain the necessities of life—nutrition, housing, water and sanitation, and especially education and health—and thus to increase their productivity and to establish equality of opportunity. Its real impact will be reflected in the happiness of a rural family whose home is suddenly brightened by electricity. It will be mirrored in the faces of those children who for once get an opportunity to lead a healthy and education life. It will be expressed in the relief of a simple farmer who no longer has to bend down to drink polluted water from a dirty pond. It will be measured by the full reward of an honest day's labour.
- Its major reliance is on liberation of the creative energies of the people. The Plan is conceived within the framework of a significant deregulation of existing economic controls and regulations so as to free the energies of private individuals and organized sectors to participate fully in economic development.
- The chief beneficiaries from planned development will be the majority of the population. This will be ensured through a national income and employment policy, rapid spread of public services to rural areas to accelerate their development, greater stress on integrated programmes for women's development and extension of social safety nets to the poorest and most vulnerable groups in society.



5. This chapter attempts to illustrate the practical steps through which the sixth Plan translates the above general principles into concrete programmes.

### Growth Strategy

6. A growth rate in gross domestic production of 6.5 per cent a year is planned for the next five years. This will provide for the projected growth in population as well as allow for an improvement of about 20 per cent in family incomes in real terms over the Plan period, or by nearly Rs. 900 per family per annum. Since the growth strategy of the Plan is based on a major breakthrough in agricultural production, particularly on small farms, and since a very serious attempt is being made to combine this growth strategy with an active income and employment policy, described in Chapter 29, it can be confidently expected that this growth will be evenly distributed, with a visible improvement in the lives of the poorer people.

TABLE 1  
*Elements of Growth Strategy*

(in 1982-83 prices)

	Additional Income			
	Fifth Plan		Sixth Plan	
	Rupees Billion	Percentage Share	Rupees Billion	Percentage Share
<b>GDP Components :</b>				
Agriculture	19.66	23.6	27.45	22.5
Industry	19.16	23.0	30.68	25.1
Services	44.49	53.4	63.93	52.4
<b>Total GDP:</b>	<b>83.31</b>	<b>100.0</b>	<b>122.06</b>	<b>100.0</b>
<b>Per family GDP (Rupees)</b>	<b>3,249</b>		<b>4,493</b>	

7. The growth strategy for the Sixth Plan relies on a combination of policies, including :

- a major increase in agricultural yields through more efficient use of fertilizer, water and farm technology;

- an expanding foothold in export markets for wheat and rice as well as for fruits, vegetables, flowers, poultry and meat;
- increased self-sufficiency in oilseeds;
- rapid development of steel-based engineering goods, modernization of textile industry and establishment of agro-industries for processing agricultural surpluses; and
- a balanced development of service industries, particularly public services to satisfy basic human needs.

Detailed national income accounts and physical targets are given in the Statistical Profile.

### Quality of Life Indices

8. However, the Sixth Plan does not depend on the favourable effects of economic growth alone. It tackles poverty directly. The main instrument is the rapid spread of public services to all sections of society, particularly education and health which are the basic ingredients for human resource development and for equal participation in economic life. Table 2 summarises the improvement expected in the quality of life indices over the Sixth Plan period. As can be seen from this table, the Sixth Plan aims at a dramatic change in literacy levels, access to potable water and sewerage facilities, spread of benefits of electricity and improvement in health indices. All these improvements are based on concrete programmes for which necessary allocations have been made. The share of public sector social development programmes has been increased from 9.9 per cent in the Fifth Plan to about 14.3 per cent in the Sixth Plan; in absolute terms, there is a quantum jump of about three times in these programmes.

TABLE 2

*Quality of Life Indices*

	1960-61	1982-83	1987-88
<b>1. Literacy:</b>			
—number (million)	.. ..	4.8	13.9
—percentage	.. ..	15.0	23.5
			48.0
<b>2. Primary Education:</b>			
—number enrolled (Million)	.. ..	2.0	6.8
boys	.. ..	1.6	4.6
			7.7

	1960-61	1982-83	1987-88	
girls .. .. .		0.4	2.2	4.6
–Percentage of primary age population		30	48	75
boys .. .. .		44	63	90
girls .. .. .		11	32	60
<b>3. Infant Mortality (age 0–1)</b>				
–per thousand .. .. .		162	100	60
<b>4. Life Expectancy :</b>				
–number of years .. .. .		43	55	60
<b>5. Access to Clean Water :</b>				
–% of total population .. .. .		n.a.	38	60
–% of rural population .. .. .		n.a.	22	45
–% of urban population .. .. .		n.a.	77	90
<b>6. Access to Sewerage Facilities :</b>				
–% of total population .. .. .		n.a.	16	26
–% of rural population .. .. .		n.a.	4	10
–% of urban population .. .. .		n.a.	48	60
<b>7. Availability of Electricity :</b>				
–number (million) .. .. .		2.46	30.8	52.9
–% of total population .. .. .		5.4	35.5	53.3
<b>8. Availability of Telephones :</b>				
–number .. .. .		87,500	414,000	934,000
–% of total population .. .. .		1.8	5.0	9.0

9. The principal instrument for development in the Sixth Plan will be the creative energies of the private sector. These energies will be liberated through a combination of programmes, such as:

- There will be accelerated development of human resources potential through a five-fold increase in the expenditure on education and health. Sufficient empirical evidence is now

available, to suggest that education and health services often make a greater contribution to improve labour productivity than do most alternative investments.

- The Sixth Plan aims at a quantum leap in technology development and has earmarked about four times as much expenditure for science and technology in the Sixth Plan as in the Fifth. This will enable the people to participate more fully in economic life on the basis of indigenous technology and indigenous efforts.
- There will be a massive deregulation of the economy to dispense with discretionary administrative controls and to replace them with a policy framework that protects both private initiative and social interests. Such a deregulation will be attempted in several careful phases, some of which are described in Chapter 10.

### **A New Compact**

10. The Sixth Plan framework is based on a new compact between public and private sector. Policies of co-existence and cooperation will be encouraged in all sectors of the economy—whether in industry or in agriculture, construction, education, health, services, trade or any other field—and a serious effort made to remove the previous antagonism between these two sectors. The public sector will essentially play the role of a catalyst. It will create the physical and human infrastructure that is needed for private initiatives to materialise. It will also reserve the right to enter as an investor of last resort wherever private sector is hesitant to come in because of the large size of an investment, or new technology, or uncertain markets. The directly productive activities and services will be reserved almost exclusively for the private sector, both in agriculture and in industry. Private initiative will also be encouraged in providing physical infrastructure in association with public sector—such as, in the construction of highways, airport terminals, energy development, and telephone services—as well as in education, health and other social services. There will be a significant load-shedding of government's financial burdens so as to mobilise private financing and to enable the government to concentrate on those functions which it alone can perform. For instance, the share of public sector industries is projected to decline to 6.7 per cent in the Sixth Plan public sector development programme compared to 16.6 per cent in the Fifth Plan.

11. Both public and private sectors will have to learn to live together in a spirit of cooperation within the framework of broader national interests. The public sector will be encouraged to learn from the dynamism of the private sector. And the private sector will be urged to embrace the social conscience the public sector must have. In most sectors of the economy, it is planned that both public and private sectors shall compete at par as well as establish joint enterprises wherever feasible.

12. The shifting role of public and private sectors in the Sixth Plan is illustrated in Table 3 below :

TABLE 3

*Shifting Role of Public/Private Sectors*

				(Rs. Billion)		
				1977-78	1982-83	1987-88
1.	<b>Total Investment</b>	..	..	29.7	55.6	135.7
	—public investment	..	..	21.0	36.1	76.1
	—private investment	..	..	8.7	19.5	59.6
	—% share of private investment	..	..	29.3	35.1	43.9
2.	<b>Industrial Investment</b>	..	..	8.8	9.7	23.7
	—public investment	..	..	6.7	4.5	3.5
	—private investment	..	..	2.1	5.2	20.2
	—% share of private investment	..	..	23.9	53.6	85.2
3.	<b>Agricultural Investment (including investment in water)</b>	..	..	5.0	9.1	24.5
	—public investment	..	..	3.0	5.0	11.0
	—private investment	..	..	2.0	4.1	13.5
	—% share of private investment	..	..	40.0	45.0	55.1
4.	<b>Investment in Infrastructure (including both physical and social)</b>	..	..	11.7	23.5	68.5
	—public investment	..	..	10.2	20.7	61.0
	—private investment	..	..	1.5	2.8	7.5
	—% share of private investment	..	..	12.8	11.9	10.9

13. Private investment is projected to increase at over twice the rate of public investment. In industries, 85 per cent of the new investment is expected from private sector by the end of the Sixth Plan period as against 24 per cent at the beginning of the Fifth Plan. Operational policies are being designed to provide the necessary foreign exchange resources and domestic credit to realise this major shift in the investment roles of public and private sectors.

14. While a major liberation of the private sector is contemplated in the Sixth Plan, policies are also being formulated to ensure that :

- Social interests do not become a casualty in any such liberalization drive. For instance, special credit programmes for small farmers and small industrialists have been designed to ensure that the small investor is fully protected and encouraged rather than wiped off by the relentless forces of the market.
- Private sector must become more efficiency-conscious and competitive rather than continue surviving within a highly protected and sheltered market. The profits of privileged access to scarce resources or licences or permits must be replaced by profits of efficiency and new technology. The private sector should be free to live by the logic of the market so long as it is prepared to die by the logic of the market and does not run to the government for rescue each time a private enterprise gets into trouble or becomes commercially sick.
- The government sector will increasingly play a promotional, rather than a regulatory role. It will encourage the introduction of new technology and efficient practices by streamlining the price and fiscal signals given to the private sector.

### **Public Corporations**

15. The Sixth Plan also lays considerable emphasis on the role of public corporations in capital formation. Public corporations are being encouraged to expand their investment out of their own profits and efficiency. The total programmes for these corporations are projected at Rs. 65 billion in the Sixth Plan which will constitute an increase of 117 per cent

over the Fifth Plan. These corporations are also being encouraged to attract more private investment to work side by side with public funds in various development fields. During the Sixth Plan period, an increasing proportion of the development programmes of these corporations will be financed out of the self-generated resources. Consideration will also be given to convert more public sector activities into a corporate form; for instance, in Railways, Oil and Gas Development Corporation, Telephone and Telegraph Department, and similar other activities.

### **Decentralization of Development Activities**

16. The Sixth Plan is based on the concept of decentralized development. The development programmes executed by the Federal Government have increased from about 20 per cent of total public sector development expenditure in 1970-71 to about 80 per cent by 1982-83. Considerable development functions were transferred in 1973 from Provinces to the Federal Government. These included fertilizer subsidy, flood control programme, canal rehabilitation, urban transport, university education, preventive health programme and rural health, besides other programmes. Urban transport was recently transferred back to the Provincial governments. It would be the policy of the Government to review continuously whether, and in what manner, additional development functions should be transferred to the Provinces during the Sixth Plan period. Even on the basis of the existing distribution of functions, the ratio of Provincial development programmes is likely to increase from about 21 per cent in 1982-83 to over 26 per cent in 1987-88, since a major acceleration is contemplated in education, health and agriculture which are largely under Provincial jurisdiction. The provincial share in the direct execution of development projects will be even larger in case there is further decentralization of development functions.

### **Role of Local Bodies**

17. One the major concerns of the Sixth Plan is to bring development closer to the people. There must be larger community participation in the execution of development programmes. There must also be a larger role for elected local bodies in the planning and implementation of development programmes. It is necessary to ensure that economic development mirrors the aspirations of the local people and is largely executed through their own active participation. The local bodies will be encouraged to play a larger role in the provision of basic services. The District Councils have already prepared their Five-Year Plans which will be discussed with them and necessary financial and technical support organized for the implementation of these

programmes. The Sixth Plan also contemplates major financial support for Non-Governmental Organizations (NGOs) so that they can play an increasingly larger and more effective role in the socio-economic advance of the society.

18. Thus, the philosophy of the Sixth Plan clearly is that development should be carried out by the people themselves, with necessary assistance from the Government.

19. In order to ensure that benefits of economic growth do not get concentrated in a few hands but are spread equitably throughout the economic system, the Sixth Plan leans on the following operational policies :

- A six-point programme for a nation-wide income and employment policy has been designed.
- A much larger share of total national services of education, health, water supply and sewerage, electricity, and roads has been earmarked for 70 per cent of the population living in the rural areas.
- Concrete programmes for a more rapid development of women have been designed and integrated in each sector.
- Special programmes are being launched to extend social safety nets to the most vulnerable groups in society, such as the indigent population, malnourished children and those unfortunately disabled and handicapped.

These programmes are described in detail throughout the Plan and in the relevant chapters. A brief summary is given below.

### **Income and Employment Policy**

20. The Sixth Plan will provide new employment opportunities for nearly four million additional labour force through the following steps :

- Greater stress on small farm production through much larger provision of agricultural credit raising it to 50 per cent of the total through the introduction of small tractors and small farm technology, and through the rapid spread of economic infrastructure in the rural areas.



- Incentives for rapid expansion of small scale units, particularly in agro and engineering industries, through liberalization of economic controls, larger availability of steel at reasonable prices, spread of rural electrification, and a favourable fiscal system.
- Proposals for undertaking rural works programmes based on Pakistan's own emerging agricultural surpluses.
- Accelerated vocational training for Pakistan's labour force, both to cater to domestic needs and for net migration abroad.
- Development of appropriate technology, using Pakistan's own raw materials and labour, through a four-fold increase in expenditure on science and technology and through the decentralized establishment of technological institutes near industrial sites.
- An income policy aimed at increased wages in line with increases in real productivity and partial indexation of the salaries of the fixed income groups.

### **Rural Transformation**

21. The Sixth Plan also aims at a rapid transformation of the rural scene in many ways. Rural areas have slept through three decades of development. Only recently, an accelerated increase in agricultural production has brought a renewed attention of what is lacking in the rural areas by way of social services and how much still remains to be done to open them up to economic development and to carry the centres of economic growth back into the heartland of the countryside.

22. At present, the physical and social infrastructure are hopelessly deficient in the rural areas. About 65 per cent of the 45,000 villages in the country, and numerous small settlements, go without electricity. The rural road network contains less than one-fifty of the prescribed minimum of 0.64 kilometer of roads per square kilometer of area. Only 22 per cent of the rural population is served with safe drinking water. Less than one-half of the rural primary school-age children actually go to schools and rural female literacy hovers around the abysmal rate of 5 per cent. The outreach of the most elementary form of rural health network misses out 21 per cent of the

population. Only 1,000 out of 7,000 doctors in the public sector at present serve in the rural areas.

23. The Sixth Plan provides for a decisive breakthrough in the provision of physical infrastructure and social services to the rural areas. This can be seen from Table 4 below :

TABLE 4

*Rural share in Benefits of Development*

	1977-88	1982-83	1987-88
<b>1. Education</b>			
(a) *urban literacy rate	42.3	43.6	62.0
*rural literacy rate	14.0	15.0	42.0
*% of rural in total	46.5	46.0	58.9
(b) *urban primary enrolment (million)	2.1	2.7	4.0
*rural primary enrolment (million)	3.4	4.1	8.3
*% of rural in total	61.8	61.4	67.5
<b>2. Health</b>			
(a) *doctors in urban areas (number)	12,324	18,800	27,000
*doctors in rural areas (number)	600	1,200	9,000
*% of rural in total	4.6	6.0	25.0
(b) *rural health centres (number)	168	374	729
*basic health units including govern- ment-run sub-centres, dispensaries and MCH centres (number)	2,645	4,262	7,000
<b>3. Electricity</b>			
*number of villages electrified	7,609	16,400	36,400
*% of total villages electrified	16.9	36.4	81
*rural electricity consumption as a % of total	4.8	6.0	9
<b>4. Roads</b>			
*increase in km of farm to market roads		5,000	10,000
*increase in km of canal roads open to public use		—	30,000

	1977-88	1982-83	1987-88
<b>5. Water and Sewerage</b>			
(a) *number of rural people served with potable water (million)	7.66	13.65	31.2
*% of total rural population	14	22	45
(b) *number of rural people served with sewerage facilities (million)	0.14	2.5	6.9
*% of total rural population	0.25	4	10

24. During the Sixth Plan period, benefits of electricity will be extended to 81 per cent of the total villages, containing nearly 90 per cent of the total rural population. The additional network of farm-to-market roads and canal roads which will be opened to public use will increase about eight-fold in the Sixth Plan as compared to the Fifth Plan period. The percentage of rural population served with clean drinking water will be raised from the present 22 per cent to about 45 per cent, and sewerage facilities from 4 per cent to 10 per cent. The proportion of the rural primary school age children in rural schools will be increased from below 50 per cent to 70 per cent. A national rural health service will be introduced (preferably on a voluntary basis, or compulsarily if necessary) and an extensive network of basic health units and rural health centres will be constructed to extend health coverage to the entire rural population.

25. Such a rural transformation will be truly dramatic in its impact. It will be reflected in the daily lives of millions of people. It will also support and accelerate an agricultural breakthrough and help convert the country into both a prosperous granary and an orchard, serving its own needs of self-sufficiency as well as finding export markets abroad, particularly in the Middle East.

### **Opportunities for Women's Development**

26. A notable feature of the Sixth Plan is the special emphasis placed on women's development. The Plan candidly recognizes that no society can ever develop half-liberated and half-shackled. It provides in each sector of economic activity development programmes to integrate women and their concerns in the mainstream of social and economic life. Overall development should benefit all sections of society and it is not possible to

segregate all the programmes which will benefit men and women alike. However, since this has been a neglected concern, the programmes in education, health, population welfare and many other sectors have been specially designed to extend socio-economic opportunities to women. Together, these programmes will aggregate to over Rs. 20 billion in the Sixth Plan. Their estimated impact is summarised in Table 5 below. As can be seen from this table, in many sectors, women's development is being accelerated at a much faster pace than the national average so that women can rapidly catch up with lost time and opportunities :

TABLE 5

*Selected Indices of Women's Development*

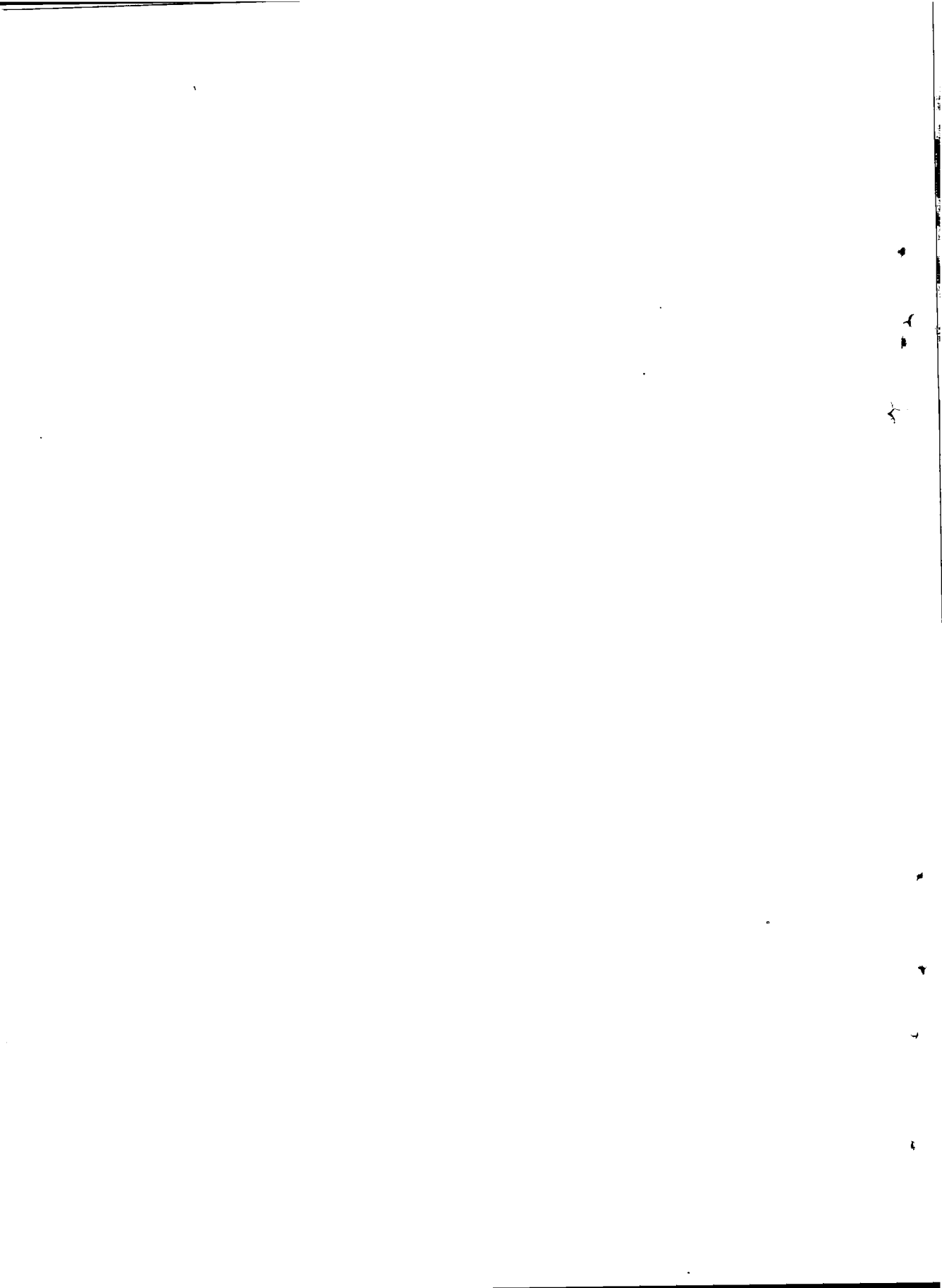
	1977-78	1982-83	1987-88
<b>1. Education</b>			
(a) % of total literate population	14.0	15.0	48.0
(b) % of total primary enrolment	28.8	32.0	37.4
(c) % of total secondary enrolment	21.6	25.1	27.0
(d) % of college/university enrolment	28.0	30.0	30.0
(e) % in vocational training	40.0	45.0	50.0
<b>2. Health</b>			
(a) availability of trained dais (thousand)	10	15	45
(b) children's immunization (million)	n.a.	6	30
(c) reduction in infant mortality (deaths per thousand)	105	100	60
(d) reduction in maternal deaths (deaths per thousand)	6-8	6-8	4-6
(e) population welfare centres (number)	1,003	1,003	1,500
(f) number of births prevented	1.5 million (1978-83)	2.0 million (1983-88)	
<b>3. Employment</b>			
(a) % remuneratively employed	7.6	8.9	12.5
(b) % of civil services	n.a.	2.0	5.0
(c) lady doctors	n.a.	1,330	4,000
(d) lady health visitors	n.a.	1,940	4,900
(e) nurses	n.a.	5,000	10,000

### Safety Nets for the Poor

27. The Sixth Plan programmes also extend a helping hand to the poorer groups in society to enable them to stand on their own feet as well as to provide means of sustenance for those who may have no other alternative of remunerative employment. These programmes include :

- Benefit of Zakat and Ushr system to 1.5–2 million mustahikeen (deserving indigents) during the Plan period.
- Nutrition programmes for 1.25 million severely malnourished children and one million pregnant mothers.
- Provision of a special programme to look after the special education and curative needs of one million disabled and handicapped children during the Plan period.
- Generous financial support to non-governmental voluntary agencies to encourage them in their efforts to ameliorate the social and economic handicaps of the poor people.
- Development of 100,000 small plots every year and provision of interest-free loans to help low-income groups build their own houses on a self-help basis.
- Development of a nation-wide system of scholarships, both through the normal budget and from Zakat and Ushr funds, to ensure that no talented child is denied education on grounds of poverty.

28. The Sixth Plan makes many bold departures in its programmes and in its policy prescriptions. Its basic objective is the socio-economic emancipation of the masses. It is based on a realistic appraisal of the future needs and capacities of the nation. Its policy proposals are concrete, operational and workable. But in the last analysis, their implementation will depend on the combined will of the nation and its willingness to accept fresh ideas and new opportunities: "The difficulty lies", as Lord Keynes wrote some decades ago, "not in the new ideas, but in escaping from the old ones, which ramify for those brought up as most of us have been, into every corner of our minds".



*Those who, when they spend,  
Are not extravagant and not  
niggardly, but hold a just (balance)  
Between those (extremes).*

*Al-Furqan-67.*

### CHAPTER 3

#### SAVINGS, INVESTMENT AND GROWTH

**P**AKISTAN has managed to sustain a steady growth of 6 per cent a year with exports growing at 9 per cent per annum in real terms during the Fifth Plan period—a period of world economic crisis, severe contraction of aid and a massive influx of Afghan refugees. However, this was accompanied by several short-comings such as low level of investment, growing deficiencies in physical infrastructure and an impoverished state of social services. The fixed investment/GNP ratio declined during the Fifth Plan period. The growth in physical infrastructure particularly in energy sectors failed to keep pace with the rapid expansion of the economy. The improvement in social sectors was lagging behind the exploding population growth. The Sixth Plan must address to these basic concerns and provide a sustainable framework for their durable resolution.

2. A growth rate in GDP of 6–7 per cent is the very minimum the economy must achieve to generate sufficient surplus to address the back-log of outstanding problems in an economy whose population has been growing at 3 per cent a year and labour force even at a higher rate. Such growth rate would also be essential to increase saving and investment to a respectable level.

3. Looked at from the angle of productivity and employment, an annual increase in labour force at a rate close to 3.5 per cent should be combined with an improvement in average productivity of around 3 per cent per annum. It is on the basis of such improvement in productivity that any meaningful programme for reduction in rural poverty can be derived.

### GDP and GNP Growth

4. The growth strategy for the Sixth Plan aims at preserving and building upon the economic progress in recent years, induce and develop new sources of growth for the medium term, usher in the phase of technological advance and lay the foundations of longer term progress while imparting greater social balance to the process of development.

5. A growth rate in gross domestic product of 6.5 per cent per annum is planned for the next five years. The various objectives of the Plan require harmony in the composition of growth. The share of commodity producing sector—agriculture and industry—is projected to increase at a rate faster than the non-commodity sectors.

6. The following table gives the growth profile.

TABLE 1

*Annual Growth Rates of GDP and GNP*

	Fifth Plan (1978–83)	Sixth Plan (1983–88)
Agriculture	4.4	4.9
Major Crops	(4.8)	(3.6)
Minor Crops	(3.1)	(7.0)
Others	(4.3)	(6.0)
Manufacturing	9.0	9.3
Large Scale	(9.7)	(10.0)
Other Sectors	6.0	6.4
	-----	-----
GDP (FC)	6.0	6.5
	-----	-----
GNP (FC)	6.3	6.3



7. *Agriculture.*—A growth rate of just under 5 per cent per annum has been provided in the Sixth Plan for the agricultural sector. The postulated growth is somewhat higher than the performance in the Fifth Plan. The more important departure from the Fifth Plan, however, is in the composition of growth. The hitherto neglected sub-sectors of “minor” crops and livestock products have been projected to grow at considerably accelerated rates of 7 per cent per annum and 6 per cent per annum respectively. In major crops, on the other hand, the growth is projected to drop to 3.6 per cent per annum. A major push is envisaged in the production of edible oils and dairy products in order to substitute for imports; and in fruits, vegetables, poultry, eggs and livestock in order to promote exports.

8. *Manufacturing.*—A growth rate of 9.3 per cent per annum has been postulated for the manufacturing sector as a whole with 10.0 and 7.3 per cent envisaged for large and small scale industries respectively. In the process, the manufacturing sector will contribute one quarter of the incremental GDP. The completion of Steel Mill in the early years of the Plan would contribute significantly to the growth of large-scale industry. Within large-scale, the intermediate and capital goods industries are projected to increase by 13.4 per cent per annum compared to 7.2 per cent envisaged for consumer goods. Further, within consumer goods, higher growth rates have been fixed for industries producing goods either for export or import substitution. The composition of output in both large and small scale manufacturing sectors would contain important departures from the existing situation. It is planned to move towards a new phase of technological advance and to improve the quality and value added in various traditional industries. Engineering and agro-based industries will spearhead the growth in manufacturing output. A number of projects are on the anvil downstream of the Steel Mill for strengthening the efforts towards import substitution in the capital goods sector.

9. *Other Sectors.*—The overall growth rate of the value added in other sectors is projected at 6.4 per cent per annum, which is roughly equal to the overall growth rate of GDP projected for the Sixth Plan. These include mining, electricity, gas and other services. A growth rate of 7.5 per cent has been estimated for mining, with natural gas contributing 52 per cent of value added, crude petroleum 22 per cent and coal about 13 per cent. These are the priority items of the Sixth Plan. However, in view of the uncertainties surrounding the actual timing of the flow of output, relatively modest growth in the value added has been projected for the Sixth Plan period. Value added by electricity will increase at 9 per cent per annum. For the services, the growth projection comes to 6.1 per cent. This is less than the

overall GDP growth due to historically fixed growth rates of ownership of dwellings and some other services, constituting one-third of the value-added in the services as a whole. However, excluding these fixed growth activities, services would grow at 6.8 per cent per annum.

10. Against the GDP growth of 6.5 per cent, GNP at market prices is projected to grow at a slightly lower rate *i.e.* 6.4 per cent per annum in real terms. This is because the projection of net factor income implies an annual growth of 4.3 per cent only due to the slow-down of remittances envisaged during the Sixth Plan. Table 2 brings out this picture.

TABLE 2

*GNP at Market Prices*

(Current Billion Rs.)

	1982-83	1987-88	1983-88	Annual Growth Rate during Sixth Plan	
				Nominal	Real
GDP (FC)	329.8	619.1	2442.9	13.4	6.5
Indirect Taxes less Subsidies	38.2	72.9	286.2	13.8	6.8
GDP (MP)	368.0	692.0	2729.1	13.5	6.5
Net Factor Income	33.0	55.9	228.8	11.1	4.3
GNP (MP)	401.0	747.9	2957.9	13.3	6.4

**Consumption**

11. Overall consumption is projected to increase at a rate significantly below that of output—5.4 per cent per annum in real terms against annual GNP growth of 6.4 per cent. This difference is on account of the policies directed towards diverting a higher proportion of additional incomes to saving and investment. Public consumption expenditure is projected to grow annually by 7.5 per cent in real terms—a rate higher than the growth rate of GNP for the reason that maintenance expenditure on infrastructure, which has been very inadequate in the past, has to be increased significantly. In addition, there is increased emphasis in the Plan on social development particularly education and health, leading to a further increase in maintenance requirements and recurring liabilities. It must be pointed out that

social services, though classified as public consumption, are an essential element of private consumption which by their very nature must be arranged collectively through governmental action, particularly for the poorer sections of the society.

12. Private consumption is expected to rise by 5.1 per cent per annum in real terms during the Sixth Plan period. Thus, real *per capita* consumption will grow by 2.3 per cent per annum or by about 12 per cent over the Plan period. This order of increase, which is a fairly modest target, will be accompanied by the redistributive impact of a sizeable expansion in the spread of basic social services and transfer payments in order to make a deep impact on poorer regions and low income groups. The following table illustrates the projected consumption pattern.

TABLE 3

*Consumption during Sixth Plan*

	(Current Billion Rs.)				
	1982-83	1987-88	1983-88	Annual Growth (%)	
				Nominal	Real
Private	311.2	546.0	2207.8	11.9	5.1
Public	39.2	77.2	304.1	14.5	7.5
Total :	350.4	623.2	2511.9	12.2	5.4

**Investment and Savings**

13. The gross domestic investment in the past several years has remained around 15-16 per cent of GNP with private investment less than 5 per cent of the GNP during 1978-83. National savings have fluctuated around 11 to 12 per cent of the GNP during the same period. The Sixth Plan would seek to improve the performance in this critical area. Mainly the strategy is to improve the environment for private investment which in itself can bring to fruition potential savings frustrated in the past in the absence of attractive investment opportunities.

14. The table below highlights the changes in saving and investment envisaged during the Sixth Plan.

TABLE 4

*Saving and Investment*

(Current Billion Rs.)

	1982-83	1987-88	Total Sixth Plan
<b>Investment</b>	<b>62.1</b>	<b>144.0</b>	<b>527.0</b>
Public	34.1	70.5	269.4
Private	19.5	59.6	200.0
Stocks	8.5	13.9	57.6
<b>Financed by</b>			
A. National Savings	<b>50.6</b>	<b>124.7</b>	<b>446.0</b>
B. Foreign Savings	<b>11.5*</b>	<b>19.3</b>	<b>81.0</b>
<b>As Percentage of GNP</b>			
Gross Investment	15.5	19.2	17.8
Fixed Investment	13.4	17.4	15.9
National Savings	12.6	16.6	15.1
Foreign Savings (Net)	2.9	2.6	2.7

\*This is a normalized benchmark as there was an abnormal decline in net foreign savings during 1982-83.

15. *Investment.*—The Sixth Plan envisages a gross investment of Rs. 521 billion including Rs. 57.6 billion for changes in stocks, yielding an average investment/GNP ratio of 17.8 per cent for the Sixth Plan period and 19.2 per cent for its terminal year against 15.5 per cent in 1982-83. Fixed Investment GNP ratio would improve more sharply, rising to 17.4 per cent in 1987-88 as against 13.4 per cent in the base year.

16. By terminal year, around 46 per cent of the fixed investment is planned in the private sector as against 35 per cent during 1982-83. As a matter of fact, new investment in the manufacturing sector is being predominantly left to private sector as the public sector will limit its role to the completion of a few on-going projects, balancing and modernisation of existing assets and setting up of industries required to achieve regional balance that might result from private shyness.

17. Although the investment by the public sector will fall relative to private investment, the Plan projects an increase in public investment from 8.5 per cent of GNP in 1982-83 to 9.4 per cent in 1987-88. The change will

not be so much in the presence of the public sector in aggregate terms as in the kinds of functions that it performs. The focus of public sector investment would shift to provision of physical and social infrastructure and the accelerated development of backward regions. To the extent that public investment in industries would decline, the Government will be better able to meet its primary obligations of providing energy, social services and transport in all parts of the country. In particular stress will be placed on extending infrastructure to rural areas.

18. *Savings.*—To realise the investment goals, a serious saving effort will have to be mounted. Policies will be initiated to raise the national saving/GNP ratio from 12.6 per cent in 1982-83 to 16.6 per cent in the last year of the Plan. The implied marginal rate of savings between the end years would be in excess of 20 per cent on the benchmark year figures. Table 5 illustrates the pattern of increase in private and public savings during the Sixth Plan.

TABLE 5  
*Public and Private Savings*

	(Current Billion Rs.)		
	1982-83	1987-88	Total Sixth Plan
<b>Natinal</b>	<b>50.6</b>	<b>124.7</b>	<b>446.0</b>
Public	6.3	26.5	95.0
Private	44.3	98.2	351.0
(Household)	(43.5)	(92.2)	(336.0)
(Corporate)	(0.8)	(6.0)	(15.0)

19. The most important element of the Sixth Plan saving strategy is that the congenial climate to be created for the Rs. 200 billion private investment will bring forth the demobilised savings of the private sector in a massive way. Private savings/GNP ratio is expected to increase from 11.0 per cent in 1982-83 to 13.1 per cent in 1987-88. Within these, a major thrust is contemplated on increasing the corporate savings. Household savings will also be encouraged with particular emphasis on mobilising remittance incomes for savings and investment. The following table indicates the critical ratios of private savings.

TABLE 6

*Private Savings as Percentage of GNP*

	1982-83	1987-88	Total Sixth Plan
<b>Private Savings</b>	<b>11.0</b>	<b>13.1</b>	<b>11.9</b>
Household	10.8	12.3	11.4
Corporate	0.2	0.8	0.5

20. Public savings rates which were negative in mid-1970s have shown a distinct improvement over the past five years. Public savings aggregated to Rs. 35.8 billion during the Fifth Plan period or around 2.4 per cent of GNP. It is planned to increase these savings to 3.5 per cent of GNP by the end of the Sixth Plan period so as to reduce the saving-investment gap within the public sector. Whereas during 1982-83, public savings are estimated to have financed about 18 per cent of the public investment, their contribution is projected to go up to over 35 per cent by 1987-88. This increase would primarily come from public corporations by promoting efficiency and commercially viable operations, gradual elimination/reduction of hidden and open subsidies and the levy of user charges.

**Foreign Resources**

21. The gross inflow of foreign resources including foreign private inflow for financing investment during the Sixth Plan period is projected at Rs. 135 billion (\$ 10 billion). Of this, over Rs. 98 billion (\$ 7.3 billion) is likely to be gross aid inflows and balance would be commercial borrowing for investment purposes, foreign equity and private investment. Around 82 per cent of the foreign resources are earmarked for public sector investment and over 60 per cent as project loans. The Plan includes a few large projects with a very high foreign exchange component in the field of energy and minerals for which special arrangements will have to be made to line up foreign funding either as supplier's credits or commercial borrowings.

22. The Sixth Plan projects a reduction in the inflow of foreign savings which are projected to gradually decline from an average of around 3.5 per cent of GNP during the Fifth Plan period to 2.7 per cent by the terminal year of the Plan. Similarly, foreign savings will finance 15 per cent of total investment over the Sixth Plan period compared to about 25 per

cent during the Fifth Plan. Though the gross aid inflows are projected to rise by 11.1 per cent per annum, net aid inflows (gross disbursement minus amortization payments), after rising by 21 per cent in the first year of the Plan in response to the build up of commitments in 1982-83, will grow by about 3 per cent per annum in real terms during the remaining Plan period.

### Plan Size

23. The gross investment during the Sixth Plan is projected at Rs. 527 billion. Excluding the changes in stocks, non-Plan investment expenditure (investment in current budgetary outlays and investment by local bodies) and including non-investment development expenditure (mainly subsidies, scholarships, recurring expenditure on social sectors, on-going schemes in social sectors etc.), the Sixth Plan size works out at Rs. 490 billion—Rs. 290 billion in the public sector and Rs. 200 billion in the private sector. The size and structure of the planned outlays are explained in detail in Chapter 4. The Plan size is derived in the following table.

TABLE 7  
*Derivation of Plan Size*

	(Current Billion Rs.)		
	1982-83	1987-88	Total Sixth Plan
Gross Investment	62.1	144.0	527.0
<i>Less:</i>			
(i) Changes in Stocks	8.5	13.9	57.6
(ii) Investment in Non-Development budget	1.3	2.0	8.8
(iii) Investment by local bodies	1.8	2.5	10.0
<i>Plus:</i>			
(i) Non-investment development expenditure	3.1	8.9	31.9
(ii) Subsidy on Fertilizer	1.6	—	3.0
(iii) Oil Exploration	0.4	1.2	4.5
Plan Outlays	55.6	135.7	490.0

(Current Billion Rs.)

	1982-83	1987-88	Total Sixth Plan
<b>Through</b>			
<b>A. Public Sector</b>	<b>36.1</b>	<b>76.1</b>	<b>290.0</b>
(i) ADP	(28.0)	(53.3)	(210.0)
(ii) Special Development Programme	(0.6)	(5.6)	(15.0)
(iii) Public Corporation	(7.5)	(17.2)	(65.0)
<b>B. Private Sector</b>	<b>19.5</b>	<b>59.6</b>	<b>200.0</b>

### Price Assumption

24. The past plans made projections on the implicit assumption of no price change in the future. An assumption of perfect price stability for a five year period was obviously unrealistic. However, during the period when the world was experiencing no more than 2 per cent per annum increase in prices, the price assumption did not create any serious problem. During the Fifth Plan period, however, the entire world was characterized by a high rate of inflation. The impact of major price changes in the world was compounded by fluctuations in the exchange rates of the major currencies in the world. The cost assumptions of various projects had to be repeatedly revised. Though the inflationary situation has improved considerably, it would not be possible to go back to the old assumption of perfect price stability. The projects now being prepared incorporate specific provision for price contingency. Since the project cost had taken into account an element of the likely future increase in prices, it was considered necessary that the Plan should specifically include an assumption regarding future increase in prices.

25. In the light of international price projections and the trends of various key elements in the domestic price situation, it has been decided to use an assumption of 6.5 per cent annual increase in prices for the Sixth Plan. This is by no means a prediction or a target. Every effort would be made to keep the inflation rate in Pakistan significantly below the indicative assumption of 6.5 per cent per annum. To the extent that international and domestic prices show greater stability, it would be possible to achieve the real objectives of the Plan with lower financial outlays.



*And when ye judge  
Between man and man,  
That ye judge with justice :  
Al-Nisa  
(IV-58)*

## CHAPTER 4

### SIZE, SECTORAL PRIORITIES AND PROVINCIAL DISTRIBUTION

**T**HE size of the Plan is derived by synthesizing a variety of considerations, not all of which point in the same direction :

- long term growth cannot proceed in a framework of continuous declines in investment ratios;
- higher investment levels are required in the Sixth Plan to build up physical and human infrastructure;
- greater self-reliance demands a rising domestic saving effort;
- and yet, there are great difficulties involved in substantially improving the rate of public savings since long-range structural changes are required, with limited impact within the next Plan period.

2. The Plan has resolved these dilemmas by opting for a modest improvement in the overall investment ratio and a phased delegation of the financial burden for some development activities to the private sector. In the public sector programme, considerable shifts have been made in the components which are based on a self-financing mechanism and utilise the market potential for mobilising savings on commercial lines. Public sector programme which has to be financed from the budgetary resources has been streamlined to focus on energy, agriculture, health and education. In the case of energy, major part of the programme is based on self-financing effort of WAPDA. In the public sector programmes not covered by the budget, a

significantly high proportion (35 per cent of the total outlays) is likely to be financed through self-financing by the public corporations.

3. A non-analytical comparison with the past may suggest a high order of acceleration in the public sector development outlays in the Sixth Plan. However, this is mainly because, for the first time, the Sixth Plan has attempted to formulate the programme in future current prices, anticipating the likely impact of the increase in prices during the Plan period. In the past, plans were made in constant prices but had to be implemented in current prices. This did not create problems in the relatively stable periods. However, in the seventies and eighties no projection for the future is valid, if it does not recognize the reality of at least moderate increase in prices. The Plan size would have been much smaller, if expressed in constant prices of 1982-83.

4. The impact of prices on the size of the Plan has been identified and explained in each component of the development plan. Comparisons are made both in current and constant prices.

5. The size of the Sixth Five Year Plan is placed at Rs. 490 billion as against an estimated outlay of Rs. 226 billion during the Fifth Plan. The Sixth Plan is being denoted in current prices and not in the base year prices. In the base year (1982-83) prices, the Sixth Plan development outlay works out at Rs. 399 billion as against Rs. 252 billion during the Fifth Plan. The Sixth Plan outlays reflect 117 per cent increase over the Fifth Plan in nominal terms but only 58 per cent in constant prices, as shown in Table 1 below :

TABLE 1

*Fifth and Sixth Plan Outlays*

(Billion Rs.)

	Nominal Terms			In 1982-83 Prices		
	Public Sector	Private Sector	Total	Public Sector	Private Sector	Total
Fifth Plan	153	73	226	171	81	252
Sixth Plan	290	200	490	237	162	399
Percentage Increase	90	174	117	39	100	58

6. In constant prices, the Plan development outlays are phased in a manner to grow slightly at a higher rate than G.N.P. This is considered essential to improve the investment ratio in the economy. By the end of the Sixth Plan, the ratio would be marginally higher than it was at the beginning of the Fifth Plan. The annual phasing of the Plan is given in Table 2 below :

TABLE 2  
*Annual Phasing of Plan Outlays*

(Current Billion Rs.)

	ADP	Public Corporations	Special Development Programmes	Total Public Sector	Total Private Sector	Per cent of GNP			
						ADP	Total Public Sector	Total Private Sector	Total (Public and Private Sector)
<b>Fifth Plan</b>									
1978-79	20.5	4.5	—	25.0	9.7	9.5	11.6	4.5	16.1
1979-80	21.8	5.5	—	27.3	12.9	8.6	10.8	5.1	15.9
1980-81	25.8	5.8	—	31.6	14.8	8.7	10.7	5.0	15.7
1981-82	26.5	6.7	—	33.2	16.5	7.7	9.6	4.8	14.4
1982-83									
(estimated actuals)	28.0	7.5	0.6	36.1	19.5	7.0	9.0	4.9	13.9
<b>Total Fifth Plan</b>	122.6	30.0	0.6	153.2	73.4	8.1	10.1	4.9	15.0
<b>Sixth Plan</b>									
1983-84	31.9	8.4	1.2	41.5	26.2	7.0	9.1	5.7	14.8
1984-85	36.4	10.9	1.8	49.1	30.2	7.1	9.6	5.9	15.5
1985-86	41.5	13.3	2.6	57.4	37.5	7.1	9.9	6.4	16.3
1986-87	46.9	15.2	3.8	65.9	46.5	7.1	10.0	7.1	17.1
1987-88	53.3	17.2	5.6	76.1	59.6	7.1	10.2	8.0	18.1
<b>Total Sixth Plan</b>	210.0	65.0	15.0	290.0	200.0	7.1	9.8	6.8	16.6

7. Within these broad parameters, the Sixth Plan has two distinct features :

- Significant shift of development responsibility from public to private sector.
- Decisive inter-sectoral and intra-sectoral shifts both in the public and private investment.

8. The allocation pattern of planned development outlays specifies the changing role of public and private sectors. There was a marked shift in favour of public sector during 1971-77, its share rising from 50 per cent in 1969-70 to over 75 per cent in 1976-77 primarily due to nationalization of a significant part of industries in 1972 and the inclusion of some large industrial projects in the public sector programme. The Fifth Five Year Plan aimed at reversing this trend, but only succeeded in partly modifying the imbalance. Public sector investment in relation to G.N.P. was reduced, without at the same time raising the rate of investment in the private sector. Nevertheless, a shift did occur. Public sector investment is likely to be two-third of the total capital formation in the economy in 1982-83. This is lower than 75 per cent recorded in 1976-77, but higher than the target figure of 50 per cent envisaged in the Plan.

TABLE 3

*Shifts in Public and Private Sector Outlays*

	(Billion Rs.)		
	1977-78	1982-83	1987-88
Public Sector	21.0	36.1	76.1
Private Sector	8.7	19.5	59.6
Percentage of private sector in total outlays	29.3	35.1	43.9

9. During the Sixth Plan, the public sector investment in manufacturing would decline further as the on-going projects carried over from the Fifth Plan are completed. The private sector would be encouraged to move forward in a more liberal framework. Further, it is proposed to shed the financial load on the public sector by transferring to the private sector some of the functions hitherto performed exclusively by the public sector. The overall share of public development outlays during the Sixth Plan period is being reduced to about 60 per cent. In fact, by the terminal year of the Plan, the share of the public sector will be reduced to 56 per cent only.

10. The Plan also envisages significant shifts in the direction of planned sectoral outlays as indicated in Table 4 below :

TABLE 4  
*Planned Outlays by Sectors during the Fifth and Sixth Plans*

	Fifth Plan		Sixth Plan	
	Outlays (Billion Rs.)	Percentage Share	Allocation (Billion Rs.)	Percentage Share
Agriculture and Water	36.05 (21.83)	15.9 (14.2)	89.95 (44.45)	17.8 (14.5)
Energy	38.83 (38.83)	17.2 (25.3)	116.50 (116.50)	23.1 (38.2)
Transport & Communications	44.36	19.6	83.52	16.5
Industry	45.59	20.2	82.40	16.3
Minerals	0.66	0.3	6.85	1.4
Social Sectors*	17.13 (15.23)	7.6 (9.9)	48.01 (43.65)	9.5 (14.3)
Others	43.40	19.2	77.77	15.4
Total (Gross)	226.02	100.0	505.00	100.0
<i>Plus</i> : Special Development Programmes	0.60		15.00	
<i>Less</i> : Operational Shortfall	-		30.00	
Total (Net)	226.62		490.00	

Figures in parenthesis relate to Public Sector outlays.

\*Social sectors outlays include expenditures on education, health, water supply and sanitation and population planning.

11. Energy can clearly be identified as obtaining the highest priority in the Sixth Plan, in terms of the allocation of investment funds. Its share increases between the two Plans from 17 to 23 per cent. In public sector, it goes up from 25 per cent to about 38 per cent. Accounting for one-fifth of the total Plan size, this is the largest single sector. In agriculture and water, the absolute allocation increased by about 149 per cent, with the share in the total programme improving from 16 to 18 per cent. The social sectors, notably education and health starting from an unduly low base, are getting the largest acceleration to a level three times as large as in the Fifth Plan. The relative share improves from 7.6 per cent in Fifth Plan to 9.5 per cent during Sixth Plan. In the public sector, it improves from 9.9 per cent to 14.3 per cent. The mineral sector gets a real quantum jump in the Sixth Plan from being an insignificant fraction of 0.3 per cent to 1.4 per cent of overall Plan size. The priority accorded to science and technology is reflected in 300 per cent acceleration between the two Plans in the public sector outlays. These five areas would account for roughly half the Plan; their combined share was about 40 per cent in the Fifth Plan. The acceleration is far sharper if only the public sector outlays are considered, from 48 per cent to 68 per cent.

12. The share of other sectors would correspondingly decline though the amount of investment in each case would be larger than in the previous Plan. The most notable decline is in the case of industry which is in the process of a transition. The public sector is rapidly reducing its level of investment in the manufacturing sector while the private sector manufacturing investment is only just beginning to accelerate. Also in the industrial sector, major capital intensive projects like steel and fertilizer have been completed. The new phase relates to engineering goods, electronics and agro-industries where the bulk of investment is reserved for the private sector, with public sector playing the role of investor of last resort.

13. By itself the investment allocation for social sectors in the Sixth Plan cannot fully reflect the priority accorded to these sectors. These sectors, particularly education and health, are not capital-intensive. The creation of physical facilities is only a part of the story. The real impact is made by an increase in the current inputs—teachers, doctors and medicines—which do not form part of the definition of investment. Indeed, part of the emphasis in the Plan is to use techniques for reducing the requirement of physical facilities—as in the case of mosque schools. The non-development recurring expenditure of this nature has been provided at about Rs. 65 billion as against Rs. 25 billion in the Fifth Plan.

### **Public Sector Development Programme**

14. During the Sixth Plan, public sector outlays are programmed to increase in real terms, though at a rate slower than private investment. The real rate of increase in public sector outlays is expected to keep its ratio to G.N.P. unchanged during the next Plan period. Stabilizing the ratio of public sector investment at the present level would create some constraints and would be possible only with the help of considerable transfer of programmes and projects to the private sector.

15. The public sector programme has been dictated by the following compulsions :

- (a) Provision of adequate infrastructure, particularly energy;
- (b) Provision of basic social services;
- (c) Development of less developed areas;
- (d) Generation of a reasonable level of employment.

16. Keeping these in view, a public sector development of Rs. 290 billion in current prices and Rs. 237 billion in 1982-83 prices is envisaged. This would be higher by about 90 per cent in current prices and 39 per cent in 1982-83 prices than the estimated outlays during the Fifth Plan period on a comparable basis.

17. Out of the total public sector outlays of Rs. 290 billion, Rs. 210 billion will be financed from budgetary allocations as ADP excluding Rs. 15 billion earmarked for Special Development Programmes of Baluchistan, FATA, public services in Karachi and possibly some least developed areas of the Punjab and Rs. 65 billion by public corporations.

18. The sector-wise break-up of public sector development programme during the Sixth Plan is shown in table 5 below :

TABLE 5

*Sectoral distribution of Public Sector Development Programme 1983-88*

(Billion Rs.)					
Sl. No.	Field of Development	ADP	Public Corporations	Total	Percentage share
1.	Agriculture	12.10	0.25	12.35	4.0
2.	Fertilizer Subsidy	3.00	—	3.00	1.0
3.	Water	32.10	—	32.10	10.5
4.	Energy	86.50	30.00	116.50	38.2
	I. Power	68.90	18.50	87.40	28.7
	(i) Water and Power Development Authority.	(57.33)	(4.00)	(61.33)	
	(ii) Karachi Electric Supply Corporation.	—	(14.00)	(14.00)	
	(iii) Pakistan Atomic Energy Commission.	(9.00)	—	(9.00)	
	(iv) Special Areas Provincial programmes and Miscellaneous Projects.	(2.57)	(0.50)	(3.07)	
	II. Fuels	16.00	11.50	27.50	9.0
	(i) Oil and Gas Development Corporation.	(12.00)	(3.00)	(15.00)	
	(ii) Concessions.	(1.90)	—	(1.90)	

(Billion Rs.)

Sl. No.	Field of Development	ADP	Public Corporations	Total	Percentage share
(iii)	Natural Gas Transmission and Distribution.	(1.20)	(2.70)	(3.90)	
(iv)	Oil Refining and Distribution.	(0.90)	(4.80)	(5.70)	
(v)	Miscellaneous.	—	(1.00)	(1.00)	
III.	Renewables, Energy Planning, Conservation and Research.	1.60	—	1.60	0.5
5.	Industry.	8.50	12.00	20.50	6.7
6.	Minerals.	2.50	3.25	5.75	1.9
7.	Transport and Communications.	40.10	17.42	57.52	18.9
(i)	Railways.	(10.00)	—	(10.00)	
(ii)	Highways and Bridges.	(14.10)	(5.00)	(19.10)	
(iii)	Port Qasim.	(1.88)	—	(1.88)	
(iv)	Civil Aviation.	(1.00)	(3.00)	(4.00)	
(v)	Telephone and Telegraph.	(10.30)	—	(10.30)	
(vi)	Post Offices and Others.	(0.65)	—	(0.65)	
(vii)	Road Transport Corporations.	—	(2.15)	(2.15)	
(viii)	Karachi Port Trust.	—	(1.55)	(1.55)	
(ix)	Pakistan National Shipping Corporation.	—	(3.00)	(3.00)	
(x)	Pakistan International Air Lines Corporation.	—	(2.72)	(2.72)	
(xi)	Rural Roads.	(2.10)	—	(2.10)	
(xii)	Research.	(0.07)	—	(0.07)	
8.	Mass Media.	1.00	0.68	1.68	0.5
9.	Physical Planning and Housing	14.50	1.00	15.50	5.1
(i)	Low income housing.	(0.78)	—	(0.78)	
(ii)	Water supply and sewerage.	(6.40)	—	(6.40)	



(Billion Rs.)

Sl. No.	Field of Development	ADP	Public Corporations	Total	Percentage share
10.	Education and Manpower.	19.85	—	19.85	6.5
	(i) Primary education.	(7.00)	—	(7.00)	
	(ii) Vocational education.	(1.45)	—	(1.45)	
	(iii) University.	(2.10)	—	(2.10)	
11.	Health.	13.00	—	13.00	4.3
	(i) Primary health care.	(7.90)	—	(7.90)	
	(ii) Hospitals.	(3.30)	—	(3.30)	
12.	Population Planning.	2.30	—	2.30	0.7
13.	Tourism.	0.35	0.40	0.75	0.3
14.	Programme for Women's Division.	0.80*	—	0.80*	0.3
15.	Social Welfare.	0.55	—	0.55	0.2
16.	Culture and Sports.	1.55	—	1.55	0.5
17.	Science and Technology.	1.00**	—	1.00**	0.3
18.	Miscellaneous.	0.30	—	0.30	0.1
	Total (Gross)	240.00	65.00	305.00	100.0
	Plus: Special Development Programmes.	15.00	—	15.00	
	Less: Operational Shortfall.	30.00	—	30.00	
	Total (Net)	225.00	65.00	290.00	

\*This is only the programme for Women's Division. Total programme for Women's Development, included in all Sectors, will exceed Rs. 20 billion. (see chapter 20).

\*\*In addition, about Rs. 4.81 billion has been provided in the sectoral programmes. The total programme for science and technology is Rs. 5.81 billion. (see chapter 17).

19. The public sector development programme of Rs. 210 billion will be financed through budgetary mechanism excluding outlays of Rs. 15 billion for the special development effort to be made for the development of less developed regions, particularly Baluchistan and tribal areas of North West Frontier Province. A beginning in this direction was made in the last year of the Fifth Plan in which special allocations were made for these areas over and above their normal share. For the Sixth Plan, a comprehensive Plan

is being framed for both Baluchistan and tribal areas, with the objective of repairing past neglect and to bring them at par with other provinces. An attempt will be made to include some areas of other provinces also in this special programme.

20. The sectoral priorities in the public development outlays reflect the Sixth Plan strategy of building up the real and dynamic sources of enduring social and economic progress. Two considerations have been important in determining the public sector role. The first is the need of sectoral investment for the economy at large and the second is the role of public and private sector. These aspects are inter-related and cannot be compartmentalized. Compared with the preceding Plan, the Sixth Plan lays a much greater emphasis on social sectors; yet it has to safeguard the short and medium term economic services required to sustain production programmes.

21. In the main, the public sector would concentrate on social aspects and providing the infrastructure for short and long-term growth through massive energy projects, drainage schemes, social programmes and special programmes for less developed regions.

22. In the overall public sector investment, the shares of fuel and power, rural infrastructure, water and social services show marked acceleration. The increases provided in these sectors not only reflect the accent that the Plan wishes to place on them but a conscious decision to leave much of future industrialization to the private sector. This shift in priorities reflects twin concerns. The disengagement of government from industrialization would permit it to do justice to the enormous task of providing physical and social infrastructure which must be regarded as having first claim on public resources. At the same time, involving the private sector to a fuller extent in the process of industrialization is expected to lead to an increase in aggregate investment through the greater mobilisation of private savings for private investment.

23. The share of agriculture and water programmes in total public investment will be at about the same level as in the Fifth Plan, of fuel and power from 25.3 per cent to 38.2 per cent and of education and health from 6.7 per cent to 10.8 per cent. These sectors together with minerals account for roughly two-third of the public sector development programme. Industry shows a clear deceleration. The share of manufacturing sector investment comes down from 16.6 to 6.7 per cent. There is a sharp decline in absolute terms also.

24. The public sector investment is distributed into two components of ADP and public corporations partly on the basis of the current status of executing agencies and partly as a reflection of the division of responsibilities in the Sixth Five-Year Plan. In particular, it has been decided that industrial enterprises will not receive funds from the budget except on the rare occasion when national priority necessitates such provision. These enterprises would rely upon their own profits and what they can borrow domestically or abroad in order to finance their expansion plans. Public corporation's self-financing programmes are identified separately from those projects which require budgetary financing.

### Development Through Budget

25. In the public sector development programme to be implemented through the budget, normally called ADP, the sectoral priorities somewhat differ in their emphasis than in overall public sector investment priorities. The emphasis on energy, and social sector programmes comes out more sharply in the Annual Development Programme component of the Plan. More than 70 per cent of the pure public sector programme (A.D.P.) is for agriculture, water, energy education and health programmes.

TABLE 6  
*ADP—Sectoral Shifts*

(Billion Rs.)

	Outlays		Allocations	
	Fifth Plan	Percentage Share	Sixth Plan	Percentage Share
Agriculture and Water	21.64	17.6	44.20	18.4
Energy	25.80	21.0	86.50	36.1
Transport and Communications	26.54	21.6	40.10	16.7
Industry	18.21	14.8	8.50	3.5
Minerals	0.33	0.3	2.50	1.0
Education and Manpower	5.64	4.6	19.85	8.3
Health	4.58	3.7	13.00	5.4
Others	20.09	16.4	25.35	10.6

26. In the Sixth Plan, the rural development programmes are made an integral part of the sectoral programmes to retain a coordinated approach.

Provisions for rural development programmes, which can be directly identified as being specifically for this purpose, constitute roughly one-third of the total ADP. In effect, the share is larger. For instance, in rural electrification, only the cost of secondary transmission and distribution lines is taken into account, but not the proportionate cost of generation and primary transmission. On a comparable basis, the provision in the Fifth Plan was 25 per cent. Actual implementation was significantly less. The rural development effort in the Plan will be mounted on a carefully selected broad front, such as primary education, rural health, rural roads, village electrification and rural water supply.

27. Similarly, the programme for science and technology derived from various sectors aggregates to Rs. 4.81 billion. For science and technology programmes, not covered by other sectors, a direct provision of Rs. 1 billion is being made. Major projects specifically added over and above the sectoral programmes in this field include National Institute of Bio-Technology, National Institute of Animal production, Health and Dairy Sciences and Research Endowment Fund.

### **Public Corporations**

28. The shares of various sectors in public corporations outlays are also likely to change. Significant expenditures have been provided for mineral sector whose share is projected to increase from 0.2 per cent in the Fifth Plan to 5.0 per cent during the Sixth Plan. This offsets the decline in the share of the manufacturing sector. Similarly, a significant amount is being kept for urban water supply and sewerage projects which thus far were depending wholly on budgetary resources to cater to their requirements. The increase in the share of transport and communications sector is the result of the removal of urban transport corporations from the purview of budgetary resources. The table below highlights the sectoral shifts in public corporations investment programmes.

TABLE 7

*Public Corporations—Sectoral Shifts*

(Billion Rs.)

Sector	Outlays		Allocations	
	Fifth Plan	Percentage Share	Sixth Plan	Percentage Share
Energy	13.03	43.5	30.00	46.2
Transport and Communications	8.67	28.9	17.42	26.8
Industry	7.19	24.0	12.00	18.5
Minerals	0.07	0.2	3.25	5.0
Physical Planning and Housing	0.31	1.0	1.00	1.5
Others	0.73	2.4	1.33	2.0

29. An analysis of the development budget of local bodies indicates that more than 95 per cent of these outlays are meant for construction activities in various sectors of the economy. Sector-wise analysis shows that roughly 40 per cent of the expenditure is being made in social services (public health engineering) and 50 per cent in economic services (roads). Though these outlays do not fall within the framework of planning process, significant increases are anticipated in the expenditure by local institutions to augment the planned development efforts.

### Private Investment

30. A detailed private sector plan is neither possible nor desirable. What the Plan offers is an indicative projection of potential growth and priority areas of investment.

31. The Sixth Plan envisages substantial increase in the private investment level and significant sectoral shifts. The aggregate size is projected at Rs. 200 billion in current prices and Rs. 162 billion in 1982-83 prices. As such, it would be significantly higher than the Fifth Plan estimated achievement both in nominal and real terms. The share of private sector in the total outlays of the Plan would be 40 per cent. On yearly basis, private investment is projected to rise by 25 per cent in nominal terms and over 17 per cent in real terms.

32. Table 8 illustrates the absolute magnitudes and growth pattern.

TABLE 8

*Private Investment—Size and Growth*

	(Billion Rs.)			
	1982-83	1987-88	Total Sixth Plan	Annual Compound Growth Rate
Agriculture	4.1	13.5	45.5	26.9
Transport and Communications	2.0	8.4	26.0	33.2
Industry	5.2	20.2	61.9	31.2
Large Scale	(3.9)	(17.0)	(49.9)	(34.2)
Small Scale	(1.3)	(3.2)	(12.0)	(19.7)
Minerals	0.1	0.4	1.1	31.9
Housing	5.4	11.3	43.6	15.9
Services/Others	2.7	5.8	21.9	16.5
Total :	19.5	59.6	200.0	25.0
Investment in 1982-83 Prices	19.5	43.5	161.9	17.4

33. As is evident, industrial investment is expected to reflect a quantum jump by 1987-88, four-times the size in 1982-83. The large scale manufacturing will increase almost five times. There is evidence of such an investment demand in the applications made for new ventures and sanctions obtained. This demand needs to be translated into physical activity of a corresponding magnitude. The proposed indicative figures need not be compared with the recent past with its history of tensions and mistrust. When it comes about, it would be a new phenomenon. Its magnitude in absolute terms is not large. Private investment is expected to be 8.0 per cent of G.N.P. in 1987-88 compared to 4.9 per cent in 1982-83. In manufacturing, it would rise to 2.7 per cent of G.N.P. from 1.3 per cent for the same years of comparison. Thus, the peaks achieved in 1969-70—7.3 per cent for total private investment and 2.9 per cent for private sector investment in manufacturing—will be nearly regained in the terminal year of the Sixth Plan. In terms of investment growth as well, industry will be the leading

sector. It is projected to grow at an annual rate of 31 per cent. Almost the entire new investment in the field of industry would be made by the private sector, with its share in additional industrial investment during the Plan period going up to more than 75 per cent. This also means that the bulk of incremental industrial GDP will be contributed by the private sector.

34. Agriculture is next to industry in terms of investment size, though its growth is a little less than transport and communications sector. This is mainly accounted for by the programme of farm machanization for which provision has been made both in terms of physical supplies and credit.

35. Underlying the differing growth rates of various sectors are the emerging sectoral shifts within the overall private investment. Table 9 below gives a clearer idea of the proposed shifts. The share of agriculture and industry goes up from 47 per cent in the Fifth Plan to 54 per cent in the Sixth Plan. The decline in the share of housing reflects the attempt to redirect the pattern of investment from luxury plazas to low-cost housing.

TABLE 9

*Private Investment—Sectoral Shifts*

Sector	(Percentages)	
	Fifth Plan	Sixth Plan
Agriculture	19.3	22.7
Transport and Communications	12.4	13.0
Industry	27.5	31.0
Large Scale	(20.6)	(25.0)
Small Scale	(6.9)	(6.0)
Minerals	0.4	0.6
Housing	25.9	21.8
Services/Others	14.5	10.9
Total :	100.0	100.0

**Provincial Programme**

36. Under the present constitutional arrangement several important development functions in the field of agriculture, water, transport, education and health lie in the provincial jurisdiction. Although in recent past, some of

the functions in these sectors have been federalised for various reasons, the provincial responsibility specially in the field of social sectors—education and health—is still very significant and the success in these fields to a great extent depends on the adequate allocations and timely execution of such programmes by the provincial governments.

37. No precise allocations for provincial governments were indicated in the Fifth Five Year Plan, but the programmes to be executed by them were spelled out in the sectoral chapters, adding upto around Rs. 26 billion. Against this, the actual expenditure incurred by the provinces adds upto around Rs. 24.5 billion in current prices and Rs. 18 billion in the base year prices in which the plan was formulated. Thus the shortfall in the provincial development outlays was negligible as 19.6 per cent of the total programme was executed through provincial governments as against over 20.3 per cent visualised in the Fifth Plan.

38. During the Sixth Plan, the portion of the development programme which has to be executed by the provincial governments under the present arrangements regarding functional responsibility for development expenditure adds upto over Rs. 58.3 billion, around 24.3 per cent of the total programme. In addition, the Sixth Plan includes a Special Development Programme of Rs. 15 billion for certain areas over and above their normal development outlays. Including these outlays, provincial share would exceed 32 per cent. This increase in allocations is due to the emphasis of the Plan on social sector development, the programmes for which are executed mainly by the provincial governments.

39. The sectoral distribution of the proposed public sector development outlays to be financed through budget by provinces is given below :

TABLE 10

*ADP—Sector-wise Provincial Allocation*

(Billion Rs.)

Sector	Punjab	Sind	NWFP	Balu-chistan	Total
1. Agriculture	2.90	1.10	0.85	1.06	5.91
2. Water	4.00	1.80	1.40	0.80	8.00
3. Power	0.48	—	0.04	—	0.52
4. Industry	1.27	0.18	1.02	0.53	3.00



(Billion Rs.)

Sector	Punjab	Sind	NWFP	Balu-chistan	Total
5. Minerals	0.12	0.05	0.26	0.07	0.50
6. Transport and Communications	2.30	1.72	1.06	0.46	5.54
7. Physical Planning and Housing	4.90	2.50	1.30	0.50	9.20
8. Education and Manpower	4.72	2.12	1.86	0.70	9.40
9. Health	4.32	1.83	1.35	0.82	8.32
10. Social Welfare	0.14	0.05	0.04	0.02	0.25
11. Rural Development and Misc.	1.95	0.20	0.15	0.10	2.40

*Note*: 1. The total sectoral programmes are not in conformity with the overall provincial share worked out on the basis of the provincial allocation formula. These deviations will be taken care of at the time of formulation of the annual plans during the Sixth Plan period. However, these deviations are so insignificant that any small shortfall or excess in the ADP sectoral programmes would not affect the targets set for various provinces.

2. The Sixth Plan programme shown here does not include additional Rs. 3.00 billion allocated mainly to primary education under Federal Programme to be released to the provinces on matching basis. Also, although population welfare programme has been provincialised, its allocations are not shown here.

40. More than 66 per cent of the overall ADP allocations in the field of physical planning and housing, education and health are to be utilised by the provincial governments. The entire programme for rural development to be implemented by the provinces pertains to rural and farm to market roads. In case of agriculture, almost 50 per cent of the programme will be implemented in financial terms by the provincial governments. A high proportion of federal expenditure is primarily due to the allocations for government storage and agricultural research. In Water Sector, only 25 per cent of the total allocations have been made to the provincial governments. The reason for this low allocation is the federalization of reclamation and drainage works and flood protection works. Unlike the past, Rs. 3 billion out of a total of Rs. 8.5 billion for the industry sector has been allocated to the provinces with a view to meeting the special requirements of backward regions in various provinces.

41. The sectoral allocations in various provinces have been made keeping in view the national priorities. Nevertheless, these priorities of various provinces are different depending upon the stage of development

of various sectors in a province as also the requirement of various sectors in different provinces. To exemplify : the Punjab gives top priority to rural roads and rural water supply; Sind has given highest priority to water, transport and sewerage; the NWFP has earmarked industry as its priority sector due to low private interest; and Baluchistan would like to lay down the water and agricultural resources base in the province.

*Make not thy hand tied  
(Like a niggard's) to thy neck,  
Nor stretch it forth  
To its utmost reach,  
So that thou become  
Blameworthy and destitute.*

*Al-Isra  
(XVII-29)*

## CHAPTER 5

### FINANCING NATIONAL DEVELOPMENT

**D**EVELOPMENT is a continuous process, feeding upon the resources generated by past development. Initiating development and generating sufficient momentum present the maximum difficulty. In subsequent stages, with the design of a proper taxation structure and with appropriate saving and investment policies, an increasing proportion of G.N.P. can be directed towards financing the development effort. In the private sector, attractive investment opportunities, efficient financial institutions, and the growth of corporate organisations with their built-in process of expansion through retained earnings play an important part in making resources available for financing. Public sector, on the other hand, must rely on mobilizing revenues in excess of current expenditure to finance at least a part of the development. In the developing countries, governments also have programmes for mobilizing household savings through institutional framework specially designed for this purpose. However, in the longer run, public sector must also rely heavily on an adequate return on past investments, the self-financing of various public utilities and enterprises as well as upon the user charges for services being rendered. The development record creates the potential. Realizing this potential requires strong policies and structural and institutional response to the changing situation.

## THE FIFTH PLAN IN RETROSPECT

2. At the outset of the Fifth Plan, the economy of Pakistan was just beginning to recover from a long period of stagnation. The task of generating resources for financing a larger development programme posed a serious challenge. Considerable effort was required to mobilize resources to meet the targets. For the last five years, each Annual Plan required significant additional taxation and resource mobilization, yet the ratio of public sector investment to G.N.P. was declining for the greater part of the Fifth Plan period. The international economic climate and the continuing deterioration in Pakistan's terms of trade were mainly responsible for this situation. Important elements of this situation are recalled below :

- (i) Not all the increases in international energy prices could be passed on to consumers. The Government had to absorb a part of the cost by reducing tax incidence on oil. By the end of the Plan period, taxes on P.O.L. products hardly accounted for 5 per cent of C.I.F. value of oil and the products consumed in the country. Government revenues from P.O.L. were reduced to 4.9 per cent of the total revenues in 1982-83 against 10.1 per cent in 1972-73.
- (ii) With record low commodity prices in the world, the export duties had to be virtually abandoned. Sizable losses were sustained on export commodities, *viz.* cotton and rice, where it would have been undesirable to adjust support prices to the farmer in line with the downward movement of world prices.
- (iii) Fertilizer prices increased throughout the world in close sympathy with energy prices. Domestic cost of producing fertilizer in high-cost new units was also high, despite cheap gas availability. Sizable increases in the issue price of fertilizer from government stocks year after year failed to bring down the overall expenditure on fertilizer subsidy programme, which consumed 4.0 per cent of total revenues during this period.
- (iv) Support prices for wheat and other crops had to be increased along with fertilizer and other input prices. Sale price of the output could not always be increased to the full extent required to eliminate food subsidy, which remains substantial in financial terms though its relative share has declined.

- (v) Increase in food prices had to be compensated in the form of higher wages, resulting in a big increase in non-development expenditure of the Government in current prices.
- (vi) Explicit subsidies eat up some 11 per cent of the revenues in 1982-83. The burden of implicit subsidies, particularly in social and physical infrastructure, is more than the explicit subsidies by an estimate.

3. In sum, the large additional effort to raise resources during the Fifth Plan could only partially compensate for the drain on resources from external pressures. The revenue surplus disappeared as a significant source of financing for the development programme. Reliance had to be placed largely on borrowed funds, domestic as well as foreign. Profits on private savings mobilized by the public sector through various saving schemes were made attractive enough to mobilize substantial amounts, which in turn raised the domestic debt servicing burden. On the basis of revised figures for 1982-83 financing position can be summarized as below :

TABLE 1  
*Fifth Plan Financing*

		(Rs. Billion)					
		1977-78	Per cent Contri- bution	1982-83	Per cent Contri- bution	Total Fifth Plan	Per cent Contri- bution
1.	Revenue Surplus	1.6	9.4	(-)1.4	(-)5.0	15.2	12.4
2.	Net Capital Receipts	2.5	14.6	6.1	21.6	12.4	10.1
3.	Self-financing by Public Corporations	0.5	2.9	2.3	8.2	8.7	7.1
4.	Borrowing from the Banking System	5.3	31.0	6.2	22.0	27.1	22.0
5.	External Resources	7.2	42.1	15.0	53.2	59.4	48.4
Total :		17.1	100.0	28.2	100.0	122.8	100.0

4. Major durable gains derived from the corrective measures of this period included the following :

- (i) Distorted price structure was substantially corrected. Agriculture support prices, issue prices for agricultural commodities and input prices have been providing necessary

incentives for higher production at relatively reduced subsidy burden in real terms.

(ii) Some of the public sector agencies have adjusted their policies sufficiently to generate internal resources to finance a significant proportion of their future investments. WAPDA has started financing more than 40 per cent of its investment programme in the energy sector through the internal generation of cash from the sale of energy. K.E.S.C. has been seeking to attain 25 per cent ratio between selffinancing and investment. A number of public sector industrial undertakings have started providing resources for their own expansion. In the latter case, improvement is not reflected in the availability of cash in the pool for financing development projects. However, it has enabled the Government to shed the load of public sector industrial undertakings from the budgetary financing. Apart from Karachi Steel Mill and not yet completed cement projects, the development programme of the public sector does not include any significant industrial project.

(iii) Arrangements for the mobilization of household savings for public sector financing have become quite effective. In the revised estimates for 1982-83, roughly one-quarter of the ADP is likely to be financed from this source. Such financing has also created strong awareness of the scarcity value of investment funds.

5. One major development during this period was the introduction of the Islamic System of Zakat and Ushr. The beginning was modest but encouraging. It generated substantial funds for helping the poor and the indigent in the society and thus provided a security net for the most deserving sections of the population throughout the country. The availability of the funds has increased over time and would record a quantum jump with the enforcement of Ushr in the final year of the Fifth Plan. This would enable the government to extend the area of operation from direct personal relief to arrangements which can meet the basic social needs of the deprived sections of the society. It has the potential to set a unique example in the world of a financing mechanism for providing basic amenities to the entire population and ensure the development of a just and fair social framework along the lines dictated by Islam. Also, it has considerably reduced the anomaly in the

fiscal system created by the exemption of agricultural incomes from the taxation system. Most important, the system will ensure that the community providing the resources can also directly share the beneficial results of these resources.

### THE SIXTH PLAN PERSPECTIVE

6. The problem of raising financial resources for the Sixth Plan needs to be viewed in this background. The picture is rather disappointing in respect of the revenue surplus, which provides development funds with no interest cost and repayment liability. Government has, however, acquired considerable command over borrowed funds which are made freely available by small savers at current attractive rates of profit being offered. Self-financing by public enterprises has emerged as a significant item for certain selected sectors, notably industry and power generation and distribution.

7. A number of favourable factors affecting future growth in revenues may be noted :

- (i) Oil prices declined for the first time during FY 1983, after a decade of persistent increase. A decline in the oil price by one US dollar per barrel implies an improvement of about Rs. 400 to 500 million in government revenues, if domestic prices remain unchanged. Even with the expectation of a hardening of the energy prices in subsequent years, it can be predicted with some confidence that for quite some time there may not be a real increase in oil prices.
- (ii) Commodity prices have started improving after touching the lowest level in 30 years. Pakistan's export commodities would start reflecting this improvement with a time lag, reviving the prospect of some income from rice and cotton exports.
- (iii) A general recovery in world economy would help Pakistan's foreign trade sector to revive, offsetting some of the recent decline in customs duty collections.
- (iv) Pakistan's economy was in much better shape in 1982-83 than it was in 1977-78. The strength imparted by sustained high growth during the last six years has increased the ability of the Pakistan economy to gain from the recovery phase of the world economy.

## Structural Reform

8. It is, however, recognized that structural problems still inhibit the process of translating physical economic progress into command over additional financial resources for the Government. Restructuring of the taxation and financial system would be a major task in the overall policy reform during the Sixth Plan period.

9. On the side of taxation, income tax operates under the limitation that agricultural incomes are precluded from its purview. It is thus applicable to only a part of the economic base. Despite a systematic and highly successful effort during the last five years to detect hidden incomes and to enlist new tax-payers, the number of income tax payers in the country is still only around 800,000. The high marginal rates of tax in upper income brackets co-exist with a wide array of rebates and reliefs, reducing average income tax actually paid to the Government to quite low levels. The tax is highly elastic. During the Fifth Plan, income tax collections increased on average at 25 per cent (28 per cent if relief measures are excluded) per annum against 20 per cent increase in non-agricultural money incomes. However, it remains a small part of the tax system. Collections under income tax account for only 18 per cent of the total tax revenue, a mere 2 per cent of the G.N.P.

10. Excise duty collections are also relatively small. Emphasis has remained on a few industries in the import substitution category. As these industries move from self-sufficiency to an export stage, there is not likely to be a significant increase in excise duty collections. Both the nature of industrialization and specific duty rates make it less elastic for the future than is normally expected.

11. Sales tax is largely in the nature of a surcharge on import duties and excise duties. It has not yet acquired the character of an independent consumption point tax.

12. This places a heavy reliance on customs duties as the main source of tax revenue in Pakistan. Roughly 38 per cent of the tax revenue is derived from customs duties. If the indirect taxes affecting customs duties (including the sales tax as a surcharge on import duties) are also taken into account, the proportion will be as high as 45 per cent. The proportional dimensions of the tax structure are given in the following table.



TABLE 2

*Tax Structure*

		1977-78	1982-83	1977-78	1982-83
		(Rs. Billion)		Per cent Share	
Income Tax	.. ..	2.8	8.8	13.0	17.6
Customs Duties	.. ..	8.4	19.0	38.9	38.1
Excise Duties	.. ..	6.3	13.4	29.2	26.9
Sales Tax	.. ..	1.6	3.4	7.4	6.8
Other Tax Revenue	..	2.5	5.3	11.5	10.6
Total Tax Revenue	..	21.6	49.9	100.0	100.0

13. The elasticities of major taxes are given in Table 3 :

TABLE 3

*Elasticity Estimates**(Annual Average, 1972-83)*

Item	Determining Variable	Elasticity
Income Tax ..	Non Agricultural Income ..	1.52
Import Duties ..	Total Imports ..	0.70*
Excise Duties ..	Large Scale Manufacturing ..	0.83
Sales Tax ..	(i) Large Scale Manufacturing ..	
	(ii) Imports ..	0.79
Tax Structure ..	National Income ..	0.73

\*Does not include 1982-83 due to abnormal decline in steel imports.

14. Such heavy reliance on customs and customs-linked taxes conditions revenue to import levels and their growth. Import substitution results in slowing the growth of this revenue. In any case, development process is likely to change the composition of imports with increasing proportion of raw materials which cannot be subjected to high import tariff. In addition, external factors acquire an unduly large influence in determining the level of revenues. The customs-based tax structure was suitable for the early stage of development dominated by agriculture. However, with the economic structure becoming increasingly industrial and diversified through continued import substitution the existing tax structure as a drag on domestic expansion and efficient resource mobilization.

15. The alternative to import and export points for collection of revenues are income and consumption (or expenditure) points. Income tax yields have started to register an increasing elasticity. This is a healthy development but still affects only a small part of the tax structure. Given uninterrupted administrative tightening of the leakages, critical re-examination of existing rebates and reliefs and continuous revision of tax rates in relation to potential yields, it is likely to take the economy in time to a point of respectable income-tax/GNP ratio.

16. It is, therefore, on the consumption point that structural change must focus. In the first place, the consumption-point tax will translate the growth of import substitution into matching increase in revenue elasticity. Secondly, by discriminating against consumption, the tax will have a built-in incentive for saving and export. Thirdly, as consumption goods portray varying income elasticities, it is possible to institute a good element of progressivity through graduated and selective rates and base structures.

17. Structural change in the tax system is only one side of the comprehensive fiscal reform being suggested in the Sixth Plan. Over the years, the expenditure patterns have acquired rigidities which need to be recognized and in some cases deliberately corrected.

18. On the expenditure side, there is considerable rigidity because of the geopolitical compulsion to carry a high defence burden. The defence expenditure has claimed nearly half of the revenue resources mobilised by the Federal Government throughout the period since the early fifties. During the Fifth Five Year Plan, the average ratio of defence expenditure to tax revenue of the Federal Government was about 42 per cent. Another strong claimant for Federal Government resources is the debt servicing which now accounts for about 30 per cent of the total expenditure charged to the

revenue. Only about one-quarter of the limited resources mobilized by the Government are available for meeting all other expenditures. In such a situation, extra care has to be exercised to limit acceptance of commitments for expenditure which may tend to grow at unpredictable rates. Subsidy on items of consumption or even production and investment subsidies represent such an expenditure commitment. Encouragement of use (often wasteful) of subsidized items combined with the resistance against change of price even when subsidy margin is widening results in a high rate of growth in subsidy expenditure.

19. There is a long history accounting for the growing subsidy expenditure in Pakistan. Over the years, particularly during the past five years, concerted efforts have been made to reduce the expenditure on the specific subsidies. However, the overall subsidy expenditures have continued to grow. Since 1977-78, the expenditure on explicit subsidies has increased by about 146 per cent. In a number of cases, persistent inflation in the country has resulted in unintended subsidies because of the political resistance to required changes in administered prices and charges of goods and services supplied by the Government.

20. Subsidies may be justified for a limited period involving a small expenditure for a specific objective. However, a generalisation of the process of subsidisation causes significant distortion and the diffusion of the effect. By now, it is difficult to determine who is subsidising whom.

21. The existing subsidies cover agriculture, irrigation water (canals), industries, transport and energy sectors which are directly and indirectly required to bear the cost of subsidy as well. There are huge subsidies in the social sectors of education, health and water supply—some desirable, some wholly unmanageable—leading to a limited expansion of these sectors and their poor maintenance. It should be an essential item of the agenda for financial restructuring that strenuous efforts are made to eliminate a large part of the subsidy expenditure, both of open and concealed variety. With the reduction in the rate of inflation in the world economy and in Pakistan, the task may be more manageable than it was in the Fifth Five Year Plan.

22. In the case of some managed prices where large quantities are sold by the public sector, notably wheat and fertilizer, the success achieved in improving supplies has created conditions favourable to the use of the market mechanism effectively, with government intervention confined to sufficient stock-piling to avoid wide fluctuation in prices.

23. Irrigation water rates are not sufficient even to provide for the maintenance expenditure on the canal system. There is no escape from gradual increase in the cost of water supply to the farmers, compensated through appropriate support prices of the products. Similar considerations may apply to the present cheap availability of gas which has had the effect of distorting the demand for different sources of energy in the country.

24. It is difficult to determine in the case of railways how much of the losses represent the failure to increase freight charges and fares in line with the unavoidable increase in the cost of operations and how much of such losses can be attributed to the persistent decline in the efficiency of operations. A comprehensive solution is required to achieve the full financial rehabilitation of the railways system with a combination of tightend management and injection of new resources. What is starkly visible in the case of railways may also apply to a lesser degree to some of the other services managed by the public sector.

25. It is realised that the problem is of a sizable magnitude and cannot be corrected immediately. However, it is equally important to appreciate that unless the problem is attacked with determination and an attempt made to educate public opinion to the realities of the situation, expanding liability on account of various types of subsidies may rise to an unmanageable level, threatening the financial stability restored after considerable effort.

26. The problem of rising debt service ratio to the total revenues of the Government requires similar effort. Pakistan has been fortunate in obtaining loans from abroad on relatively low interest rates. To the extent the borrowed funds have been used for projects which promised to pay for themselves, there should be relatively small burden on the budgetary resources. Increasing the return on past investments so that they pay for their own debt liability and generate surpluses to service the debt incurred for non-commercial activities requires evolving of a careful debt management policy.

27. An important element on the expenditure side relates to the recurring liability for completed projects in the social sectors. This is particularly important in the provincial budgets. Provincial governments find that with the increase in recurring liability for education, health and other social programmes, their revenue budgets are greatly squeezed. The maintenance expenditure on assets created in the process of development and the task of adequately providing for the repair and maintenance of old assets

require substantial amounts. These are being neglected. In some cases development funds are diverted for this purpose by a number of devices. The financing of recurring liability and maintenance expenditure would be a major issue during the Sixth Plan and beyond. So far, the social sector programmes have been relatively small. The Sixth Plan attempts a decisive change in the direction of public expenditure in favour of social sector programmes. Much larger funds would be required for both maintenance and recurring liability. It would appear next to impossible to attain the target of full coverage of the population with essential social amenities like primary education and primary health without the introduction of some user charges. It is, therefore, suggested that serious consideration may be given to the imposition of reasonable fees in public schools, colleges and universities and hospitals. The indigent should be covered through the Zakat/Ushr system.

28. The obligation to levy usher charges should be delegated to the local level, urban and rural. Community should raise general revenues or impose fees etc. to maintain educational facilities. Water supply in the urban areas and similar programmes should be on a self-financing basis. Interest rates on loans may be reduced to prevent social amenities from becoming over-capitalized and to keep the charges reasonable. This issue is also discussed in the relevant chapters.

29. User charges often lie in the local domain so that reliance on them will be in keeping with the Sixth Plan goal of making a major departure in the direction of unleashing local fiscal initiative. Instead of being mere recipients of grants and tax assignments, these institutions must also satisfy local needs by atleast meeting the recurring costs.

### **Fiscal Strategy**

30. The structural reform suggested above focuses on the objective of maintaining longer term dynamism and stability of the fiscal system. This only indicates the direction of the required structural adjustment. The financing of the Sixth Plan is not made dependent upon the realisation of these adjustments. It is assumed that at least changes sufficient to avoid deficit emerging in the revenue budget would be made in the Sixth Plan; a small surplus on revenue account is assumed to be generated to finance the Sixth Plan. This is only the minimum scenario. As a matter of policy, efforts must, and will, be made to contribute to development from the revenue budget, at a higher rate.

31. The strategy for the Sixth Five Year Plan, as outlined in chapter 2, has been designed keeping in view the limitation of budgetary resources which can be available for financing public sector development expenditure pending substantial restructuring of the fiscal system. Out of a total size of Rs. 490 billion proposed for the Sixth Plan, Rs. 200 billion or about 41 per cent is earmarked for the private sector compared to about 32 per cent in the Fifth Plan. The saving potential in the private sector and the financing mechanism is discussed later in this chapter. In general, it may be pointed out that the past experience has clearly shown that enough resources are deployed to finance private sector investment whenever profitable investment opportunities are opened up and necessary investment goods in demand, particularly in agriculture and transport sector, are made freely available. The Sixth Plan proposes widening of the role of the private sector by considerable load-shedding of functions from the public sector.

32. The public sector programme of Rs. 290 billion consists of the following :

TABLE 4

*Public Sector Development Programme*

(Rs. Billion)

Programme Head				
(i)	Public Corporations	..	..	65
(ii)	Development Programme	..	..	225
				---
(a)	Development Budget	..	..	(210)
(b)	Special Development Programmes	..	..	(15)
				---
			Total Public Sector	290

- (i) A large portion of the public sector investment programme has been taken out of the purview of the budgetary financing. The public corporations in the energy, transport and other sectors, which are managing their affairs on commercial lines, would be required to combine their self-financing with bank borrowing within the country and commercial or concessional borrowing from abroad to finance their projects. The self-financing would include the ploughing back of their own profits and equity shares to investors within the

country, Pakistanis working abroad and foreign investors. It has been identified that the programme capable of such financing could amount to Rs. 65 billion during the Sixth Plan period. Of this, one-third would need to be financed by corporation's own contribution to equity or shares to the public. The remaining two-third would be financed from borrowing internally and externally.

- (ii) This leaves a programme of Rs. 225 billion, including a special programme of Rs. 15 billion for which special financing arrangements are being explored with the aid-giving agencies and the bilateral donors. Only 33 per cent of this programme is to be financed from the normal budgetary resources provided by the Government of Pakistan.

33. The development programme required to be financed from budgetary resources may thus be summarized as follows :

TABLE 5  
*Budgetary Components of Development Programme*

	(Rs. Billion)
(i) Annual Development Programmes for the period 1983-88	210
(ii) Domestic Financing for the Special Development Programmes.	5
Total :	215

34. The financing of the programme indicated above is proposed as follows :

TABLE 6  
*Sources of Budgetary Finance*

Item	(Rs. Billion)
(i) Net Capital Receipts	46
(ii) Self-financing by Public Corporations	30
(iii) Borrowing from the Banking System	43
(iv) External Resources (Gross)	80
Total Financing :	199
Total Programme :	215
Gap :	16

35. Net capital receipts depend substantially on the mobilization of savings in government sponsored schemes. During 1982-83, the latest estimates show a high level of mobilization. The projection of Rs. 46 billion for the next 5 years takes into account the policy that the incentives would be maintained but further growth may slow down.

36. Self-financing by public corporations has been shown mainly for WAPDA. It has been assumed that WAPDA would be able to maintain more than the required 40 per cent self-financing for their investment programme which is reflected in the budget. Policies would be initiated during the Plan for improvement in the self-financing of other public corporations along the lines of WAPDA. However, at this stage results of such efforts have not been anticipated.

37. Borrowing from the banking system for the development budget has been brought down by considerable effort to a level where it represents only 1.4 per cent of GNP during the year. Borrowing from the banking system by Government was deliberately kept below safe limits as part of a strong anti-inflationary policy. With the success in stabilization of the price level, it may be possible to allow somewhat larger deficit financing in the Sixth Plan after carefully assessing the monetary situation prevailing during the Plan period. The projections however, assume deficit financing at about 1.4 per cent of GNP.

38. Gross external resources are assumed to grow at around 10 per cent per annum. Such a level is absolutely essential for some of the major projects the Government intends to execute during the Sixth Plan period, e.g., LBOD, Kalabagh Dam, Chashma Nuclear, Saindak Copper etc. In certain cases co-financing arrangements will have to be made as no single donor country may be able to provide the required amount. About 40 per cent of this will be in the form of rupee generating aid.

39. The above indicated financing of the public sector programme through budgetary mechanism leaves a gap of Rs. 16 billion on existing basis. This could be financed by a combination of measures. The gap is worked out on the assumption that revenue surplus on existing basis may be negligible during the Sixth Plan which might not be the case. Thus some additional effort has also to be made to cover the gap. On the whole, the total additional effort would be around Rs. 25-26 billion. It would be highly desirable if measures could be adopted to generate a revenue surplus of Rs. 2 billion annually on an average *i.e.* the level which was available during the Fifth Plan



period. Concerted effort should be made to increase the self-financing by public sector enterprises or departments of the government providing services. This could either be reflected in a higher level of financing or the programme being shifted from budgetary financing to the public corporate sector where both own generated funds and borrowing would relieve the burden on the exchequer. Finally, the borrowing from the banking system need not continue to remain confined to the present level which was dictated by the preceding backlog of inflation.

40. The analysis of the financing aspects, therefore, shows that Rs. 215 billion should be regarded as the minimum programme to be financed from the budget. As is discussed in chapter 4, the development programme will be slightly less than the Fifth Plan as ratio of GNP at a time when the Government is confronted with the task of finding resources for building physical infrastructure and for accelerating programmes of human resources development.

### Public Corporations

41. The Sixth Plan outlays of the public corporations outside the budget have been placed at Rs. 65 billion against Rs. 30 billion during the Fifth Plan period. Broad details of financing these outlays are given in the following table.

TABLE 7

*Financing of the Public Sector Corporations*

	(Rs. Billion)
(i) Self-financing	23.0
(ii) Bank Borrowing	22.0
(iii) External Resources (Gross)	20.0
Total :	65.0

42. Self-financing has been placed at Rs. 23 billion. This includes funds which these corporations may arrange from the capital market excluding borrowing from the commercial banks. Such a high amount of self-financing may appear unrealistic compared with the past performance. Since

the Plan places highest emphasis on improving efficiency and productivity of these corporations, such a level of financing would be the minimum required.

43. The external resources inflow on gross basis has been placed at Rs. 20 billion. This will be mostly in the form of equity participation, joint-ventures in case of industrial projects, commercial financing in case of PIA and Shipping Corporation and inflow of normal project assistance in some cases.

44. Bank borrowing of these corporations has been placed at Rs. 22 billion on gross basis in average of Rs. 4 billion per annum, against Rs. 3 billion per annum during the Fifth Plan period. This allocation has been made on the assumption that these corporations would repay their past loans on schedule. The net credit expansion would be around Rs. 12 billion which is consistent with the overall monetary expansion programme envisaged for the Plan.

#### **Private Sector Resources**

45. Unlike the public sector, the exact identification of financing arrangements of the planned private investment is not possible, nor is it necessary. The predominance of non-institutional household savings as a source of finance at the present stage of development makes it all the more difficult to indicate precise financing arrangements. Saving and investment are in some cases undertaken by the same economic unit, being part of the same economic transaction. Both the sectoral dimensions and their financing patterns can be influenced by appropriate policy framework and other measures. The private sector plan is thus of an indicative nature, pointing out the direction in which this sector of the economy will be moving in the Plan period. Broad outline of supporting policies and availability of required credit are elaborated here.

46. The usual sources for financing private investment are foreign loans and equity and domestic savings of corporate and non-corporate (household) nature. The non-corporate savings in turn can be either institutional, channelled through banking and non-banking financial institutions or financing by households themselves. The relative importance of these sources differs from sector to sector. Whereas in industrial investment, foreign loans and institutional domestic savings play a preponderant role, the investment in housing, agriculture and even transport is financed to a very large extent

by non-institutional sources. The table below attempts to identify the sources of financing of private investment during the Sixth Plan. The overall size of Rs. 200 billion takes into account future growth of prices. In 1982-83 prices, the private investment programme works out at around Rs. 162 billion.

TABLE 8

*Financing of Private Investment*

Source	Rs. Billion.	Per cent Share
A. Domestic Resources	175.0	87.5
(i) Corporate Savings and New Equity Contribution	18.0	9.0
(ii) Institutional Finance from Specialised and other Banks	59.0	29.5
(iii) Institutional Finance (Non-Bank)	10.0	5.0
(iv) Self-financing	88.0	44.0
B. Foreign Loans/equity	25.0	12.5
Total :	200.0	100.0

47. Major part of the private investment of Rs. 200 billion is likely to be financed from domestic resources. A comparison with the Fifth Plan (implementation of Rs. 81 billion in 1982-83 prices) suggests an acceleration of a high magnitude in the private sector investment during the Sixth Plan. As explained earlier, however, this is because private investment was extremely depressed at the beginning of the Fifth Plan and has only recently picked up. The Sixth Plan private investment target takes into account the investment demand already registered from the private sector in last two years and the arrangements made for meeting this demand.

48. The national savings are projected to grow to around 16.6 per cent of the GNP by 1987-88 from the current level of 12.6 per cent, a major portion of which will be private savings. On the other hand, private investment as a percentage of GNP is projected to increase to 8.0 per cent only against the current level or of around 5.0 per cent. The Plan assumes a substantial reduction of public sector reliance on private savings for financing their development outlays. A significant amount of private investment in the fields of agriculture, housing, transport and small scale industries is of

a self-financing nature, done by the households themselves. However, some basic issues which would require resolution in financing private investment would be :

- Diversion of home remittances to investment purposes from consumption uses.
- Policy framework to direct private savings towards the investment projected by the Plan.

49. In order to induce remittance income into savings, a number of measures are being adopted. These include offering the emigrant a portfolio of schemes where he can put in his money depending upon his preference and requirement. These schemes would include many of the financial instruments that are available in Pakistan but are not so readily available to Pakistanis abroad. In addition, new schemes would be devised through which the emigrant when he returns would be able, if he is inclined, to receive not only the capital he has put in but land and other facilities including credit for setting up small or medium industries. These facilities will be offered in a coordinated, one-window operation in the countries where large emigrant population exists. Import of machinery under non-repatriable investment has already been liberalized. Sizeable imports have been arranged under this scheme.

50. Corporate sector made significant contribution in financing industrial investment in the 1960's. However, during 1970-77, due to the uncertainties created by the nationalisation policy, its contribution became insignificant *i.e.* 2.5 per cent of the total investment. In recent past, a gradual revival of corporate sector is visible. It is hoped that various policy measures taken since 1978 and those proposed for the Sixth Plan will increase the contribution of corporate sector in financing industrial investment. Indeed, the Sixth Plan reform of indirect tax and subsidy structures will enable rationalization of income and corporate taxes to encourage more investment out of retained earnings.

51. The bank credit availability for financing fixed investment is in line with Monetary and Credit Plan prepared to achieve the Sixth Plan targets consistent with the safe limit of monetary expansion. As a matter of fact, a very cautious approach has been followed in this area. The rate of expansion of non-banking financial institutions in recent years has considerably gone up and, increasingly, these institutions are meeting investment requirements from their own resources. These institutions would be mainly financing investment in the field of large scale industries though some investment may also be made in the services sector.

52. To ensure a steady flow of credit, a package of sound measures and rational institutional restructuring will be required :

- Credit earmarking mechanism for private sector will be made more efficient by simplifying procedures and eliminating the decision-making irritants.
- As credit is unlikely to be cheap and abundant in supply, policy attention will be devoted to comparative yields of stocks, bonds and government saving schemes. The Government programmes have been designed as not to crowd out the private sector demand for credit. However, such a policy will have to be reinforced by the dynamism of the private sector in improving its own credit-worthiness.
- Improvement of private sector credit-standing will also be the most potent instrument for diverting remittances from consumption to income-yielding assets.
- The Islamic instruments of Modariba and Musharika will make significant additions to the available portfolio of instruments.
- More investment equity finance institutions like Pak-Saudi and Banker's Equity, will be created and encouraged.

53. Foreign loans/equity requirements are placed at Rs. 25 billion or around 12.5 per cent of the private investment. These requirements are substantially higher than inflows in the recent past. However, the sheer size of the private industrial programme makes resort to foreign finance absolutely necessary. Though the cost of such funds in the present international setting is likely to be high, the real problem will be their adequate availability for productive use. For this purpose, the following steps are contemplated :

- PICIC and IDBP will double their operations through special foreign loans.
- Sixth Plan will usher in the direct excess of private sector to foreign private portfolio funds. This will help familiarise the private sector with the working of sophisticated international finance market, so very necessary for aggressive export marketing.


54. Summing up, the overriding aim of the Sixth Plan is that investment, public as well as private, should pay for itself. This would release tax resources for social sectors whose financial pay-off is at best limited. Even here the policy emphasis will be to reduce the element of subsidy in a phased manner. Such fiscal courage is necessary irrespective of the Plan and its financing. This is a vision required for long-term financial viability of the nation.

*So establish weight with justice  
And fall not short  
In the balance;*

*Al-Rehman  
(LV-9)*

## CHAPTER 6

### EXTERNAL RESOURCES FOR THE PLAN

 AFTER several years of slow growth in exports, a rapid infusion of imports and large external financing requirements, Pakistan's external payments position has improved considerably over the last few years. A sustained high growth in GDP in excess of 6 per cent per annum in real terms, combined with an export elasticity of 1.5 and a powerful import substitution programme, has strengthened the basic balance of payments. Together with a rapid growth of workers' remittances, this has led to a progressive reduction in the current account deficit. Despite the steep decline in real net aid inflows to Pakistan, there has been an improvement in Pakistan's foreign exchange reserve position.

2. The improvement in economic and trade performance since the mid-70s has taken place despite the existence of uncommonly severe external developments. These include :

- a world economic environment characterized by a period of low growth followed by a recession in 1980 of unusual intensity and duration which led to a decline of 2 per cent in the volume of world trade in 1982;
- a steep decline in world commodity prices which, in real terms, dropped 30 per cent below the average of the seventies and thereby touched levels not seen for three decades;
- an unremitting diminution in Pakistan's external terms of trade of about 30 per cent during the Fifth Plan, equivalent to an income loss of 2 per cent of GDP;

- a continuing sharp decline in the level of net external assistance to Pakistan; real net aid transfers during the period 1974-75 to 1981-82 declined at a rate of 34 per cent per annum;
- an unprecedented rise in real interest rates to about 8 per cent after 1979 and the associated volatility of exchange rates which aggravated payments imbalances, constrained policy options and greatly complicated the task of economic management; and
- the dramatic change in the geo-political situation following the events in Afghanistan which placed additional demands on Pakistan's constrained resources.

### Exports

3. The evolution of Pakistan's external payments position during the Fifty Plan has been marked by resilience and underlying strength. The three years to 1980-81 witnessed a phase of forceful and broad-based expansion in exports reflecting the rapid growth of production in agriculture and manufacturing, a diversification in the commodity composition and direction of exports, and improved competitiveness supported by export incentives. Exports rose strongly, by close to 30 per cent annum in value and 14 per cent in volume terms, substantially in excess of the Fifth Plan target of 11 per cent per annum volume growth.

TABLE 1  
*Fifth Plan Export Performance*

(\$ million, 1977-78 Prices)

	1977-78	1982-83 (Targets)	1982-83 Prov. actuals	Growth Rate (%p.a.)	
				Targets	Actuals
Raw Cotton	110	275	278	20.0	20.3
Cotton Yarn	98	240	244	19.6	20.0
Cotton Cloth	178	225	229	4.8	5.2
Rice	250	378	251	8.6	-
(Basmati)	(110)	(165)	(101)	(8.4)	(1-1.7)
(Other)	(140)	(213)	(150)	(8.8)	(1.4)
POL	70	82	23	3.2	-19.9
Others	600	1000	1001	10.8	10.8
<b>Total (Exports)</b>	<b>1306</b>	<b>2200</b>	<b>2026</b>	<b>11.0</b>	<b>9.2</b>



The exports of non-traditional items, cotton made-ups, leather products, garments, etc expanded at an even faster rate; the share of this group in total exports rose to 40 per cent in 1980-81, compared with 29 per cent in 1977-78.

4. In 1981-82, however, Pakistan's export performance faltered under the weight of the cumulative contractionary effect of a rapidly deteriorating world environment. Exports dropped some 17 per cent in value with especially sharp falls occurring in the case of Carpets (-42 per cent), Rice (-31 per cent), and Yarn (15 per cent). In particular, export prices touched a new cyclical low as high interest rates forced unloading of stocks in a situation when world demand was quite weak. The decline in export prices not only impaired export earnings but also contributed heavily to a substantial worsening of the terms of trade. Between 1978-79 and 1981-82, Pakistan's commodity terms of trade deteriorated by some 23 per cent; by the end of the Fifth Plan, the cumulative deterioration since 1978-79 is expected to be of the order of 30 per cent.

5. In response to these developments, the Government took a number of measures to reverse the decline in exports. It served the link of the rupee from the rapidly appreciating dollar in an attempt to restore the competitiveness of Pakistan's exports; it strengthened its demand management and supply side policies so as to stimulate, through adjustments in incentive prices and improvements in efficiency, the productive base of the economy. For the year 1982-83, exports are estimated to rise by close to 10 per cent in current prices; since export unit values are expected to be below long-term trends, this implies that exports may be about 12 per cent ahead in volume terms.

## Imports

6. The initial years of the Fifth Plan were marked by a sharp rise in import payments reflecting in large measure significantly higher petroleum prices but, additionally, shortfalls in the domestic production of wheat and fertilizer. From 1980-81, however, despite import liberalization, import payments have remained more or less constant in current dollar terms, reflecting the successful implementation of the import substitution programme and the strong emphasis on demand management.

TABLE 2

*Fifth Plan Imports*

(\$ million, 1977-78 prices)

	1977-78	1982-83 (Targets)	1982-83 (Est. actuals)	Growth Rate (% p. a.)	
				Targets	Actuals
Wheat	146	—	—	—	—
Fertilizers	106	113	129	1.3	4.0
POL	486	508	640	0.9	5.7
Edible oils	178	248	254	6.9	7.4
Capital goods	1141	1753	1323	9.0	3.0
Others	914	1546	1572	11.1	11.4
	-----	-----	-----	-----	-----
Total Imports, cif	2971	4168	3918	7.0	5.7
	-----	-----	-----	-----	-----
Total Imports, fob	2751	3814	3565	6.7	5.3

For the Plan as a whole total imports are expected to rise by 5.3 per cent per annum in volume terms compared to the Fifth Plan estimate of 6.7 per cent per annum.

**Invisible**

7. The growth of workers' remittances from abroad proved to be a much more dynamic factor than was assumed in the Fifth Plan. With the exception of a temporary slowdown in 1981-82, caused by adverse interest rate differentials and exchange rate uncertainty, remittances in the last five years have grown at a rate of close to 20 per cent per annum in nominal terms. By the end of the Plan period, remittances were running at an annual rate approaching \$ 3 billion compared to \$ 1.1 billion in 1977-78. As a consequence, Pakistan's surplus on its invisibles account rose by 24 per cent per annum during the Fifth Plan.

**Current Account Balance**

8. Reflecting the rapid growth in exports and remittance flows, combined with a restraint on imports, the current account deficit declined

steadily from 5.3 per cent of GNP in the first year of the Plan to 1.4 per cent of GNP in 1982-83.

TABLE 3  
*Fifth Plan Current Account Balance*

	(\$ Million, Current prices)							Compound
	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83		Growth
								(% p. a.)
Exports, fob .. .. .	1287	1646	2341	2798	2319	2628		15.3
Imports, fob .. .. .	-2751	-3816	-4857	-5563	-5769	5532		15.0
Workers' Remittances ..	1156	1397	1748	2097	2224	2885		20.1
Current Account Balance ..	-630	-1126	-1149	-991	-1610	-433		-7.2
Memo :								
Current Account Balances % of GNP .. . . .	-3.7	-5.3	-4.5	-3.3	-4.9	-1.4		

The deterioration in the trade and invisible account in 1981-82 has been fully corrected in the final year of the Plan. The current account deficit is estimated at \$ 443 million or 1.4 per cent of GNP, its lowest level on record. In terms of constant prices, the average deficit during the Fifth Plan is estimated to be about \$ 700 million compared with a Plan forecast of \$ 1 billion. When measured as a proportion of total foreign exchange earnings, the deficit has declined to 6.6 per cent in 1982-83 compared with 21 per cent in 1977-78 and 29 per cent anticipated for the final year of the Plan.

### Capital Account

9. The evolution of Pakistan's capital account during the Fifth Plan was shaped by three developments: a steep decline in real net transfers of official assistance; access to substantial inflows of reserve-related drawings from the IMF following the conclusion of the Extended Fund Facility arrangement; and, with the exception of 1978-79 and 1981-82, significant increases in Pakistan's foreign exchange reserve position.

10. Of these developments, the decline in real net transfers exerted the most severe pressure and posed the greatest challenge to the task of economic management. Table 4 presents data on aid flows, in current and constant prices, in the period 1974-75 to 1981-82, and as a proportion

of gross disbursements, domestic investment and GNP. Whatever the basis of measurement, these data show that the magnitude of the decline in net aid inflows to Pakistan has been striking; the volume of real net transfers to Pakistan has fallen at a rate of 34 per cent per annum, from \$ 664 million in 1974-75 to only \$ 30 million in 1981-82, or from about 33 per cent of gross domestic investment to 1 per cent. Furthermore, in the case of certain donor countries, net assistance is now close to zero, or even negative, so that these donors are net recipients of capital from Pakistan. Clearly, if a significant improvement in trade and invisibles performance during these years had not taken place, Pakistan would have been compelled to adopt restrictive, inward-looking policies which would have seriously disrupted the process of economic reforms being undertaken by the Government.

TABLE 4

*Gross and Net Aid Inflows (excluding Afghan Refugee Assistance), FY 75-82*

	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	Trend <sup>1</sup> Growth FY 75-82 (% p. a.)
1	2	3	4	5	6	7	8	9	10
Gross Disbursements	1,019	1,064	961	856	948	1,077	861	809	-2.5
Net Aid Inflows <sup>2</sup>	752	783	659	483	578	642	368	317	-10.9
Net Transfers <sup>3</sup>	611	632	481	285	361	403	98	60	-26.0
Net Aid Inflows at constant 1975-76 prices.	817	783	612	411	474	430	203	168	-20.0
Net Transfers at constant 1975-76 prices.	664	632	447	243	296	270	54	32	-34.0
Memo items;									
(i) Net Aid inflows as a % of: Gross Disbursements.	73.8	73.6	68.6	56.4	61.0	59.6	42.7	39.2	
Investment.	40.9	34.0	23.8	16.0	17.2	15.4	7.9	6.0	
GDP	7.1	6.4	4.8	3.0	3.2	3.0	1.5	1.2	
(ii) Net Transfers as a % of: Gross Disbursements.	60.0	59.4	50.1	33.3	38.1	37.4	11.4	7.4	
Investment	33.2	27.5	17.4	9.4	10.7	9.7	2.1	1.1	
GDP	5.8	5.1	3.5	1.8	2.0	1.9	0.4	0.2	

<sup>1</sup> Estimated by least squares method and converted into equivalent annual compound rates.

<sup>2</sup> Gross Disbursements minus amortization.

<sup>3</sup> Gross Disbursements minus amortization and interest.

*Note.*—The aid data exclude debt relief to show the impact on net aid flows and net transfer in the absence of debt relief.

11. The trend in the decline in real net transfers appears to have been arrested—possibly substantially reversed in 1982-83; the Consortium countries have increased their commitments since 1982-83 so as to improve the level of disbursements during the early period of the Sixth Plan. A larger part of these new commitments were in the form of quick-disbursing programme loans.

12. To sum up, barring two years of moderate pressures, Pakistan's external payments position during the Fifth Plan has reflected a gradually improving trend. The slowdown in exports in the last two years notwithstanding, exports show a trend growth over the Plan of about 9.2 per cent per annum in real terms. Given the deterioration in the external environment, this must be regarded as an impressive accomplishment. After a sharp rise in the first two years of the Plan, imports have been held to a level which has been broadly constant in nominal terms as the effects of the progressive liberalization of the import regime have been more than outweighed by substantial import replacement in wheat, sugar, fertilizers, cement, steel, etc., and strong demand management policies. Thus, import volumes are expected to rise in real terms by 5.3 per cent per annum over the Plan as a whole compared with the Plan target of 6.3 per cent per annum. The surplus on the invisibles account also exceeded the Plan expectations by a substantial margin. Helped by the strong growth in workers' remittances, invisible receipts rose by over 10 per cent per year in real terms or almost twice as fast as the Plan forecast. These factors played an important role in off-setting the adverse effects of the decline in real net aid transfers to Pakistan. Foreign exchange reserves improved to a level equivalent to about 4.5 months of imports. Pakistan will thus move to the Sixth Plan with a stronger balance of payments than that which existed at the beginning of the Fifth Plan period.

### **Sixth Plan Strategy**

13. The following assumptions underly balance of payments projections for the Sixth Plan period :

- a continuation of the trend improvement in agriculture, industry and energy sector performance of the past five years through improvements in efficiency and new investment strategies so as to strengthen the productive base;
- s modest but decisive upturn in world economic activity along with broadly unchanged terms of trade;

- the management of a flexible exchange rate, with supportive policies, aimed at maintaining the competitiveness of Pakistan's exports and restraining non-essential imports;
- a major adjustment in the structure of incentives facing industry so as to improve the allocation of resources and secure incentive differentials in favour of those products and sectors where Pakistan retains—or can acquire—a strong dynamic comparative advantage for efficient import replacement and/or rapid export expansion;
- a phased liberalization of access to imports to improve economic performance through greater access to imported inputs and technologies while, at the same time, exposing industries to international competitive pressures;
- a bold programme of deregulation combined with a lifting of the constraints on finance and infrastructure to stimulate private initiative and attractive overseas investment in key trade-related sectors;
- in agriculture, a selective adjustment in output incentives and a strengthening of institutions so as to move 'up-market' into new crops and higher value added products for export; and
- in the energy sector, continuing adjustments in domestic prices and intensified conservation efforts to limit the demand for energy and oil imports while concurrently providing incentives for accelerated exploration and development of domestic energy resources.

14. A further important assumption underlying the Sixth Plan's balance of payments projections concerns the use of a 'normalized benchmark' rather than provisional actual data on trade and invisibles in the base year 1982-83. The justification for the use of benchmark figure derives from the highly volatile nature of the balance of payments outcome in both 1981-82 and 1982-83. In 1981-82, Pakistan experienced a record high current account deficit of \$ 1.6 billion because of the full impact of the worldwide recession. In the following year, however, the position was dramatically reversed when the recovery in exports and surge in remittance flows was attended by a reduction in import payments. This led to an unprecedented contraction in the external deficit from \$ 1610 million in

1981-82 (5.3 per cent of GNP) to \$ 433 million in 1982-83 (1.4 per cent of GNP). Since 1982-83 constitutes a highly atypical year, and any projections that are based on it would seriously distort the external payments picture over the course of the Sixth Plan, it has been considered appropriate to work with a base year that is normalized. A simple average of the two years 1981-82 and 1982-83 gives a benchmark current account deficit of \$ 1.0 billion; however, such a simple average would ignore the impact of the progressive reduction in the current account deficit that had been taking place between 1978-79 and 1980-82. In any case, a higher weight should be attached to 1982-83 because the recessionary impact of 1981-82 should not be built into the projections for the future. Assigning a weight of 60 per cent to all components of the trade and invisibles in 1982-83 and 40 per cent to 1981-82, the weighted average current account deficit comes to \$ 904 million. This has been adopted as the benchmark for the Sixth Plan.

### Export Prospects

15. While the much-hoped-for recovery in the world economic situation in 1982 proved to be elusive, there are again widespread expectations of a moderate recovery in activity in 1983, some evidence of which is provided by modest increase in industrial production in the advanced countries and an end to the fall in commodity prices. Both interest rates and inflation have come down sharply since 1982-Eurodollar rates for example have fallen from 15 per cent to less than 9 per cent while the rate of consumer price increase in the industrial countries following eight consecutive months of deceleration now stands at 5.3 per cent with fiscal and monetary policies becoming less stringent. Partly as a consequence of these developments, the stock rundown may now be over and final demand appears poised for a rise; there are also indications of an end to the decline in imports into developing countries. Taken together, these trends point to some rise in activity in the first half of 1983, followed by a rather faster rate of growth in 1984. For the period of the Sixth Plan, it is estimated that the trade-weighted rate of growth of GDP of Pakistan's major trading partner countries will average an annual rate of increase of about 3-4 per cent. The volume of world trade is expected to rise by about 2 per cent in 1983 and grow thereafter at an annual rate close to 4 per cent.

16. Helped by the present weakness in commodity prices, especially oil, the forecast for world inflation during the course of the Sixth Plan is expected to average about 6.5 per cent per annum—fairly low by recent standards. Despite current depressed levels, and notwithstanding recent evidence of a recovery in the prices of primary products, there is little

optimism for a sharp rebound before 1983-84. Accordingly, the projections in the Plan assume that there will occur no improvement in Pakistan's terms of trade. However, it is expected that there will be some gain in the early years as cotton and rice prices move upwards in response to a swing in the stock cycle and a firming of demand. Thereafter, the terms of trade are expected to drop back again as the rise in fertilizers, edible oils, capital goods, and possibly oil prices, more than outweighs the earlier gains in primary commodities.

TABLE 5  
*Sixth Plan Export Projections*

					(\$ million)		
					1982-83	1987-88	Compound
					(Benchmark)		Growth
							(% p. a.)
Rice	..	..	..	..	306	471	9.0
Raw Cotton	..	..	..	..	305	459	8.5
Textiles	..	..	..	..	934	1957	16.0
(Yarn)	..	..	..	..	(240)	(369)	(9.0)
(Fabrics)	..	..	..	..	(250)	(321)	(11.0)
(Garments)	..	..	..	..	(104)	(344)	((27.0)
(Made-ups)	..	..	..	..	(252)	(681)	(22.0)
(Others)	..	..	..	..	(88)	(142)	(10.0)
Carpets	..	..	..	..	140	211	8.6
Leather and Leather Products	..	..	..	..	127	221	11.7
(Leather)	..	..	..	..	(93)	(150)	(10.00)
(Leather Products)	..	..	..	..	(34)	(71)	(15.90)
Fish and Fish preparations	..	..	..	..	90	173	14.0
Others	..	..	..	..	602	1544	20.7
Total	..	..	..	..	2504	5036	15.0

17. The Sixth Plan assumes that Pakistan's merchandise exports will grow at a trend rate of 8.5 per cent year in volume terms. The sources of growth of exports will include moderate expansion in most items that are of significance in the base year, supplemented by a decisive shift in the composition of exports towards higher value added items, as well as the



emergence of new agricultural export commodities. The achievement of such growth rates will be contingent upon sustained improvements in agricultural and industrial production and productivity; an incentive structure that induces a progressive shift towards up-market, higher value added products so as to maximize foreign exchange earnings from the same raw material base; a sustained improvement in those aspects of non-price competitiveness—product relevance, quality, up-to-dateness, design and reliability—that are the routes to improved trade performance and better prices; a major thrust towards the exports of new commodities especially poultry, livestock, fruits and vegetables, and other food to the rapidly growing Middle East markets, and increasing information about new foreign markets through an aggressive and discriminating marketing strategy.

18. Amongst commodity exports, rice enjoys foremost position. However, world trade in rice is of a highly volatile nature as only a small fraction of world production is traded internationally. Thus, even small variations in production in major rice exporting countries induce instability in the world rice market. Given the uncertain pattern of the world market and the current large surpluses of rice, the Sixth Plan anticipates that Pakistan's exports of rice will grow by about 3 per cent per year in volume terms and about 9 per cent in value. These rates are approximately in line with current projections of world trade in volume and prices and imply that Pakistan will continue to maintain its share in rice over the plan.

19. Rice exports, of course, consist of high value Basmati and various other varieties which are priced at roughly half as much. In Basmati, Pakistan faces different markets with very dissimilar demand patterns. Saudi Arabia and the Gulf States display a marked preference for Basmati and are willing to pay a premium price which is substantially above that of long grain American rice. The next group of countries which have some preference for Basmati, but not a very strong one, consist of Iran and Iraq; in other markets, Basmati has to compete against American rice with no premium paid for its distinctive aroma. It may be desirable to study the possibility of an aggressive sales drive for Basmati rice—as a high priced, exotic food item aimed at capturing the upper-end of the world market for special food.

20. The prospects for exports of other rice will depend on future developments in countries where rice is the staple crop, domestic production in sizeable, but deficits continue to be large as result of rapid population growth. Many of these countries propose to embark on ambitious programmes to increase agricultural production; should these programmes

succeed, the demand for imports will not be large. Furthermore, since world trade is such a small fraction of world production and output, export possibilities are likely to be erratic. The Government will need to adopt a strategy of maintaining large stocks of non-Basmati varieties in order to capitalize on high prices and high demand during years of diminished output in deficit countries.

21. Based on an annual growth rate of 4.7 per cent per year in cotton production and close to 6 per cent per annum in domestic consumption, Pakistan's export surplus of cotton works out to about 2 million bales in the terminal year of the Sixth Plan. The outlook for raw cotton suggests that world raw cotton exports will expand at a rate of a little over 2 per cent per annum in volume with prices rising by close to 7 per cent a year from present levels. The 2 per cent per annum export growth rate for raw cotton assumed in the case of Pakistan implies that Pakistan will maintain a constant share of world trade.

22. The forecast for raw cotton exports is not only linked to the growth in domestic production and world demand but also to the prospects for expansion in the production and exports of cotton textiles. During the Sixth Plan, the export effort in the textile sector will be two-fold: first, to increase the volume of sales across a broad range of cotton textile products; and second, to upgrade the composition and improve the quality of these exports. With appropriate policies and investment support, the Plan will see a strong revival of Pakistan's mill sector as it develops new market orientation, moves out of traditional grey fabric exports into higher priced fabrics, and provides quality fabrics to the garment and made-up segments of the industry. In other words, the Plan strategy is to promote differentiation in products and markets between the mill and the powerloom sector. While the latter will continue to be an efficient provider of low quality fabrics to the domestic and export markets, the mill sector—responding to a significant shift in the incentive environment—will diversify into blended fabrics and new types of construction.

23. Yarn exports are forecast to grow by 8 per cent a year in value and about 3 per cent in volume. This rate is significantly below that achieved in the immediate past but takes into account the expected slowdown in demand for yarn in Pakistan's traditional markets, notably Hong Kong and Japan, and more intensified competition from South Korea and Brazil. Cotton fabrics export volume is projected to grow at 5 per cent a year or roughly in line with historical trends. Since the planned revival in the mill

sector will take time, it is expected that a large part of the increment in fabrics exports will emanate from the powerloom sector.

24. In recent years the performance of the made-up and garment sector of the textile industry has been impressive; this has led to considerable improvement in the export product mix. Exports of made ups which include towels, tents and canvas, cotton bags, etc., have increased at a brisk rate: between 1977-82, they rose in volume terms by about 130 per cent. Similarly, garment exports experienced remarkable growth, expanding 2.5 times in the same period. With demand expected to remain strong following improved quota arrangements overseas, the Plan forecasts export growth of 15 per cent per annum in volume for made-ups and 22 per cent per year in value, and 20 per cent and 27 per cent in volume and value for garments. Exports could expand faster if a revitalized mill sector and the larger powerloom units diversify into the production of, for example, towel exports using modern looms.

25. Reflecting the planned change in the overall product mix, total exports of textile products are projected to grow by 9.5 per cent per year in volume and 16 per cent per annum in value; at the end of the Plan, the non-traditional textiles are expected to account for almost 60 per cent of export earnings from textiles compared with 23 per cent in 1976-77.

26. After several years of strong growth, Pakistan's carpet exports experienced a marked reduction in volume and price on account of the recession-induced fall in demand in principal importing countries and growing international competition from India. Between 1980-81 for example, carpet export volumes dropped 28 per cent and prices were severely depressed: total export revenues from carpets declined by about 42 per cent. However, recent trends seem to point to a revival in demand as the fall in export volumes has been arrested, and on the evidence of performance in 1982-83, the volumes of carpet exports is slightly ahead of a year earlier. It is expected that as demand rises further, prices will begin to show greater firmness. The Sixth Plan target for carpet exports assumes a fairly modest rate of expansion on about 2.5 per cent year in volume with total export receipts increasing by 8.5 per cent per year. A somewhat faster rate of increase in export revenues is possible following the current reorganization of the industry towards the production of standardized low-knot Persian design carpets which would augment Pakistan's strong competitive edge in the higher quality, non-standardized range.

27. Leather exports hold a key position amongst Pakistan's traditional export items. Although export performance in recent years has been uneven—owing in large measure to supply difficulties—Pakistan still retains the potential for rapid growth particularly in respect of semi-tanned and finished leather and leather products. While world demand is expected to remain buoyant, considerable emphasis is placed in world markets on the quality and design standards of products. The Plan assumes that Pakistan will be in a position to respond to these requirements following proposed improvements in finishing facilities, the establishment of grading norms, selective incentive measures and Government support to the industry by means of infrastructure, training and research. Accordingly, total leather exports are expected to grow by 5 per cent in volume terms and 12 per cent a year in value, reflecting faster growth in existing product lines and a move to higher stages of processing and finished products.

28. The exports of fish and fish products are projected to grow in line with the strong upward trend of recent years—14 per cent per annum in value and 7 per cent per year in volume. Pakistan has already established a foothold in the rapidly expanding markets of the Middle East, and demand and prices are expected to continue to remain favourable. However, despite rapid growth in the past, present export levels are well below the potential of the fisheries sector. If resources management directed at a systematic attempt to identify, develop and conserve marine resources is undertaken, and new investment incorporating modern technologies helps improve product quality, exports may well exceed the 14 per cent per annum value growth assumed during the course of the Sixth Plan.

29. By far the most significant and bold programme affecting Pakistan's external trade prospects during the Sixth Plan will be the planned expansion in exports of food products following the successful transition of the agriculture sector from a focus on import substitution, geared to meeting the deficits created by the expansion in domestic demand, to an overall surplus with excellent prospects for further broad-based growth of food products for export. The agricultural targets of the Sixth Plan imply a substantial growth in agricultural exports. A study prepared for the Planning Commission recently has indicated that agricultural exports could rise to an impressive \$ 2 billion or more by the terminal year of the Plan. The estimate however, covers items including cotton and rice which have been discussed earlier. Excluding these items, the export potential of new commodities—including wheat, sugar, poultry, livestock, fruits and vegetables—is estimated at \$ 800 million by the end of the Plan. Fast growing markets for these products are available in the region giving Pakistan a potentially strong competitive edge.

30. This will, however, be a more difficult and challenging phase in the development of agriculture, particularly in consideration of the intense competition that Pakistan is likely to face from more advanced countries and suppliers who command strong brand loyalties. Pakistan will thus have to match the high standards of quality and aggressive marketing methods of its competitors and evolve a production structure that is fully responsive to the changing patterns of demand, tastes and preferences in what is a discriminating world market.

31. There are, however, indications of private sector investment interest in exploiting the potential for food exports that offer grounds for considerable optimism. Concept clearance has already been given for a number of US-Pakistan joint-venture arrangements to establish an integrated livestock fish-feeding, breeding and slaughter/packaging plant, including wholesale and retail outlets to produce finished cuts of beef, veal and mutton for export, a similar complex for livestock and poultry and broiler farms, a goat and sheep raising complex, and other agro-processing industries.

32. For its part, the Government will ensure that opportunities for further substantial investment in agro-based industries will remain promising. The establishment of the Export Processing Zone in Karachi offers one such avenue for further joint-venture enterprises. It is hoped that industries set up in the Zone, in the agro-processing field and in other sectors, will not only lead to higher export earnings of processed food products, but attract innovational investment in up-market products and, through a 'learning effect', enrich the organisational and marketing skills of our management.

33. Based on these expectations, the Sixth Plan forecasts that exports of new food items from Pakistan will expand from the present level of around \$ 100 million to about \$ 500 million by the end of the Plan period.

34. Other export commodities which are forecast to record substantial gains in the Sixth Plan are sports goods (10 per cent per annum), surplus products from the Steel Mill (25 per cent annum, albeit from a small base) and engineering goods. Despite uneven export performance in the

past—there is, for example, no firm trend in engineering goods exports over the last five years—low effect rates of protection and strong competition from imports which have restrained growth, Pakistan still holds a potentially strong dynamic comparative advantage in the production and export of a wide range of light engineering products. Recognizing this potential, the Government has recently completed a comprehensive study of the capabilities and constraints facing the engineering sector in Pakistan with a view to identifying both the medium-term prospects for further efficient import replacement and faster export growth. During the Sixth Plan, the Government intends to implement a number of key policy proposals, of which a major reform of the industrial incentive system, a relaxation of regulatory constraints, and a programme to improve the technical capability of enterprises in the engineering sector, are regarded as being central to establishing a durable basis for further efficient growth in this sector. With these reforms fully in place and the coming on-stream of the full production potential of the Steel Mill, Pakistan will have established the pre-conditions for a decisive acceleration in engineering goods production and export. The Plan assumes that exports of engineering goods will expand by 18 per cent per annum in value terms so that by 1987-88, engineering goods exports will comprise approximately 10 per cent of total manufactured exports.

35. Taken together, these projections imply that total export earning during the Sixth Plan will grow from \$ 2504 million in 1982-83 to \$ 5036 million in 1987-88 or 8.5 per cent per annum in volume terms and 15 per cent in value.

### **Imports**

36. During the Sixth Plan, import volumes are forecast to grow by 5.5 per cent per year, somewhat faster than the experience of the Fifth Plan, as a whole, but a substantial increase over trends in recent years when imports remained nearly constant in value. The rate of 5.5 per cent per annum projected for the Plan reflects the net outcome of the requirements to support a real DGP growth rate in excess of 6 per cent a year, more rapid private sector investment, an ambitious energy sector development programme and import liberalization on the one hand, with a sequence of major import replacement programmes in key sectors on the other.

TABLE 6

*Sixth Plan Import Projections*

	(\$ Million)		
	1982-83 (Benchmark)	1987-88	Compound Growth (% p.a.)
Milk and Dairy Products	60	88	8.0
Edible Oils	227	402	12.1
Fertilizers	171	310	12.6
Cement	14	—	—
POL	1650	2543	9.0
Capital Goods	1823	3015	10.6
Others	2195	4451	15.2
Total Imports, cif	6140	10,809	12.0
Total Imports, fob	5627	9917	12.0

37. In addition to the elimination of wheat, sugar and cement imports, the Plan will seek to secure major savings in the imports of edible oils, milk and dairy products, steel, transport equipment, engineering goods, and with somewhat less certainty, POL. With regard to edible oils, the imports of which have expanded rapidly and now average close to \$ 250 million a year, the Government has undertaken a comprehensive plan for a ten-fold increase in the acreage devoted to non-traditional oil-seeds which, together with improvements in yields and extraction rates from seed cotton, rape and mustard, is expected to limit import demand to a growth rate of 4.7 per cent per year in volume terms. Domestic production of oilseeds is projected to a growth rate of 4.7 per cent per year in volume terms. Domestic production of oilseeds is projected to grow by 7.3 per cent per annum so that by the end of the Sixth Plan, Pakistan should be in a position to meet almost 40 per cent of its total requirements of edible oils.

38. Imports of dairy products have also similarly shown rapid rates of growth in recent years in response to the growth in domestic incomes. The Sixth Plan will see a significant downward modification in these trends as domestic production is expected to rise by 6 per cent a year following the establishment of new milk processing plants, improvements in the collection, transportation, processing and distribution systems, more attractive fiscal

incentives and strengthened support services. Indeed, the Plan projects a decline in the real value of imports of milk and dairy products in the years ahead.

39. The coming on-stream of the full production potential of the Steel Mill during the early years of the Plan will mark an important phase in Pakistan's industrial development. It will mean that substantial import savings—estimated at about \$ 200 million a year—will accrue across a broad range of products in addition to establishing the basis for the efficient, accelerated growth of the steel-using engineering sector and other downstream products such as tin plates, large diameter pipes, wire and wire rods, rails and structures and projects which would use slag for cement and coal tar to make various chemicals. Furthermore the output of the Steel Mill will stimulate the development and progressive manufacture of motor vehicles, buses, trucks and tractors for which a systematic, phased deletion programme has been drawn up.

40. Fertilizer imports are forecast to rise by 6.2 per cent per annum in volume and 13 per cent in value; these relate almost entirely to imports of complex fertilizers since Pakistan is, following the commissioning of substantial new additions to capacity, self-sufficient in urea. The rise in the import of complex fertilizers during the Sixth Plan reflects the yield and production targets in agriculture and assumes that domestic offtake will grow by 8 per cent per annum. In the event a proposed DAP plant comes on-stream within the Sixth Plan period, imports will be correspondingly lower.

41. In recent years, price adjustment and demand restraint combined with conservation efforts have been an important restraining influence on the growth of imported oil. Although the prospects for the future expansion in domestic production remain encouraging, considerable uncertainty attaches to the precise timing and magnitude of the import substitution that such discoveries would imply. Moreover, current and medium-term shortages of gas and the long lead times involved in expanding production suggest that Pakistan's requirements for thermal generation in the Sixth Plan will need to be based on imported oil. Even though the Plan embodies a significant acceleration in the pace of development of existing and new fields, further demand management measures and a programme for the development of alternative energy forms, unless significant discoveries are made, POL imports will rise from the current level of \$ 1650 million to \$ 2543 million in 1987-88 or by 9 per cent per annum in value terms,



despite growth in domestic production from known oil fields and the expectation that world oil prices will not begin to move significantly upwards before 1984-85.

42. Imports of capital goods will expand by close to 11 per cent in value terms, reflecting the expected growth in private sector investment, liberalization and the requirements to support the investments planned in the energy sector; other imports are forecast to rise by 15.2 per cent in current dollars. Thus, in the terminal year of the Plan, total imports on an f.o.b. basis will rise to approximately \$ 10,000 million, implying a growth rate in value terms of 12 per cent a year and 5.5 per cent in volume.

43. While these forecasts have been based on a careful, commodity-specific analysis of the sequence of major programmes of import replacement, the actual trend in imports may deviate from these projections following the likely effects of a programme of continuing import liberalisation and other reforms of the trade regime. Although the impact of the liberalisation measures taken thus far has been small, it is difficult to predict what the longer-term effect will be. The import liberalisation programme and the restructuring of the system of industrial incentives that will follow it are regarded as a central part of the Government's efforts at promoting an efficient adjustment strategy; a growing volume of imports is not only essential to support increased investment and faster economic growth, it is also expected to induce substantial improvements in economic efficiency through embodied technical progress with favourable effects on industrial productivity, costs and prices. The Government, therefore, expects that any surge in imports attendant on further liberalisation will quickly manifest itself in a faster rate of growth of output, productivity and exports, and that progress towards import savings in the sectors detailed above will, on balance, restrain the growth of imports to manageable levels. If this should occur, Pakistan can confidently expect to see a continuation of the slow to moderate growth in import volumes that has characterized the past few years, and with world inflation continuing to subside, total import payments should be close to the levels suggested in the Plan projections.

### **Invisibles**

44. Following the impressive increase of more than 24 per cent per annum in the Fifth Plan, Pakistan's surplus on invisibles is projected to grow at only a little more than 9 per cent per year in the Sixth Plan. This is mainly on account of the substantially different expectations with respect to the future flow of workers' remittances.

TABLE 7

*Sixth Plan Invisibles Balance*

	(\$ million)						
	1982-83 (Bench- mark)	1983-84	1984-85	1985-86	1986-87	1987-88	Com- pound Growth (% p.a.)
Invisible Balance	2219	2439	2658	2901	3169	3453	9.2
Payments	-1957	-2149	-2384	-2639	-2918	-3235	10.6
(of which : interest)	(-469)	(-506)	(-546)	(-590)	(-636)	(-686)	(7.9)
Receipts	4176	4588	5042	5540	6087	6688	9.9
(of which : remittances)	(2621)	(2883)	(3171)	(3488)	(3837)	(4221)	(10.0)

45. The growth of workers' remittances is expected to slow down appreciably during the Sixth Plan. Pakistan has been fortunate in the past that substantial remittance flows have played a key role in alleviating pressures on its balance of payments especially in the context of the steep decline in net aid inflows. Thus, workers' remittances which constituted only 15 per cent of export earnings in the mid-70s now account for over 100 per cent of exports and 287 per cent of the expected current account deficit for 1982-83. However, the Plan recognizes that the recent drop in world oil prices has added a new dimension of uncertainty concerning these flows. With the prospect of intensified pressures on the payments and reserve position of the oil exporting developing countries, and a consequent scaling down of their development activities in the 80s, it is probable that net emigration from Pakistan will be considerably slowed, and perhaps reversed, in the years ahead. Nevertheless, it is expected that with some shift in the skill composition of migrants and improvements in their salaries with longer periods abroad, workers' remittances will still rise by about 10 per cent per annum in nominal terms or 3.5 per cent per year in inflation-adjusted terms. In the light of recent trends in these flows, this is a fairly conservative assumption and allows for the large element of uncertainty that attaches to projections in this field.

#### Current Account Balance

46. Table 8 brings together the various assumptions discussed above and sets out their implications for the current account deficit of the balance of payments. It is seen that with exports growing some 55 per cent faster

than imports in real terms, constant terms of trade, and workers' remittance flows expanding by 10 per cent per annum, Pakistan's current account deficit is expected to rise from about \$ 900 million in the base year to \$ 1.4 billion in 1987-88, an increase of 9.6 per cent per annum in nominal terms and around 3.1 per cent per annum in real terms. The deficit will however fall steadily from the present estimated level of 2.9 per cent of GNP to 2.6 per cent and from 13.5 per cent to 12.2 per cent of total foreign exchange earnings at the end of the Sixth Plan period.

TABLE 8

*Sixth Plan Current Account Balance*

	(\$ Million)						
	1982-83 (Benchmark)	1983-84	1984-85	1985-86	1986-87	1987-88	Com- pound Growth (% p.a.)
Exports, fob ..	2504	2879	3311	3808	4379	5036	15.0
Imports, fob ..	-5627	-6302	-7058	-7905	-8854	-9917	12.0
Workers' remittances	2621	2883	3171	3488	3837	4221	10.0
Current Account Balance	-904	-984	-1089	-1196	-1306	-1428	9.6
Memo :							
Current Account Balance as a % of GNP	2.9	2.9	2.9	2.8	2.7	2.6	-

**Capital Account**

47. Although the world aid climate is expected to improve in the future, it will not be easy to finance even this order of the current account deficit. Firstly, Pakistan has large repurchases scheduled on account of earlier drawings on the IMF. If no further arrangements are entered into—and none have been assumed in the projections—net flows of IMF resources will move from an average inflow of about \$ 380 million in the last two years of the Fifth Plan to an outflow of roughly similar magnitude. Similarly, assistance for Afghan Refugees which constitutes an important proportion of total aid inflows in the base year may well taper off, an expectation which has been accounted for in the projections. Finally, Pakistan's requirements for food imports will diminish as a consequence of the import substitution programme.

48. Of crude 1 importance to the financing of the current account deficit in the Sixth Plan is the behaviour of long-term aid inflows. The Sixth Plan assumes that, in contrast to the sharp diminution of external support in the 70s, future years will see a reversal of these trends. Real net aid inflows—that is, gross aid disbursements excluding Afghan Refugee Assistance and amortization payments—after rising by 21 per cent in the first year of the Plan in response to the build-up of aid commitments in 1982-83, will grow by over 3 per cent per annum in real terms during the remainder of the Plan period. Pakistan will seek to augment the pipeline for Sixth Plan projects, especially in the Energy Sector, as well as secure a shift in the composition of future aid flows towards a large proportion of quick-disbursing programme, sector and commodity assistance. Although these assumptions may appear to be ambitious, they represent a continuation of the welcome—and indeed, unprecedented—increase in external assistance to, and support for, Pakistan's record of sound economic management and Plan priorities indicated at the Consortium meeting in April, 1983.

TABLE 9

*Sixth Plan Aid Inflow Projections*

	(\$ Million)						
	1982-83 (Benchmark)	1983-84	1984-85	1985-86	1986-87	1987-88	Com- pound Growth (% p.a.)
Gross Aid Inflows	1296	1489	1584	1681	1789	1911	8.1
(Refugee Assistance)	(276)	(275)	(258)	(233)	(208)	(183)	(-7.9)
Gross Aid Inflow (excluding Refugees Assistance)	1020	1214	1326	1448	1851	1728	11.1
Amortization	-448	-475	-513	-554	-598	-646	7.6
Net Aid Inflows	572	739	813	894	983	1082	13.6
Memo:							
Real Net Aid Inflows <sup>1</sup>	572	694	717	740	764	790	6.7

<sup>1</sup>In constant 1982-83 prices.

49. It is important to note, however, that even under the assumptions regarding the flow of external assistance, the proportion of total development expenditure financed by net aid inflows will, by the end of the Plan, be about 10.8 per cent compared with an estimated 13.1 per cent in 1982-83.

50. For its part, the Government will take steps to accelerate the process of aid disbursements by following up the measures adopted in the recent past to accelerate project clearance procedures and aid negotiations with a number of other actions, the most important of which is the recent decision to set up a new Projects Wing in the Ministry of Planning and Development. The Projects Wing will be charged with the responsibility of all aspects of the project cycle: appraisal, progressing, evaluation, commitment budgeting, aid programming, etc., in addition to training project managers in efficient appraisal and implementation techniques and assisting weakly-organized but high priority sectors with project preparation. Pakistan recognizes that efficient project management is the key to maximizing the productivity of its constrained resources.

51. As regards other capital flows, foreign private investment flows to Pakistan are expected to rise significantly. The Government's decision to unleash private sector creativity and dynamism within the framework of supportive policies institutions has brought about a strong resurgence of investment interest from project sponsors located in the Middle East, the USA, UK and elsewhere. While there will be some lag between these indications of intent and actual project implementation, the Plan projections assume that foreign private investment flows will average about \$ 150 million in the years 1984-85 to 1987-88 and will flow mainly into industries which will make a significant contribution to improved balance of payments performance.

52. In addition to a large volume of aid inflows and private foreign investment, Pakistan will seek to utilize additional long-term capital at commercial rates for projects which are suitable for such financing. Bids have already been invited for the Chashma Nuclear Power Plant which require corresponding offers of financing arrangements from the bidders. Other projects of this nature are the Hydrocracker Plant and the Multan Refinery. Co-financing arrangements which seek to mix commercial loans with concessional assistance will be sought in respect of certain other projects where the pay-off is clearly high, capital costs large, and the technology complex. Examples are the Kalabagh Dam, Left Bank Outfall Drain, projects in the National Energy Plan and the Special Programme for Baluchistan, etc.

53. The amounts assumed in the projections are indications of broad orders of magnitude. During the course of the Plan, Pakistan will need to devise concrete means for increased real net aid flows and a funding package for Sixth Plan programmes and projects by an appropriate mix of

commercial flows and concessional assistance. Although such a policy will lead to some progressive hardening of the terms of long-term assistance to Pakistan, it is expected that sustained growth and improved trade performance over the course of the Plan, alongwith a strategy of maintaining reserves at acceptable levels, will bring about a reduction in the ratio of Pakistan's debt services from 13.7 per cent in 1982-83 to 11.4 per cent at the end of the Plan while substantially improving its credit rating. Pakistan would thus be in a position to borrow prudent amounts from overseas capital markets to finance the high priority, capital intensive projects envisioned in the Sixth Plan without exerting undue pressures on its debt servicing capability or compromising the underlying strength of its external account.

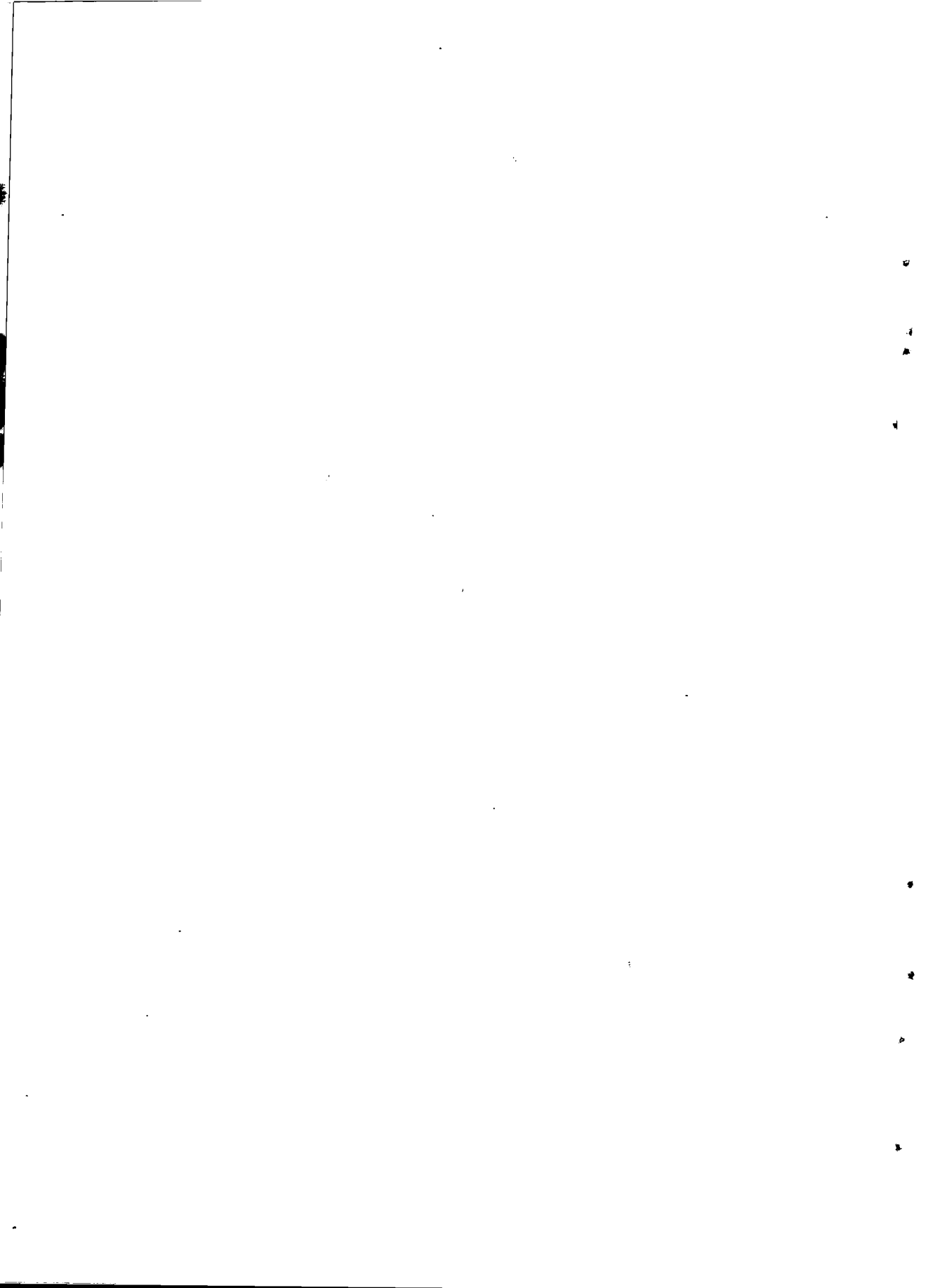
54. The balance of payments projections for a period of five years can, at best, be treated as rough estimates arising from production targets, investment programmes, suggested changes in commercial, fiscal and exchange rate policies, and the likely behaviour of world trade. The margin of error in each of these variables may be compounded and render the projections open to modifications. Even projections for a year often require considerable modification during the same year. For this reason, an attempt has been made to build in a substantial safety margin in the balance of payments estimates discussed above; for example:

- The export estimates are based on a volume growth of 8.5 per cent per annum. The real growth rate of Pakistan's exports before the major recession year 1981-82 was as high as 14 per cent per annum. It is quite likely that the actual growth rate of exports in constant prices will exceed 10 per cent per annum during the Sixth Plan. The present export target represents a conservative view of future growth possibilities;
- The projected growth of workers' remittances at 3.5 per cent per annum in real terms and 10 per cent in nominal terms is based on a rather pessimistic scenario regarding developments in markets which have absorbed Pakistani labour in the recent past. Even with a net return of migrant workers at some stage, remittances may continue to improve for a number of years as returning workers bring accumulated savings for starting a new life in the country;
- The import projections at this stage also provide for some cushion in the estimated imports of energy and fertilizer. As explained in the chapter on Energy, with a forceful energy

conservation programme, the growth in oil imports could be significantly less. Similarly, fertilizer imports could be lower in the event planned additions to domestic capacity are accomplished ahead of schedule. Furthermore, full account has not been taken in the import projections of the possible import substitution in the engineering goods sector for which large investments are proposed to be undertaken both in the public and private sectors;

-- Pakistan has suffered a major decline in the terms of trade during the last five years. It is probable that part of this loss will be reversed during the next Plan period particularly in the light of the expected improvement in commodity prices from present depressed levels. The present balance of payments projections, however, are based on neutral movements in prices with the terms of trade remaining constant at their present low level.

55. If some of the elements identified above behave favourably and if Pakistan is able to obtain net aid inflows suited to its stage of development and the record of its performance, it would be possible to increase the size of the development programme during implementation. However, even if th more unfavourable assumptions implicit in the above projections persist, it appears reasonable to expect that the balance of payments situation will remain manageable during the Sixth Plan.





*O You who have attained  
to faith! Do not devour  
one another's possessions  
wrongfully—not even by  
way of trade based on  
mutual agreement—and  
do not destroy one another:  
for behold, God is indeed  
a dispenser of grace unto you!*  
*An-Nisa-29.*

## CHAPTER 7

### PRIVATE INVESTMENT: POLICY FRAMEWORK FOR A TAKE OFF

**P**AKISTAN is preponderantly a private enterprise economy. In 1982-83, private sector contributed three-fourths of the GNP and around 90 per cent of value added in commodity production. With such large weights, there is no escape from designing a set of policies consistent with creating a climate of optimal private allocation without sacrificing national economic priorities. This precisely is the aim of the Sixth Plan. There is no intention to work out a detailed plan for private sector. It is rather a modest attempt to have the benefit of hindsight on the past and to capture likely future perspective with no suggestion of clairvoyance. Ambition there is, not by accident but by design, embodied in the bold policy framework for the liberation of genuinely creative private enterprise.

2. At the beginning of the Sixth Plan, large scale industries contribute only 20 per cent of the overall private investment, which is less than agricultural investment estimated at 21 per cent. Industrial sector has had a vicissitudinal past with frequent redefinitions of the domains of public and private industrial activity. The limits to private enterprise and expansion in

the presence of state in the industrial sector are viewed as an index of the role of private investment in general. This is a widely held view and reflects the early association of development and entrepreneurship with industrialisation. Though industrialisation is a major plank of the Sixth Plan strategy, it rejects this particularistic view of private investment in favour of a more general advance of private entrepreneurship in all spheres of economic activity.

### PAST REVIEW

3. The low industrial base inherited by Pakistan in the absence of any tradition of productive entrepreneurship inevitably put the public sector to the fore in the initial stages. But its role was promotional in that it entered fields which the private sector would not pioneer, *e.g.* industries in backward regions or those requiring large investment. In this phase, many such units were set up in public sector and then turned over to the private sector.

4. The ups and downs of private investment from 1969-70 to the terminal year of the Fifth Plan are brought out in the following table.

TABLE 1

*Private Investment as Percentage of GNP at Market Prices*

	1969-70	1977-78	1982-83
Agriculture .. ..	1.1	0.9	1.0
Transport and Communications	1.2	0.6	0.5
<b>Industry .. ..</b>	<b>3.2</b>	<b>1.0</b>	<b>1.3</b>
Large Scale .. ..	(2.8)	(0.7)	(1.0)
Small Scale .. ..	(0.4)	(0.3)	(0.3)
Housing .. ..	1.3	1.0	1.4
Services/Others .. ..	1.2	0.6	0.7
<b>Total :</b>	<b>8.0</b>	<b>4.1</b>	<b>4.9</b>

5. In the sixties, the private sector had begun to come into its own, not only in the processing of agricultural raw materials but also in relatively more sophisticated fields like cement, chemicals and fertilizer. In response to a liberal package of policies and incentives, the share of private investment in GNP rose to 8.0 per cent in 1969-70, about one-third of which originated in large-scale manufacturing. However, the ascendancy of private dynamism in industry was not an unmixed blessing. The quantitative jumps were accompanied by qualitative humps in the shape of excesses of concentration and social irresponsibility. Nor were all firms competitive and efficient. Indeed, a number of white elephants emerged, whose survival depended on a heavily protective umbrella. The excessive investment demand resulting from the large quantum of concessions was kept within supply constraints through permits and sanctions. Thus began the process of regulatory proliferation, confounded by the direct state interventions of the seventies.

6. The seventies witnessed the other extreme. Three rounds of quick-fix nationalisation and a spate of regulatory restraints on private sector opened the chapter of public sector excesses. Private investment suffered a big jolt and the resulting slump was particularly pronounced in large-scale manufacturing. The share of the later in GNP plummeted in 1977-78 to one-fourth of the share in 1969-70. It was only small-scale manufacturing which, without any state interference or patronage, contributed significantly to whatever industrial growth did take place during this period. The numbers do not truly reflect this due to information gaps.

7. The Fifth Plan occasioned the opportunity of enforcing rational proportions. The following specific measures were adopted:

- (i) Denationalization of agro-based industries (cotton ginning, rice milling, flour mills).
- (ii) Clear demarcation of activities between public and private sectors and opening up of nearly all spheres of activity to the private sector.
- (iii) Government's willingness to examine any request for denationalization on case-by-case basis.
- (iv) Promulgation of Transfer of Managed Establishments Order empowering the Government to offer to the former owners of nationalized industries the share of proprietary interest in the acquired units.

- (v) Promulgation of Rights in Industrial Property Order. This order provides safeguards against any arbitrary take-over of industrial property by the Government.

8. In addition, a number of export incentives were instituted, import and foreign exchange regimes liberalised, sanctioning procedures simplified and the limit of 'no-sanction' units raised. Not only that public sector units were taken off the back of the budget to start the process of bringing them at par with private sector, the budgetary resources were diverted to improve infrastructure facilities and, not the least, a system of credit earmarking for private sector was put on the ground. The private response was hesitant at first. This hesitancy contributed to the frustration of the Fifth Plan objectives of shifting private investment from housing and transport to manufacturing. A noteworthy feature was that investment in agriculture left large-scale industrial investment behind. Overall, private investment as a percentage of GNP stopped declining by 1982-83.

#### INDICATIVE PROJECTIONS OF SIXTH PLAN

9. Detailed and precise private investment projections are neither possible nor-desirable. What lies in the domain of desired possibility is the indicative projection of potential growth and identification of priority areas of investment. By no means could these be construed as obligatory targets.

10. The Sixth Plan envisages substantial increase in the private investment level and significant sectoral shifts. It is expected that overall private investment during the Plan period will go up from 4.9 per cent of GNP in 1982-83 to 8.0 per cent in 1987-88. The aggregate size is projected at Rs. 200 billion in current prices, 41 per cent of the Sixth Plan outlays. Public investment is placed at higher level chiefly because of the infrastructure requirements of the private sector. Compared to nominal achievement of about Rs. 73 billion in the Fifth Plan, the Sixth Plan investment projection is significantly higher. Its annual acceleration in nominal terms is 25 per cent and around 14 per cent in base year prices. The latter is twice as high as the Fifth Plan acceleration.

11. The size, growth and sectoral shifts are explained in Chapter-4. In summary :—

overall private investment is projected to grow by 174 per cent in nominal terms and by 100 per cent in 1982-83 prices.

- large-scale manufacturing investment is expected to increase more than four times, followed by agriculture and transport and communications.
- large-scale manufacturing investment is envisaged to grow at an annual rate of 34 per cent, transport and communications by 33 per cent and agricultural investment by 27 per cent.
- the share of large-scale manufacturing in the overall private investment in the terminal year of the Sixth Plan is visualised to be 29 per cent, that of agriculture at 23 per cent and for housing and transport and communications at 19 per cent and 14 per cent respectively.
- there is likely to be a decline in the relative share of housing and services sectors implying shift towards more productive sectors.

### POLICY FRAMEWROK

12. Far from being a matter of projecting higher growth, private investment in the Sixth Plan will be an outcome of strategic policy thrusts enabling the free response of private sector. The policy will be directed not only to further boost up the private confidence, but importantly towards influencing the real economic forces inhibiting investment. While the various trade-offs will be made explicit at the time of formulating the operational annual plans, the Sixth Plan will in general lay down a strong implementation capacity to fine-tune the economy.

#### I Industrial Investment Policy

13. The Rs. 62 billion programme of private investment in the Sixth Plan may be ambitious, but is consider necessary for a bold departure from the past. As a matter of fact, an investment of Rs. 28 billion is already sanctioned. Add to it Rs. 12 billion of projected investment in the self-supporting small scale sector, and the balance turns out to be a none too unmanageable Rs. 22 billion. Given the comprehensive policy framework to be provided during the Sixth Plan, the ambition to expect private investment to take off is not devoid of sober realism.

14. For the first time, a coordinated policy approach will be followed for private industrial investment in the overall framework of deregulation. In the first year of the Plan, an industrial policy statement will be

made to replace the adhocery perpetuating for the last 15 years. It will specify roles of private and public sectors, sanctioning procedures, industrial estate planning, availability of infrastructure, quantum of incentives, financial pattern and policy guidelines for foreign investment. Also announced will be an industrial investment schedule covering the Plan period. It will indicate investment possibilities, not limits to investment, and identify priority industries eligible for the new set of incentives, financial arrangements and infrastructure facilities.

15. while concrete and specific measures and actions will be spelled out in the industrial policy statement and industrial investment schedule, the following paragraphs discuss the broad policy issues involved in the creation of a new policy framework.

16. *Deregulation.*—Phased deregulation, implemented through budgets, import policies and industrial policy statement will be the driving force behind the growth of private investment in the Sixth Plan. The first phase is already under-way, focusing on simplifying the bewildering complexity of procedures and the issues of a positive list of industries requiring no sanction, with heightened ceilings for rupee and foreign exchange components, investment-oriented and liberal access to foreign exchange, restructuring of fiscal mechanisms and decentralized credit approval processes. Subsequently, the concentration will be on price and non-price controls.

17. It must be made clear that deregulation means more competition, not more concessions. With the Sixth Plan emphasis on non-traditional exports, sophisticated import substitution and technology intensive industries, there will be no room for tax breaks, overprotected markets and cheap access to scarce investible funds. Those who wish to live by the logic of the market must also be prepared to die by the same logic. In other words, concentration will not be allowed to be built into the very process of investment.

18. *Limits to Public Sector Growth.*—In the Sixth Plan, public sector will be limited to undertake around 25 per cent of the industrial investment. This shift from public to private investment is an objective per se, a load-shedding that cannot be avoided. As a matter of rule, public sector will complement private enterprise by concentrating on infrastructure. While existing public sector industry would expand to modernize and the on-going projects have to be completed, new units will mainly seek to reduce regional imbalances that might result from private shyness to invest in some poorer areas. Moreover, the first preference of the public sector in entering an

industrial field will be to establish joint ventures with the private sector, domestic as well as foreign. However, private investment trends will be closely monitored in the first 2-3 years of the Plan. If private response is lacking in some priority areas, public sector will have to act as the investor of the last resort to achieve national objectives.

19. *Choice of Investment.*—In the choice of the composition of industrial investment the determining criteria would be import substitution and export expansion. The completion of the Steel Mill will push up technological advance in downstream engineering goods industries in which the private and the public sector would co-exit. The current import bill of these goods and accelerated mechanisation of agriculture in the Sixth Plan indicate the directions of import substitution. More than half of the investment will take place in import substitution, steel-based and engineering industries.

20. Next in importance will be export and agro-based industries. Having achieved self-sufficiency in food, agricultural growth will shift to high value crops. The industries linked with these crops would be developed, not only to meet the rising domestic demand but more importantly, to achieve a quantum jump in exports. About one-third of the projected investment will take place in these industries.

21. Yet another engine of export growth will be the small-scale sector. A 15 per cent increase per annum is envisaged in small scale and cottage industries. The role of such in industries in the process of industrialisation needs no explanation. These are usually based on local raw materials, create significant employment and are often export-oriented. Such industries would also meet the objectives of rural development in the Plan. Additional advantages include industrial dispersal and containment of rural-urban migration.

22. Small-scale sector faces a different set of problems and, therefore, requires concentrated micro incentives. The more important of these during the Sixth Plan will include : a combination of fiscal incentives to ease initial cash flow problems; preferential access to credit through stronger specialised institutions; institutionalised dissemination of information about acceptable export designs and suitable technologies; organization of advisory marketing boards; assistance in training for required skills; encouragement for integration with large-scale sector through sub-contracting; and provision of adequate infrastructure and measures to make it accessible to small-scale investors.

23. *Economic Policies.*—Fiscal, commercial, monetary and credit policies will be re-fashioned to operate as genuine incentives rather than stumbling blocks in the way of private investment. In the area of fiscal policy, the specific concerns are the rationalisation of rebate system, restructuring of the corporate tax to prevent it from acting as a drag on mobilising investible funds and removing the anomalies resulting from taxing production rather than consumption.

24. In the field of commercial policy, there is need for thorough going tariff reform from the viewpoint of the degree of net or effective protection available to various industries. In many cases, there exists the grave anomaly of taxing raw materials more than the final output, leading to negative protection. Further, the exchange rate flexibility and the associated import liberalisation has helped remove many rigidities, but the benefits of a liberal regime will remain under utilised unless the exchange rate itself becomes a strong tool of development policy. Further still, a fungible fund of reasonable size is required to ease the foreign exchange availability to the private sector.

25. Real investment requires a stable monetary environment. The Sixth Plan aims at growth with stability. Monetary policy will, therefore, continue to focus on the gains of financial consolidation made in the Fifth Plan. To ensure a steady flow of credit, a package of sound measures and rational institutional restructuring will be required. The system of credit earmarking for private sector in the credit budget will be streamlined. Also, the long and the cumbersome process of loan approval will be curtailed and decentralised to the level of efficient decision making. As the Government needs for financing commodity stocks go down as a result of phased decontrol, the overall availability of funds will improve considerably. In regard to foreign exchange resources for private sector, Banker's Equity and NDFC have already been provided 100 million dollars. In addition, negotiations are underway for doubling or even tripling the external assistance to private sector through PICIC and IDBP.

26. *Financial Structure of Firms.* - Considerations of increasing risk and fear of bankruptcy have rendered internal finance—retained earnings plus depreciation funds—a significant and the key component of capital structure of private firms in most industrialisation experiences. The experience of Pakistan in the sixties documents similar conclusion. Thus, the responsibility of financing investment primarily rests at the doors of private sector itself, the best that the Government can do, and it will not fail to do just that, is to institutionalise a climate which rewards enterprise.



27. Going by the dictates of the market mechanism, the era of cheap credit is over. The real question that has to be addressed relates to the comparative yields of stocks, bonds and government saving schemes. While Government may have to end its unfair competition with the private sector for private finance, the private sector, too, will have to raise productivity to gain a competitive edge for the available finance.

28. More than anything else, it will be the productive edge of private investment that can divert home remittances from consumption to income-yielding assets. The Islamic instruments of Modariba and Musharika show the way to future. There will be need for more investment and equity finance institutions like Pak-Saudi and Banker's Equity.

29. *Remittances.*—The conversion of household savings into desired productive investment would require initiation of proper economic policies which promote investment. Among the most important of these policies will be those concerned with changing the asset preferences of overseas Pakistanis. With rational exchange rates and collapsing world interest rates, the inflow of remittances is not expected to suffer a major setback. In their search for safe investments, the overseas Pakistanis would most likely be interested in putting up venture capital in activities with smaller scale and somewhat secure return. Opportunities, will, therefore, be created to enable them to self-finance such ventures. Indeed, de-regulation will go a long way in boosting up these investments as the regulations deterred small investors more awesomely than the big men in business. Those of the overseas Pakistanis who cannot undertake direct investment will be able to partake of the investment process through the private investment houses being allowed for the first time.

30. *Wages and Productivity.*—A new labour policy will be announced during the course of the Sixth Plan. Incomes policy will become an important adjunct of other economic policies. It will thus be possible to relate wage bargains to productivity gains. However, the nature of debate that has been going on regarding the issue of wages and productivity is misconceived. The problem is not that wages are too high, but that investment is too low to yield an adequate flow of benefits to satisfy the needs of society and its components.

31. Let it be clearly understood that the days of water-dump philosophy are over. Further, the rate of change of money wages may have at best left the real wages unchanged. In other words, the initial distribution of productivity gains has also stayed the same. Further still, wage content of

manufacturing has not increased significantly. In any case, the prices in the import substitution sector are cost-determined due mainly to the imported inputs. As for some loss of competitive edge in the export sector, the depreciating rupee is there to mend it. And there is not much real wages resistance to thwart it.

32. Investment is largely financed from saving out of profits. The Government will have no qualms about private sector earning profits of hard work, efficiency and technological change. The high rate of investment targeted in the Sixth Plan underscores this policy. With the investment rate and its composition so determined, future growth rate and output per worker strategically depend on the rate at which private sector installs and expands plant and equipment, and the public sector supplies the required infrastructure.

33. *Infrastructural Policy.*—The freeing of private initiative has to move hand in hand with the facilitation of implementing investment projects by the adequate provision and unfettered availability of infrastructural cooperant, a responsibility that public sector must discharge efficiently. The Sixth Plan projections of private industrial investment may look ambitious in the context of shortages of infrastructure the economy has been experiencing in recent past. In point of fact, the Sixth Plan is confronted with the situation of having lost a decade in the planning for investment in infrastructure.

34. The problem requires careful handling and the Sixth Plan proposes to deal with it on a broad front.

35. In the short run, whatever infrastructure is available now and the likely additions from the ongoing projects will be budgeted to avoid a thin spread. The technique will be to plan and implement industrial estates with one-window availability of energy, water, phones, etc. This will have to be accompanied by scarcity pricing policies so as to check inessential demand and provide resources for investment. Such is the strategy required for living with the shortages of the first 2-3 years of the Plan. Beyond that, the situation is expected to ease. More than half of the public sector programme of the Sixth Plan pertains to the investments in energy, transport and other infrastructure. In the later years of the Plan, the supply of energy from various sources and other infrastructure is likely to be more than the projected annual average increases. Over the longer run a national energy plan is being prepared for the next ten years, extendable to 20 years.

36. Not the least important is the induction of private sector itself in the infrastructural investment. It could come into the field of energy all along the line. In particular, as public investment in coal is going to experience a quantum jump, possibilities will multiply for private sector to produce coal-based power and buld-sell to WAPDA. Other fields open to private sector include road constructions, airlines, air terminals, telephone industries, oil and gas exploration and electricity distribution.

## II. Agricultural Investment Policy

37. Private agricultural investment has shown considerable resilience compared to industrial investment. In fact, private investment in agriculture exceeded investment in large-scale industry in 1982-83. The event took place despite the fact that agricultural sector does not possess skilled manpower and modern managerial capability and a counterpart of various incentives available to industry. The major incentive it enjoys is the international price, which the industrial sector in any case has. At times, even this incentive was eroded by export duties. After achieving self-sufficiency, the illiterate farmers have brought the country to the threshold of becoming a large agricultural exporter. This so called backward sector has also demonstrated relatively greater acceptance of new technologies. It may well be that resources are being transferred from industry to agriculture due to the relative security of investment in the later.

38. Agricultural investment during the Sixth Plan will be in line with the growth strategy in this sector. The key element of this strategy is to push up investment in high value added crops like fruits and vegetables, flowers, livestock and poultry to expand production and enter export markets in a massive way. The supportive policy framework will include technological change at small farm level through small tractorization, price support measures and suitable marketing arrangements. In case of of livestock at least. The possibilities of corporate organisation will be explored. The high value added push will require modern storage capacity, yet another area for private investment. The Government will also gradually withdraw from some activities which the private sector can perform. For example, tubewells in the sweet ground water areas are proposed to be transferred to private sector in a phased manner. Also, to increase efficiency of water use, non-monetised investment in on-farm water management will be supported strongly.

39. Investment in agriculture is largely geared to achieve desired farm mechanisation. The mechanisation programme consists primarily of tractors and corresponding accessories and tubewells. In physical terms, it is

proposed to double the number of tractors, threshers, sprayers and other mechanised implements during the Plan period. Other important components for private investment in agriculture will be land development, farm buildings, storages, etc.

40. Most studies indicate that the productivity of small farms is greater than large farms. The Sixth Plan will start the process of shifting the balance of power in favour of the small, but more productive, farmers. There are three critical elements of this approach. First, the decision to allow the import of small tractors during the Sixth Plan is expected to provide the required technological breakthrough. Second, provision of credit to the small farmers will be given the highest priority by raising it to as high as 50 per cent. Third, the priority accorded in the Sixth Plan to develop rural infrastructure such as road, village electrification, water supply, health and education facilities will help create an environment conducive to the release of productive initiative at the small farm level. In addition, it is expected that the incomes from remittances sent by rural-based Pakistanis abroad will be invested in small tractors and other requirements of developing small farms into productive units.

### III. Housing Investment Policy

41. Rates of return in housing are relatively low. Construction industry in this country has largely been a stop-go operation. If houses continue to be built, it is mainly because of the cultural attachment to owning a house. In an economic sense, housing rises and falls with inflation. As the economy moves towards greater and stability, the rate of return question assumes more and more significance.

42. The Plan proposes to address the housing concerns of the nation in a number of ways. In the first place, a national housing policy will be announced during the course of the Plan. Secondly, the provision for housing in the Sixth Plan has been made in line with the GNP growth which assumes a reduction in the income elasticity of housing construction, resulting from the experience of sixties. This reflects efforts which will be made to channel investment to low income and utility housing rather than luxury units. It will thus be possible to increase or improve the number of dwellings much in excess of the level indicated by the investment. Thirdly, Government effort will be concentrated into the development of plots, leaving the house construction to private sector. During the Sixth Plan period, half a million plots will be developed.

#### IV. Private Investment Policies in Others Sectors

43. *Transport and Communications.*—Investment in transport and communications is primarily made up of the cost of motorized vehicles required for transport purposes. The programme in this regard aims at doubling the yearly availability of buses and trucks by 1987-88. Large investments will be made in refrigerated transport required for food exports. It is also visualised that private sector would enter into road construction operation and airlines and telephone industries.

44. In the case of urban transport, the inefficiencies resulting from the public private duality will be reviewed.

45. *Minerals.*—The mineral development programme has been so designed as to help the process of industrialisation, particularly through private sector. Apart from the high priority accorded to energy minerals like coal and uranium, significant public investments will be made in rock phosphate, iron ore and gypsum. These public investments will help encourage processing of these minerals by the private sector. In allocating the investment in various industries, the development of mineral resources in Sixth Plan has been kept in view. The Sixth Plan provides an acceleration of 32 per cent per annum in the private mineral investment.

46. *Energy.*—In energy sector, while oil exploration is not technically treated as investment unless a successful find results, it does offer the prospect of a huge pay-off. The private sector will be active in the search for oil and gas either on its own or in collaboration with the public sector. The same is true of development projects which are treated as investment. Private investment, however, has two distinct possibilities. One important joint venture with a foreign firm is the Sui-gas compressor project. Again, the fields of small hydel stations and clean energy units are wide open for private investment.

47. *Services.*—In the services sector, private initiative will be directed to setting up of hospitals and clinics, a private university and other educational institutions, distribution of electricity and the improvement of efficiency in the non-formal sector.

#### V. Policy toward Foreign Private Investment

48. Good economic performance is the best inducement that a Government can offer to the foreign private investor. Pakistan has fared well in the past five years on this account. It has put its economic and financial

house in order during a period in which developing against were defaulting on contractual liabilities. The other attractions to foreign investors have traditionally been cheap raw materials, cheap labour and cheap energy. In case of raw materials, Pakistan has its un-exploited mineral potential, particularly copper and the high-value added crops to offer. Labour may not be cheap compared with similarly placed economies, but it cannot be an inhibiting factor as even the existing foreign firms have usually offered higher wage rewards. Energy is also not likely to remain cheap, though its exploration and development will itself be a big area of attraction in the Sixth Plan.

49. As outflows have generally exceeded actual inflows in the past, the resulting balance of payments implications paint a narrow picture of the benefits derived. The extent of technology transfers, contribution to import substitution and export effort and the imparting of management skills are benefits that ought to be weighed against the loss from capital outflows.

50. The comprehensive industrial policy statement to be made in the first year of the Sixth Plan will also lay down the policy guidelines for the inflow of foreign private investment. It will define the incentives framework, efficiency criteria, the principles of equity sharing and social responsibility. Most important, there will be a new blueprint for technology transfers, shifting the emphasis from assembling to substantial deletion programmes.

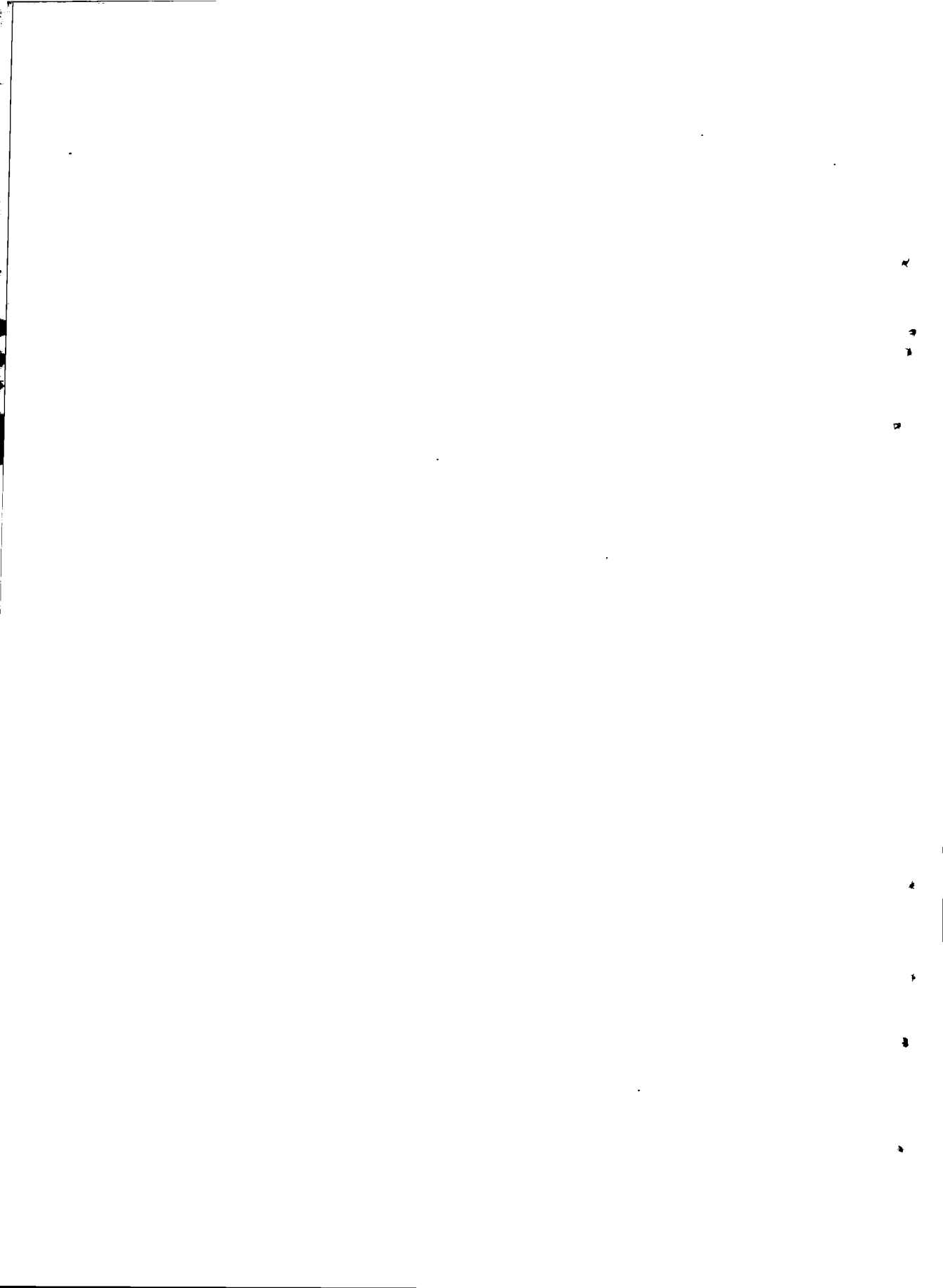
51. In the Sixth Plan, efforts will be made to substantially raise the weight of foreign investment in the overall private investment. First, the foreign investor will enjoy the organisational flexibility of entering an investment field direct or collaborate with public or private sector. Second, portfolio investors from abroad will now be able to provide finance directly to the recipient private investor. Third, the major recipient sectors will be energy, mining, construction and agriculture for exporting high value-added output. The major location of manufacturing investment will be the Export Processing Zones.

52. The sheer size of the private industrial programme makes resort to foreign private finance absolutely necessary. Though the cost of such funds in the present international setting is likely to be high, the real problem will be their adequate availability for productive use. As already stated, PICIC and IDBP will double their operations through special foreign loans. Further, Sixth Plan will usher in the direct access of private sector to foreign private portfolio funds. This will help familiarise the private sector with the working of sophisticated international financial market, so very

necessary for aggressive export marketing. An important advantage will be the requirements of technological change that use of foreign finance invariably entails.

53. An issue that has generated some controversy is whether or not to treat overseas Pakistanis as foreign investors. The issue will be dealt with in the context of liberalisation of the economy in general.

54. In sum, the unleashing and optimal development of private initiative is crucial to the realisation of the Sixth Plan targets. With the institutionalisation of a consistent policy framework during the Plan, opportunities for profitable investment will increase manifold for confident and vibrant private sector.



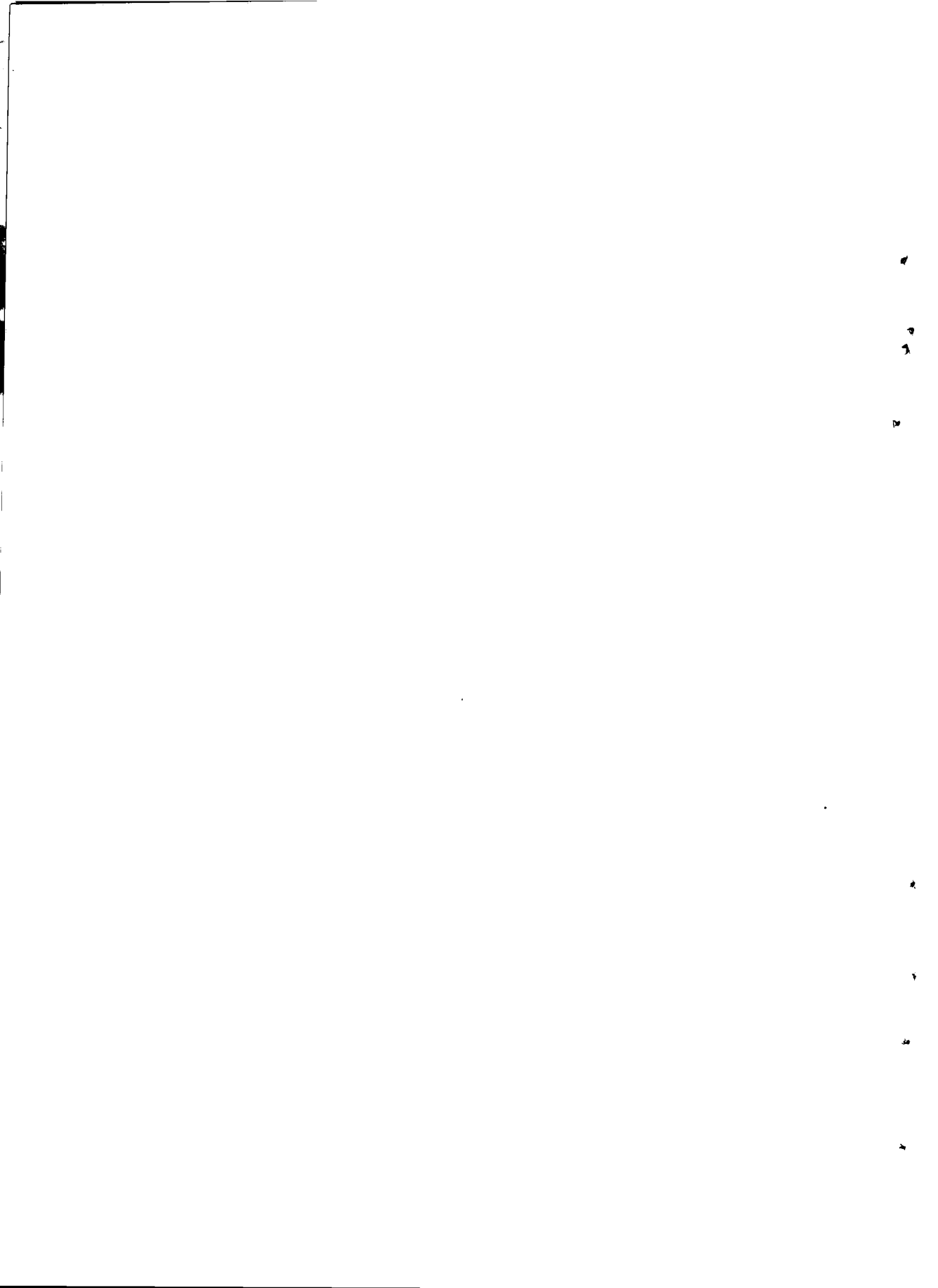


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**PART II**

**MAINTAINING THE  
GROWTH MOMENTUM**

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*Then let man look  
At his Food  
(And how We provide it)  
For that We pour forth  
Water in abundance,  
And We split the earth  
In fragments,  
And produce therein Corn,  
And Grapes and nutritious Plants,  
And Olives and Dates,  
And enclosed Gardens,  
Dense with lofty trees,  
And Fruits and Fodder,  
For use and convenience  
To you and your cattle.*

*Al-Abasa  
(LXXX-24 to 32)*

## CHAPTER 8

### AGRICULTURE : FROM SELF-SUFFICIENCY TO EXPORT

 AGRICULTURE is the largest single sector of the economy accounting for 29 per cent of the GDP. It employs 55 per cent of the labour force and its share of export earning amounts to 70 per cent, including processed agricultural exports. The share of agriculture in the GDP has declined over the years, representing high growth rate in industry and infrastructure. However, agriculture itself has maintained a steady pace of expansion—over 4 per cent per annum throughout the period since the advent of the sixties. This places Pakistan in a select group of developing countries which have succeeded in inducing and sustaining high agricultural growth.

2. Over the last two decades, agriculture in Pakistan has advanced rapidly. The strategy in the sixties was directed mainly towards achieving self-sufficiency in agricultural products through the expanded use of

subsidised inputs, including irrigation, and the adoption of improved varieties; during the later part of the seventies and early eighties, the success resulted largely from price support policies and the additional water which became available from Tarbela. However, it must be recognised that beneficial interaction between inputs and incentives, while not yet exhausted, does have technical and economic limitations so that future development strategy must see another shift of emphasis. This improvement will rely heavily on the adoption of suitable policy packages, diversification of crops, strengthening of the supporting institutional framework for agriculture by providing rural roads and electricity and structural adjustments in pattern of production and distribution. Moreover, since the opportunity for horizontal expansion in production by extending the area under the principal crops is limited, the targets of higher production will be achieved mainly by vertical improvement. This should result from the adoption of better agronomic practices and modernization of agriculture within economic and technical constraints. The heart of this strategy will be increasing the productivity of small farmer and supporting this with modernised marketing and agro-services. In this way agriculture will be able to move from the state of self-sufficiency to one where exports can be expanded on a competitive basis. Moreover, a self-sustaining growth should be achieved while curtailing subsidies. Government support should shift increasingly to those crops which are currently less important in size and require effective stimulant from Government policy and action achieving sizeable expansion in production.

### **Fifth Plan Review**

3. Agricultural growth rate is estimated at roughly 4.4 per cent per annum for the Fifth Plan period against the Plan target of 6 per cent. There was an impressive growth recorded in the four major crops *viz.*, wheat, rice, sugarcane and cotton, accompanied by the beginning of a rapid growth in the relatively small poultry sector and selected items in the fruits and vegetable crops. Roughly 80 per cent of the major crop targets for incremental production envisaged in the Fifth Plan were actually realised according to published data. However the realization of the goal of wheat self-sufficiency and an uncomfortably large surplus in sugar suggest that the actual growth may have been even higher. Difficulty was, however, experienced in extending the dynamics of agricultural change to what are regarded as minor crops, notably pulses and traditional oilseed crops. Shortfalls were also experienced in the livestock (other than poultry) and fishery sectors.

4. The complete picture regarding crop production in the Fifth Plan is presented in the following table :

TABLE 1

*Crop Production Performance during Fifth Plan*

	Achievements			Fifth Plan Targets 1982-83	Additional Output in Fifth Plan		% age of additional output realised
	1977-78 Actual	1981-82 Actual	1982-83 Actual <sup>1</sup>		Envi-saged <sup>3</sup>	Realised	
-----Million tonnes-----							
GRAINS	12.86	16.16	17.39	19.02	5.70	4.53	79
Wheat	8.37	11.14	12.34	13.01	4.16	3.97	95
Rice <sup>2</sup>	2.95	3.43	3.44	3.96	1.01	0.49	48
Maize	0.82	0.93	1.01	1.22	0.41	0.19	46
Others	0.72	0.66	0.60	0.83	0.12	(-)0.12	(-)100
CASH CROPS	30.66	37.33	33.35	35.74	6.70	2.69	40
Cotton (lint)	0.58	0.75	0.82	0.89	0.30	0.24	80
Sugarcane	30.08	36.58	32.53	34.85	6.40	2.45	38
OILSEEDS	1.48	1.86	2.08	2.51	0.94	0.60	64
Cotton Seed	1.16	1.50	1.64	1.78	0.60	0.48	80
Traditional oilseeds	0.32	0.34	0.42	0.54	0.16	0.10	63
Non-traditional oilseeds	Neg.	0.02	0.02	0.19	0.18	0.02	11
PULSES	0.81	0.48	0.71	1.14	0.30	(-)0.10	(-)33
Gram	0.61	0.29	0.50	0.84	0.18	(-)0.11	(-)61
Others	0.20	0.19	0.21	0.30	0.12	0.01	8
VEGETABLES AND SPICES	2.21	2.67	2.73	3.38	0.98	0.52	53
Onion	0.33	0.45	0.48	0.52	0.19	0.15	79
Potatoes	0.29	0.48	0.52	0.70	0.31	0.23	74
Others	1.59	1.74	1.73	2.16	0.48	0.14	29
FRUITS	2.09	2.78	2.68	2.98	0.73	0.59	81

<sup>1</sup> Actual or provisional where-actuals have not been notified.

<sup>2</sup> Rice data is combined for both IRRI and Basmati. During the Fifth Plan Basmati production increased more than proportionately. With a proper weightage given to the Basmati rice, overall rice production was close to the Plan target.

<sup>3</sup> Difference between the Fifth Plan targets for 1982-83 and the bench-marks.

5. The limited shortfall in the production of crops from the Plan targets which were fixed in the light of maximum range of possibilities, perceived at the time of the formulation of the Fifth Plan, arises from a number of factors. Most important among these was the increase in world energy prices which correspondingly affected international fertilizer prices.

Even with the attempt to cushion the impact of this factor on domestic fertilizer prices, and the effort to raise output prices, fertilizer consumption increased at a slower pace than visualized in the Plan. World recession was directly responsible for affecting the incentives for export crops notably cotton and rice where international prices had moved by the end of the Plan period below domestic support prices. Difficulties were experienced in disposing off exportable surplus even with the realised growth in output. A limited availability of improved seed, particularly of high yielding varieties, arising from the delay in implementing the IBRD assisted seed industry projects in the Punjab and Sind, was the most important element.

### **Sixth Plan Objectives and Strategy**

6. The primary goal of the Sixth Plan in the agricultural field would be to ensure that the growth impulses in this primary sector are institutionalised. This would require considerable investment in the supporting services and setting up organizations and arrangements which would ensure an effective linkage of domestic agriculture with the demand for high-value agricultural produce in the expanding world market.

7. The strategy in the agricultural sector may be conceived as follows :

- (i) The growth elements which have produced significant results during the Fifth Plan need to be carried further notably the combination of modern inputs (chemical fertilizers, pesticides) with improved seed and adequate availability of agricultural credit. This would involve both spreading of use of the modern technology on the remaining farms and moving towards optimum combination of various inputs.
- (ii) For improvement in the use and application of water, farmers have to be organized, trained and encouraged to utilise irrigation water in the most effective manner. The limited additions to irrigation water during the Sixth Plan would need to be supplemented by considerable improvement in the on-farm water management.
- (iii) Farm mechanization should emerge as a major new growth element during the Sixth Plan period. Only large tractors were used in relatively limited numbers so far. The opening

up of the import of small tractors and small farm machinery would provide a new basis for intensive farming on medium and small farms.

- (iv) Extension service would be modernized and its sources would be diversified, so that a swift and effective communication of new ideas, techniques and research is established with the farmer in the field. Improvement of traditional extension service has been under way, though still at a slow pace. New approaches would be experimented which comprise mobility and relatively high level of operational personnel employed in selected areas and for special tasks. This would be combined with the extension service to be provided by the private sector involved in marketing inputs or seeking to obtain the produce as raw material for processing and marketing at home and abroad.
- (v) Diversification of agriculture would be achieved by extending system of support prices to high value new crops. Other measures, like crop/cattle insurance and innovative agricultural loan programmes, such as, supervised credit, group loans etc., would also be encouraged to promote investment in the new technologies.
- (vi) Main focus of agricultural development strategy would be the small and medium farmers. Such farmers constitute the majority of farms. The objective is to devise a system to reach such farmers with a special package of inputs and credit combined with essential social services. Their ability to attain higher productivity with the help of access to inputs and credit would ensure a significant change in the socio-economic relations in the rural society.
- (vii) Special emphasis will be placed on the development of *barani* (rainfed) areas. Pre-ponderance of irrigated agriculture in Pakistan has resulted in relative neglect of these areas in the past which represent fairly large pockets of rural poverty. A project approach to these areas, with the focussed and co-ordinated efforts of all the related departments, has been developed to bring about an early change in the conditions in these depressed areas.

- (viii) Agriculture will be developed during the Sixth Plan as an export based industry. Pakistan has only a limited experience of agricultural exports mainly with cotton developed originally as an export crop. Rice emerged from a largely domestic crop to quality as an export crop during the seventies. Future growth in agriculture would mainly be for the export market. This would involve emergence of sizeable wheat surplus as an added insurance for food self-sufficiency and experimenting with a large number of high-value crops mainly for export markets. Not all of these can be identified in advance. The essential elements are the linkage of domestic agriculture with the world markets, cost-effectiveness, efficiency of production, concern for quality, arrangements for grading and a high degree of flexibility and responsiveness to the market signals from abroad. Some of these exports would trigger investment in food processing and other agro-based industries both for the domestic market and exports.
- (ix) For the domestic market, major emphasis will be on the rapid expansion of domestic oilseeds and protein-based crops for both human consumption and animal feed. A major objective of the Plan is to freeze the present size of edible oil deficit. Introduction of soyabean crop offers the most promising potential for this purpose. This would also provide protein for animal feed, encouraging further efficient growth of poultry and livestock.
- (x) The Plan includes substantial programmes for exploiting forests and the vast fishery potential within the bounds of sensible economic, technical and ecological constraints.

### **Crop Production Targets**

8. The crop production targets for the Plan are significantly related to the water availability and additional area expected to be brought under cultivation during the next five years. As explained in the Chapter on Water Resources, the water programme is designed to provide an additional 11.28 million acre feet (MAF) of additional irrigation water at the farm gate. This would provide 1.31 million hectares additional irrigated cropped area during the Sixth Plan period—from a level of 14.64 million hectares in 1982-83 to 15.95 million hectares in 1987-88. There is little likelihood of any further



increase in the *barani* area from the level of 5 million hectares already achieved. The total cropped area is thus expected to increase by only 7 per cent during the next five years. This compares with 11 per cent increase in the cropped acreage during the Fifth Plan period.

9. With relatively small additional acreage under cultivation, the future strategy would focus on increasing productivity and crop yields through balanced and timely application of inputs, a measure of control on field losses and use of improved technology.

10. The additional area expected to be brought under cultivation would be utilised for oilseeds and the fruit and vegetable crops. The change in the cropping pattern expected to be brought about during the next five years is indicated in the table below :

TABLE 2

*Change of Cropping Pattern during Sixth Plan*

	Percentage share in cropped area		Additional area (000 Hectares)	Percentage of additional area
	Benchmarks	1987-88		
Grains	55.79	54.67	498	38.0
Wheat	36.25	35.13	240	18.3
Rice	9.95	10.02	146	11.1
Other grains	9.59	9.52	112	8.6
Cotton	11.51	10.78	—	—
Oilseeds				excluding
Cotton seed	2.85	4.56	393	30.0
Pulses	7.38	7.33	86	6.6
Vegetables, spices & fruits	2.68	3.69	248	18.9
Sugarcane	4.29	4.02	—	—
Others including fodder	15.50	14.95	85	6.5
Total :	100.00	100.00	1310	100.0

11. No mechanism for direct intervention exists for enforcing any particular cropping pattern. The above represents a desirable pattern which would need to be brought about through suitable policy measures. The

efficacy of the required measures has already been well tested. These include the provision of assistance to the farmer on support prices; agricultural services including credit; and improved marketing arrangements. These will be extended now to include new crops with the emphasis being placed on exports, and import substitution.

12. The projected growth in agriculture will be around 6 per cent per annum on the basis of a most favourable combination of inputs and environment, which may not materialise in the same manner as visualised. Having regard to the past experience, it will, therefore, be prudent to assume a growth rate of 5 per cent per annum for agriculture sector for national accounts purposes.

13. The crop production targets for 1987-88, the terminal year of the Sixth Plan, take account of the additional production expected from programmes aimed at providing additional inputs of water, fertilizer, improved seeds, plants protection measures, and better farm management practices, promoted by more intensive and improved transfer of technology. These have been related to benchmark figures which have been worked out to represent more normal or firm output figures at the beginning of the Plan. These are different from the actuals for 1982-83 to take into account fluctuations on account of weather and other factors. The estimated actuals for 1982-83 are separately indicated.

TABLE 3

*Crop Production Targets*

	Computed Benchmarks	Estimate 1982-83	Targets* 1987-88	Percentage Increase over Benchmarks <sup>1</sup>	
				Overall	Annual
-----Million tonnes-----					
GRAINS	16.72	(17.39)	21.80	30	5.5
Wheat	11.80	(12.34)	15.50	31	5.6
Rice	3.31	(3.44)	4.20	27	4.9
Maize	0.97	(1.01)	1.38	43	7.3
Others	0.64	(0.60)	0.72	12	2.4

<sup>1</sup> Discrepancies may occur as a result of rounding.

\*The crop targets used here indicate maximum technological possibilities. Value-added in agriculture for GDP Computation is, however, based on more conservative estimates in certain cases.

	Computed Benchmarks	Estimate 1982-83	Targets* 1987-88	Percentage Increase over Benchmarks <sup>1</sup>	
				Overall	Annual
<b>CASH CROPS</b>	35.89	(33.42)	42.07	17	3.2
Cotton (lint)	0.82	(0.82)	1.03	26	4.7
(Million bales of 375 lbs)	(4.83)	(4.83)	6.07		
Sugarcane	35.00	(32.53)	40.94	17	3.2
Tobacco	0.07	(0.07)	0.10	47	8.0
<b>OILSEEDS</b>	2.00	(2.08)	2.86	42	7.3
Cotton seed	1.64	(1.64)	2.07	26	4.7
Traditional	0.33	(0.42)	0.44	42	5.6
Non-traditional	0.03	(0.02)	0.35	1029	64.4
<b>PULSES</b>	0.70	(0.71)	0.79	15	2.8
Gram	0.50	(0.50)	0.58	18	3.3
Others	0.20	(0.21)	0.21	7	1.4
<b>VEGETABLES AND SPICES</b>	2.61	(2.73)	5.11	96	14.4
Onion	0.45	(0.48)	0.80	77	12.1
Potatoes	0.46	(0.52)	0.85	85	13.1
Others	1.70	(1.73)	3.46	104	15.3
<b>FRUITS</b>	2.20	(2.68)	3.59	63	10.2

14. The above targets represent an anticipated slow-down in the growth rates recently experienced in wheat, sugarcane, rice and cotton crops where surpluses have already emerged. Major acceleration is being attempted in the production of oilseeds, vegetables and fruit crops.

15. Calculation of these targets is based on the adoption to an increasing extent of an integrated package of inputs and services. It is very difficult to separate the contribution to be made by individual inputs. However, certain measures inevitably must contribute a larger proportion of the benefits than others, depending on the degree to which the use of such inputs at the initial stage falls short of optimal levels. In the following table the estimated contribution, expressed in percentage, to the anticipated increase in output attributable to the various physical inputs, is presented. This indicates the relative importance accorded to them in the compilation

of the Plan (*See* para 16 below also). The table below summarises contribution of various inputs in increasing output in the major crops :

TABLE 4

*Role of Farm Inputs in Increased Output*

Inputs/Factors	Wheat	Rice	Maiz	Sugarcane	Cotton	Average*
-----Per cent-----						
Area due to water	11	27	15	—	—	16
Fertilizer	61 <sup>5c</sup>	19	68	56	69	48
Plant Protection	—	14	4	18	17	7
Improved seed	2	5	3	—	6	3
Transfer of Technology :						
(a) Shift of area to improved varieties	16	17	—	—	—	16
(b) Cultural practices	10	18	10	26	8	10
Total :	100	100	100	100	100	100

\*The average is weighted according to additional area estimated at 240,000 ha. for wheat, 146,000 ha. for rice, 48,000 ha. for maize, and *Nil* for sugarcane and cotton.

16. The above numbers do not fully take into account the interactive effect of inputs and probably attribute an unduly large share of the productivity gain to the use of fertilizer which, in any case, has to be used in combination with other inputs and farm practices. Crop yields can be raised significantly through better extension of cultural practices. These include :

- (i) proper seed bed preparation;
- (ii) sowing of seed in the right quantity, at the right time, at the proper depth and in lines, to provide an optimum plant population;
- (iii) inter-cultural practices for control of weeds, proper aeration of the soil and breaking the crust so as to reduce water loss by capillary action; and
- (iv) timely harvesting to avoid field losses, etc.

however, the contribution of cultural practices has been taken at a modest level because effectiveness of extension services in this field is still far from satisfactory.

### Availability of Inputs

17. The strategic material inputs required to achieve the crop production targets are listed below :

TABLE 5  
*Crop Production Inputs : Benchmarks and Plan Targets*

Inputs	Unit	1982-83	1987-88 Target	Annual increase rate	
				Sixth Plan	Fifth Plan
Water availability	(MAF)	101.49	112.77	2.1	2.5
Fertilizer Off-take	(000 Nut. tonnes)	1,244	1,828	8.0	11.6
Seed distribution	(000 tonnes)	115	186	10.1	10.8
Plant Protection coverage	(000 hectares)	1,618	3,253	15.0	19.7
Mechanization	(000 tractors)	137	337	19.7	22.1

18. It must be emphasised that appropriate measures will also be taken to improve substantially the efficiency of use of these costly inputs.

19. *Fertilizer.*—Fertilizer distribution has been growing at a fairly rapid pace in Pakistan for the last two decades and its use has acquired fairly wide acceptance among the farmers. The average annual rate of growth in fertilizer consumption since 1960 has been 18 per cent. Average application per hectare has reached at 63 kg. by the end of the Fifth Plan.

20. The fertilizer consumption maintained an average growth rate of 11.9 per cent per annum for the five-year period (1978–1983), despite a considerable slow-down in the middle years of the Plan.

TABLE 6  
*Fertilizer Consumption during 1978–83*

Year	Fifth Plan Target	Actual Off-take	Per cent Achieve- ment of Target
	---000 nutrient tonnes---		%
1977-78	—	720	—
1978-79	780	880	113
1979-80	895	1,043	117
1980-81	1,030	1,079	105
1981-82	1,185	1,080	91
1982-83	1,360	1,244	91

21. The demand in fertilizer is influenced by a number of complex factors, including the basic relationship between the fertilizer prices and the prices of various crops for which the fertilizer has to be applied. In the earlier years before the achievement of domestic self-sufficiency in nitrogenous fertilizer, the logistic arrangements for import and distribution of the fertilizer played an important role. The water availability in the canals and the prospects of successful maturing of crops, in time, also determine the attitude of the farmer whether he would be willing to incur the expenditure on a costly input like fertilizer. In addition, the ease with which credit can be obtained for the purchase of fertilizers, in-roads made by the distribution system in reaching distant places, and the delayed process of adjustment of the farmer to even a balanced increase in the prices of the fertilizer and the crop, all determine the level of fertilizer used in any particular year. During the middle years of the Plan, the shock effect of the increase in fertilizer prices combined with the reduced availability of water in the irrigation system brought about a slow-down in the rate of increase in the fertilizer application. By the end of the Fifth Plan however, a trend growth rate in excess of 10 per cent per annum in the absorption of fertilizer had been resumed.

22. The relationship between the cost of fertilizer and the value of the increased output to be expected from its use is the central economic relationship which determines the fertilizer use on the farms. This has two elements, namely (i) the crop response ratio to fertilizer use, and (ii) fertilizer-crop price ratio. The combination of these two determines the financial incentives for fertilizer use that are particularly important for small scale farmers, growing low value foodgrain crops.

23. Pakistan has maintained the cost of fertilizers at a low level in the past so as to encourage even the smallest farmers to use them. While other complementary inputs have not been neglected, a greater measure of encouragement may have to shift to them during the Plan period. It is to be anticipated in any case that the yield trend will improve as the contribution from the improved package of inputs takes effect and output prices remain favourable. Under these circumstances an increase to a more realistic fertilizer cost to the farmer or an adjustment to foster the use of compound fertilizers can be readily absorbed. While the Sixth Plan will see great emphasis still placed on the expansion of fertilizer use, the whole dynamic situation will be kept under constant review and adjustments to favour one input on another may be adopted as necessary in the national interest.

24. Consumption of fertilizer is expected to increase from the estimated level of 1.24 million nutrient tonnes in 1982-83 to 1.83 million nutrient tonnes in 1987-88. This represents an increase of 47 per cent over the five years or an annual compound growth rate of 8 per cent. The projected rate of growth in the fertilizer consumption is somewhat lower than that actually recorded in the Fifth Plan because of the large base that has already been achieved. Over the Fifth Plan period, the consumption of fertilizer increased from 46 kg. per cropped hectare to 63 kg. and this is expected to increase by a higher margin (to 87 kg.) by end of the Sixth Plan. The following table shows the situation during 1980-81 (the latest year for which comparative data were available) in a number of developing and developed countries. It shows that Pakistan has still a long way to go (of Egypt where yields and fertilizer levels are much higher) but suggests too that the increasing attention being paid to complementary inputs as justified (of India where yields are comparable but fertilizer inputs are lower and better balanced).

TABLE 7

*Fertilizer Use*

Country	N	P	K	Total	Wheat yield/ m.t./ha
	-----kg/ha-----				
Pakistan	39.70	9.30	—	49.50	1.6
India	20.80	6.40	3.60	30.90	1.6
Iran	0.02	0.02	—	0.04	1.1
Egypt	194.00	35.70	2.80	232.50	3.2
UK	177.24	57.74	58.60	293.60	5.7
Netherlands	561.00	96.40	131.24	788.62	6.7

Source : FAO Fertilizer and Production Year books 1981.

N.B. The data are not strictly comparable since fertilizer use applies to all crops, and yield only to wheat, but in each country the production of wheat under irrigation or high rain-fall is a substantial component of the national crop plan so that the comparison is indicative.

25. The projections for minimum fertilizer requirements have been made on the basis of the physical targets of output and an anticipated improvement in the grain-nutrient ratio. As discussed later, it is important that the fertilizer should be used more efficiently and its productivity should be higher than has been achieved in the past. The projections thus represent the minimum quantity of fertilizer which must be made available. However, it would be necessary to keep the situation under review. If the demand continues to rise faster, *i.e.* at 10 per cent or more per annum rather than 8 per cent assumed in these projections, supply arrangements should need to be modified. Fortunately this would not pose a significant problem in view of the surplus of domestic fertilizer production (urea) available in the early years of the Plan period. However, it would be essential to persist with the efforts to improve the efficiency of the use of fertilizer. It is obvious that at 10 per cent per annum growth in fertilizer use, agricultural output would exceed the target set in the Sixth Plan, if this is accompanied by an improvement in grain-nutrient ratio as visualised in the Plan.

26. From the foregoing discussion it is evident that use of chemical fertilizer has become fairly wide-spread. Therefore, subsidising fertilizer prices for promoting its use is no longer necessary. It has been explained that keeping fertilizer prices at depressed level is responsible for its in-efficient use (low crop response ratio) and neglect of other important inputs and management measures. Moreover, the 1980 National Agricultural Policy aims at rationalising crop input-output prices. Therefore, with the present policy of taking support prices of the important crops close to their international/border prices, it has become imperative to eliminate fertilizer subsidy. Even in its present form the subsidy on fertilizer in effect acts mainly as subsidy to the industrial sector for build-up stocks. In view of these considerations, it has been decided to eliminate subsidy in fertilizer prices completely by June, 1985. Fertilizer prices will thus be adjusted gradually over this period in such a manner that total subsidy on this account remains within the Plan allocation of Rs. 3 billion.

27. The fertilizer response ratios for major crops adopted for working out production targets for the Fifth and the Sixth Plans are given



below. These ratios, though not universally applicable, are the result of a well established formulation and are generally agreed amongst the experts :

TABLE 8

*Fertilizer Response Ratios for Major Crops*

Crops	Fifth Plan	Sixth Plan
Wheat		
Rice	1:7	1:8
Maize	1:7	1:8
Sugarcane	1:7	1:8
Cotton (lint)	1:95	1:100
Oilseed crops	1:1.5	1:2
Fodder	1:4	1:10
Vegetables including Onion and Potato	—	1:110
Tobacco	—	1:30
Fruits	—	1:10
Pulses	—	1:30
	—	1:8

28. Some of our soils are saline sodic and gypsum (as soil amending agent) is used only on a nominal scale. A strategy for the use of gypsum on such soils has already been developed and its use will be promoted in the selected project areas. In order to improve the physical and biological conditions of the soils, it is necessary to increase the organic matter. This can be done in a number of ways and farmers must be taught how these measures will be promoted through suitable programmes.

29. For proper health of the soil, it is necessary to maintain an appropriate balance between nitrogen and other nutrients in the soil. The N : P ratio stood at 3.7 : 1 during 1981-81 and was improved to 3.6 : 1 in 1982-83. This ratio will be further improved to 2.9 : 1 by 1987-88. Efforts will, however, continue to achieve the desirable ratio of 2 : 1 and, depending on the success of these efforts, the required availabilities in the market will be suitably adjusted. Promotional programmes for encouraging balanced fertilizer use will be adequately supported. In addition, the use of other nutrients like K, Zn, etc. will be promoted wherever necessary to ensure the effective use of the fertilizer input.

30. The fertilizer programme is based on the expectation that with the improved ratio between various fertilizers, in conjunction with more balancing application of other fertilizer response ratio in terms of the physical output would increase. The response ratios in other countries which achieved high agricultural growth has been in excess of 1 : 10. In the Fifth Plan, with the then depressed agricultural picture, a modest response ratio of 1 : 7 was adopted. Over the years, studies conducted with reference to Pakistan experience have shown that the ratio of production response to fertilizer has improved. For the Sixth Plan, a response ratio of 1 : 8 has been adopted for the major food-grains which takes into account the limitations within which Pakistan agriculture has to function.

31. The emphasis during the Plan period would be on improving the efficiency of the fertilizer use by various devices.

32. The use of fertilizer elements in the right proportion and a suitable method of application are crucial in increasing the efficiency of fertilizer with a view to getting higher net returns. Vigorous extension efforts are required to make the farmers realise the need to use fertilizer in the balanced doses for achieving higher grain-nutrient ratios. For promotion of fertilizer use during the Sixth Plan, the following measures will be pursued vigorously :

- (i) Information will be made available to the extension workers on different aspects of fertilizer use.
- (ii) Soil testing laboratories established at district/tehsil level will be made effective in providing soil test advice for fertilizer use to the farmers and with this end in view, suitable calibration studies relating to expected crop yields to fertilizer application rates and soil test values, particularly of phosphates, will be developed.
- (iii) Encouraging setting-up of fertilizer mixing plants for producing compound fertilizers according to the needs of the corps.
- (iv) Training programmes for the extension workers in fertilizer use will be intensified.
- (v) Improved flow of credit will be ensured to take account of increase in fertilizer prices.

- (vi) Service cooperatives will be promoted to take the fertilizer to the door-steps of the farmers in remote areas.
- (vii) Marketing infrastructure will be improved to sell fertilizer in balance proportions and in currently remote and inaccessible areas.

33. *Improved Seed.*—The World Bank-aided seed projects mainly for wheat and cotton, have been delayed to start during 1983-84. The expenditure in the Sixth Plan will, therefore, be adjusted to the level where it can be utilized successfully. It is expected that there will be an advance from a total of 115.1 thousand tonnes of seed of all types (mainly wheat and cotton) in 1982-83 to 185.6 thousand tonnes in 1987-88.

34. This will give a total coverage of 71 per cent for all seeds in Sind and the Punjab. Alternative local arrangements will be made in Baluchistan and NWFP till such time the private sector does not attain the capability for meeting full improved seed requirements. NWFP has already started a seed project which visualises provision of only small mobile seed processing plants and other farm machinery for setting-up an improved seed production system. Similarly, the seed quality control services will be strengthened.

35. The Seed Corporations established in the Punjab and Sind will be guided by Seed Councils at Federal and Provincial level. Rapid expansion in production of oilseeds will be handled by the Ghee Corporation while import of high quality varieties of vegetable seeds, well known to export markets, will be necessary until local production can be expanded. Seed subsidies will be kept under review.

36. *Mechanisation.*—The quantum jump envisaged during the Sixth Plan in the Agriculture sector would not be possible without large scale modernisation and mechanisation of the agriculture sector. It is obvious that we have to take measures to shift, as expeditiously as possible, from bullock-based farming to modern tractor-based farming. For this purpose, large scale induction of medium size (45 H.P.) and small size (below 30 H.P.) tractors will be encouraged and it is envisaged that 50 thousand additional tractors per annum will be made available through import and gradually through domestic manufacture for which 5 plants for medium size tractors have already been sanctioned, and 2 plants for small tractors are proposed to be set up. This would bring the total fleet of operational tractors to 337 thousand by the end of the Sixth Plan. The credit for this expansion will be provided through the cooperatives and the Agricultural Development Bank.

37. While increasing mechanisation conjures the idea of creating labour surpluses, in practice this is not necessarily so. The speedy cultivation and crop sowing made possible by tractors can in fact intensify production and thus encourage to increase its participation in this development. Custom hire of labour from the farms to the towns and overseas has eliminated any semblance of controversy, and increased mechanisation has become a necessity both to intensify production and increase the speed of operation : in some areas for example harvesting of the wheat crop formerly done by hand may be delayed and the crop damaged by rain; combined harvesters are in demand to alleviate the problem. Therefore mechanisation, other than tractors, such as combine harvesters, reapers, threshers, transplanters, etc. will also be encouraged. It is also necessary that wide-scale induction of a variety of tractor implements (in addition to the line-cultivator) should be promoted.

38. Mobile and stationary repair facilities, particularly in rural areas and *mandi* towns, are required in larger numbers and the private sector will be encouraged to increase its participation in this development. Custom hire of farm machinery of all types would also be encouraged.

39. *Credit*.—Credit is a vital agricultural input requirement. Its importance has further increased by the fact that improved varieties of crops require more water, better seed, high doses of fertilizer, and effective plant protection measures. In addition, credit is required for adoption of technological developments and provision of other long term investments aimed at increasing productivity of the farm and/or cropping intensity. Therefore, adequate availability of credit to farmers for agricultural inputs (production) and investments (development) will be given requisite attention. Present policy of channelising agricultural production credit mainly through the commercial banks and the Federal Bank for Cooperatives, and the agricultural development credit through the Agricultural Development Bank of Pakistan, will continue. Procedures for obtaining loans has been simplified and will be kept under watch through the institutional mechanism of the agricultural committees at the Federal, Provincial and the District levels. Committees already working at these levels will be suitably strengthened in order to enable them to monitor and analyse the agricultural credit disbursement position effectively and initiating prompt remedial measures wherever needed. Banks will be encouraged to promote innovative agricultural credit schemes, such as, supervised credit, group loans, etc., with a view to extending the credit net-work over a much larger section of the farming community, particularly among those holding less than economic

holding, and ensuring its proper use and recovery. Total number of the farmers covered by the institutional credit should be doubled over the Sixth Plan Period from its existing level of about 0.5 million to 1.0 million. This would be a reasonable target considering that at present the coverage is only about 12 per cent of the total number of private farms.

40. The following targets are visualised for the agricultural credit for the Sixth Plan period.

TABLE 9

*Institutional Agricultural Credit Programme*

(Million Rupees)

Year	Production	Develop- ment	Total
1982-83	3,960	2,356	6,316*
1983-84	5,990	2,975	8,965
1984-85	6,800	3,900	10,700
1985-86	7,800	4,900	12,700
1986-87	8,800	6,300	15,100
1987-88	10,000	8,000	18,000
Total : Sixth Plan	39,390	26,075	65,465

\*Estimated gross disbursement.

41. To encourage investment and adoption of new technology feasibility for introduction of crop/cattle insurance will be considered on priority basis alongwith other measures proposed for the credit programme.

**Agricultural Marketing**

42. An efficient marketing system is a pre-requisite both to increase agricultural production and meet the requirements of consumers. Among the marketing components to which farmers are quick to respond to are prices they get for their crops and the timely procurement of the produce. Also the produce should reach consuming centres at the lowest cost and of the desired quantity and quality at a time and price reasonable to consumers. The elements of a marketing system that require priority attention include : pricing; procurement; transport; storage and/or processing; product grading; quality control and merchandising and especially management at the different levels of the marketing channel.

43. Government has already created a climate conducive to the improvement of the marketing system, particularly of prime commodities. Price support, which are reviewed periodically according to economic conditions, are extended to wheat, rice, sugarcane, cotton, onion, potatoes, and non-traditional oilseeds. Such a measure not only provides an incentive to growers, but also stabilizes prices in the interest of the consuming public.

44. Further emphasis will be given during the Sixth Plan period to establish quality standards of more commodities particularly those with export potential. Mechanism for the enforcement of these quality standards should be strengthened. The main thrust of the Sixth Plan, with wheat also to enter into the export market, will be achieve the export objectives for vegetables, fruits, poultry, eggs and meat. Institutional innovations and improvement in the marketing system as well as supporting infrastructure will be undertaken in order to realise these objectives.

45. Alongwith institutional developments, the required infrastructure vital to an efficient marketing system will be given appropriate attention. Although the construction of farm-to-market roads was given priority in the Fifth Plan period, many inadequacies in the road net work system still exist especially in more remote regions. Futhermore, the conditions and state of repair of rural roads is far from satisfactory. In this regard, a farm-to-market road construction as well as repair programme will receive attention as elaborated else-where in the relevant chapter.

46. Crucial to an effective marketing system is the problems of storage not only of capacity but also of management. Lack of storage capacity could greatly slow down buying and procurement activities and consequently the storage problem will be shifted to the farmers where the majority do not have the space to store the produce in their homes and is thus left in the field or improperly stored, subjecting the produce to deterioration and thereby causing reduction in the value of the product. Additionally, improper storage in ware houses could result in losses in quality and value. The Government and the private sector have taken steps to provide some storage capacity. However, with the increase in production envisioned in the Sixth Plan, more space is required. The public sector investment in storage will be limited to wheat, rice, and cotton commodities, while the requirements of the other commodities will be met by the private sector through appropriate incentives and policy measures.

## Export of Agricultural Commodities : Import Substitution

47. *Exports : Promise, Prospects and Problems.*—With the projected growth in agriculture during the Sixth Plan, surpluses in agricultural commodities will emerge for which export markets have to be identified. A specially constituted Working Group on 'Agricultural Self-sufficiency and Exports' has estimated that Pakistan will have sizeable exportable surpluses of wheat, rice, sugar, fish and poultry. The same group has projected that the country's earnings through export of agricultural surpluses can be of the order of Rs. 30 billion by 1987-88. It estimates exportable surpluses of 2.5 million tonnes of wheat, 1.5 million tonnes of rice, \$ 300 million of poultry, live-stock and fisheries and \$ 7 million of fruits and vegetables by the end of the Sixth Plan period. Irrespective of the precise quantification, which must remain a matter of uncertainty at this stage, the size of agricultural exports will be large if the growth potential of Pakistan agriculture is realised in line with the Sixth Plan strategy.

48. To convert this exportable potential into physical exports, an institutional framework will be needed to complement the role of the three entities involved : farmers, government and the private enterprise. For this purpose, special commodity-wise Boards will need to be set up which bring together a specialist policy staff with private enterprise in the shape of corporate partnerships between local entrepreneurs and high technology foreign firms. There will also be a need to organize the farmers on a regional and commodity basis and establish their linkages with the appropriate National Commodity Boards for cereals, sugar, oilseeds, fruits and vegetables. These policy boards will have representation from farmers' associations, private business and trade, and government agencies will operate under the aegis of the government and will assist in promotional and policy matters. The boards will help formulate policies and regulations for grading, quality control and plant quarantine while establishing communication points where there can be a full interchange of ideas between interested parties. They will, however, not intervene in actual marketing which will be left entirely in private hands.

49. There will be need for a system of swift relay of information for policy review and adjustment in the light of trends in the international markets. It is important, while looking at the export potential, to recognise the complexity and uncertainties of trade in the primary commodities. Many developing countries, lured by apparently promising prospects, had come to grief by increasing disproportionately their export crops and then facing the

bleak realization of holding the stocks longer than they could afford. Pakistan which has the advantage of proximity to the Middle East, USSR and China would have to face competition from countries of high technology and those following agricultural export subsidies. It is important in this phase to develop a flexible response. Pakistan must develop an aggressive agricultural export policy which exploits its comparative high-value agricultural crops and advantage of easy access to neighbouring markets, while focussing on more processed exports rather than on primary products and judiciously using a blend of domestic private enterprise and foreign multinationals to develop new markets abroad and to benefit from rapidly changing technology in this field. It must also recognise that all exports are not desirable. Exports, where the cost per unit of foreign exchange is high in domestic resources, need to be discouraged. A continuous process of sifting and selection will be necessary.

50. In addition to establishing National Commodity Boards, other measures considered necessary for providing marketing conditions conducive to achievement of the production targets and export objectives are as follow:

- (i) Adoption of improved marketing and processing technology, preferably through collaboration between the local entrepreneurs (corporate sector/private enterprise/marketing co-operatives) and the reputed international firms.
- (ii) Setting-up of improved marketing institutions (market committees, trading/export houses, commodity stabilization funds, support prices cover, grading/quality standards, and institutions for implementing/over-seeing these functions, etc.) and provision of requisite infrastructure facilities, such as, grain silos, ware-houses, cold-storages, product quality testing laboratories, grading and primary processing plants, etc. etc.
- (iii) Streamlining transport systems and making special arrangement for handling, movement, and speedy clearance of perishable agricultural commodities in transit.
- (iv) Preferential air-freight arrangement for promoting export of perishable products.
- (v) Promoting food processing industry through availability of cheap packing material and chemicals supported with other incentive package including tax concessions, import of machinery for modernization/BMR, credit, etc.



51. *Import Substitution.*—The other key aspect in the strategy for food self-sufficiency is the import substitution in the edible oil. In 1981-82, a total of 624 thousand tonnes of edible oil was imported against the total requirement of 766 thousand tonnes, involving an expenditure of Rs. 3449 million in 1981-82, being 47 per cent of the total amount spent on imports of food commodities. There seems to be no technical, ecological or economic reason why Pakistan should not meet its requirement of edible oil domestically.

52. In the Sixth Plan, a policy package will be evolved to ensure self-sufficiency in edible oils in the shortest possible time. Many studies have been carried out by the experts and the administrators by now which have come to the conclusion that it is within the domain of practicability to gradually reduce dependence on imports. The pivotal point of the strategy is that the incremental demand during the Plan period should be met from the additional domestic production. Of the eight edible oil crops, the most promising ones are sunflower and soyabean. The former has the advantage of yielding more oil per acre, produces two regular crops (spring and autumn) per year, and is comparatively less demanding in respect of soil and water requirements. On the other hand soyabean is a rich source of protein and has more diversified uses beside being an important source of oil. Its quality of nitrogen fixation makes it particularly valuable for increasing soil fertility. These two oilseed crops have the potential for becoming the major domestic oilseed sources. Safflower, which yields very high quality oil, can also be grown under special conditions, such as, on residual moisture after rice in non-perennial canal area in Sind and in gram tract in upper Punjab for decreasing blight hazard. Therefore, soyabean and sunflower will, through a crash programme, be developed into major domestic oilseed sources. This will be achieved through suitable price support policy and other comprehensive production promotion oriented measures.

53. Main policy measures and the structural changes sought in the Sixth Plan are composed of :

- (i) a crash programme for the increased output of edible oil seeds—with a heavy concentration on the spring soyabean crop and intensive use of the potentially vast area available in the districts of Multan, Sahiwal, Vehari, Rahim Yar Khan, Bahawalpur and Bahawalnagar in Punjab and the districts of Tharparkar, Sanghar and Nawabshah in Sind Province. In addition, during the Kharif season, soyabean can be successfully grown in the NWFP.

- (ii) promoting cultivation of sunflower through a crash programme in all provinces as spring and/or autumn crop, preferably as a catch crop, with a view to achieving twin objectives of increasing cropping intensity as well as oilseed production ; and
- (iii) developing sunflower crop as an important source for good quality edible oil with concentration of effort in those areas where it can come as a cash crop.

54. Further supporting measures include :

- (i) a newly organized Oilseed Development and Processing Corporation (ODPC) to replace the Ghee Corporation with its individual units to be merged in the parent company ;
- (ii) in this particular field, the Government would have to assume a major responsibility both for policy making and for the operation of the crash programme.

55. *Storage Facilities.*—The storage capacity constructed in the Fifth Plan of 1.90 million tonnes will be increased to 3.06 million tonnes, giving a total capacity of 7.30 million tonnes by 1987-88. Commodity-wise details are as under :

TABLE 10

*Commodity-wise Storage Capacity Proposed*

Commodities	(million tonnes)				
	Fifth Plan Targets	Fifth Plan Achievements	Total capacity available by 1982-83	Sixth Plan Targets	Total capacity available by 1987-88
Wheat	2.22	1.70	3.35	2.15	5.50
Rice	0.17	0.15	0.84	0.66	1.50
Cotton	0.07	0.05	0.05	0.25	0.30
Total	2.46	1.90	4.24	3.06	7.30

56. The storage design in future will ensure that the stocks could be held safely for longer periods, will be in conformity with international standards, and provide for bulk handling.

### **Crop Technology and its Transfer**

57. Measures will be taken to improve the two-way flow of information between research workers and farmers via the extension services. The private sector will be required to play an increasing role, particularly in the expansion of plant protection, fertilizer and mechanization activities. Research allocations, already exceeded in the Fifth Plan, will be again substantially increased and coordination and the establishment of new priorities will receive special attention.

58. Research will be even more closely related to the development programme priorities: thus, measures to support the oilseed expansion programme; intensification of production in barani areas; the ideal combination of inputs to meet technical and economic criteria; improvements in fodder production and, the identification of varieties of superior yielding and other qualities of all important crops will be given fresh impetus. To these ends, the Pakistan Agricultural Research Council will review present programmes and draw up a Perspective National Research Plan in which the expected shift in production policy will be reflected.

59. A remodelling of the extension services, which are at present very weak, will be required and experience gained with new approaches, especially from the IBRD supported T & V projects in Sind and the Punjab. These will be examined with a view to their expansion in areas where they have been found successful.

### **Small Farmers Development Strategy**

60. According to 1980 Agriculture Census, small farms with less than 5 hectares (about 12.5 acres) holding, constitute 75% (2990 million) of the total farms (4069 million) in the country although these contain only one-third (6.54 million ha.) of the total area (19.06 million) of private farms. Production problems of the small farmers, therefore, deserve special attention on social as well as economic grounds. Main constraints in this regard are lack of technology suited to small farm production needs, availability of inputs, and easy access to institutional credit. A five-point strategy has been

adopted for the Sixth Plan to assure that the small farmers would participate in the agricultural development of the country as a leading element. This consists of the following :

- (i) Increased availability of agricultural credit ;
- (ii) Provision of small tractors ;
- (iii) Improving rural services ;
- (iv) Special programme for barani areas ; and
- (v) Establishment of small agro-industries in the rural areas.

61. *Agricultural Credit.*—Firstly, adequate availability and easy access to the institutional credit, for production as well as capital investment requirements, are the most important measures for increasing productivity of the small farmers. Agricultural credit availability to small farmers has been improved considerably in recent years. In 1979-80 out of agricultural credit of Rs. 2.9 billion, Rs. 1.02 billion, or 35 per cent, was provided to small farmers. By 1982-83, total agricultural credit had increased to Rs. 6.3 billion, with share of the small farmers improving to Rs. 2.3 billion. The volume of credit to small farmers was more than doubled during the period with 15 per cent, or Rs. 435 million, being provided completely interest free.

62. During the Sixth Plan, the target is to raise the volume of agricultural credit by more than 185 per cent to Rs. 18 billion with the share of small farmers rising to 50 per cent. At Rs. 9 billion by 1987-88, it would involve a four-fold increase.

63. Procedure for obtaining agricultural loans has been made simple and will be kept under watch through institutional mechanism of the agricultural committees at the Federal, Provincial, and local levels. Loans upto Rs. 25,000 can now be obtained from the commercial banks on personal sureties alone. Loans to subsistence farmers (owning less than 12.5 acres of land) upto Rs. 6000 per annum have been made interest free innovative agricultural credit programmes such as, supervised credit, group loans, etc. will be encouraged with a view to reaching out to the small farmers.

64. *Small Farm Technology.*—Secondly, mechanization of the small farm operations is another important measure for increasing productivity as well as intensity of cultivation of farms. Import of tractors of smaller horse power (20–30 hp) range has already been allowed alongwith making arrangements for their progressive local manufacture, both in public as well as private sector. Bulk of the new addition of 2,50,000 tractors visualised for

the Sixth Plan period will be of small tractors (20–30 hp) suited to small farm operations. Agricultural Development Bank of Pakistan will act as the lead agency, with back-up support of Ministry of Food and Agriculture, for implementing small farm mechanisation programme. The programme will include, beside tractorization, promoting use of suitable implements and other machinery, such as, small irrigation pumps, threshers, planters, row cutters, etc.

65. *Rural Services.*—Thirdly the Sixth Plan lays great emphasis on improvement of rural services. Physical targets regarding farm to market roads, rural electrification, and health and education facilities, are elaborated elsewhere in the relevant chapters of the Plan. Extension of the outreach of social services to the rural areas would specially benefit the small farmer, who, at present, is particularly handicapped by not being able to have access to urban centres. In the agriculture sector, attention will be given to adequate availability of inputs and improvement of extension service. All public and private sector agencies engaged in distribution of agricultural inputs will be prompted, through various measures, to reach out to the *mandi* towns in rural areas in order to bring input within easy reach of the small farmers. In addition, programmes aiming at encouraging formation of viable cooperatives by the small farmers, for enabling them to interface more effectively with the public and private sector agencies for deriving maximum benefits for them, will be further improved and strengthened during the Sixth Plan period. The Training and Visit System of agricultural extension, which is particularly suited to reaching out to the small farmers, will be expanded during the Sixth Plan period in the light of the experience gained from implementation of the pilot projects in Punjab, Sind and NWFP during the Fifth Plan.

66. *Special Programme for Barani Areas.*—Fourthly, *barani* areas, where economic conditions are more adverse, and agriculture is prone to much higher risks than the irrigated areas, need special attention. For this purpose development of agricultural technologies and systems designed to minimising risks and optimising economic returns from the farming activities are of paramount importance. Productivity will be raised through intensified research on farming systems, range land development and its proper use, and adoption of modern technology; important components of which are :

- (i) increased use of fertilizers;
- (ii) improved tillage;
- (iii) soil and water conservation;

- (iv) improved varieties and livestock breeds;
- (v) appropriate farming systems (including livestock husbandry) conducive to more diversified intensive production;
- (vi) improved range management practices;
- (vii) improved livestock nutrition;
- (viii) proper mechanization; and
- (ix) proper weed and animal disease control.

Project area approach is being adopted and efforts of the various project agencies are being coordinated to produce the desired results.

67. *Small Agro-industries.*—Fifthly, establishment of small agro-industries in the rural areas will be promoted not only to use the raw material produced there but also to provide employment to the rural unemployed and under-employed people. This programme will be promoted through appropriate fiscal and other policy measures. Beside extension of the required infrastructure (roads, electricity, etc.) facilities, programmes aimed at promotion of handicrafts, sericulture, poultry and processing of fruits and vegetables in the rural areas will be given particular attention.

### Cooperatives

68. Cooperatives are recognised universally as the most effective institutions for meeting production inputs and marketing needs of the farming community. In Pakistan, where majority of the farmers and livestock owners are persons of small means, cooperatives have an important role to play. However, because of the peculiar historical experience in development of the cooperative movement, its role in taking care of the farmers' production and marketing problems has been rather limited. Many studies were conducted in the past for investigating factors responsible for such a situation. Federal Bank for Cooperatives, which under its charter, is charged with the responsibility for promotion of the cooperative movement in the country, has evolved a strategy, in the light of these studies, for remedying the constraints hindering full harnessing of the potential of cooperative institutions for enabling the farmers in general, and the small farmers/livestock owners in particular, to meet their needs through self-help and collective effort. Programme of action initiated in this regard is under various stages of implementation in the provinces which will be vigorously pursued through the implementation committees already constituted for this purpose in every province.

69. The following measures will receive high priority with a view to focussing attention on the most vital requirements :

- establishment of a Cooperative Investment and Management Development Cell (CIMDEC) in the Federal Bank for Cooperatives for rendering advisory and training services to the cooperative sector in organising and managing business (production input supply as well as produce marketing) and processing enterprises;
- streamlining of the cooperative training institutes for meeting training requirements qualitatively as well as quantitatively;
- enabling Provincial Cooperative banks to develop banker-customer relationship with the cooperative societies through appropriate adjustment in the loaning procedure;
- improving capabilities and efficiency of the Provincial Cooperative Departments with a view to affording effective regulatory control over, and ensuring proper functioning of the cooperative institutions;
- encouraging Provincial and Federal apex cooperative institutions (particularly Cooperative Unions) to render audit and inspection service to the primary and secondary level cooperative societies with a view to decreasing their dependence on cooperative departments for this purpose;
- encouraging establishment of viable secondary and apex level cooperative institutions, preferably organized on single purpose/commodity basis capable of rendering comprehensive services and support to the primary level cooperative societies organised on single or multi-purpose basis;
- making the primary cooperative societies at the village/union council level broad based with a view to making them viable and minimising influence of the big land-lords on their management (for this purpose desirability of increasing the minimum membership requirement for registration of cooperative societies, fixed more than fifty years ago, would also be examined together with formulation of model bye-laws for conducting business of the cooperatives);

- expeditious liquidation of dormant and non-viable cooperative societies in order to enable functionaries of the cooperative department to concentrate attention on the institutions which are in a position to render effective service to their members; and
- eliminating super-fluous control and day-to-day interference by the employees of the cooperative department in routine management decisions of the cooperative institutions.

### Forestry

70. It is estimated that forests cover 2.96 million hectares in Pakistan containing 119 m.cu.m. of wood as standing trees. Total timber production in the country from Government managed forests and private lands, attained the level of 1.12 m.cu.m. during 1981-82 whereas its demand during that year was estimated at 1.98 m.cu.m. leaving a shortfall of 0.86 m.cu.m. This demand was met partially through imports costing Rs. 1.0 billion during 1980-81 compared with Rs. 0.67 billion spent during 1978-79. The import bill for wood products was Rs. 0.60 billion during 1981-82. This decrease resulted mainly from increase in local production of paper. However, the paper industry in Pakistan is based mainly on agricultural crop residues (except 10-15% mix of long fiber pulp imported from abroad) and thus this decrease is not related to performance of the forestry sector. Moreover, as consequence of the very high price of timber in Pakistan, the construction industry is forced to use alternate material, such as, angle iron frames, for doors and windows.

71. From the annual timber off-take of 1.1 m.cu.m. only 0.18 m.cu.m. come from Government managed forests while the rest comes from private land. *Per capita* availability of timber in various countries is indicated below :

U.S.A.	1.60 cu.m
Japan	0.30 cu.m
Pakistan	0.013 cu.m

With rising income and increasing population, demand for timber is estimated to rise further. Reliable data for timber and firewood demand are wanting but rough estimates indicate that demand of timber is likely to exceed 2.52 c.cu.m. by 1987-88 inspite of extensive substitution by the alternate materials in construction, furniture, and industrial uses. Firewood



production from Government forests was estimated at 0.49 m.cu.m. during 1981-82 against an annual demand of 17.0 m.cu.m. the shortfall being met from farms and waste lands crop residues, dung and fossil fuels. The demand for fuelwood is expected to rise to 20.2 m.cu.m. by the end of the Sixth Plan. In view of the high price of oil, the fast depletion of known national resources of gas, and the need to save manure, the problem of growing adequate fuelwood has become of considerable importance.

72. The gap between production and demand is alarming and is widening further. However, per unit area production (productivity) of the existing forest, particularly coniferous forests in the northern parts of the country, is far below the optimum production potential of the soil and climate of these areas. Of 2.96 million hectares of state managed forests only 1.27 million hectares are covered by the management plans. Invariably, all these management plans are on low input-low output systems which completely ignore the production potential of the site and the species. The average annual per hectare yield for the total wooded forest area in Pakistan is 0.21 cu.m. as compared to 1.65 cu.m. in case of U.K. and 1.19 cu.m. for USA. The lower average annual yield in our case is generally ascribed to poor stocking of the forest areas which is not entirely true. Actually this is primarily due to very extensive and broad brush standards adopted for forest management on account of very poor technical and operational (financial as well personnel) status of the provincial forest departments. Growing of trees to very large sizes is no longer necessary on account of change of mode of log transport from floating through rivers to road transports, and availability of technology, such as pulp, veneer, plywood, chipboard, laminated board etc., which has permitted the use of smaller sizes of timber. Young trees invariably put on more vigorous growth than the old trees. Therefore, where wood is scarce it does not make economic sense to keep forest stands unharvested after the current annual growth and average annual growth equalize. Immediate replacement of such stands by a new seedling crop will maximise wood productivity of the existing area under forests. The production from the existing forests can, therefore, be increased manifold by shortening rotations of the forests.

73. The following measures will, therefore, be undertaken for development of forests and increasing wood production during the Sixth Plan period :

- shortening of rotations and consequential re-adjustment of the forest management systems of the existing forests with a view to increasing sustained annual yields upto the maximum

- production possibility level determined by the growth potential of the desirable forest species, soil, and climate;
- improvement of the techniques for raising nursery (including better seed sources), planting, protection from fire, insects, and diseases, cultural and thinning operations, etc., with a view to maximizing rate of growth of forest stands thereby maximising productivity of the forest land;
  - introduction and expeditious extension of the improved logging/forest harvesting systems for efficient utilization of the existing wood resources with minimal damage to the existing forest stands and the soil;
  - re-adjustment of the forest policies and procedures with a view to enlisting cooperation, and wherever required, effective participation of the local communities, in promoting improved/intensive forest management systems;
  - involvement of owners of the private forests, particularly in Hazara Division where management of even privately owned forest/waste-lands is vested in the Government, in management of their forests through appropriate institutional measures suited to the local socio-administrative environment, but designed to achieving maximum productivity of the land;
  - much bigger thrust on tree plantation of fast growing species on private farm lands, through motivation and involvement of the local communities, for meeting fuel/energy needs of the rural areas;
  - development of compact fuel-wood plantations, wherever opportunities for block plantations are available for supply of fuel-wood to towns;
  - continue development and harvesting of minor forest products and sericulture for creating gainful job opportunities near the forest areas for the local population in order to facilitate forest management;
  - strengthening forestry services and the forestry research and training institutions for meeting requirements of the energy plantation programme, intensive forest management systems,

improved forest harvesting/logging, better utilization of wood resources, and development support communication needs; and

- determining feasibility for establishment of a long fibre pulp mill to enable better utilization of the coniferous smallwood, promote forest management intensification programmes, and help substitute import of long-fibre pulp needed for sustaining the national paper industry.

This policy framework will be translated into operational measures through the medium of annual plans.

74. The following physical targets are envisaged for the Sixth Plan period :

TABLE 11

*Sixth Plan Targets in Forestry Sector*

	Unit	1982-83	Sixth Plan Targets	
			1987-88	Commulative
Wood Production (Govt. forests)				
Timber	'000' M <sup>3</sup>	200	497	1785
Fuelwood	'000' m <sup>3</sup>	480	1193	4285
Total :	'000' m <sup>3</sup>	680	1690	6070
Afforestation	(000) Hect	8.5	17.4	80
Distribution of plants	Million Plants	35.1	51.6	226
Liner Plantation	000 Av. Kms.	2.7	5.5	25.5
Nursery raising	Hect.	289	450	1928

### Livestock

75. The livestock sector in Pakistan constitutes about 28 per cent of GDP in agriculture, contributes 15.7 per cent to the total export earnings, and remains still, the principal source of motive power for land cultivation, levelling and rural transport. The increases in total production of livestock products, except poultry, over the past several years have resulted mainly from increase in livestock inventory rather than increase in production per animal. Increase in milk production has been below the growth in population

in recent years. Meat production has grown at a higher rate only because of goats. Beef production has grown at a negligible rate and is mainly a by-product.

76. In dairy production the present deficit is the result of transmission technology problems. The present milk production is 9.7 million tonnes which caters to 97 per cent of market consumption with imports accounting for the marginal 3 per cent but rising rapidly. Currently there is an upsurge of interest in milk processing, due mainly to incentives provided by the Government, and presently 20 milk processing plants, including three of the second generation, are operating with capacity to process over 500 thousand litres of milk daily. It is envisaged that during the Sixth Plan period, additional 15 milk plants, involving a total investment of approximately 2 billion rupees, will be established which will make the country self-sufficient in milk production. The milk processing industry is inducing more rapid growth of milk production in the rural areas by providing linkages to the various consuming centres. The increase would also be pushed by improved inputs, and services, such as, artificial insemination, disease cover, feeds and improved management. The milk production is estimated to increase at the rate of 6 per cent per annum.

77. Pakistan's livestock resources holds considerable potential for production increase. The potential for beef production increase is estimated to be 500 thousand tonnes of incremental carcass beef through raising and fattening surplus cattle/buffaloe calves, and aged buffaloes/cattles. The potential for mutton production increase is estimated at 50 thousand tonnes through fattening of lambs/kids for 75-120 days. Beef is a by-product of dairy production and draught power while mutton is produced through low technology usage of range lands and stubble grazing. The potential for incremental beef production from fattening of 3 million buffaloe male and surplus cattle calves, and 1.5 million aged and unproductive cattle/buffaloe will be exploited by encouraging feed lot operations and establishment of slaughter house complexes through appropriate incentive package including permission to export a sizable part of this production. The mutton production potential, will also be exploited by fattening of lambs/kids on feed lot to produce additional mutton. It is expected that such measures will generate a growth rate of 6 per cent per annum for beef and mutton production.

78. Poultry production has already become commercialised. Rapid development in this area has been possible because of many factors that have aided and encouraged its growth. The sector has shown a growth rate of 15

per cent per annum during the last decade. This has been an important factor in meeting the growing demand for meat in this country. At present the poultry industry growth appears to be constrained by two factors. First, it has not yet found linkage with the larger export market abroad. Secondly, the feed industry has not yet developed adequately to provide good quality feed at competitive prices. Both these aspects would receive attention in the Sixth Plan. With the solution of these problems in the Sixth Plan period, the growth rate is again expected to be about 15 per cent per annum. The rural poultry, which presently is producing much below its optimum level, will be developed through programmes involving cross breeding with improved breeds and better feeding practices, and disease control.

79. A conservative estimate indicates that the availability of livestock feed from green fodder, dry roughage, range land and agro-industrial by-products fall about one third short of meeting the recommended requirements. This is mainly because forage and fodder production methods continue to stick to traditional low output level technology. Industrial and agricultural wastes and by-products are not fully utilized in spite of the fact that knowledge about production of better forage and fodder crops and possibilities of using molasses, pith, bagasse, beet pulp, cottonseed hulls, fruit wastes, is available and can be used. In order to achieve stipulated growth rate in milk, meat and poultry production, it is necessary to promote feed and fodder industry. Therefore programmes aiming at promotion of better fodder crops, and recycling of industrial/agricultural wastes and by-products and poultry wastes for livestock feeding will be given special attention. Availability of oilseed meals in larger quantities, as a result of increased oilseed production programme will further improve the situation.

80. Range lands in Pakistan occupy 70 per cent of the land area, *i.e.*, 56 million hectare. The carrying capacity of these range lands have deteriorated over the years due to over grazing and lack of proper management. Attempts in the past at range land improvement, although limited in extent and difficult to implement on large scale due to financial constraints, have shown that production increase of about 150 per cent can be obtained if adequate range development measures and stocking according to carrying capacity are undertaken. However, these measures can be taken effectively only when the livestock owners are motivated to cooperate, an aspect which was not given enough attention in the past. Programmes for range land improvement (enforcing controlled grazing, stock culling, reseeding with improved varieties, flood water control/spreading, introducing drip/sprinkle irrigation system wherever possible, etc.) through effective involvement of livestock owners will be initiated during the Sixth Plan in order to remedy the short-comings of the past efforts.

81. Apart from a modern plant at Islamabad the slaughter houses are invariably lacking in reasonable facilities for hygienic and human slaughter and for adequate processing of by-products including hides and skin. The private sector has been reluctant to establish feed lot units or collaborate in bilateral ventures for increased production of quality meat and its processing, resulting mainly from lack of economic incentives. Realizing this the Government has allowed export of 50 per cent produce of such feed lot units/bilateral ventures to make them financially viable. The setting up of milk, meat and poultry processing plants and livestock feed mills will be encouraged to provide stability to the market of these commodities. Domestic price control on livestock products depresses production, thereby leading to inevitable shortages. The situation in this regard will be kept under careful watch in order not to adversely affect the results of the other proposed measures.

82. Providing adequate coverage against prevailing day-to-day or contagious/viral diseases is difficult to achieve, access facilities are poor, trained manpower is insufficient and there is a scarcity of drugs. The existing system of opening veterinary hospitals and dispensaries cannot meet the requirement in view of huge financial implications and wide dispersal of domestic animal in the rural areas. Mobile units are therefore, to be encouraged where-ever feasible alongwith training of the farmers in day-to-day treatment of common livestock ailments.

83. Disease control has been the main activity of Provincial Livestock/Animal Husbandry Departments. All vaccines used and services rendered are as a rule free of charge except nominal charges in some cases for maintaining better accuracy of statistics. However, funds allocated for purchase of vaccines and medicines are grossly insufficient. Vaccination coverage is around 10-20 per cent for cattle/buffaloes and 5-10 per cent for sheep and goats in the various regions. Special programme would be launched to provide better animal health cover for livestock.

84. Research has been conducted at different institutions on various traits of livestock production and health. However, because of lack of coordination amongst these institutions, there is much duplication. Moreover, the research results are not disseminated expeditiously and extensively. Measures would be taken to improve the research facilities, and quick dissemination of research findings among farmers for increased livestock production.

85. As a result of the above programmes and measures, substantial quantities of poultry meat, beef, mutton and eggs would become available for export to the neighbouring countries of the Gulf. An expert group has estimated that 3000 tonnes of beef, 10000 tonnes of mutton, 5000 tonnes of poultry meat and 252 million eggs per annum would be available for export by 1987-88.

86. Bench marks production and Sixth Plan targets for livestock products are summarised below :

TABLE 12

*Production Targets for Livestock Products*

Commodity	Unit	Bench Marks 1982-83	Production Targets 1987-88	Per cent increase over Plan period	Per cent annual increase
Milk	000 tonnes	9,660	12,900	34	6
Meat (Beef/Mutton)	"	870	1,165	34	6
Poultry meat	"	70	140	100	14.9
Eggs	Million No.	3,200	5,900	84	13
Wool	000 tonnes	40	55	38	6.6

87. The single most important measure would be the encouragement of large-scale corporate private enterprise in the form of large modern farms (with their own feed mills and slaughter houses). With the livestock farms already exempt from ceiling of land holdings, it is also contemplated that these farms would be allowed a free export of 50 per cent of their total produce. These privately-owned large modern livestock farms are envisaged to form a nucleus for the provision of technical services and good quality inputs for the small farmers of the surrounding areas.

88. Further the Government would constantly review the development requisites of this industry with special attention to fiscal exemption and rebates.

89. Critical policy measures required in the poultry sector include :

- (i) ensuring the availability of high quality poultry feed;
- (ii) encouragement of the setting up of processing plants to provide stability to the broiler market;

- (iii) efficient and concessional air cargo arrangements for exports of poultry products;
- (iv) establishment of poultry research institutes to work out least cost and efficient poultry feed formulae; and
- (v) a thorough review of the fiscal controls and import restrictions which have hitherto inhibited the growth of this sector.

90. Essentially, the problems for the dairy sector relate not to production but to the transmission of technology. The main thrust of the programme would thus be on the introduction of modern technology and the development of marketing with the private sector playing a major role; while the Government will be concentrating its efforts in breeding and nutrition research and in creating an environment conducive for the private investment to flourish.

### Fisheries

91. Research has indicated the tremendous high fish catch potential from the coastal and deep sea belt in Exclusive Economic Zone (EEZ). But the industry remains under developed and its resources inefficiently exploited. A similar productive potential exists in the inland resources.

92. Fish production targets for 1987-88, and achievement during the Fifth Plan are as follows :

TABLE 13

#### *Fish Production Targets*

Source	Production	Targets	Estimated	Targets	Per cent increase	
	1977-78	1982-83	Production 1982-83	1987-88	Fifth Plan	Sixth Plan
-----'000' Tonnes-----						
Marine	234	289	272	361	16.2	32.7
Inland	33	49	60	66	81.8	10.0
Total :	267	338	332	427	24.3	28.6

The increase in fish production should meet both domestic demands and increase in exports.



93. The above targets are based on major policy and institutional improvements, for instance :

- (i) the introduction of mechanised boats and fishing gears;
- (ii) adoption of efficient fishing technology;
- (iii) establishment of fish harbours (at Gwadar) and landing facilities;
- (iv) extension of credit;
- (v) development of the potential of inland fishery resources;
- (vi) extension of new technology to fishermen and pond operators; and
- (vii) improvement of marketing facilities.

94. Institutional support programmes prerequisite to the development of the fishery resources, and increasing its production efficiencies, will also be undertaken including education and training, strengthening of research, and survey facilities and manpower capabilities.

95. Some of the major policy measures for the development of fisheries consist of :

- (i) restructuring of the Federal Fisheries Board;
- (ii) immediate examination and revision of all laws concerning fisheries, removing all obstructions to private enterprise and dismantling of unnecessary governmental controls;
- (iii) induction of selected foreign fisheries specialist firms for joint collaboration with local entrepreneurs, particularly for deep sea fishing and in order to develop expertise in modern technology; and
- (iv) all kinds of fishery equipment and machinery including BMR required for process units would be exempted from import restrictions and duties.

96. It is expected that as result of these measures, an estimated 55 thousand tonnes of fish and its by-product would become surplus to country's requirement by 1987-88 and would be available annually for export.

## Financial Outlays

97. In the Fifth Plan, an outlay of Rs. 9.7 billion was provided for agriculture, excluding fertilizer subsidy. This amount was to be spent on projects and programmes which were designed to strengthen the institutions, research, infrastructures, and services to support the agricultural sector, and these in turn would have provided a strong base for the Sixth Plan strategy. Due to a variety of factors, the amount actually utilized was Rs. 6.1 billion which has resulted in a staggering of the projects and delayed institutional arrangements for the supply of services which are required for dynamic agriculture *viz.*, extension service, seed industry, management, research back-up, etc.

98. In the Sixth Plan, an outlay of Rs. 12.35 billion has been provided including Rs. 12.10 billion as ADP allocation. This would be spent first on completing the on-going projects and second, undertaking projects of high priority in line with the objectives and strategy of the Sixth Plan. This represents an increase of about 98 per cent over the Fifth Plan utilization. The distribution of financial outlays between Provinces and the Federation is as follows :

TABLE 14

*Financial Outlays : Distribution between Provinces and Federation*

Subsector	Provinces					Federal	Total Pakistan
	Punjab	Sind	N.W.F.P.	Balu- chistan	Total Provincial		
	Million rupees						
1. Storages	400	150	200	100	850	2,800	3,650
2. Crop Inputs*	295	50	129	117	591	204	795
3. Support Services*	1,228	314	141	214	1,897	2,157	4,054
4. Livestock	260	191	113	549	1,113	102	1,215
5. Forestry	627	176	259	65	1,127	496	1,623
6. Fisheries	90	219	8	18	335	428	763
Total :	2,900	1,100	850	1,063	5,913	6,187	12,100

\*Detailed activity-wise allocation may be seen in Annexure I.

99. In the Sixth Plan, effort will be made to strengthen project preparation capabilities of the agencies and departments (provincial and federal), and to create institutional framework for vigilant monitoring, with a view to taking prompt remedial action for timely completion of the projects and proper utilisation of the funds. The Planning Commission itself will play an active and effective role in providing expertise in project preparation to the sponsoring agencies.

100. The details of estimated expenditure during the Fifth Plan and allocations for the Sixth Plan by sub-sectors are given in the Statistical profile, while allocations by sub-sectors/executing agencies as well as physical targets are given in Annexures I and II respectively.

## AGRICULTURE

*Financial Allocations 1983-88*

(Million Rupees)

S. No.	Sub-Sector	Federal	Total Provincial	Punjab	Sind	N.W.F.P.	Baluchistan	Total (Col. 3+4)
1	2	3	4	5	6	7	8	9
<b>Institutional Arrangements and Infrastructure</b>								
1.	Government Storages	2,800	850	400	150	200	100	3,650
2.	Agri. Education	227	103	91	1	6	5	330
3.	(a) Agri. Extension	77	542	320	120	39	63	619
	(b) Oilseed Maximization programme	400	—	—	—	—	—	400
4.	Agri. Research	1,369	191	141	20	20	10	1,560
5.	Agri. Marketing	18	26	3	5	10	8	44
6.	Cooperatives	—	50	20	10	13	7	50
7.	Agri. Credit	—	14	14	—	—	—	14
8.	Agri. Economics and Statistics	20	31	7	8	6	10	51
<b>Crop Production</b>								
9.	Improved Seeds	72	425	200	25	100	100	497
10.	Soils and Fertilizers	64	108	80	11	14	3	172
11.	Plant Protection	68	58	15	14	15	14	126
12.	Mechanization	36	545	300	145	39	61	581
13.	Soil Conservation and Land Development	10	395	332	5	8	50	405
<b>Others</b>								
14.	Livestock	102	1,113	260	191	113	549	1,215
15.	Forestry	396	784	425	161	183	15	1,180
16.	Watershed Management	51	246	140	—	66	40	297

1	2	3	4	5	6	7	8	9
17.	Wildlife	41	53	36	10	5	2	94
18.	Range Management	8	44	26	5	5	8	52
19.	Fisheries	428	335	90	219	8	18	763
20.	Public Corporations	-	-	-	-	-	-	250
	Total :	6,187	5,913	2,900	1,100	850	1,063	12,350
	Subsidy on Fertilizer	3,000	-	-	-	-	-	3,000

## AGRICULTURE

*Physical Targets (Crop Production)*

Major Programmes	Unit	Sixth Plan Targets
Grains	000 tonns	21,795
Wheat	"	15,500
Rice	"	4,200
Maize	"	1,380
Others	"	715
Cash Crops	"	42,068
Cotton (lint)	"	1,033
Sugarcane	"	40,935
Tobacco	"	100
Oil Seeds	"	2,853
Cotton Seed	"	2,066
Traditional	"	437
Non-Traditional	"	350
Pulses	"	795
Gram	"	582
Others	"	213
Vegetables & Spices	"	5,105
Onion	"	800
Potatoes	"	850
Others	"	3,455
Fruits	"	3,585

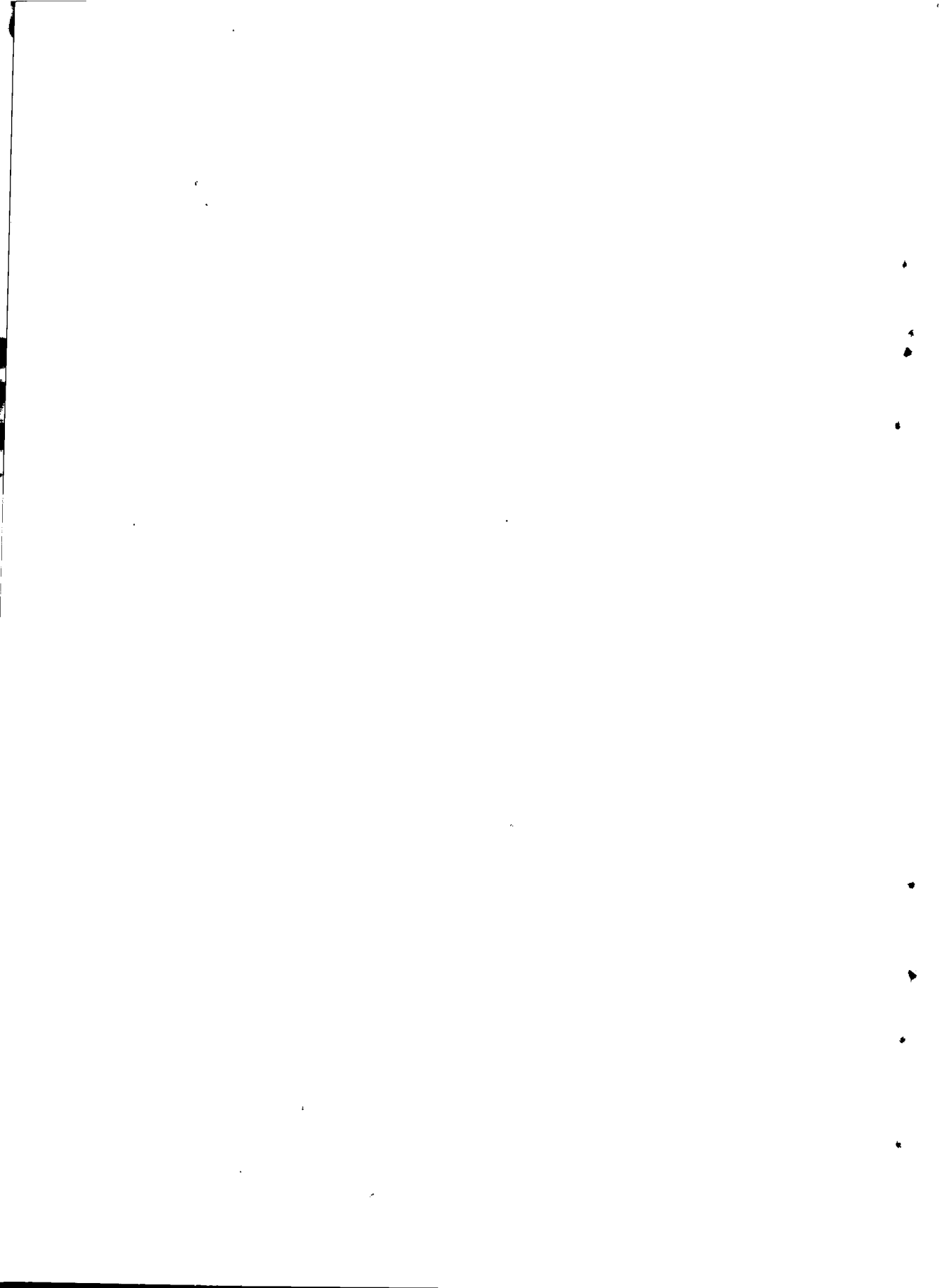
*Note* :—The Crop targets used here indicate maximum technological possibilities. Value added in Agriculture for GDP Computation is however, based on more conservative estimates in certain cases.

## AGRICULTURE

*Other Physical Targets*

S. No.	Major Programmes/Items	Units	Sixth Plan Targets
1.	Fertilizer Off-take	'000' N/tonnes	1,828
2.	Improved Seed distribution	'000' tonnes	186
3.	Plant Protection	'000' Hectares	3,253
4.	Mechanisation (Operational Tractors)	Nos.	337,000
5.	Agricultural Credit	Million Rupees	18,000
6.	Government Storages availability	'000' tonnes	7,300
7.	Animal Husbandry (Production)		
	(i) Meet	'000' tonnes	1,305
	(ii) Milk	Million tonnes	12.9
	(iii) Eggs	Million No.	5,900
	(iv) Hides	Do.	5.66
	(v) Skins	Do.	34.03
	(vi) Wool	'000' tonnes	55.00
8.	Forestry	'000' Cubic Meter	1690
	Timber	Do.	(497)
	Firewood	Do.	(1193)
9.	Fisheries	'000' tonnes	427.0
	Inland	Do.	(66.0)
	Marine	Do.	(361.0)

*Note* :—All figures show the Targets in the last year of the Plan except items 4 and 6 which show the total availability by the end of the Plan period.





*"And We wished to be  
Gracious to those who were,  
Being depressed in land,  
To make them leaders  
And make them heirs".*

*Al-Qasas  
XXVIII-5*

## CHAPTER 9

### RURAL DEVELOPMENT: A MASSIVE TRANSFORMATION OF RURAL ECONOMY

**R**URAL development lies at the heart of any meaningful development strategy. This is the only mechanism to carry the message of change to the majority of the people and to obtain their involvement in measures designed to improve productivity levels. Rural population exceeds 70 per cent of the total population of the country, despite a rapid rate of urbanization. Average rural income is 34 per cent less than *per capita* urban income. A large part of under-employment is still concealed in various rural activities particularly in the less developed parts of the country.

2. For centuries, the true magnitude of poverty has been concealed from view by pushing a large part of it to the rural areas. This set in motion a self-perpetuating mechanism. The more enterprising and talented in the rural society migrated to the cities in search of dreams which were seldom realized. Such migrants added to urban squalor. The relatively more prosperous in the rural society opted for urban residence for different reasons. The rural society itself has in this way systematically been denuded of its more enterprising elements, as rural areas developed the character of a huge and sprawling slum.

3. The rural society has developed a set of values which emphasize close human relationships and sense of belonging to the community. Responsibility of individual to the society is emphasized. This value system has

helped survival with dignity and the development of a rich culture in the midst of poverty. The task is to provide modern amenities as an aid for bringing into motion the internal dynamics of the rural society on a path leading to increase in productivity and self-help, changing the overall surrounding while preserving coherence, integrated structure and the rich cultural heritage of the rural society.

4. Developments in the past have touched rural scene mainly *via* agricultural development programmes. These are essential and would have to be intensified. Much more important is a large scale expansion of physical and social infrastructure to the village scene. These include rural roads, rural water supply and village electrification as part of the change in the physical environment and the primary education and primary health care as the agents of social change.

### Review of Fifth Plan

5. The Fifth Plan placed considerable emphasis on rural development and earmarked 25 per cent of the public sector expenditure to be directly spent in rural areas. Though the estimated expenditure during this period in nominal terms has slightly exceeded the Plan outlays, in real terms there were substantial shortfalls. Social infrastructure suffered the most serious shortfall. Except for rural electrification and to some extent rural roads, most of the targets fixed for rural social development could not be achieved as can be seen from the following table :

TABLE I  
*Fifth Plan Financial and Physical Achievements*

	Target	Estimated Achievements
(Rs. million)		
<b>Financial</b>		
Primary Education	1,830	848
Rural Health Programme	2,623	1,250
Rural Roads (Tertiary Roads Only)	1,020	1,600
<b>Physical</b>		
Primary Education	10,113 Schools	7,925 Schools
Rural Health Centres	625	206
Basic Health Units	4,596	1,617

6. In the final year of the Fifth Plan, a special priority sector programme was formulated for implementation under the coordinating effort of the Planning Division. Under this programme 8,200 mosque schools were started, virtually equalling the performance along traditional lines of the preceding four years. An immunization programme reached three million children supplemented through the rural health centres. Dai (traditional midwives) training programme added 5,000 trained dais.

7. In the Fifth Five Year Plan development was conceived partly as a constituent of sectoral development programmes and partly as an integrated programme to be executed by the District/Markaz Councils and Provincial Rural Development and Local Government Departments. The total allocation for the sectoral programmes amounted to Rs. 10.17 billion for school education, health care, potable water supply and sanitation works to be undertaken by the respective sectoral departments at the Provincial level. Specific allocation of Rs. 1.50 billion was made for promotion of Integrated Rural Development Programme through District/Markaz Councils. Implementation of the Integrated Rural Development Markaz Programme during the Fifth Five Year Plan was for Rs. 2.7 billion against Rs. 1.5 billion indicated in the Plan.

8. Although the Fifth Five-Year Plan rural development strategy was critically based on the proposed establishment of local bodies, these could not assume their development role before the middle of the Plan. Their functioning started with traditional activities. The impact of the revival is evident from the record of revenue collections and their use in development activity. Revenue from taxes and other sources of funds directly raised by local bodies increased 3 times over the last 5 years. Most of this increase went into financing of development schemes with the result that the investment of local bodies rose by about 4 times over this period. The major physical achievements during 1978-83 included completion of 1,878 kilometers of farm to market roads under IRDP, electrification of 8,287 villages, coverage of 9.94 per cent of rural population for safe water facilities and 1.79 per cent rural population with sanitation facilities. The number of miscellaneous minor/small scale schemes were also implemented on aided self-help basis, which included local afforestation, de-silting of local channels/drains, construction of embankments and culverts, terracing of land and renovation and repair of Markaz/schools/store/dispensary buildings, introduction of adult education and vocational training programmes for women, street pavement, construction of water storage tanks and open surface wells. Implementation of all small scale schemes involved participation of the population through the institution of Rural Markaz at Union Councils level.

9. A remarkable phenomenon not foreseen by the Fifth Plan was the social impact of the accelerated flow of incomes from remittances into the rural areas. This development has had a profound impact on the perceptions of their needs by the rural populace. Not only is there now a demand for services at levels not experienced before, there also appears to be willingness to pay for the quality of service.

### **Sixth Plan**

10. The rural development effort in the Sixth Five-Year Plan will be mounted on a carefully selected broad front. It will embrace the production and productivity of agriculture by improved availability of inputs, particularly water and fertilizer, and a decisive breakthrough in rural infrastructure, physical and social. On the whole, the public sector development outlays are proposed to be raised from 21 per cent of the total in the Fifth Plan to 32 per cent of the public investment in the Sixth Plan. In absolute terms this would be 3 times the level of expenditure during the Fifth Plan period.

11. The increase of 160 per cent proposed in the public sector investment in rural production programmes seeks to correct earlier neglect. This is, however, less than the average growth for overall rural transformation. Production programmes are only of a supporting nature. These programmes would bring forth a corresponding investment and use of inputs by the private sector. Much greater effort is proposed in the public sector for improving the physical and social infrastructure.

12. During the Sixth Plan, the scope for future expansion in the area under cultivation or in extra availability of irrigation is limited. It is estimated that irrigated water during the Plan will expand by 10 per cent mainly by intensified use of sub-soil water in sweet water zones and improved water management to avoid waste. Cropped area would increase by about 7 per cent. Value added in agricultural crops is projected to increase by 23 per cent. Predominant share of this increase will have to come from enhanced productivity for which significant investment in agriculture is of crucial importance.

13. The other factor which is likely to help in increasing agricultural incomes is the change in composition of output. Some changes occurred in the Fifth Plan period with modest diversification towards potatoes and onion and expansion in all major crops. This has resulted in export surpluses

in major crops but significant deficiencies have emerged in edible oil, milk, pulses, etc. The situation demands greater selectivity among major crops and wider spread elsewhere. It is, therefore, proposed that :

- Concerted effort will be made during the Sixth Plan period to move towards high value crops.
- Livestock and poultry will be given high priority and exports of these, alongwith fruits and vegetables, will be developed on a priority basis.
- Arrangements have been devised to endure that the grower gets an adequate price for his produce.
- Income from agriculture would grow substantially as a result of high productivity and assured prices.

14. The Plan targets for selected crops and agricultural production have been spelled out in Chapter No. 8, 'Agriculture: From Self-sufficiency to Export'. Policy imperatives of these targets are discussed in subsequent paragraphs.

### Input Programmes

15. *Agriculture*.—The input programme in the field of agriculture pertains to fertilizer, plant protection, seeds and mechanization. Major thrusts are envisaged in all these programmes :

- Despite the substantial increase in the use of fertilizer, the present level of consumption is still grossly inadequate. The fertilizer offtake is projected to increase from 1.24 million nut. tonnes during 1982-83 to 1.83 million nut. tonnes in 1987-88. For the health of the soil it is necessary to maintain an appropriate balance between nitrogen and other nutrients in the soil. By 1987-88, this ratio will be reduced to 2.9 : 1 from the current ratio of 3.6 : 1 against the desirable ratio of 2 : 1. Promotional programme in this respect will be adequately supported.

The plant protection coverage is planned to be increased from 3.16 million spray hectares in 1982-83 to 7.23 million spray hectares in 1987-88, showing an increase of 129 per cent over

the Plan period. Emphasis will also be placed on controlling the insects, pests and diseases by cultural practices.

The total number of tractors at the end of Fifth Plan period is estimated at 137,400. It is expected that this number will be increased to 337,000 by the terminal year of the Plan. In order to cater to the needs of small farmers, a special programme for introducing and popularizing the small tractors alongwith suitable implements was launched during the terminal year of the Fifth Plan. This programme will continue and will be backed by availability of credit. To improve the effectiveness of the farm mechanization programme due emphasis would be given to the training of machinery operators in proper use and preventive maintenance of the machinery and implements.

— The Government agencies will continue to maintain a fleet of bulldozers and other heavy machinery for hiring out to the farmers for land reclamation and development operations.

... High priority will be given to improved seeds programme. The quantity of improved seeds by the public sector will be increased by 61 per cent during the Plan period. Private sector will be induced in a big way in seed production and distribution business to provide healthy competition to the public sector.

16. *Research and Extension.*—Continued improvement and development of technology is indispensable for sustained growth. The institutions of research, extension and education in the field of agriculture, established over time, have done useful work in this respect but general achievements have lagged far behind the potential or needs. Adequate funds have been provided in the Plan for research and extension to achieve better results.

17. In the Sixth Plan, research programmes will follow these directions:

— Special emphasis on research related to oil seeds, pulses, vegetables and other import substituting or export promoting commodities.

Development of small farm technology for timely completion of farm operations.

Minimization of pest losses, particularly on the farm level.

Evolving of high-yielding, disease-resistant varieties suitable for various zones.

18. Extension services were reorganized on a pilot scale under a new approach of agricultural extension called 'training and visit' during the Fifth Plan period in 5 districts of the Punjab and Sind. Sixth Plan strategy envisages removal of deficiencies and shortcomings of T & V system and its gradual extension to the entire country.

19. *Water Resources.*—The most important input for agriculture is water. It is estimated that irrigation water will increase by 11.14 per cent from the current level of 101.49 MAF to 112.77 MAF at the end of Sixth Plan. Of the increase of about 11.28 MAF, 6.44 MAF would come from surface irrigation projects and 4.84 MAF from the ground water reservoir. The highest contributor to the ground water additionality would be private sector as its tubewells would pump 3.63 MAF additionally.

20. An investment of Rs. 32.1 billion is proposed for the development of water resources by the public sector. Rs. 0.640 billion are likely to be invested by the private sector for the installation of about 25,000 tubewells during the Plan period. The major investment in this field, however, will be for enhancing the water availability and alleviating the problem of waterlogging. The most important programme will be that of drainage and reclamation, claiming 44 per cent of the total water sector investment.

21. The Sixth Plan will place maximum emphasis on the most seriously affected areas identified as "disaster areas" that are underlain by 0 to 5 test depth of saline and fresh groundwater table. The main objectives of the programme are :

Instead of reclaiming gross command area as a whole, emphasis would be laid on disaster areas (where the water table is less than or equal to 5 ft. depth). It is planned to reduce the extent of disaster area by 70 per cent during the Plan period.

- Area under saline ground water would be given priority. Important drainage projects, including LBOD, will be taken up during the Plan period.

- Sweet water area outside the disaster zone will be left entirely to the ingenuity of the private sector. In fact, some of the areas of this type which are currently under the public sector SCARP

programme will be gradually transferred to the private sector through a specially designed transition project.

22. The physical targets which are proposed to be achieved are installation of 4,312 of fresh and saline ground water tubewells, replacement of 810 tubewells and construction of 11,446 miles of surface and tile drains. The gross area protected during the Sixth Plan will be 5.3 million acres, including a disaster area of 2.8 million acres.

23. In addition to drainage and reclamation projects, the water sector programme includes major projects for remodelling of canals and rehabilitation of irrigation system in the country as a whole.

24. Another programme for improving the water availability, namely the on-farm water management programme was started during the Fifth Plan period to reduce the watercourse losses which, according to some estimates, run from 35 to 40 per cent. This programme, which has been found of great utility, will be continued and 1,700 water-courses will be improved under the regular programme during the Sixth Plan period. A crash programme was also started to accelerate the work. Under these two programmes, more than 29,700 water courses are likely to be improved by June, 1988. The tempo of crash programme will be maintained by improving 20,000 water-courses in a period of next two years. In addition, full improvement (installation of pucca nakkas and lining) will be completed on 8,000 water-courses, improved partially under the crash programme.

25. In addition to the programmes for protection and improvement of irrigation system, 25 per cent of the outlays are also earmarked for the development programme for augmenting water resources. The extension programme includes the construction of new canals, small dams, check dams, small irrigation schemes infiltration galleries, installation of tubewells and research and investigation. The objectives and physical targets to be achieved through these programmes are as follows :

- New canals totalling 1,451 miles will be constructed during the Plan period.
- 13 small dams and 30 check dams will be constructed which will bring about 48,000 acres of land under cultivation. About 267 small irrigation schemes in the less developed regions such as Baluchistan, Federally Administered Tribal Areas (FATA),



Azad Jammu and Kashmir Kohistan and Northern Areas will be completed. These would provide irrigation facilities for about 780,000 acres of land in these areas.

In addition to the private tubewells, public sector would also install 739 irrigation tubewells for the benefit of backward areas of NWFP, Baluchistan, Federally Administered Tribal Areas (FATA) and Azad Jammu and Kashmir.

26. *Education.*—Education programmes are for the first time deliberately planned to benefit all sections of rural population—children, youth and adults. A large primary education programme designed specially to suit rural population has been planned to provide full geographical coverage of schooling facilities. Chances of rural boys and girls for receiving secondary education will double because of hundred per cent increase in facilities and a massive programme of literacy covering 10.5 million out-of-school youth and adults, particularly women, will enable them to shake off their age old inhibitions to develop flexible attitudes and acquire useful skills necessary to benefit from developments in other sectors. Major emphasis in educational programmes in the rural areas will be on technical training and providing functional skills through introduction of agricultural and vocational courses in schools and setting up of trade schools and technical institutes. In addition, a much larger proportion of rural youth will be able to benefit from facilities of technical, professional and higher education through increased provision of residential accommodation reserved for them, supported by scholarships for talented students from low income families. In overall terms about 42 per cent of the planned expenditure will benefit the rural population.

27. *Health.*—The programme of health has also been specially designed to help the rural populace. Around 45 per cent of the expenditure under the health sector is earmarked for basic and rural health centres and accelerated preventive programmes which will have a direct impact on rural life. The following objectives of the Plan will specially help the rural population:

Bringing the health facilities within a radius of 3–5 kilometres will entirely benefit the rural population.

The entire addition in staffing of doctors and paramedics is being provided to strengthen the basic health units and rural health centres.

- The major portion of the physical works is earmarked for construction of rural health centres, basic health units and adequate residences for their staff.

28. *Rural Water Supply, Sanitation and Housing.*—The programme in respect of rural water supply and drainage/sanitation is being accelerated. It is proposed that by the end of the Plan period access to safe water supply will be available to 45 per cent of the population and that for drainage/sanitation to roughly 10 per cent. This programme together with the health programme already outlined will go a long way in improving the quality of life. In the rural areas, housing of satisfactory standard is in very short supply. Keeping this in view, for the first time in the history of the country, rural housing is being made a priority sector. To overcome the housing shortage, during the Sixth Plan period, the loaning operations of the House Building Finance Corporation will be extended to the rural areas so that necessary credit facilities become available to the people in the village. Government will help the rural people in the development of appropriate lay-outs for houses for which local councils will be required to evolve a suitable mechanism for arranging necessary technical advice.

### Physical Infrastructure

29. Programmes pertaining to physical infrastructure comprise rural electrification and farm to market roads. The rural electrification programme has been presented in Chapter 27. Only 16,400 villages were provided with electricity in the last 35 years. The Sixth Plan proposes to electrify another 20,000 villages. This means that 81 per cent of the villages will have access to electricity by the end of the Plan.

30. The deficiency of rural roads can be judged by the fact that against minimum requirement of 0.64 km per sq. km of the area, there is hardly 0.12 kilometer per sq. km available. The deficiency is particularly large in the case of tertiary rural roads *i.e.* village roads. Only 16 per cent of the villages are suited on all weather roads and less than 30 per cent have all weather connection. The remaining villages are either totally cut off from rest of the country or depend on fair weather connection to the outside world situated on all weather roads.

31. At the beginning of the Fifth Plan, the total length of village roads in the country was 41,000 kilometers. During Fifth Plan period, approximately 5,000 kilometers of new village roads were added and 1,000 kilometers of existing village roads were improved at an estimated cost of

Rs. 1,600 million, bringing the total to 46,000 kilometers. The amount likely to be spent on village roads during the Sixth Plan adds upto Rs. 4,100 million. This includes tertiary road construction/improvement under all programmes including farm-to-market roads and those by local governments. Of the total amount, Rs. 2,100 million would be made available through ADP. The local governments are expected to spend Rs. 2,000 million from their own resources, which is not being treated as planned outlays. This would add 40,000 kilometers of village roads by the end of Plan period. This would almost double the availability of village roads in the country. The following strategy is proposed to achieve the objective.

- (a) *Canal Roads.*—Irrigation canals have approximately 56,000 kilometers of road/inspection paths, out of which only 1,100 kilometers are open for public use (mostly in NWFP and Baluchistan). It is proposed that during the Sixth Plan period, 30,000 kilometers of canal roads should be opened to traffic.
- (b) *Road Construction Machinery.*—The most critical factor in slow increase of village roads in the past was absence of adequate road construction machinery with the Local Governments. To rectify this situation, special efforts would be made to procure road construction machinery for the Local Governments to enable them to undertake the proposed enlarged programme of village roads.
- (c) *Stage Construction.*—The village roads are usually less than 10 kilometers long each and serve small population. Consequently, they have very little initial traffic. While it is absolutely necessary that, unlike in the past, these roads must be constructed with proper specifications, it would not be necessary to provide black topping from the very beginning. It is, therefore, proposed that construction of farm-to-market roads should be executed in stages. In the first instance, where soil conditions permit, only earthen roads should be constructed. Shingle roads (water-bound-macadam) should be provided where soil conditions are poor. Black topping of these roads, however, should be undertaken only when it is justified from traffic point of view. With this strategy, it should be possible to construct/improve approximately 10,000 kilometers of village roads during the Plan period.

32. The benefits of these programmes will go far beyond changing the agricultural scene. Its critical linkages will include the development of rural industries and the consequent employment effect, containment of rural-urban migration and, not the least, a growth of demand for the output produced in urban areas.

33. The preceding paragraphs show details of various programmes meant directly for the uplift of the rural areas. But the Plan on the whole having rural orientation, several programmes in other sectors are likely to benefit the rural areas to a great extent as stated below :

- The increase in the coverage contemplated in the radio and TV programmes is basically meant to increase these facilities in the farflung areas. Under the broadcasting sub-sector, the proposed high powered transmission will cover a sizeable area of Baluchistan, Sind, Punjab and N.W.F.P. provinces. New stations are proposed to be set up at Zhob and Loralai and village broadcasting units at Sibbi, Rahim Yar Khan, Abbottabad, Mirpur Khan, D. G. Khan and Sargodha. Also existing local broadcasting stations at Faisalabad and Gilgit will be upgraded to 10 KW power. The entire TV programme of extending coverage through Rebroadcast Centres/booster stations at Tando Allahyar Khan, Malakand, Bahawalnagar, Lehia, Parachinar, Swat, Kohlu and Mianwand and TV links between Quetta—Kalat, Quetta—Loralai and Cherat—Sakesar—Razmak are designed to take the TV into the rural areas in a big way. Also second channel for educational TV will be installed to impart adult education through a network of 10470 community viewing centres which will be set up mostly in the rural areas.
- The entire road programme for the improvement and construction of highways passing through the countryside will benefit the rural areas. In addition to providing employment to the rural population in the construction of these roads, these would lead to useful links with farm to market roads, strengthening thus the Plan thrust on the opening of rural areas. Similarly the benefits of education and health programmes will indirectly spill over to the rural population.

The fertilizer offtake would increase by more than 70 per cent during the Plan period. Unlike the past, a reduce quantum of subsidy (Rs. 2 billion as against Rs. 9 billion) has been provided.

It will be a two way policy of reducing subsidies and counterbalancing the increased procurement prices of agricultural outputs. The output and income effects of this policy will benefit the rural areas.

- The introduction of Ushr from Rabi crop of 1982-83 would have far reaching implications for transforming rural life. Its receipts will be entirely spent in the areas of collection, not only to help the needy but also for project of collective benefit.

### **Development through local councils**

34. A great emphasis is proposed to be placed on the development of basic-and-felt-needs projects at the local level during the Sixth Five Year Plan (1982--88). In the Sixth Five Year Plan, an attempt has been made to institutionalize local development through the concept of District Plans. The Provincial Governments, Azad Government of the State of Jammu and Kashmir, Northern Areas Administration and Islamabad Administration were requested to advise the district councils to prepare the district plans in consultation with the people at large and the officers concerned with development for the following sectors :

- (i) Construction of roads from farm to market;
- (ii) Drinking water;
- (iii) Primary, middle and secondary education;
- (iv) Health.

35. The Planning Commission has suggested a few criteria for the inclusion of schemes in this programme. They are briefly stated below :

- (i) The number of people expected to be served by a project;
- (ii) The contribution to be made by the people of the area expected to be benefitted and the local body;
- (iii) The level of development of the area concerned in comparison to the other areas of the country;
- (iv) The availability of social services and infrastructure facilities in that particular area;

- (v) The availability of resources for the maintenance of the project after its completion;
- (vi) The ability and willingness of local body to raise at least part of the resources required at the local level.

36. The Government has decided that the development role and financial viability of the Local Councils may be progressively strengthened so that they play an increasing and more important role in the planning, promotion and execution of development projects during the Sixth Five Year Plan, particularly in the fields of education, health, clean water supply, rural roads and other programmes of local development.

37. The district level plans will be submitted to the Provincial Government concerned who will study and examine them after getting the views of the development and administration officials in the area concerned, where necessary. Planning and Rural Development Ministries would work with the Provincial Governments to evolve policies for streamlining district plans and to evolve arrangements for financial support and implementation of properly scrutinized plans. The instrument of local planning will be used as a method to motivate and encourage popular participation and direct involvement of the local community in development activities and as a programme to execute and administer a variety of development projects.

38. Rural development presents a colossal challenge. It is more than a simple issue of finding more money and using local institutions. It would involve changes in age-old attitudes and would require creating enthusiasm along-with a strong sense of responsibility. There would be need for considerable decentralisation and flexibility of choice at the local level to be combined with effective supervision, monitoring and safeguards. Above all, it would require that the traditional outflow of educated persons from the rural areas to the urban areas should be reversed. More of the doctors, engineers and other experts have to be induced to accept residence in rural areas. Teachers, doctors, agricultural extension workers, medical technicians and other similar professionals would create a new class within the rural communities and induce change from within. Some of them would come from outside. Others have to be mobilized from within and properly trained. In both cases, initial task is to create proper incentives to counter the lure of the city life. Later, with their help pressures would develop creating demand for change in the rural environment. More facilities would be created. It is on the success of moving educated personnel to the rural areas that the battle for rural development would be won. The Plan seeks to provide the initial thrust towards this goal.

*And we sent down Iron,  
In which is (material for)  
Intense might and strength as well as  
Many benefits for mankind.*

*Al-Hadid  
(XVII-25)*

## CHAPTER 10

### INDUSTRY : ELEMENTS OF A NEW INDUSTRIAL STRATEGY

**I**NDUSTRIAL growth in Pakistan since 1947 has been highly impressive. Starting with virtually a complete absence of any worthwhile industries located in the territories forming present Pakistan, by the end of the sixties the country had developed a substantial industrial base. Despite severe setbacks, the industrial base has continued to expand. Considerable diversification has been achieved and the nation appears to be poised for a major break-through in engineering and chemical industries, both requiring high technology.

2. Industrial sector, including large and small-scale manufacturing, constitutes 17 per cent of G.D.P. with an industrial labour force estimated at 3.5 million and manufactured exports accounting for 65 per cent of total exports. This has brought the structure of G.D.P. in Pakistan and its industrial growth in line with the middle income developing countries, while in overall terms Pakistan still remains a low-income country.

3. While the quantitative progress has been remarkable, quality of industrialisation has been surrounded by a number of question marks. The industrialisation for a long time reflected the aspirations of a nation in a

great hurry. There has been willingness to pay a high price for industrial advance which explains the level of incentives provided during different periods. The degree of protection has always been high and has resulted in the creation of excess capacity some of which may not be regarded suitable for utilization even in the long run. Some industries remain uncompetitive even after long periods of operation. Studies carried out at different stages of development indicate that the value added in a number of cases may be negative, if international prices are used for analysis. This implies that, in cold reality, a part of the industrial sector is using more of the national resources than it is contributing to the national pool. The main justification for such industries is to provide a base for acquiring modern skills and technology. But over the long run, they must improve efficiency in order to survive and to contribute meaningfully to national prosperity.

4. Manufacturing sector is dominated by the food processing and textile sector which together account for 55 per cent of value added. The contribution of engineering sector is estimated to be only 15 per cent of the income derived from manufacturing. The picture has changed significantly during the Fifth Plan, but a great deal of the ground has yet to be covered.

5. There has developed a strong preference for investment in industries which cater to a sheltered domestic market under bans of a prohibitive rate of duty. With the limitation of domestic demand, emergence of export surplus requires extra resources for providing additional incentives. Export growth in the manufactures is derived mainly from the rapidly expanding small items encouraged by the realistic exchange rate policies since the devaluation decision of 1972 and the liberalisation of investment policies initiated in the later seventies for small manufacturing units.

6. A substantial part of the qualitative problems are indeed part of the difficulties which inevitably have to be faced by the late entrants in the industrial field. It needs to be realised that given the size of Pakistan's own domestic market, its future lies not in terms of an inward-looking domestic market approach, but in boldly facing competition and aggressively seeking a high share of the world markets. The next phase of industrialisation must, therefore, include greater emphasis upon strengthening the basic competitive position of the industries rather than providing them protection to survive with their own weaknesses and inefficiencies.



7. Private sector was the main vehicle of implementing industrialisation strategy in the fifties. Public sector role was more promotional in nature. Apart from providing incentives and markets, the public sector entered fields which the private sector would not pioneer such as industries in backward regions or those demanding large investment and embodying complex technology. Many such units were first set up in the public sector and then transferred to the private sector. Pakistan Industrial Development Corporation played a pioneering role. But because of its emphasis on more difficult areas and less profitable industries, there developed a tradition of measuring public sector industrial performance in social terms-rather than profitability.

8. By the later part of the sixties, the private sector had grown from the processing of agricultural raw materials into cement, chemical and fertilizers, and had acquired a dominating position in the banking system. The ratio of private industrial investment to GNP was around 3.5 per cent at the close of the Third Plan—in fact higher if foreign exchange input was valued at correct price. This was based on the incentives whose magnitude raised serious question of equity and social justice. Even in purely economic terms the scale of resources used for providing incentives involved waste. The incentive framework created a level of investment demand which could not be met from the existing resources. A substantial part of the investment demand had to be curbed by the system of sanctions and permits.

9. In the early seventies, the pendulum swung to the other extreme. Three rounds of hasty nationalisation and an injudicious mix of regulations for what remained of the private sector, created a different set of problems. The nationalisation of basic industries in 1972 increased the share of public sector to about a third of fixed assets in large scale manufacturing industry. This was followed by a sharp increase in the level of public sector investment in industry during 1972-78 with a demoralized private sector virtually on going investment strike. In constant prices total private sector industrial investment dropped during 1970-71 to 1976-77 to less than half of its level in 1970-71, through investment in small scale industry grew somewhat modestly during the 1970s (rising from 14 per cent of the total private sector industrial investment in 1970-71 to 33 per cent in 1976-77)

TABLE 1  
*Industrial Investment 1970-71 to 1976-77*  
*(Million Rupees, Constant 1969-70 Prices)*

Period	Private Sector		Total	Public Sector	Total Industrial Investment	Public Sector as per cent of total
	Large and Medium scale	Small Scale				
1970-71	1,166	192	1,358	65	1,423	5
1976-77	438	213	650	1,563	2,213	71

10. There was a dramatic shift in the respective roles of the private and the public sectors. The total industrial investment in the country was a little over 3 per cent of GDP in 1970-71, almost entirely accounted for by private investment. By 1976-77, the ratio of industrial investment to GDP had increased to over 4 per cent, with roughly three-quarters of the investment originating in the public sector. The private industrial investment had declined to a range of 1.1 to 1.3 per cent of the GDP. The public sector faced the constraint of finding resources both financial and managerial—while the private sector's potential savings were lost to the system because of uncertainty inhibiting the investment.

11. With the corrective measures introduced during the Fifth Plan, some improvement is noticeable in recent years. A large and potentially powerful entrepreneurial class has developed in the country though with relatively modest resources which it had earned in other activities. They have the capacity and are keen to take up sizeable responsibility in the industrial field. This class includes businessmen graduating from trade and construction within the country and have since moved towards industry and also Pakistani businessmen who have done well abroad and are keen to invest in their own country. Given a suitable framework of policies, particularly the relative freedom from stifling controls and regulations, there appears to be a promising climate for rapid expansion in private investment. During the past 5 years, the Investment Promotion Bureau has issued sanctions for new industrial investment totalling Rs. 46 billion.

#### **Review of Fifth Plan (1978-83)**

12. The Fifth Plan offered the opportunity of drawing rational conclusions from the two distinct experiences of the past. The Government concluded after a careful examination that in a rapidly industrialising economy, the public private debate relates to only a marginal issue. By

denationalising the small agro-based units that should never have belonged to the public domain and opening nearly all spheres of economic activity to private sector, a start was made to provide a rational basis for choice in individual cases. The Fifth Plan stressed the completion of ongoing projects and the consolidation of earlier investments in the public sector while encouraging private investments to increase substantially and to play their full role in the development of the country. The ratio between public and private sector investment in manufacturing was expected to increase from 75 per cent share of the public sector to a rough parity. New investments in the public sector were restricted to balancing and modernisation of existing facilities and taking up only those new projects which were absolutely necessary for creating links to enable existing projects to utilise their capacity fully.

13. To increase the ratio of private investment, a number of export incentives were instituted. Import and foreign exchange rules liberalised; sanctioning procedures simplified; and a Government guarantee against further nationalisation was introduced. The size limit for units not requiring any sanction was raised. Complete or partial exemption from custom duty was granted for machinery imported for industries (i) of national importance (ii) located in less-developed areas, and/or (iii) requiring balancing, modernisation or replacement. Other incentives included tax holiday, accelerated depreciation, excise duty exemptions and export rebates. A wide area of industrial activity was thrown open to foreign investors and foreign investment was particularly encouraged in industries which required sophisticated technology and were highly capital intensive. A separate law was enacted to provide complete security to foreign capital and complete freedom was provided for repatriation of foreign capital and dividends from Pakistan at any time. The public sector units were weaned away from budgetary financing to start the process of bringing them at par with the private sector. Not the least, a system of credit allocation for the private sector was organised with the participation of a variety of institutions. Bankers Equity was set up to play a catalyst's role in overcoming financial problems at the initial stage of the project. NDFC has been allowed by an amendment of its charter to finance private sector projects.

14. The fifth Plan provided for an industrial investment of Rs. 40 billion at 1977-78 prices, of which Rs. 19 billion was earmarked for the private sector. In the public sector, 77 per cent of the investment (Rs. 16.17 billion) was provided for completion of 'ongoing' projects and 6 per cent

(about Rs. 1.26 billion) was for the tractor plants. The balance of 17 per cent in the public sector investment was to accommodate balancing and modernisation of existing units and a few small new projects. Due to a low base, private investment was projected to increase by 17.5 per cent annum whereas public investment was anticipated to show a slight declining trend. An evaluation of the period shows that public sector investment in nominal terms exceeded the planned outlays mainly because of the large escalation in the cost of Karachi Steel Mill (KSM). On the other hand, private investment also exceeded the target. During the Plan period the policy package for the private sector created a favourable response, which could not be fully translated into physical investment due to the limited availability of infrastructure and other amenities. The policy package for the private sector was creating a favourable response, which could not be fully translated into physical investment due to the limited availability of infrastructure and other amenities.

15. During the period 1977-78 to 1982-83, the industrial sector experienced an overall annual growth of 9 per cent and the large scale manufacturing value added grew at an average of 10 per cent against the planned target of 12 per cent. Production in manufacturing in the public sector increased at a higher rate by 14.5 per cent per annum.

16. Investment in the manufacturing sector at 1977-78 prices declined by over 24 per cent *i.e.* from Rs. 8263 million in 1977-78 to Rs. 6256 million in 1982-83. This was mainly due to an attempt by the public sector to drastically reduce its commitments in this sector in line with the Fifth Plan strategy. Public sector investment by the end of the Plan period was reduced to less than half in real terms.

TABLE 2  
*Investment in the Manufacturing Sector During Fifth Plan*  
*(1977-78 Prices)*

	(Rs. Million)				
	1977-78	Percent- age	1982-83	Percent- age	Annual Growth Rate
Private Sector	2,120	26	3,330	53	9.5
Public Sector	6,143	74	2,926	47	-13.8
Total :	8,263	100	6,256	100	-5.4

17. Investment in manufacturing sector declined as a proportion to GDP (at factor cost) from 5.3 per cent in 1977-78 to 4 per cent in 1982-83. The public sector manufacturing investment declined as a proportion to GDP from 3.9 per cent in 1977-78 to 1.4 per cent in 1982-83, while the corresponding proportion in case of private sector investment marginally increased from 1.4 per cent to 1.6 per cent during the same period. The private sector maintained a growth rate of 9.5 per cent at an average. The proportion of private investment in the total went up from 26 per cent in 1977-78 to 53 per cent in 1982-83, despite the heavy public sector expenditure on the completion of the Pakistan Steel Mill.

18. The basic objective of the Sixth Plan is to provide well-focused clear directions for future industrial progress. Structural adjustment would be the key element. This would include a liberal framework for industrial sanctions, improving the competitive strength of existing industries through tariff rationalisation, and systematic modernisation and balancing. The scope of their profitability would be improved by replacing the cost-plus pricing with a more efficiency-oriented pricing formula, within a drastically reduced number of industries for which the use of market prices is not considered suitable. Considerable emphasis would be placed on improved management and absorption of new technology.

### Major Growth Element

19. For the expansion of the manufacturing sector, four major growth points are indicated :

- (i) Highest priority is accorded to the *steel-based engineering goods industries*.—This is a large area and presents considerable scope for expansion to meet a rapidly rising domestic demand. With the completion of the Karachi Steel Mill, urgency is attached to investment in downstream industries. Within this sector, linkages have been identified with the demand for equipment originating in various sectors—transport equipment, railway wagons, rails, steel using industries, large diameter pipes, electrical equipment, telecommunication instruments and machinery for domestic industrialization;
- (ii) The projected high growth in agriculture is expected to expand opportunities for *investment in processing industries for export markets*. Among these, cotton textiles and sugar

are already established and sizeable. Cotton textiles is in the process of recovery and would be strengthened as a modern export-oriented industry. Sugar would have to complete its transition from an import-substitution industry to acquire a competitive export stranglehold. This would require adjusting the support price of sugarcane in real terms to competitive international trends, combined with measures to pay more for higher sucrose content and to create forward linkages by profitably utilising most of the by-products. Reduction in the difference between international and domestic sugar prices would be an important factor in encouraging food processing industries, notably canned fruit and vegetables, confectionary and fruit juices:

- (iii) *Agricultural inputs* provide a major growth point for industrial expansion. During the Fifth Plan, the main emphasis was on the setting up of the fertilizer factories to meet the expanded demand for this key input. During the Sixth Plan, mechanisation of agriculture would provide the major linkage between agriculture and industry. Five units for the progressive assembly and manufacture of tractors have already been sanctioned in the public and private sectors. The demand is expected to grow rapidly with the introduction of small and medium tractors. With the availability of the motive power to the farmers through the tractors and the tubewells, there would be need to encourage further use of other agricultural implements, and
- (iv) The progress of industrialisation will be along the lines of already discovered and proved resources of minerals. The neglected potential in coal development will be utilised rapidly for power and for coalbased industries. At Saindak the copper development would be taken up along cautious lines of phased development. Phosphate rock discovered at Hazara would be utilised for the production of phosphatic fertilizers. Gypsum crushing is being encouraged for meeting the agricultural demand.

### Other Elements

20. Investment on a large scale would also be encouraged in the manufacturing sector for adoption of energy saving devices. An attempt

would be made to specify standards of energy efficiency for the machinery which would be allowed to be imported or produced domestically.

21. Apart from the engineering goods sector, which would be mainly seeking to exploit the vast existing import substitution possibilities, most of the industrial sector would be directed towards an export-oriented growth.

22. The engine of export growth will be the agrobased and small scale industries. To increase profitability, industries based on industrial waste and by-products would also be developed. Vigorous policies would be pursued to increase export earnings through increase in non-traditional exports. Preference will be given to industries which include from the outset an element of surplus for export. This will orient the industry from its inception towards the export trade.

23. The tariff structure, the present system of industrial incentives, the policy of "cost plus" pricing which discourages efficiency and investment and restricts the allocative function of the price mechanism, the process of investment sanctioning and the private and the public sector access to foreign exchange, domestic equity and loan financing during the Plan period, will be rationalised and restructured to bring these in line with the objectives of the Plan.

24. By instituting a system of appropriate designs, efficiently organised marketing through export houses and adequate lines of credit, it is envisaged that the export-led growth through the small scale industry route will be accelerated during the Sixth Plan period.

25. During the Plan period, it is also envisaged to bring about changes in the product composition of the manufactured exports of the country as Pakistan proceeds to higher stages of industrial development. Moving from simple labour-intensive to skill-based export items would require considerable modernisation and balancing. It is in the interest of the country to upgrade and diversify manufactured exports towards higher value added items.

26. The major instrument of industrial growth during the Sixth Plan would be the private sector. The ratio of public sector industrial investment to the GNP has already been brought down to a little over 1 per cent of the GNP. Without the growth of the private sector investment to a ratio of 3 to

4 per cent of the GNP by the end of the Sixth Plan, it would be extremely difficult to maintain the overall tempo of expansion in manufacturing. The capacity utilisation in the public sector industries, which are presently estimated to account for 50 per cent of the total industrial asset, would largely be determined by the demand originating from the private sector. This is specially true of the steel mill. The demand from engineering goods sector must rise quite rapidly to absorb the full capacity output from the steel-using industries.

27. At the same time, private sector may seek support through public sector participation in some of the difficult enterprises. This is being experimented in some of the downstream steel industries. The public sector on its part has used the private sector association for entrusting to them management of enterprises requiring speedy response in a competitive market. Thus, a new phase of cooperation between public and private sector is expected to commence, leaving behind the acrimony of the past.

28. Public sector commands a sizeable proportion of industrial assets in precisely those industries which should expand. This segment cannot be asked to stand still. It would need to expand production, increase capacity utilisation, act as a vehicle for introducing new technology, and improve productivity, growth and expansion would be undertaken only as part of this framework. After completing the projects which are under way and nearing completion, the public sector would mainly concentrate on rationalisation of the operations for industrial undertaking managed by it. Modernisation and balancing, with suitable selected expansion of capacity, as a logical part of the overall rationalisation of the projects would be undertaken.

29. To encourage and assist industrialisation, the concept of pioneer industry will be developed and the term will be defined as "industry which is not being carried out in the country on a scale adequate to the economic needs of the country and for which there are favourable prospects for development". Such industries will become eligible for all facilities and incentives from Government and they will be subject to minimum scrutiny and controls.

30. In addition to the above mentioned strategies following measures will be introduced to achieve the targets—

- While the wholly foreign firm will have a role to play in industries with new techniques, the joint enterprise of local and



foreign businessmen is likely to secure greater acceptance in Pakistan and also contribute more to the raising of managerial and technical standards;

- Special funds will be created to close down the sick units and the industries of low value-added and switch over to higher technology;
- Efforts will be made to bring improvement in labour-management relation and introduce effective and fair system of conciliation and arbitration. It will also attract the multi-nationals to invest in Pakistan;
- Quality control measures will be made mandatory and standardisation will be encouraged;
- An effective programme of industrial training in all the important fields to match with the Plan requirements will be undertaken which will take into account the present exodus rate of trained manpower. This will not only ensure the provision of a technological base for receiving the foreign technologies but will also result in the earning of the valuable foreign exchange through the remittances from our expatriate technicians; and
- Expansion in the presently available research and development organisations *i.e.* PCSIR, PITAC, Universities etc. and location of specific industrial research institutes close to industrial sites in a programme of decentralised science and technology development.

### **Industrial Investment Programme**

31. In the Sixth Plan, an industrial investment of around Rs. 82.5 billion is projected with Rs. 20.5 billion or 25.0 per cent earmarked for the public sector. This compares with Rs. 46 billion invested in the manufacturing sector in the Fifth Plan, with roughly 56 per cent invested in the public sector. Overall industrial investment in industrial sector is expected to be increasing at an annual rate of 14.7 per cent in current prices—slightly ahead of the GDP projected growth of 13.4 per cent in current prices. The ratio of industrial investment to the G.D.P. (F.C.) will thus rise from 4 per cent in 1982-83 to 5.3 per cent during the Sixth Plan.

32. Implementation of the private sector investment programme of Rs. 62 billion would require acceleration in the present level of private investment in this sector by 30 per cent per annum in nominal terms or around 22 per cent per annum in real terms. The required acceleration in the private sector programme is of a very high magnitude. It has been estimated that out of the sanctions given during the Fifth Plan period amounting to Rs. 46 billion, roughly 52 per cent had already been implemented. There is thus a throw forward of Rs. 22 billion. The investment in small scale industry has been increasing at a relatively high rate during the recent years. This does not require to go through the sanctioning procedures. With the proposed liberalisation in the investment limit for industries not requiring sanctioning procedures, the rate of growth in small scale industries may even be higher during the Sixth Plan period. It is expected that from a benchmark of Rs. 1.3 billion in 1982-83, such investment may increase to around Rs. 3.5 billion by the end of the Plan period. Total investment of Rs. 11 billion is expected to be in small scale and rural industries during the Plan period.

33. If the investment demand reflected in the new sanctions during the Fifth Plan continues at the same level, total new units in the Sixth Plan would be of the order of Rs. 62 billion and is expected to be implemented during the Plan period.

34. The growth in the industrial output and value added is projected for the Sixth Plan period at 9 per cent per annum. The growth in industrial production is being projected at a lower rate than the growth in industrial investment because of the shift in emphasis towards more difficult capital intensive and long gestation industries. This would be partly counter-balanced by the completion of a large project in the basic steel sector for which bulk of the investment had been made during the Fifth Plan.

35. The programme includes investment in strengthening the institutional framework for various industries, setting up specific technology and training institutes for a number of industries, with the objective of improving the quality, acquisition of technology and expanding the markets for products.

## Exports

36. Manufactured exports are expected to increase during the Sixth Plan period from \$ 1.3 billion in 1982-83 to \$ 3.1 billion 1987-88. Manufactured exports are expected to grow by slightly over 11 per cent per annum in volume, compared to projected 8 per cent annual real growth in overall exports. The share of manufactured exports is expected to rise from 55 to 64 per cent of total exports during the period.

37. A 15 per cent increase per annum is envisaged in small scale and cottage industries. The role of such industries in the process of industrialisation needs no explanation. These are usually based on local raw materials, create significant employment and are often export-oriented. Such industries would also meet the objectives of rural development in the Plan. Additional advantages including industrial dispersal and curtailment of rural-urban migration.

38. The following table broadly indicates the major thrust of industrial investment strategy:

	Percentage of total industrial investment
Import substitution .. .. .	27
Steel .. .. .	11
Engineering goods .. .. .	16
Export Expansions .. .. .	18
Agro-based .. .. .	18

## Public Sector

39. Out of the public sector programme of Rs. 20.5 billion in the Sixth Plan, Rs. 8.5 billion would be provided through the budget mainly for the completion of the Pakistan Steel Mill excluding re-payment of loan. Funds have also been provided for the completion of the public sector cement projects carried forward from the Fifth Plan. The new industrial

projects which may require partial budgetary support include single super-phosphate factory based on Hazara rock phosphate, newsprint based on bagasse and Security Printing Corporation expansion projects. Other projects would be financial from retained earnings of the Corporation and marked borrowing. For the backward provinces and under-developed areas the pace of development will be maintained through special programmes in the public sector. The industrial projects for the Oil Refining sector are discussed in the Chapter on Energy. These are also based on self-financing outside the budget.

40. The investment required for a large part of the above programme will have to be generated by the public sector enterprise through internal finance such as retained earnings and depreciation funds. For credit needs, the public sector will be required to compete with private sector on equal footing, on the basis of project viability. In order to improve the resource generation in the public sector, rationalisation of pricing policy, registration of units at the stock exchange, setting up of productivity-based incentive system and resource mobilisation through joint ventures with the private sector, both domestic and foreign will be reviewed.

41. While the public enterprises will be governed to a considerable extent by the overall policy framework being laid down in the Sixth Plan for industrial investment, the fact of their being in the public domain necessitates a good measure of internal planning. For this purpose, a detailed operational and financial plan will be prepared every year and the public sector investment will be governed by these Annual Plans. The currently installed "signalling system" will provide the means of evaluating and compensating the public sector managers according to actual performance. A system of corporate and financial planning has been introduced to facilitate the implementation of the National Plan priorities and to enable effective resource mobilisation.

### **Private Sector**

42. A detailed private sector plan is neither possible nor desirable. What is rational is the broad indication of potential areas of investment, the expected private effort and a policy framework to which the private sector will be free to respond. The policies will be directed not only to further boost private confidence, but also towards influencing the real economic forces inhibiting investment, *viz.* uncertainties of real exchange rate and real interest rates, low profitability etc.

43. The major policy thrust during the Sixth Plan will comprise deregulation, infrastructure budget, rationalisation of commercial-fiscal-monetary policy-mix and an efficient package for the small scale sector.

### Deregulation

44. Deregulation will be the *primum mobile* of the Sixth Plan. Indeed, the liberation of productive and innovative private energies critically depends on the breadth and the depth of deregulation. For the sake of ensuring success regulatory measures have to be well-conceived and their introduction timed into operational phases, with adequate and credible back-up. Basically, the objective is to restore the logic of the market within the framework of overall national interests, in matters of advance as well as survival.

- (a) A new Industrial investment Schedule will be announced, specifying a list of priority industries without any investment ceiling for individual industries;
- (b) No Government sanctions will be required for industries included in the Investment Schedule, except for clearance by investment finance institutions in case the private sector borrows from these institutions;
- (c) Automatic access to foreign exchange licensing for the import of machinery upto a fairly liberal limit will be provided for industries included in the Schedule;
- (d) Policy guidelines will be announced for the terms of foreign equity loans, suppliers credits, royalty and technical fees, within which all individual agreements will be automatically approved with only the exceptions requiring government clearance;
- (e) The Annual Plans will give priority to completing existing industrial estates and setting up some new ones, particularly in the less developed areas, in order to economise on scarce infrastructure and to provide one-window operation facilities for private investment;

- (f) The national credit budget should not be allowed to be pre-empted by the public sector so that adequate credit becomes available for private investment; and
- (g) Adequate foreign exchange will be lined up for the private sector by strengthening the resources of investment finance institutions, setting up new private investment finance companies, and by arranging foreign exchange lines of credit for the private sector investment.

45. The charter of the Investment Promotion Bureau will be enlarged to include investigation and identification of investment opportunities, to help promote industries by providing assistance to the prospective entrepreneurs in the acquisition of land, factory, places, utilities and in arranging long-term finances, skilled manpower and other services. The Investment Promotion Bureau will act as a coordinating agency for attending various problems faced by the investors and also will coordinate in the operation of specific schemes for financial assistance at concessionary rates of interest like small industries finance schemes, project development assistance scheme, capital assistance schemes, etc. A time limit will be prescribed for the evaluation and clearance of a project to the acquisition of infrastructure facilities and arrangement of financing and other requirements.

46. Development of land sites and the construction of factory buildings on the basis of projected demand, originally through Government grants and loans and then self-financing will be accorded priority. Facilities will be created in these industrial estates for the private investors to hire or to lease out constructed industries buildings of standard designs for starting quick production facilities.

### **Commercial Policy**

47. There is no doubt that the commercial policy instruments have in the past worked towards oppressing rather than promoting growth. In effect both acted as convenient surrogates for inability to tax through economically meaningful alternatives. The Sixth Plan reforms will be directed towards the following—

- Rationalisation of tariff structure to dovetail it to the objectives of providing signals and incentives for resource allocation into desired investment avenues;

- Exchange rate, helped by the severance of the rupee-dollar link, has to become a potent and flexible tool of development policy;
- Foreign exchange availability to investors will be augmented by the institution of a investible fund of reasonable size; and
- Interest rate on long-term loans for capital formation should reflect cost which can be borne by various industries, and not the short-term concern for monetary stability.

### **Fiscal Policy**

48. Fiscal policy will also have as one of its over-riding considerations the improvement of incentives for investment. Specifically, actions will be taken in the following respects:—

- Compensatory rebate system will be further streamlined; and
- Corporate tax structure will be geared to the need of mobilising investible funds.

49. Prudent monetary and credit policies have already begun to furnish the elements of a stable financial environment for investment decision. The Sixth Plan will attempt to harmonise the objectives of growth and stability. Further, the cost and availability of credit to private sector will be governed by the large weight assigned to private industrial investment.

### **Foreign Private Investment**

50. Foreign private investment in Pakistan has never assumed a significant proportion of overall investment. In a world where technology, marketing and finance keep touching ever new heights of sophistication, an important quick course left to developing countries for sharing this strategic knowledge stream is by learning from foreign investors. The policy and incentives-mix that exists at the outset of the Sixth Plan includes non-nationalisation commitment, unambiguous repatriation and royalties rules and avoidance of double taxation. The Sixth Plan policy package will consist of the following:

- The foreign investor will enjoy the organisational flexibility of entering an investment field direct or collaborate with the public or the private sector;

- Portfolio investors from abroad will now be able to provide finance directly to the private investor; and
- Continued development of facilities in Export Processing Zone.

51. The foreign investors will be drawn in two ways—firstly, through direct advantages offered to them, and, secondly, through the lure of dynamic domestic industries. There is a natural affinity between a healthy domestic private sector and the expanded foreign investment.

### Small Scale Industries

52. Small scale sector faces a different set of problems and, therefore, requires some special incentives. The more important of these during the Sixth Plan will be as under :

- A combination of fiscal incentives to ease initial cash flow problems;
- Preferential access to credit through stronger specialised institutions;
- Institutionalised dissemination of information about acceptable export designs and suitable technologies;
- Assistance in training for the required skills;
- Organisation of advisory marketing boards;
- Encouragement for integration with large scale sector through sub-contracting; and
- Provision of adequate infrastructure and measures to make it accessible to the small scale investors.

53. Credit arrangements pose the most important single problem in execution of the private sector industrial projects. Presently the Credit Consultative Committee, headed by the Governor of the State Bank of Pakistan makes broad allocation of overall credit availability between public and private sectors and within the private sector for various priority needs.



This relates mainly to the credit from the banking system. The credit requirements of the private industrial sector are of more diverse nature and require coordination among various institutions operating in this field; on the ground, credit arrangements for sanctioned projects are decided for the individual projects through specially organised consortia. Broad general issues arise for improving the organisation and flow of credit from various sources to the industrial sector. There is no existing forum to feed back the monitoring and examination of the issues which keep arising. It is suggested that the State Bank should set up an Industrial Credit Cell, along the lines already set up for agricultural credit. An Advisory Council for industrial credit should also be established for discussion of the relevant issues and for facilitating the supply of credit for private investment.

### Technology

54. A stage has now been reached when both the private and the public sectors should pay much greater attention to the modernisation of industrial processes, adaptation to the changing technology and, where necessary, scrapping completely obsolete machinery and technology.

55. In order to achieve these objectives and physical targets of the Sixth Plan, progressive advance in technology is essential. The country will have to move rapidly on the technology curve in selected industries and for selected processes. The whole objective of development is to improve productivity and wages of the low-paid workers. Every effort will be made to move into sophisticated industries. This issue is discussed further in Chapter on Science and Technology (Chapter 17).

### Research

56. Research plays an important role in the development of new products and the efficient production of the existing ones. Possibility of advancing some sort of subsidy to firms undertaking research will be given consideration. Apart from giving tax incentives to stimulate research and development and to promote better quality industries, the Government will encourage new products or improvement in the existing products/processes relating to manufacturing activities during the Plan period. The Government may encourage research in high priority national industries by partially sharing direct cost of research and development.

57. In order to achieve self-reliance in science and technology, the following actions will be initiated during the Plan period—

- (a) Major part of the technical assistance will be utilised in setting up of international institutions of science and technology as applicable for immediate use to specific industries so that the country's indigenous technological capacity is built to a point where it does not need much by way of outside help; and
- (b) Expertise invited under technical assistance will include Pakistanis.

58. Industrial policy has been evolving on new lines since the present government started grappling with problems created in the post-nationalisation phase of industrialisation in Pakistan. The contours of a new industrial policy can be identified from a number of measures which have already been undertaken and policy directions indicated in the Sixth Plan. The Industrial Policy statement of the Government of Pakistan was made in 1948. This still remains the most comprehensive statement of policy on the subject. It is recommended that in order to allay apprehensions and doubts on various issues and, to integrate various policy measures, the Government may at an early stage in the Plan implementation issue a new Industrial Policy statement. This would act as a guiding framework for both the public and the private sectors as well as the various agencies set up to encourage and promote industrial progress in the country. Rs. 700 million have been earmarked for Science and Technology programmes as against Rs. 166 million utilised in the Fifth Plan.

59. In the light of the preceding discussion on Industrial Policy strategy, detailed study has been made of a large number of industries already set up in the country and new industries which should receive urgent attention. Working Groups were set up involving a large number of experts in various fields to study different industries groups and make specific recommendations to formulate programmes and policies specific to those industries. Further work would have to be undertaken in consultation with the concerned agencies and the Ministry of Industry with a view to preparing

an indicative Investment Schedule or an indicative Investment Plan for the private sector for the Sixth Plan period. Investment pattern in the various industrial sectors during the Sixth Plan will be in the following proportions:

TABLE 3

*Investment Pattern during Sixth Plan*

(Million Rs.)

Sector	Investment			Percent- age of total
	Public	Private	Total	
Basic Metals and other Engineering Industries	9,060	10,870	19,930	24
Agro, Small and Rural Industries	2,481	13,400	15,881	19
Textiles	5	12,790	12,795	16
Petrochemicals	60	5,260	5,320	6
Non-Metallic Minerals Products	2,108	4,290	6,398	8
Fertilizers	1,440	4,100	5,540	7
Chemicals & Pharmaceuticals	1,399	5,285	6,684	8
Rubber products and other Misc. industries	3,947	6,005	9,952	12
Total :	20,500	62,000	82,500	100

## INDUSTRY

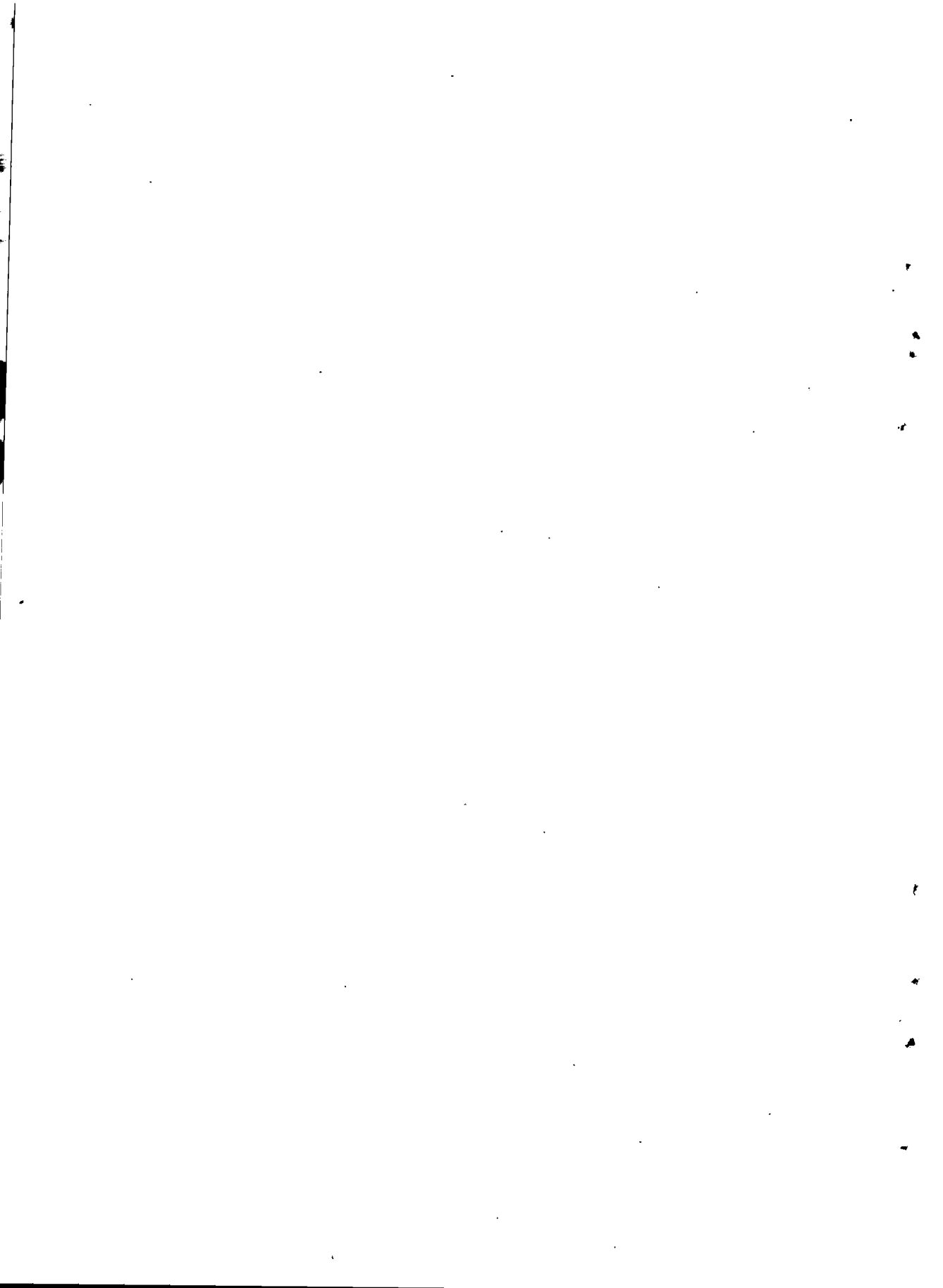
*Financial Allocations 1983-88*

		(Million Rs.)		
Industry Groups		ADP	Outside ADP	Total Public- sector
1. Food, Beverages, Tobacco	.. ..	174	408	582
2. Textiles	.. ..	-	5	5
3. Paper, Pulp and Boards	.. ..	512	1,328	1,840
4. Wood Products	.. ..	-	-	-
5. Leather and Footwear	.. ..	59	-	59
6. Rubber Products	.. ..	-	-	-
7. Chemicals	.. ..	242	1,157	1,399
8. Fertilizers	.. ..	240	1,200	1,440
9. Petrochemicals	.. ..	10	50	60
10. Non-Metallic Minerals Products	.. ..	398	1,710	2,108
11. Basic Metals	.. ..	3,660	3,094	6,754
12. Metal Products	.. ..	132	129	261
13. Machinery other than Electrical	.. ..	91	505	596
14. Electrical Machinery	.. ..	191	686	877
15. Electronics	.. ..	14	112	126
16. Transport Equipment	.. ..	46	400	446
17. Miscellaneous Industries	.. ..	2,731	1,216	3,947
(i) Industrial Estates	.. ..	(186)	(-)	(186)
(ii) Small Industries Programmes	.. ..	(673)	(-)	(673)
(iii) Export Processing Zones	.. ..	(85)	(50)	(135)
(iv) Other (Printing Press etc.)	.. ..	(1,087)	(1,166)	(2,253)
(v) Science & Technology	.. ..	(700)	(-)	(700)
Total	.. ..	8,500	12,000	20,500

## INDUSTRY

*Financial Outlays by Agencies*

				(Million Rs.)		
Executing Agency				ADP	Outside ADP	Total Public sector
(A)	FEDERAL	..	..	5500	7630	13130
	(i)	Ministry of Production	..	4292		
		(a)	Pak Steel ..	(3600)		
		(b)	Fertilizer ..	(240)		
		(c)	Cement ..	(110)		
	(ii)	Ministry of Industries	..	152		
		EP Zones, Karachi, Lahore & Peshawar		(15)		
	(iii)	Ministry of States & Frontier Regions/FATA-DC		92		
		(a)	Mini Cement Plant ..	(15)		
		(b)	Gypsum Board Plant ..	(10)		
	(iv)	Ministry of Science and Technology	..	700		
	(v)	Kashmir Affairs Division (AKMIDC Projects)		103		
	(vi)	Finance Division/Pakistan Security Printing Corporation	..	29		
	(vii)	Other Ministries	..	132		
(B)	PROVINCIAL			3000	4370	7370
	(i)	Punjab/PIDB Projects	..	1270		
	(ii)	Sind	..	180		
	(iii)	NWFP/SDA Projects	..	1020		
	(iv)	Baluchistan/BDA Projects	..	530		
		Total (Federal & Provincial)	..	8500	12000	20500



*“Do ye not see  
That God has subjected  
To your (use) all things  
In the heaven and in earth  
And has made His bounties  
Flow to you in exceeding  
Measures (both) seen and hidden”*

*Luqman  
XXXI-20.*

## CHAPTER 11

### MINERALS: ACCELERATED EXPLORATION AND DEVELOPMENT

THE fact that the development of Pakistan's mineral resources can make great contribution to industry and manufacturing has long been recognised, and yet the exploitation of these resources has not taken place because the strategy for industrial and manufacturing development did not pay enough attention to the use of indigenous raw materials. As a result, our rich mineral resources could not be adequately exploited over the past 30 years.

2. In the Sixth Plan, added emphasis will be placed on accelerated exploration and development of minerals and mineral based industries. This expansion will call for policy readjustments, restructuring of institutions and financial support.

3. Despite the lack of funds and skilled manpower, the Geological Survey of Pakistan has worked well in the exploration of the most promising areas. Today the mineral resources are better identified in relation to their location, quantities, quality and classification and this information is in

keeping with the professional standards. The major mineral resources are : coal, uranium, rock phosphate, gypsum iron, copper, gold, silver magnesium chromite, antimony, barite, rock salt, sulphur, gemstones such as rubies and aquamarine, porcelain and china clays.

4. Investment for development of mining has assumed an added importance in the context of needs for self-reliance in energy and supply of raw materials for Pakistan's integrated coastal, import based steel plant near Karachi. The foreign imported raw material, mainly metallurgical coal, iron ore and manganese account for nearly 50 per cent of the cost of production of basic steel produced at the steel mill. The prices of coal, following the oil crises in 1973, have been steadily increasing which is also true, though to a lesser extent of iron ore. Need for using coal in place of oil (which is mostly imported) in the processing industry and the substitution of gas by coal to produce electricity, are of overriding importance. There is also need for substitution of natural gas by coal briquettes in household use to conserve the former for use in more productive channels e.g. fertilizer and chemical industries.

5. In the Sixth Plan, the financial outlays in the public mining sector are being increased three fold. In addition, private savings through policy incentives and concessions, will be mobilised for investment in mining enterprises, besides the direct participation of financial institutions for equity and credits. It is hoped that with the adjustments in the policy priorities, laying special stress on the private sector and the reorganisation of the public sector, the mineral sector could be made more dynamic. Together with the provision of capital and the development of infrastructure, efforts will be made to acquire modern technology by encouraging joint ventures with transnational and foreign firms, and training of technical manpower under the bilateral and multilateral assistance programmes.

## FIFTH PLAN REVIEW

### Public Sector

6. During the Fifth Plan, the major minerals such as copper (Saindak), coal (Lakhra), rock phosphate (Hazara), iron ore (Nokundi), gypsum (Mianwali), emerald (Swat) and magnesite (Abbottabad) were identified and projects for exploitation of resources were developed. Mine development for these minerals is either assured or likely to be achieved in the near future, hopefully during the Sixth Plan. The Saindak integrated mineral project is under discussion with prospective participants for suitable financing and



technical collaboration. The Resources Development Corporation (RDC) selected Mountain States Mineral Enterprises (MSME) consultants from USA to prepare a bankable document for the Project. M/s. Charter-Brown of U.K., appointed by Pakistan Banking Council have, by and large, supported the conclusions drawn earlier by MSME, with certain modifications in the metallurgical process. Pakistan Mineral Development Corporation (PMDC) has raised the production capability of Makarwal collieries (Punjab) by 150 per cent, installed a coal washing plant at Shahrih colliery (Baluchistan) and increased production of salt by about 45 per cent. PMDC has also exported rock salt India and East Africa. The Gemstone Corporation of Pakistan (GEMCP) established in 1979 has increased the production of the emeralds and rubies and discovered new emerald bearing deposits in Swat. Pakistan Industrial Development Corporation (PIDC) has upgraded, as proven, 30 million tonnes or iron ore reserves in Nokundi (Baluchistan) which have been accepted as technically suitable for PAK-STEEL, and 11 million tonnes of magnesite for establishing a magnesite-chromite refractory industry. FATADC have identified a number of minerals of economic value in the districts and agencies of NWFP. The Azad Kashmir Mineral and Industrial Development Corporation (AKMIDC) has identified and evaluated many minerals, but the mining activities are confined to the production of limonite, mica and yellow ochre. The Geological Survey of Pakistan, in addition to its regular activities of systematic mapping, undertook five special exploration projects in Baluchistan. As a result, potential deposits of porphyry copper, lead zinc and fluorite are being investigated in detail. Moreover, coal, chromite and magnese are being evaluated in other provinces. The Pakistan Council of Scientific and Industrial Research (PCSIR) undertook wide range of investigations, including bench-scale tests and pilot plant operations to upgrade and utilise indigenous minerals in their ore processing and metallurgy, glass and ceramic laboratories.

7. The provincial mineral development agencies, responsible for the management and development of minerals (except oil, gas and nuclear ores) have carried out evaluation and exploitation of various minerals. Sarhad Development Authority (SDA) in collaboration with British Mining Consultants have established 3.2 mt\* (Proven) and 3.0 mt (indicated) reserves of phosphate rock in Hazara (NWFP). The nearly Kakul phosphate mines are being developed to produce 67,000 tonnes per year crushed rock phosphate required for existing single-super phosphate plants of the National Fertilizer Corporation (NFC). It has established 6 billion tonnes of nepheline syenite deposits in Koga (Malakand-Mardan) and collected sufficient data showing

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\*Million Tons.

promising results of lead, zinc and molybdenum in Kohistan area. Punjab Mineral Development Corporation (PUNJMIN) has undertaken thirteen schemes, six for the development of gypsum, dolomite, silica sand, fireclay and coal and seven for the exploration and evaluation of other minerals. PUNJMIN has earned substantial revenue through the sale of its products. The Baluchistan Development Authority (BDA) continues mining of quartzite, fluorite and chromite minerals.

8. As against an allocation of Rs. 770 million, likely expenditure is expected to be Rs. 400 million. The Geological Survey of Pakistan may cover an area of 45 thousand sq. kms. against the targets fixed for geological mapping over an area of 160 thousand sq. kms. *i.e.* 28 per cent of the envisaged targets.

### Private Sector

9. Because of the complex and long development requirements of the mineral industry, the private sector has restricted its activities to those minerals that can be easily located and exploited with little capital and technical skill for processing and which can render quick returns. In consequence, most of the deposits of non-metallic nature that occur on or near the surface such as coal, limestone, silica sand, fireclay, soapstone, gypsum etc., are being extracted by open pit or shallow underground mining methods by a number of small concerns.

### SIXTH PLAN OBJECTIVES AND PRIORITIES

10. The major basic objectives of the future development programme for minerals will aim at :

- accelerated exploration on sub-surface resources;
- determination of the quality and size of resources;
- rapid and systematic development of all economically viable minerals to supply the requirements of manufacturing industry and agriculture from indigenous resources;
- increasing foreign exchange earnings through exports; and import substitution (especially of coal and iron ore for Pakistan's first integrated steel mill) and development of rock phosphate deposit.

11. For a comprehensive mineral development programme, it is essential to extend the area and intensity of explorations. This would require expansion in the quality and the extent of the activities of the Geological Survey of Pakistan. Concurrently entrepreneurs must be involved in prospecting and development of mineral resources and this can be achieved through a reform of the mining laws and regulations, making them more development oriented and less prohibitive in scope. Finally, it is necessary to restructure and redefine the role and functions of the public corporations and agencies engaged in prospecting and developing of minerals so as to demarcate areas between them and the private sector.

12. The arrangements for financing mineral projects have to accept the problems of large investment, long development requirements and uncertain, sometimes even inadequate returns. The small proportion of the international trade which Pakistan represents the mineral sector's role is almost insignificant. The location of minerals requires transportation from the mine head to the country's ports near Karachi (KPT, Bin Qasim). This makes the price of minerals even less competitive. In the initial years, therefore, Pakistan must concentrate on increasing the domestic demand in the case of most of its mineral products other than copper.

13. It is generally agreed that the present system of publishing the information about the deposits and the procedures for obtaining certificates of approval, prospecting and mining leases are cumbersome, prohibitive and discouraging.

14. The Sixth Plan strategy would, therefore, enlarge and intensify the activities in the fields. It would focus, *inter alia*, on a well-defined and clear enunciation of Government Policy on the role and functions of the Provincial and Federal Governments and opportunities for the private sector. To this end, a national mineral development policy will be formulated and announced immediately after the launching of the Sixth Five Year Plan. The policy would deal with the question of proprietary rights, safeguards against nationalisation, the tenure of the lease, the role of banks and financial institutions and set up physical and regulatory incentives. The programme of work of the Geological Survey of Pakistan will be enlarged both in respect of promising prospective areas and upgrading the knowledge of areas already explored. A more efficient system of mapping and dissemination of information on the results of its surveys and mapping will be evolved to interest the public, the private sector and the foreign investors.

15. While encouraging the participation of private parties in mining enterprises, efforts will be made to safeguard against wasteful and reckless exploitation through crude and unscientific methods by improving knowhow on mining industries and transportation. With a view to making up for the deficiency in the availability of trained and skilled manpower, polytechnics, engineering colleges, and engineering universities will be encouraged to develop suitable courses (diplomas and degrees) in geological disciplines and mining engineering. The public sector corporations engaged in mining and allied fields will be asked to prepare programmes of inservice training within the country and abroad to overcome shortages in this vital field. To make better and more efficient use of the existing technical and managerial manpower employed by the different public corporations and also to eliminate duplication in their functions, a study will be carried out to reduce their number and streamline their functions.

16. A directory of mineral points, gradation and specification of the ores and the agencies and the corporations engaged in the field of mining—public and private—will be prepared as reference material for the investors, the institutions and the policy makers.

17. To attract the private enterprise, while eliminating past unsatisfactory practices of exploration, the Government and financing institutions will take a lead in educating and assisting those private parties which may be interested in prospecting and development of mines. The public enterprises, particularly PMDC, will be asked to strengthen their technical advisory and project preparation cell and also to extend help to the private sector. The portfolio of viable projects based on comprehensive pre-investment and investment feasibility will be prepared and published by PMDC. The role of the public corporation would include technical studies and advice, assisting the progress and efficiency of the mining industry, encouraging the participation of foreign capital in mineral development, expediting imports and production of necessary equipment and spare parts and other activities designed to make the best use of the country's fuel and mineral resources for development.

## THE ROLE OF GOVERNMENT AND PUBLIC ENTERPRISES

18. In Pakistan as in most other countries, both the developing and the developed, government has to play a prominent role in the development of the mining industry. This role in the earlier 60s was confined to exploration by the Geological Survey of Pakistan, and an advisory and promotional

role performed by the Bureau of Mines in the Federal Government. The prospecting and mining leases were issued by Provincial Governments. The functions of the Federal and Provincial Governments have been subject to changes, in the wake of distribution of subjects between the federation and the provinces under different Constitutions. This has resulted in today's unsatisfactory situation whereby this sector (more than any other) is overburdened with laws, regulations and cumbersome directives. There is still a degree of duplication and overlapping of the functions between the Federal and Provincial Governments. It would be no exaggeration to say that, in addition to the non-availability of the easy capital and the dearth of technical personnel, this confusion has also contributed substantially to the stagnation and the slow growth of this potential resources.

19. There are in all, 17 public corporations, both federal and provincial, engaged, in one or the other type of mining operation. Their activities, and charter, not infrequently overlap and duplicate each other's sphere and responsibilities. They compete with each other for the meagre financial resources and the manpower, with the result that these two inputs, particularly the managerial cadres which are thinly distributed lead to increasing overhead costs and attendant losses and inefficiencies in operations. With the exception of the Geological Survey of Pakistan which has a clear charter to explore and map the prospective geological and mineral zones, the rest of the public corporations (federal and provincial) deal with more than one mineral or ore. However, a few carry out their operations over a wide geographical area and range of deposits and this overstrains their capabilities and capacity to undertake substantial and meaningful programme of prospecting and development. While the proliferation of the corporations has gone in all directions, disproportionately to the size and the share of the sector in the national economy, there is as yet no financial intermediary or development bank specialising exclusively in mineral financing.

20. With a view to having a focal point for management and coordination of policies relating to exploration, prospecting and development of coal reserves and its use for the generation of electricity and the substitution of other energy sources, a federal organisation to be designated as National Coal Authority will be set up. In view of the constitutional aspects regarding distribution of subjects between Provinces and the Federation, the agreement of the Provinces will be obtained who will also be given representation on the Board of Governors.

21. The National Coal Authority will be assigned, amongst others, the following principal functions :

- Assessment of the quantity and quality of coal reserves and formulation of National Exploration Programme;
- Investigation and assessment of economic potential of coal and formulation of projects of coal based industry preferably close to the coal-mine heads;
- Coordination and supervision of coal utilization feasibility studies *e.g.* manufacture and marketing of smokeless coal briquettes and fuel substitutions;
- To act as clearing house of ideas and provide advisory and consultative services for the processing of leases and concessions, in consultation with provincial governments for the public and private and domestic/foreign joint ventures; and
- NCA assistance to the Government in establishing the appropriate structure and mechanism for mining finance especially the financing of the private sector.

22. In order to focus the problems faced by mining industry, both by the private and the public undertakings, and to have coordination in the policies between the public corporations and the federal and the provincial Governments, the Federal Government had set up a Mineral Coordination Board in 1973 at the federal level in the Ministry of Petroleum and Natural Resources. It is required to .

- coordinate the activities of various central and provincial agencies concerned with different stages of mineral development;
- review the progress made;
- consider the annual programmes of various agencies;
- resolve any differences between Provincial Governments and the agencies with regard to priorities; and
- advise the Governments on policies and plans in the mineral sector.

23. Its most effective contribution to date has been in the following fields

- consensus on the fundamentals of mineral concession policy.
- review of the geo-scientific manpower; and
- the provision of valuable technical comments on the mineral exploration and development schemes prepared and submitted by the federal and provincial governments and their corporations to its technical scrutiny committee.

24. In the Sixth Plan the Government will initiate more actively in the mineral sector through a study of the needs and scope for :

- reducing the number of public corporations and streamlining their functions;
- setting up a Mineral Development Bank or Fund;
- establishing a public company or authority for prospecting and development of coal and coal based industries and power generation with the possible participation of Pakistani private parties.

#### MINERAL POTENTIAL AND RESERVES

25. To illustrate, optimum investment opportunities have been classified and ranked on the basis of :

- inferred, indicated and proven reserves;
- gradation of quality and specifications; and
- location in relation to commercial exploitation.

26. The order of priorities based on these criteria are :

- coal;
- copper, gold and silver;
- phosphate;
- iron ore;
- gypsum;
- gemstones;
- china clays and refractory materials;
- marble and onyx.

## Coal

27. The estimated coal reserves are 1 billion tons (valued at US \$ 140 billion at an oil price equivalent of US \$ 30 per barrel). They range in quality from lignite to sub-bituminous coals. The potential demand for coal in 1987-88 is estimated to be 5.4 million tons. This quantity could meet 10 per cent of the anticipated commercial energy demand. To make enough coal available to meet future markets, a number of obstacles facing exploration, development, production and utilization will have to be overcome. The following measures will be taken:

- up-grading reserves from inferred/indicated to proven status through appropriate investigation;
- development of coal infrastructure, marketing and utilization;
- encouraging mining ventures on cooperative base;
- introducing fiscal incentives;
- applying dual firing systems in heat processing units;
- establishing small thermal energy plants near coal mines (with participation of WAPDA and KESC, as well as provincial Governments) on joint venture or equity basis;
- carrying out feasibility studies of gasification of Lakhra coal for medium/low Btu gas;
- introducing the unit-train concept at railways for moving coal from the mines to the centralized delivery points;
- investigating the feasibility of water transportation on the Indus river especially between Kalabagh and Sukkur;
- adopting pricing policies in relation to competing fuels on a more rational basis to encourage increased coal development and use; and
- setting up smokeless briquetting plants of economic sizes based on major coal fields as a substitute for kerosene oil.



## Copper, gold and silver

28. The Resource Development Corporation (RDC) has completed 45 thousand meters of drilling, more than 130 thousand chemical analysis and three bench scale metallurgical tests have thereby identified resources of 412 mt of copper and associated valuable mineral deposits to a total in ground value of US \$ 9.3 billion at Saindak in Baluchistan. On the basis of a pre-investment study, Seltrust Engineering Limited (SEL) of U.K. in 1977 recommended opening of the South or body. This would involve a mining and milling rate of 12,500 tonnes of ore per day to produce 17,850 tonnes blister copper annually, containing 52 thousand oz. of gold and 80 thousand oz. of silver, 234 thousand tonnes of sulphuric acid and 100 thousand tonnes of steel billets. Blister copper will be exported to major user countries like Japan, U.K. and other European countries at prices ruling at the time of export. Steel billets if eventually processed, and sulphuric acid, will be consumed within the country. A bankable document prepared by M/s Mountain States Mineral Enterprises (MSME) Consultants of USA (1980) has estimated that implementing the total project would cost about \$ 400 million including \$ 240 million in foreign exchange.

29. Since the viability of the project has to a large extent been proved, and the feasibility studies completed, it is proposed to implement Phase-I of the project (blister copper and sulphuric acid production) at an estimated cost of US \$ 330 million. For phase-II, that is, the steel billets, the technical viability of the ACCAR process for steel production needs to be verified. The project is basically a private public mixed enterprise with a majority share holding of Pakistan private investment, public sectors and financial institutions, and foreign equity participation. This mix should allow technology to be acquired while limiting Government equity to catalytic support and involving domestic and foreign private investment and public share participation on the basis of the profitability of the project. The project will be included in the special development programme for Baluchistan.

## Phosphate

30. Good quality rock phosphate deposits have been found in Hazara (Lagarban and Kakul). In the Lagarban area the estimated reserves are 12.2 mt. (measured 3.2 mt. indicated 2.97 mt. and inferred 5.94 mt.) ranging in  $P_2O_5$  content from 27 to 29 per cent. The beneficiated rock is

technically suitable for the manufacture of phosphoric acid as well as nitrphosphate. A mine of 0.2 Mt. annual capacity will be developed at a total cost of Rs. 252 million subject to the completion of a phosphatic fertilizer plant. Kakul Phosphate Mines containing 1 Mt. of rock phosphate have been developed to substitute imported rock phosphate (67 thousand tons per year) required by the existing single super phosphatic plants of the National Fertilizer Corporation (NFC) at Faisalabad and Jaranwala. A crushing and grinding plant at a total cost of Rs. 120 million will be installed to meet the consumer's specifications. On the basis of the present trends, there will be a demand for phosphatic fertilizer of 450,000 nutrient tons by 1987.

### Iron Ores

31. Nearly 50 million tons of iron ore with 45 to 50 per cent Fe content have been proved in Nokundi areas in district Chagai. These ores have been found technically suitable as feed for gaseous direct reduction process and for blast furnace in pelletized form. The objective is to substitute imports leading to substantial foreign exchange savings. On production Nokundi iron ore will meet 47 per cent of the total demand of PAK-STEEL.

TABLE 1

*Break-up of Demand Structure for Imported Iron Ore*

	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Quantity (Million tonnes)	0.76	0.98	1.40	1.50	1.90	1.92
Value (Million Rs.)	364	518	813	959	1355	1450

### Gypsum

32. More than 5 billion tons of high quality gypsum is present in Pakistan and it is found in all provinces. The potential demand for gypsum for agriculture over the next 10 years is 1.6 mt—for the cement, industry 150 thousand tons and for the construction industry about 0.5 mt. During the Sixth Plan, PUNJMIN will develop Daudkhel Gypsum Mining and Crushing plant at an estimated cost of Rs. 470 million to produce 0.75 mt. gypsum and its products per year.

### Gemstones

33. On the basis of preliminary surveys and investigations, it has been determined that there is a significant potential for increasing gemstone production, provided detailed exploration is undertaken. The high quality of the Mingora (Swat) emeralds merits a detailed exploration in depth both by drilling and by underground work. Only two to three ruby deposits are being operated out of more than 30 showings. The ruby deposits of Azad Kashmir especially warrant greater attention. The increase both in the level of production and value added in gemstones is foreseen. During the Sixth Five Year Plan, the GEMCP intends to increase further the production of gems through the development of deposits known at present (Mingora and Gujar Killi emeralds deposits) which have already been explored by the Corporation and which show promise of development and of yielding good financial returns. At the same time, it is proposed to carry out search and exploration for gemstones in the areas where on the basis of available geological informations there appear to be more promising deposits (Mohmand and Malakand Agencies). It is also proposed to expand and to further increase production of cut and polished gems and other gem products.

### China Clays and Refractory Materials

34. About 7 m.t. of good quality china clay is present in Shah Dhari (Swat) and Nagarparkar (Sind). The production of china clay from the operating mines will be increased to feed both the ceramic units in the country and for export. The Nagarparkar output will become viable if the road is constructed from Nagar Parkar to Karachi. Large deposits of refractory clays, delomite, silica sand quartzite, chromite, serpentinite, graphite and magnesite are present which can be developed and processed to feed PSK-STEEL and other metallurgical/high temperature furnace units in the country, PAK-STEEL alone will need 44 thousand tonnes of fireclay, 2.5 thousand tonnes dolomite, 40 thousand tonnes of silica sand, 22 thousand tonnes of quartzite and 4 thousand tonnes of fluorite.

### Marble

35. Considerable scope exists for expanding production of marble (onyx). The difficulty is that the mining methods used are most unsuitable and destructives resulting in poorly shaped rough blocks that fetch very low prices in foreign markets. With technical advice, adequate investment and modern methods of mining the suitably sized slabs out of marble deposits will be employed.

36. Summarized description of the above and a few more workable mineral deposits is given in the following table:

TABLE 2

*Status and Scope of some Workable Mineral Deposits*

Mineral/Location	Reserves (Tons)	Production (Tons) 1981-82	Status and Scope
Coal—Punjab, Sind, Baluchistan.	1 billion tonnes inferred and 480 mt. indicated and proven reserves.	1.6 mt.	Being explored and mined by public and private sector to meet the energy requirement of the country.
Copper—Saindak—Baluchistan.	412 mt. inferred reserves containing 0.3 percent to 0.5 percent copper content and 70 mt. proven reserves.	Nil.	Resource Development Corporation and foreign company will undertake the implementation of the project.
Rock Phosphate—Kakul and Lagarban, N.W.F.P.	12.2 mt. reserves containing 3.2 mt. proven 2.97 mt. indicated and 5.9 in inferred reserves ranging in P <sub>2</sub> O <sub>5</sub> content from 27 to 29%.	970	Mining consultants have submitted the report and phosphate rock will be used for manufacturing phosphate fertilizers.
Iron Ore—Nokundi, Baluchistan.	100 mt. inferred and 30 mt. proven reserves with Iron content 45 to 50%.	Nil.	Exploration continuing. Laboratory studies have established its use for Pak steel and gaseous direct production process.
Gypsum—All Provinces.	5.5 billion tons.	0.28 mt.	Private and public sector engaged in its mining. Production will be increased to meet its demand for construction and reclamation of sodic soils.
Gem Stones—N.W.F.P.	Not evaluated.	N.A.	GEMCP is exploring and mining emeralds and rubies mainly for export.
Marble (ordinary and onyx) N.W.F.P. and Baluchistan.	Large deposits of ordinary marble and about 100 million cubic feet onyx marble.	0.08 mt.	Being mined and processed both by private and public sector. Modern mining methods would be applied for the production of exportable products.

## INVESTMENT

37. The role of the Government and the public sector in the mining industry will primarily be confined to exploration and mapping of the country; making available information on the potential deposits and reserves; dissemination of information and investment potential and providing incentives and support to the private sector. The public sector is already engaged

in development of deposits and will explore the possibility of private participation, both foreign and Pakistan. A number of ores and minerals which can be developed in the short and the medium term; and those which can be used in industrial processing and manufacturing within the country or have linkage to energy production, will be given higher priority. These have been classified into two categories; the first which would be developed during the Sixth Plan and will be given major allocations are coal rock phosphate, iron ore, gypsum, magnesite, rock salt and uranium minerals. For the second category, mineral investigations will be carried forward to permit further evaluation of the size and quality of reserves available. These include: antimony, lead, zinc, nickle, manganese, china clay and nepheline syenite.

38. The total public sector investment in the Mineral Sector during the Sixth Plan is Rs. 5750 million. The details of financial outlays and the physical targets are given in Annexures I and II respectively.

### **Punjab**

39. The total investment programme including federal investment of Rs. 174 million in Punjab will be Rs. 789 million. Punjab will implement a number of schemes for the exploration and development of coal, rock salt, fuller's earth, silica sand, potash and gypsum. The major project will be to develop Daudkhel Gypsum Mining and Crushing plant at an estimated cost of Rs. 470 million to produce 0.75 million tons gypsum and its products per year.

### **Sind**

40. More than half the of the total available coal reserves exist in Sind area near Lakhra. During Sixth Plan a coal fired thermal power plant of 300 MW, based on Lakhra coal, will be set up and is likely to become operational by end of plan period. In addition to coal, other non-metallic minerals will be explored and evaluated in Dadu, Tharparkar, Khairpur, Sanghar and Thatta districts, Provision of Rs. 2046 million including federal investment of Rs. 1996 million has been proposed for these programmes. The major project will be Development of Lakhra Coal deposits.

### **N.W.F.P.**

41. The main activity in Mineral Sector in NWFP will comprise of three schemes namely; development of rock phosphate, detailed exploration of sulphide minerals in Kohistan and pre-investment feasibility study of

Nepheline Syenite. The total investment is estimated to be Rs. 672 million including federal investment of Rs. 199 million. Development of Hazara rock phosphate deposits would claim Rs. 372 million to produce 0.27 million tons of rock phosphate for the production of phosphatic fertilizer.

### **Baluchistan**

42. During the Sixth Plan period, Rs. 902 million programme including federal investment of Rs. 832 million for the exploration and development of mineral resources is envisaged, Lead, zinc, sulphur, asbestos, antimony and other minerals will be explored and evaluated. The major programme will be the development of Nokkundi Iron ore deposits with an estimated investment of Rs. 500 million.

### **Federal Administered Tribal Areas, Northern Areas and Azad Jammu and Kashmir.**

43. Federal Administered Tribal Area (FATA), Northern Areas (NA) and Azad Jammu and Kashmir (AJK) are known to be rich in mineral resources yet its development is slow due to the non-availability of economic advantages such as distance from ports to consumption centres, poor infrastructure, restricted institutional facilities, limited enter-preneurial skill and lack of credit facilities. Considering these constraints and the role of mineral sector to be keystone of economy, new strategy will be devised to promote efforts for the identification of investment opportunities for commercially viable mineral deposits and mineral based industries. Federal Public Sector agencies and consultants have been and still are engaged in the mineral activities of the areas and as a result have identified a few mineral deposits of economic importance that would receive attention of the Federal Government and Government of Azad Jammu and Kashmir for evaluation and exploitation during Sixth Plan. Provision of Rs. 33 million has been made during Sixth Plan mainly for the exploration and evaluation of manganese, iron ore, copper, soapstone, chromite and limestone and for the procurement of equipment in FATA area; Rs. 10 million for N.A. in addition to the provision made to other federal agencies (GSP and GEMCP) working in the area for the evaluation and mining of rubies, zircon and heavy minerals and Rs. 36 million for AJK for detailed surveys, investigations and exploitation of coal, graphite, precious stones and gypsum.

## **INFRASTRUCTURE**

44. The occurrences of mineral deposits in Pakistan are in remote and in accessible areas, at least, on the basis of indications of existing surveys. This is due to the fact that earlier exploration concentrated on areas which

unfortunately have not kept pace with the development in the rest of the country, particularly in the matter of infrastructure and roads network. The existence of reasonable well developed communications system particularly road network and water are pre-requisite for opening up of the country for the exploitation of mineral wealth.

### Roads

45. To develop the mining industry, federal and provincial governments would arrange to provide roads and power for the transportation of supplies and products in the mining areas of different provinces. This facility would not only serve the mining communities but should also accommodate other basic needs of the backward areas as well:

#### *Punjab :*

- Katha Sagral (on Khushab-Pail road) to Nali-16 Kms; (for coal);
- Mustafabad (on Choa-Saidden Shah-Kallar Khar road) to Dhalwal-Karrala-Malot-Karuli—19 Kms (for coal);
- Rathucha (on Choa-Saidden Shah-Khewra road) to Lava-Saluii-Gharibwal—32 Mks (for coal);

#### *Sind :*

- Kanote railway station to Lakhra Coal field—16 Kms (for coal);
- Meting railway station to National Highway—13 Mks (for coal);

#### *NWFP:*

- Kohala-Khan Kalan to Nathiagali (for barite);
- Thakiahall to Bondi Nikra (for soapstone);
- Charbagh to Ghundai Tarako (for marble);
- Lowera Meana to Shaid Meana (for marble);

*Baluchistan :*

- Spintangi-Harnai-Sharigh—125 Kms (for coal);
- Pir-Ismael Ziarat-Mach—32 Kms (for coal);
- Roads will be constructed in Muslim Bagh chromite producing areas.

**Manpower and Safe Working Conditions**

46. Adequate number of properly trained and experienced geoscientists, mineral engineers, middle line supervisors etc., is a pre-condition for mining development. During Sixth Plan, it has been estimated that there will be an additional demand of 184 geologists and 276 mining engineers. The demand for drillers shall stand at 30 while for other engineers and technical staff it will be 165. The demand for para-engineering staff will stand at 2390 which includes shot firers, mine surveyors, coal cutters, ventilation assistants, drilling operators, sirdar managers and timbermen. The requirement of other un-skilled staff will be 5730. During the Sixth Plan arrangements inservice training of para-engineering and para-geological staff will be made. A training mine near Choa-Saidden Shah, District Jhelum will be developed. Moreover, Mine Rescue and safety stations will be established in all the provinces for the safety and in-service training of miners.



**MINERALS**  
**Financial Outlays 1983-88**  
*(Programme-wise)*

Sub-sector/Programme	(Million Rupees)		
	ADP	Out side ADP	Total
1	2	3	4
1. Geological Surveys and Preliminary mineral Investigations ..	177	-	177
2. Detailed Exploration and Evaluation .. .. .			
(i) Firming up of Coal Reserves .. .. .	350	-	350
(ii) Pre-Investment Feasibility Studies .. .. .	250	-	250
(iii) Exploration and Evaluation of nuclear minerals .. .. .	300	-	300
(iv) Other mineral exploration and evaluation programmes such as for gemstones (NWFP, NA & AJK), Manganese, iron ores, copper, soapstone, chromite, limestone (FATA), graphite, feldspar, ruby (AJK), non-metallic minerals (Sind), lead, zinc, sulphur, coal, antimony, asbestos (Baluchistan) potash, coal (Punjab), lead, zinc, copper, molybdenum, nepheline syenite (NWFP) .. .. .	273	-	273
3. Development :			
(i) Lakhra Coal Mining Project (Sind) .. .. .	320	1630	1950
(ii) Duki Coal Mining Project (Baluchistan) .. .. .	40	93	133
(iii) Hazara Rock Phosphate Project (NWFP) .. .. .	159	213	372
(iv) Kumhar Magnesite Project (NWFP) .. .. .	-	100	100
(v) Nokkundi Iron Ore Project (Baluchistan) .. .. .	100	400	500
(vi) Daudkhel Gypsum Quarries (Punjab) .. .. .	-	470	470
(vii) Rock Salt Mining Project (Punjab) .. .. .	46	51	97
(viii) Development Projects for other minerals such as emerald, china clay, gypsum, salt (NWFP), dolomite, coal, fuller's earth and silica sand (Pb) and coal (Baluchistan) .. .. .	71	277	348
4. Establishment of Training Centres, Laboratories and Mine Rescue Stations .. .. .	96	16	112
5. Research and Development .. .. .	58	-	58
6. Equity Share-Mining Bank .. .. .	50	-	50
7. Infrastructure (Roads) .. .. .	210	-	210
Total .. .. .	2500	3250	5750

## MINERALS

## Financial Allocations 1983-88

(Agency-wise)

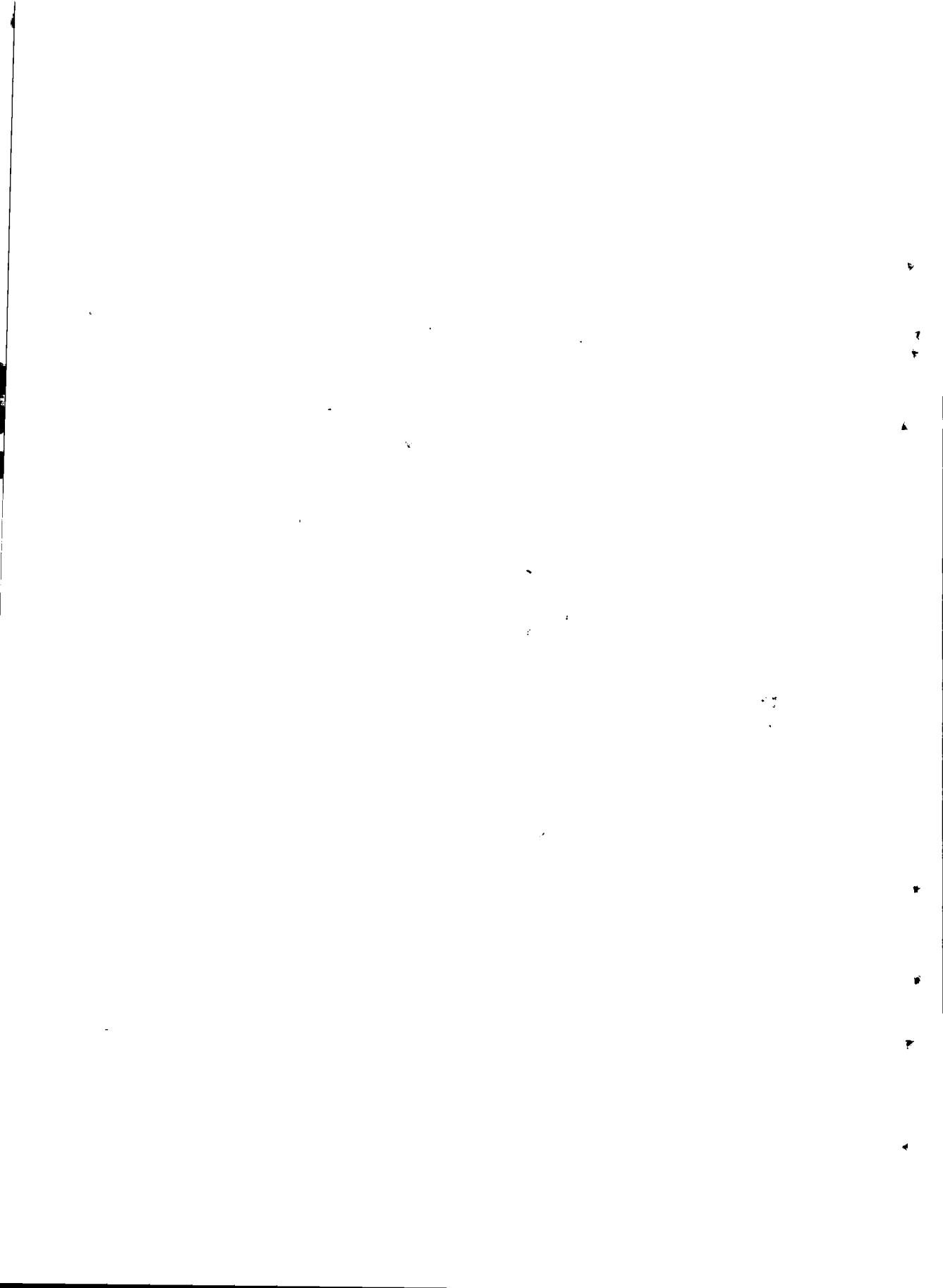
Sr. No.	Agency	(Million Rupees)		
		ADP	Outside ADP	Total
1	2	3	4	5
<b>A. Federal</b>				
1.	M/o Petroleum and Natural Resources	1226	1957	3183
2.	CMLA Secretariat	300	—	300
3.	M/o Production	100	585	685
4.	M/o Science & Technology	35	—	35
5.	M/o States & Frontier Regions	33	—	33
6.	M/o Kashmir Affairs & Northern Areas	46	—	46
7.	Infrastructure	210	—	210
8.	Equity Share—Mining Bank	50	—	50
	Sub-Total (Federal)	2000	2542	4542
<b>B. Provincial</b>				
1.	N.W.F.P.	260	213	473
2.	Sind	50	—	50
3.	Baluchistan	70	—	70
4.	Punjab	120	495	615
	Sub-Total (Provincial)	500	708	1208
	Total (Federal & Provincial)	2500	3250	5750

## MINERALS

*Physical Targets*

Item	Unit	Sixth Plan Targets
1	2	3
<b>*A. Production of Major Minerals :</b>		
Coal .. .. .	'000' tons	5,400
Rock Salt .. .. .	"	1,000
Gypsum .. .. .	"	2,000
Limestone .. .. .	"	11,000
Marble .. .. .	"	110
Rock Phosphate .. .. .	"	270
Iron Ore .. .. .	"	544
Chromite .. .. .	"	60
Gemstone .. .. .	Value in million Rs.	400
<b>B. Regional Geological Mapping</b>		
1 is to 50 thousand scale.	Sq. Kms.	89,600
Punjab .. .. .	"	13,440
Sind .. .. .	"	2,560
NWFP .. .. .	"	25,600
Baluchistan .. .. .	"	32,000
Azad Kashmir and Northern Areas .. .. .	"	16,000

\*The production of major minerals represents the targets in the last year of the Sixth Plan.



*From some We produce  
 Green (crops), out of which  
 We produce grain,  
 Heaped up (at harvest);  
 Out of the date-palm  
 And its sheaths (or spathes)  
 (Come) clusters of dates  
 Hanging low and near:  
 And (then there are) gardens  
 Of grapes, and olives,  
 And pomegranates,  
 Each similar (in kind)  
 Yet different (in variety):  
           Al-An'an  
           (VI-100)*

## CHAPTER 12

### BALUCHISTAN: THE NEW AGRARIAN FRONTIER

**B**ALUCHISTAN is the largest province of the country (347,000 sq. km.) and has the smallest population (4.31 million which is widely scattered in the generally hilly terrain of the province and is also the least developed. *Per capita* income is a meaningless concept for areas within the same country. But studies show that income levels in Baluchistan are significantly below the national average. The province visibly lags behind in the social and physical infrastructure as illustrated by the following indicators:

Indicators	Average	for
Literacy rate.	Baluchistan	Pakistan
	8.5%	23.5%
Children attending school (5-9 years).	21%	48%
Doctor population ratio.	1 : 10,000	1 : 5,320
<i>Per capita</i> electricity consumption (KWH).	124	231
Telephone density per 1000 persons.	2.7	5.0

The potential for development is large. However, the constraints arising from a long period of neglect pose a serious challenge for the ingenuity of the planners.

2. The provincial socio-economic scene is generally characterised by :

- (i) cereal food deficit despite easily accessible 15 million acres of cultivable virgin soil,
- (ii) low absorption capacity depicted by absence of a sizeable portfolio of large projects,
- (iii) embryonic industrial sector both large as well as small scale,
- (iv) progressive depletion and state of irreparable of the historically inherited physical infrastructure, and
- (v) neglected flora and fauna with evidence of large scale irreversible denudation of forest and foliage.

3. Notwithstanding its state of under-development, the province is strategically situated and has promising economic potential. It has long borders in the East with Iran, in the North with Afghanistan and has a long sea coast in the South that leads to the Persian Gulf. The cultivable almost 15 million acres of virgin soil, undiscovered natural resources in the form of sub-soil water and minerals and a variety of climatic conditions offer exciting new avenues of socio-economic development.

#### **Development Planning in Retrospect**

4. Balanced regional development has been a major objective of national economic planning ever since its inception in the early fifties. The first two decades of planning, however, by-passed Baluchistan for a variety of independent but inter-related institutional and economic reasons.

5. A combination of socio-economic factors detracted attention from the development of Baluchistan. The foremost of these being :

- (i) the inherited scant defence-oriented infrastructure,
- (ii) the extra-constitutional status of the province and a law and order oriented centralised administration,

- (iii) a non-egalitarian tribal hierarchy enjoying official patronage, and
- (iv) the unavailability of readily exploitable resources particularly perennial water flows.

6. These structural rigidities of the provincial system were reinforced by the later day preoccupation with pre-Bangladesh East-West parity and pre-emption of resources by the Indus Basin potential. The logic of circumstances postponed the development of Baluchistan to later more opportune times.

7. As an up-shot of the combined effect of the above, the average annual development outlays for the province during the first three Five-Year Plans is estimated at around Rs. 25 million.

8. Though Baluchistan remained peripheral to the main development stream, yet it was not entirely excluded from it. The developments in down country, induced, *albeit* in a limited way, agriculture production growth; the province benefitted from such development as the air and the telecommunications links, the expanding commerce and the banking system.

#### Recent Development of the Seventies

9. The development of Baluchistan ranks high on the national priority scale since it gained the status of a province in 1970. The provincial urge and assertion for development met with favourable response from the federal government.

10. Baluchistan is given an edge over the other provinces in the development outlays share over and above that justified by its population ratio. The Provincial ADP is increasingly supplemented by rising federal expenditure in Baluchistan. In evidence of this focussed attention, Baluchistan ADP rose from Rs. 140 million in 1970-71 to Rs. 402 million in 1977-78.

#### Fifth Plan Effort

11. The initial development effort of the seventies was further consolidated during the Fifth Five-Year Plan. The provincial ADP rose to a new high level of Rs. 650 million in 1982-83, denoting a near five-fold increase over that of the 1970-71 allocations. To further invigorate the development process of the province and release its potential to take advantage

of the expanding Middle East Markets where it enjoys locational advantage, a special development plan of Rs. 19.5 billion was presented to the Consortium and other friendly countries for financing. The special development plan has had encouraging response from the donors. Commitments of Rs. 1.5 billion were made at a very early stage after the presentation of the programme.

12. The Fifth Plan concerted effort has had both visible and qualitative impact on the economy and life style of the people. Some of the visible achievements during the Fifth Plan period are :

- (i) Completion of RCD Highway.
- (ii) Availability of piped gas.
- (iii) Electrification of 250 villages.
- (iv) Establishment and consolidation of the Baluchistan University.
- (v) commissioning of two textile mills.
- (vi) Completion of the much delayed Hub Dam, and
- (vii) Installation of Guddu-Quetta transmission line and 14 diesel electricity generation units to mention a few.

13. Likewise, the Fifth Plan made mentionable progress in the social sectors. The number of primary schools increased over the Plan period from 2,382, to 3,212 and high schools from 140 to 171. Primary and high school enrolments also showed an upward momentum during the period.

14. In the Health Sector, besides the Bolan Medical College Complex, the number of hospitals rose from 27 to 123, dispensaries from 331 to 371 and hospital beds from 1924 to 2524. There was a corresponding expansion in the population benefitting from these facilities. Potable drinking water supply was provided to a number of villages.

15. The Fifth Plan gains were not limited to the social sectors. The production sector, particularly agriculture experienced impressive gains. By 1981-82, the total area under cereals more than doubled and total cereal production for the period increased from 273 thousand tonnes to 562 thousand tonnes. The production of high-value fruits and vegetables rose to 463 thousand tonnes depicting growth rate of 21 per cent. Production technology in agriculture has also undergone transformation. The use of fertilizer, tractors, tubewells and mechanization has increased considerably.



## Sixth Plan

16. Balanced regional development is one of the chief concerns of the Sixth Plan. To redress past neglect and to draw Baluchistan into the main stream of the national economy, concerted efforts will be made to realise the full economic potential particularly the agrarian potential of the province. With its vast virgin cultivable soil, district climatic conditions, suited particularly to high value fruits and vegetables, Baluchistan has the making of a new agrarian frontier. To this end a big push will be made during the Sixth Plan period.

17. A public sector development programme of Rs. 21 billion (Rs. 5.6 billion provincial and Rs. 15.4 billion federal including special Development Programme,) is proposed for Baluchistan for the Sixth Plan period. The proposed public sector development allocations are roughly 250 per cent higher than the implemented Fifth Plan and are expected to be supplemented additionally by commitments by donors under the Special Development Plan.

18. It is envisaged that this concentrated public investment effort primarily on the founding and strengthening of physical and social infrastructure would bring about a visible change in the life style and economy of the province in the short run and induce sustained growth in the long run.

### Growth Point Strategy

19. Notwithstanding the relative provincial average economic indicators, there is, within the province, variance in the level of economic affluence, population density and infrastructure availability. The population spread, land and irrigation facility, established agricultural practices and social and physical infrastructure suggest a growth point strategy with agriculture as the leading sector.

20. The climatic conditions, and the manifest characteristics of the different parts of the province suggest the following five growth points for concentrated attention during the Sixth Plan period:

- (i) The cool mountainous region to the north and north east of Quetta, that has a fairly well established agricultural sector consisting of commercial orchards, vegetable farms, grain farming (mainly wheat) largely for on-farm consumption and

sheep husbandry. The region is also relatively better off in terms of physical infrastructure such as rail, road and tele-communications. In recent years, the area has adopted with success the tubewell technology. Surveys and the present intensity of tubewells suggest the availability of sufficient underground water.

- (ii) Sibi and the Pat Feeder Plain, the only canal irrigated area, with more than half of the total irrigated acreage of the province grows good quality surplus rice and wheat. The area also has established traditions of rearing cattle for beef. With increased water flows to the Kirthar and Pat Feeder canals, the output and area under crops can be doubled within a short period.
- (iii) The Kalat-Khuzdar Valley which has potential for immediate growth both because of the opening effect of the RCD Highway and the fertile land. Khuzdar is an emerging urban centre.
- (iv) The Mekran Coast Belt and the adjoining Mekran Division that offer opportunity for developing fishing, agriculture and animal husbandry. The area grows 40 per cent of the country's dates and provided favourable surrounding for sheep and cattle rearing on a large scale.
- (v) The Bela Pocket which is advantageously located in the vicinity of Karachi and open to spill-over of technical know-how and entrepreneurship. The location-specific tariff and income tax incentives offered by the government for industrial investment in Baluchistan, it is expected, would attract industries that, besides employment opportunities, would augment the low income base of the provincial government.

21. The development programme during the Sixth Plan will give priority to the above ecological zones with a view to—

- realising firstly the immediate gains in areas that are poised to respond to economic incentives and the market mechanism, and

- developing areas that have the potential but lack the necessary pre-requisite infrastructure.

### Agriculture the Leading Sector

22. Contrary to the common belief, the growth momentum in the Sixth Plan is to emanate from agriculture rather than mining. The abundant fertile soil unique climatic conditions and the progressiveness of the farmers all combine to make agriculture the leading sector capable of inducing well-spread benefits transferring the province into a growing economic area. These characteristics and potential of the agriculture sector will be elaborated later. It may be appropriate at this stage, to point out briefly the limitations of the mining sector.

23. Mining, though important in its own right and recognized as a claimant to receive due attention during the Sixth Plan period, is extractive industry with weak backward and forward linkages with the local economy. Because further industrial use of the minerals is outside the province, it offers limited prospects of initiating sustained growth in the provincial economy. Besides its weak linkages to the provincial economy, mining is a fluctuating, if not contracting industry. Present surveys still have not established conclusively the commercial viability of known deposits of iron, copper, mercury, chromite, fluorite and magnesite. Coal and marble are the only two mineral products mined in substantial and growing quantities.

24. The agriculture sector, has thus the makings of a leading sector capable of changing the whole spectrum of socio-economic scene on many counts.

- The provincial economy is predominantly agriculture-oriented. Agriculture engages eighty five per cent of the population and it has in certain areas been developed to appreciable levels of excellence.
- The province has easily accessible virgin cultivable 15 million acres of land. Investments in water management and water supply expansion hold promise of immediate well spread economic returns.
- The climatic conditions in the Northern and North-Eastern regions of the province are particularly well suited to high value deciduous fruits and such vegetables like potato and onion that have ever expanding market.

- The province has established traditions of raising mutton and beef commercially and the Mekran Coast holds unlimited fishing prospects.

25. The above favourable characteristics of the agriculture sector are strengthened by the responsiveness of the farmers to modern technology and market forces. During the last five years, the nutrient tonnes of fertilizer use had doubled and the use of better seeds adopted on increasing scale. Similarly, mechanisation as evidenced by increased tractor use and tubewell installation has occurred.

### **Sixth Plan Priorities and Sectoral Programme**

26. With agriculture playing the role of the engine of growth, the development effort will be concentrated in sectors facilitating the realisation of the agriculture potential of the province. Alongside the stress on agriculture production and the complementary physical infrastructure and electricity, the spread and availability of social services will be emphasised with a view to bringing about a visible change in the life style of the people. Accordingly, the Sixth Plan sectoral priorities are :

- (i) Agriculture and Water.
- (ii) Energy.
- (iii) Transport and Communications.
- (iv) Health and Education.
- (v) Physical Planning and Housing, and
- (vi) Mining and Industry.

27. A brief description of the size, strategy, components of the envisaged sectoral programmes and some important projects is given below.

### **Agriculture and Water**

28. During the Sixth Plan period an investment programme of Rs. 1,720 million is proposed for the development of agricultural proper and its allied sub-sectors of animal husbandry, fisheries and forestry. The main elements of the agriculture programme include strengthening and expanding of the provincial agriculture research, extension and marketing leading to higher produce per acre and higher returns from marketing to growers.

29. Two particular lines of research that need attention and focus are on-farm water management and the development of single crop research

farms, particularly in the Mekran Division. The on-farm water management programme would have to be innovative. In that, besides experimenting on water conservation methods for the in-use flood irrigation, experimentation will be diverted towards conduit irrigation of the trickle irrigation type.

30. Another area requiring strengthening is agriculture marketing especially of high value fruit and vegetables. Besides the normal packing and grading, the down country market behaviours would require detailed analysis and corresponding change in marketing attitude so as to avoid market glut and ensure better returns to farmers. An important role can be played in this regard by new seed and plant varieties and food conservation technology.

31. Since Baluchistan produces both surplus beef and mutton, the animal husbandry programme in the Plan will provide better health coverage to the animal stock, induce genetic improvements and break fresh ground on commercial scale in such innovations as the introduction of Karakul Sheep breeding. To this end a multi-facet project aided by the Asian Bank is under implementation by the Baluchistan government.

32. Dairy farming and poultry farming, the two facets of animal husbandry not organised thus far, will be paid special attention during the Plan period. A number of poultry and dairy farms are planned under the provincial government. The quality and numbers of milching cattle will be improved by wide-spread use of artificial insemination, import and sale of animals to the private sector and awarding of stud bulls at the community level.

33. Though Baluchistan is known for the extent of forest areas, yet the need of forestry is perhaps greatest here. The years of neglect have led to the denudation of the hills even of bushes with the consequent flood run offs and soil erosion. The concentration on range management, protection of the scant fauna, promise high returns through secondary benefits from water recharge and soil conservation. Efforts would need to be diverted towards this aspect of range management away from the almost futile attempts of afforestation along roads etc.

34. The main limitation on the exploitation of the provincial land resource being water, the Sixth Plan awards the highest priority to the development of this critical resource. To install a dependable and appropriate irrigation system an investment programme of Rs. 4.13 billion is proposed for the water sector. The Plan strategy for the water sector has the

elements of expanding the present surface irrigation, by constructing dams and expansion of canal discharge, remodelling of irrigation works and recharge of under-ground water.

35. Perennial water flows in the form of rivers being extremely scarce if not altogether absent and with high evaporation losses, economic rationale demands that this scarce and critical resource be efficiently used. The water resource development programme has, therefore, been prepared to achieve the highest returns not from large surface irrigation schemes, canal widening being the only exception, but from small irrigation schemes supported by recharge activity. This strategy, apart from water conservation, has the added advantage of bringing about quick increases in production and is suited to the topography and population spread of the province.

36. The investment programme allocations of the sector amongst the various categories of water development devices reflect both water and resources use economy. It is envisaged that the planned water sector development programme will augment irrigated cultivated area by an additional 6 lakh acres during and immediately after the Sixth Plan and carry over an equal potential into the future. Some of the major projects in various stages of the projects life cycle and implementation are mirani Dam, Kish Dil Khan Dam, Badin Zai Dam, Pat Feeder Canal, and a number of small irrigation schemes.

### Energy

37. The realisation of the Baluchistan agriculture potential relies heavily on the wide spread availability of electricity for tubewell energisation. The task is rendered more difficult by the natural limitation of water scarcity for steam generating units, the technological and cost constraints of coal/gas based generation and the high transmission losses over long distances.

38. To augment the very low internal production of electricity, Baluchistan was drawn into the national grid system by the installation of the Guddu-Quetta transmission line. A similar transmission line has been completed from the KESC system to Bela and Uthal, the southern most industrial pocket of the province. During the Sixth Plan period it is proposed to increase electricity availability by installing a 220 KV line from Dadu to Khuzdar. Likewise the feasibility of a similar transmission line from a mid-country point to the north of the province via Loralai will be taken up, and construction of second 220 KV Guddu-Sibi line will be started.

39. To cater to the energy needs of the province, in view of the limitations on local generation capacity and its distribution, a Rs. 7.2 billion programme has been proposed for this sector during the Sixth Plan period. The programme has the components of increased provincial generation capacity based on gas and coal, transmission from the national grid system and its distribution. A small but important part of the energy sector development programme is the distribution of natural gas and LPG as fuel to Quetta city and the other towns of the province. Besides the transmission and distribution and construction of grids, major schemes in various stages of preparation and implementation are a 70–100 MW coal station at Duki, 25 MW gas turbine at Quetta, installation of diesel generation sets in far off places and the shifting of existing LPG plant to some other major towns.

40. As a result of this programme, it is expected that by the end of the Plan electricity availability would rise from the 1983 level of 115 MW to nearly 300 MW and the provincial generation capacity would grow to 73 MW from the present 48 MW rated capacity. In terms of coverage, the North, North Eastern, Central and Southern areas would have electricity available to an additional 1,000–1,200 villages. Going by the present consumption pattern 53 per cent of the energy provided would be consumed by agriculture, with energised tubewells increasing manifold from the present level with obvious impact on agricultural production. The availability of electricity would generate an additional of small scale mechanical workshop type activity, lay the foundation of small scale agro-based industry and generally induce a visible change in the predominantly agrarian character of the provincial economy.

### **Transport and Communications**

41. The scant communications network both within the province and with the rest of the country is another structural bottleneck inhibiting the growth potential of the province. Since the railways coverage is limited and cannot be spread more extensively at economic costs for reasons of topography, the construction of a reasonable and extensive road network assumes key importance.

42. During the Sixth Plan period a public sector development programme of Rs. 3.2 billion is proposed with a view to making the province easily accessible. The proposed development programme includes improvements in railways, air and telecommunications with major emphasis on

roads. Within the road network programme priority will be given to connecting the rural agricultural areas to the provincial and national market centres. Existing shingle roads will be black topped, new shingle roads cut and the major arterial roads, mainly a federal responsibility, widened and improved.

43. The major portion (Rs. 1.2 billion) of the proposed programme is earmarked for construction and improvements of national and inter-provincial highways. Some of the road projects given priority of implementation are Quetta-Taftan Section of the RCD Highway, Sibi-Chaman Section N25, D. I. Khan-Zhob Road, Sui-Kahsmore Road, and a number of bridges and lesser provincial roads. An allocation of Rs. 700 million is being provided outside the ADP for Sibi-Rakhani Road.

44. The railways and ports sub-section of the programme has two main projects; electric traction over Bolan pass and development of Gwadar fish harbour. Together, these schemes are estimated to cost Rs. 1.1 billion. Civil aviation, telecommunications are projected to absorb Rs. 459 million for airport facilities and telephones and post offices.

#### **Physical Planning and Housing**

45. Baluchistan population is predominantly rural and dependent on agriculture with urban population being only 15 per cent. The only city in the provinces is Quetta, the capital with a population of 3 lakhs. The other urban centres, mainly district headquarters, have population spread of 15 to 50 thousand. The provincial water and sewerage covers 27 per cent and 4 per cent respectively. There is acute shortage of housing and sanitation facility even in the capital city. To overcome the housing problem likely to be intensified by increased economic and commercial activity and to better the water and sanitation coverage in the province, a development programme of Rs. 1.2 billion is proposed for the Sixth Plan.

46. The planned public sector investment programme is split evenly between housing, sewerage and drinking water. In the housing sector, it is proposed to develop 5,000 plots in the urban centres of the province for construction by the private sector, and to relieve the public sector housing shortage, construction of one thousand housing units is contemplated. Likewise, greater coverage of both the urban and rural population by water and sanitation facility is envisaged. It is estimated that by the end of the Plan period the water and sewerage facility will be available to 50 per cent of the provincial population.



## Social Sectors

47. A public sector investment programme of Rs. 2.1 billion is proposed for the sectors of Education and Health. The development strategy in the two sectors is the expansion of primary school, health base and the consolidation of mid level and higher level facilities. It is projected that the school participation rate will rise to 46 per cent. In the health sector, extensive immunisation coverage will be provided to children against communicable diseases, coverage of primary health at the village level extended and the logistic with the RHCs made better.

### Education

48. Present national comparative data suggest that Baluchistan lags behind in the field of education. The literacy and participation rates for the province are slightly higher than one third of the national coverage.

49. During the Sixth Five Year Plan, in keeping with the national education policy objective, it is planned to expand the education facility and participation in the province and affect qualitative improvement by emphasising school education expansion and consolidation of higher and teacher education. With this end in view a Rs. 1,214 million programme is proposed for the education sector in the province. More than 60 per cent of the proposed programme will be diverted towards primary and secondary school education for the addition of 2,515 new primary schools, 300 middle schools and 120 high schools. In addition, improvements and additions will be made to the existing school building facilities. College education will be consolidated by the provision of libraries, hostel, teacher residential accommodation and training.

50. The policy of consolidation will be extended to higher education with priority to the Engineering College, Khuzdar, the Baluchistan University Campus and research facilities at the centres of excellence.

### Health

51. The provincial health facilities are relatively poorer than those for the nation as a whole and perhaps much worse when the population spread and urban concentration of facilities is taken into consideration. To better the existing situation a Rs. 905 million programme is proposed for the province.

52. The main components of the health sector programme are creation of new facilities and upgradation of existing ones, strengthening the health manpower availability with emphasis on rural spread and basic health coverage. Health coverage of the under five population is especially marked for focussed attention by the provision of extensive immunization against the major six communicable diseases and the institutionalisation of the rural *dai*. Additional coverage to the vulnerable child and mother portion of the population will be provided under the nutrition programme.

53. By the end of the Plan period, provincial hospital beds and Rural Health Centres will nearly double to 4,344, and 55 respectively, and Basic Health Units will rise to 155. The implementation of the programme will lead to increased health personnel availability; doctors and auxiliary and ancillary staff. The envisaged health programme supported by the 50 per cent coverage of drinking water and sanitation under another programme will reduce the incidence of disease, remove morbidity and provide curative coverage to the population.

### **Mining and Industry**

54. The mountain ranges of Baluchistan contain a variety of minerals, some of them being mined on large scale commercial basis. The role of the public sector is limited to exploration activity and shall continue to be so during the plan period.

55. The small PMDC production activity mainly in coal will only be expanded to play the pioneering role of a catalyst in the case of large deposits, discovery and private sector hesitation. A case at hand is the Resource Development Corporation concerned with the Saindak Integrated Mineral Product and the PIDC iron ore project. During the Sixth Plan period a Rs. 945 million programme of exploration, surveys and direct production is envisaged. The bulk of this programme (Rs. 500 million) is tentatively marked for iron ore production subject to financial viability. The Saindak integrated project will be initiated under the special development programme for Baluchistan.

56. In the industrial field public sector development efforts will essentially be limited to the provision of industrial infrastructure. Direct investment in any industry will be guided strictly by the criteria of profitability and pioneering role prompted by lack of the private sector initiative. To facilitate and attract the private sector industrial development, the industrial

estate at Uthal, Lasbela is being provided with the necessary infrastructure requirements supported by tax holiday and tariff concessions.

57. For the Plan period a modest Rs. 550 million programme is envisaged primarily for the strengthening and the establishment of new industrial estates (Rs. 344 million) at promising locations. To encourage cottage industry in a field where the provincial resources indicate comparative advantage, two carpet and handicraft units are planned to be set up at a cost of Rs. 77 million. The planned expenditure in roads and energy and the establishment of the Uthal industrial estate together with fiscal and tariff incentives, it is expected, will provide a strong enough base initiating industrial investment, both large scale and small scale.

### **Issues and Policy Shifts**

58. The Sixth Plan big push effort is, in essence, pump-priming aimed at initiating a self-sustained growth process affecting the economy and the life style of the people. It is expected that the growth rate in Baluchistan will be much higher at 10 to 12 per cent than the overall 6.5 per cent for the country. The Plan is expected to induce visible benefits directly benefitting three fourth of the population, raising agriculture production to more than twice the bench-mark level, and bringing about structural changes.

59. The implementation of the envisaged programme will, however, strain the implementation capability of the province and disturb the static, almost medieval social relationship framework. To achieve a breakthrough the distilled experience of the country must be brought to bear on simultaneous improvements in the overall administrative machinery. Bold, forward looking policy initiatives are warranted, so as to induce a whole-hearted participation of the people in this historic process of change.



*Any (they would assign)  
in all that they possessed  
a due share into such as  
might ask (or help) and  
such as might suffer  
privation*

ZARIYAT  
(16-19)

## CHAPTER 13

### SPECIAL AREAS: EXPANDING DEVELOPMENT FRONTIERS

THE socio-economic development of the underdeveloped regions, especially the provision of basic needs in these areas, is a major objective of the Sixth Five Year Plan. Besides the Province of Baluchistan, which is the subject matter of a separate chapter, the relatively backward geographic regions include the Tribal Areas, the Northern Regions and Azad Kashmir. The average *per capita* income of these regions is substantially lower than that for the nation. Also these regions visibly lag behind in various quality of life indices. Perhaps the most noticeable indication of the under development of these regions is their food deficit position, which because of the distances from the surplus food areas, is reflected in higher prices and therefore a lower living standard or high Government subsidies which divert funds from development activity.

2. These regions have certain common geo-physical and socio-economic characteristics :

- The regions are geographically contiguous, forming an inverted crescent along the North-Eastern Borders of the country adjoining Afghanistan, China, and occupied Kashmir. This geographic situation renders them strategically important.
- The whole region consists of high mountaineous ranges with narrow valleys and limited agricultural land, though agriculture is the mainstay of people's livelihood.

- A centralised administrative set up oriented towards law and order rather than development.
- Finally, relative to their easily exploitable resources the area is generally over populated. The population, however, is hardy and willing to respond to the economic pulls not only in the down country where they are employed in the unskilled and semi-skilled services sector but also substantial migration has taken place to the Western countries and the Middle East, particularly from Azad Kashmir.

3. The present day state of under-development of these regions stems from historic reasons and paucity of immediately exploitable resources. In the pre-independence days, development needs of the area were only a by-product of the defence needs. Basic infrastructure was provided to the extent warranted by defence. In the post-independence period particularly with the inception of planned development, the development needs of the area were taken note of and some progress made in the provision of physical infrastructure such as roads, telecommunications, health and education. Scattered surveys of the mineral and forestry resources were undertaken. As a result, important minerals were located some of which, like marble in the Tribal Areas and precious stones in the Northern Region, are being exploited commercially. The opening up of Azad Kashmir was particularly emphasised and the main highway from Murree to Muzaffarabad was black topped and some industries were set up around Mirpur. Education facilities were expanded and agriculture of the area was organized on better lines.

4. The development activity was further boosted in the early 1970's, particularly during the Fifth Five Year Plan. The combined development funds for the region increased from Rs. 177.5 million in 1973-74 to Rs. 408.8 million in 1977-78. During the years of the Fifth Plan, Rs. 3,510 million were allocated for the region: Rs. 1,598 million for FATA, Rs. 655 million for Northern Areas, and Rs. 1,257 million for Azad Kashmir. During the Plan period, some of the major projects completed included Bara River Canals Scheme, Electrification of 834 villages and establishment of marble, oil expelling, woollen, footwear and leather goods industrial units in FATA; electrification of 46 villages, construction of Gilgit-Skardu, KKH and Astore roads and a fruit dehydration plant in Northern Areas; a vegetable ghee plant, wool scouring and bailing plant, construction of assembly building, university, colleges and a number of bridges in Azad Kashmir.

5. With a total area of 110,686 sq. km., total population of 4.73 million and strategic location, economic uplift of these areas needs focused attention. Keeping in view the twin aims of immediate socio-economic relief and long term exploitation of resources potential, the Sixth Plan strategy is :

- to concentrate on the development of agriculture and water for immediate returns;
- opening up of the difficult terrain by a network of roads facilitating the exploitation of mineral and forestry resources on commercial basis; and
- simultaneously improving both the skills and health of the population through extensive education and health programmes so that these areas can share the benefit of industrialization in the sub-regions or in the down country.

6. With these short run and long run objectives in view, outlays of Rs. 9.13 billion are envisaged during the Sixth Plan. This is roughly three times the outlays of the Fifth Plan. In essence, the Sixth Plan development effort aims at creating the pre-conditions for sustained growth. It is envisaged that annual growth rate of the region during the Sixth Plan would be substantially higher (10%) than that the national average (6.5%). A distinctive feature of the Plan allocation is its full funding from the Federal development expenditure.

### THE TRIBAL AREAS

7. The Federally Administered Tribal Areas are spread over an area of 26,970 sq. kilometres. The population is estimated to be 2.175 million, with a density of 80 per sq. kilometre compared to national average of 105 and the NWFP average of 146. The population of FATA in 1981 is reported to have declined by 12.7 per cent over 1972 as against the corresponding increase of 28.3 per cent in the total population of Pakistan. This fall depicts a net migration response to the push effect of the meagre means of subsistence and the pull effects of the down country and foreign economic development forces.

8. The standard of living of the people of Tribal Areas is extremely low. The literacy rate is about 5 per cent compared to national average of about 24 per cent, the *per capita* consumption of electricity is one-fourth of national average and black topped road kilometres 4.5 per cent of national total.

## Past Development Effort

9. Attempts were made during the Second and the Third Plans to initiate development activities in these areas, but without any significant progress. It was only during the late 1970's that effective planned development took some shape. Besides several concessions announced from time to time the establishment of FATADC was one of the major steps taken to accelerate the socio-economic development of the area. Further, the role and responsibilities of other public sector agencies for the development of infrastructure, social and productive sectors was specified and enhanced. The development expenditure in the public sector has increased from Rs. 59.5 million during the Second Plan to Rs. 1628 million in the Fifth Plan.

10. To supplement the above development outlays and to initiate a visible change in the life style of FATA, a Special Development Plan for the Tribal Areas was prepared. The Rs. 4.2 billion Special Plan consists of quick gestation production projects.

### Sixth Plan

11. The Sixth Plan envisages a public sector development programme of Rs. 3.25 billion. In addition, between Rs. 2 to 3 billion may be spent under the Special Programme for Tribal Areas. The following table gives the Sixth Plan allocations and sectoral breakdown under the normal ADP programme. The public sector development programme will stimulate private investment.

	(Million Rs.)	
	Fifth Plan Expenditure	Sixth Plan Allocation
Agriculture.	99	161
Water.	279	600
Fuel and Power.	159	450
Industries and Minerals.	48	233
Transport and Communications.	452	680
Physical Planning and Housing.	166	250
Education.	264	549
Health.	112	326
Others.	49	—
Total . .	1628	3249



## **Agriculture and Water**

12. The growth strategy in agriculture aims at an increase of 50 per cent in the overall crop output over the Plan period through increasing the cultivable as well as cropped area. For this purpose, additional land will be brought under cultivation and irrigated areas will be increased from 62,324 hectares to 100,771 hectares through installation of 265 tubewells, construction of small dams and lift irrigation. In addition, 241 thousand kilometers of irrigation channels will be improved rehabilitated and constructed.

13. Besides doubling the fertilizer off-take, the plant protection coverage will be increased from 21.65 thousand to 23.1 thousand spray hectares. To strengthen the extension services about 100 scholarships will be given to the Tribal students in the field of agricultural education.

14. In the livestock sub-sector, the major programmes include the establishment of a Directorate of Animal Husbandry, the construction of 15 buildings for artificial insemination centres with a view to improve the livestock quality, and afforestation of about 1,170 hectares in blocks while linear afforestation will cover 378 avenues Kms.

## **Energy**

15. The Sixth Plan programme includes erection/completion of 1,080 Kms of HT lines and 1,240 Kms of LT lines. In order to accelerate power supply in the tribal areas, 784 transformers will be installed and as many as 750 villages will be electrified. The work on switch over from 33 KV system to 66 KV-132 KV system in the area will be accelerated for power development in the rural areas as well as to ensure the power supply stability.

## **Industry and Minerals**

16. For industrial development of the area, an amount of Rs. 233 million has been provided during the Sixth Plan. Under the aegis of FATADC, a gypsum board plant, a small tools unit, a cement plant and a number of industrial training centres are envisaged.

17. The Tribal Areas are known to have scattered deposits of such minerals as dolomite, marble, limestone, gypsum, copper, phosphate and bauxite, of which only marble is being exploited on a limited scale. During

the Sixth Plan, attempts will be made to organise the quarrying of mineral deposits on scientific lines and to establish the quantities of others by extensive surveys of the area.

### **Education and Health**

18. In these two social infrastructure sectors, the development strategy is to follow the national health and education policies. The emphasis will be on the provision of broad based, well-spread primary education both for girls and boys, the strengthening of higher education and teacher education and improvement of vocational and technical education.

19. Likewise, during the Sixth Plan period primary health coverage particularly to children in the form of immunization will be provided on a universal basis. Hospital beds will be increased by 420, and 28 rural health centres and 58 basic health units will be constructed. It is envisaged that the number of doctors will be increased from 121 to 366, paramedics and dais from 680 to 1,360 and from 435 to 1,135 respectively.

### **Transport and Communications**

20. During the Fifth Plan, about Rs. 452 million was incurred against the Plan allocation of Rs. 250 million on the construction of 369 Kms black topped and 484 Kms shingled roads. Besides, 416 Kms of existing roads were improved and 19 bridges were completed. At present, there are 2,900 Kms of road in FATA, mostly comprising of single lane. Of these, about 1292 Kms are black topped and 1607 Kms shingled.

21. For the Sixth Plan, Rs. 680 million have been provided including Rs. 100 million earmarked for the completion of on-going schemes. In all, 482 Kms of black topped and 706 Kms shingled roads will be constructed, while 401 Kms of existing roads will be improved. Work on 20 bridges will be completed and feasibility studies on 14 new bridges will be carried out.

### **AZAD KASHMIR**

22. Azad Kashmir has an area of 13,300 sq. km. and a population of 1.98 million. The population density is 149 persons per sq. km. The *per capita* cultivable area availability is 0.12 hectares. The literacy rate is 23 per cent and the availability of road per 100 sq. km. is 27.4 kms.

## Past Development Effort

23. The development needs of Azad Kashmir received due attention since the very early days but it got a real big push during the Fifth Plan period when development outlays increased to Rs. 1444 million on an annual average of Rs. 288 million against an annual average of Rs. 68 million during 1970-78. The annual development programmes were supplemented to a large extent by expatriate industrial investment around Mirpur and investment in housing and transport in the private sector.

## Sixth Plan

24. During the Sixth Plan period an outlay of Rs. 4112 million is envisaged. Comparative Fifth Plan and Sixth Plan allocations and achievements are detailed below :

	(Million Rs.)	
	Fifth Plan Expenditure	Sixth Plan Allocation
1. Agriculture.	182	310
2. Water.	7	200
3. Power.	292	1000
4. Industry and Minerals.	68	161
5. Transport and Communications.	411	1000
6. Physical Planning and Housing.	136	350
7. Education and Training.	102	543
8. Health.	111	548
9. Others.	135	-
Total . .	1444	4112

## Agriculture

25. During the Fifth Plan the main thrust in the field of agriculture remained on the development of forest resources. A number of schemes relating to afforestation and regeneration including Hill Farming and Integrated Land Management were completed. Besides afforestation, the priorities were given to the production of maize, apples and vegetables.

26. During the Sixth Plan Rs. 310 million have been provided for the agriculture sector. The Hill Farming Technical Development Programmes (Phase-II), Integrated Land Management schemes and afforestation are among the major development projects of the Sixth Plan.

### **Water**

27. During the Fifth Plan a sum of Rs. 20 million was provided for water development schemes, but due to lack of implementing capability, low priority assigned by the AJ&K Government to water sector and very low allocation in annual development programmes, only about Rs. 7 million were utilized during the Fifth Plan. Consequently, the targets envisaged could not be achieved. The total irrigated area by the end of the Fifth Plan stood at 10,000 hectares or 6 per cent of the available cultivable area. For the Sixth Plan, a sum of Rs. 200 million has been allocated for water sector's schemes. The major irrigation schemes included in the Plan are Andaral, Chakswari, Khari, Sarsawa-Panjera, Mandal and Garhi Dapatta.

### **Industry**

28. In the field of industry, the Industries Department of Azad Kashmir plans to establish industrial estates, women industrial school and development of sericulture, wood working and carving, wool weaving and plantation of five million mulberry plants. The major programme of AKMIDC comprises the establishment of cane cutting and polishing unit, two cold storages, two mini cement plants, a soda ash unit, two furit processing and canning units, graphite processing and two brick plants.

29. In the private sector, permission to set up 73 different industrial units has been given. The important among these are Scooter Assembly Plant, Cotton Spinning Mill, Match Factory, Textile Weaving Units and many other small and medium units. Ten units have already gone into production.

### **Minerals**

30. Various Government and semi-Government agencies have been engaged in the exploration, evaluation and development of mineral resources of Azad Kashmir. As a result of these investigations, mineral deposits of economic importance such as bauxite, bentonite, coal, fire clay, graphite, gypsum, limestones and dolomite, mica, pyrite, quartzite slate, soapstone and precious stones have been identified.

31. Programmes to set up alum, high alumina bricks and artificial abrasives on bauxite and fire clays, up-gradation of graphite, marketing studies of mica, soapstone and gypsum plaster and mining and separation studies of precious stones from gangue minerals are underway. Against an allocation of Rs. 9.8 million (ADP) during Fifth Plan. AKMIDC incurred an expenditure of Rs. 6.8 million. Provision of Rs. 35.8 million has been made for Sixth Plan to undertake detailed surveys, investigations and exploitation of coal, graphite, precious stones, gypsum and other minerals.

### Energy

32. Against the Fifth Plan allocation of Rs. 180 million for power development, Rs. 292 million was estimated to be incurred. The major projects completed under the Fifth Plan include the extension of national grid from WAPDA system to Azad Kashmir, distribution of power and village electrification, installation of diesel sets at district headquarters and construction of hydel stations. The energy consumption in Azad Kashmir has increased at the rate of 39.3 per cent per annum during the Fifth Plan period.

33. In the Sixth Plan, a provision of Rs. 1000 million has been made for power sector. It is estimated that 1000 new villages will be electrified. Besides the specific allocation for Azad Kashmir, an allocation of Rs. 300 million has been made in WAPDA's Plans for investigations of Abbasian, Kohala and Bunji or Bhasha Hydel Projects. Separate allocation of Rs. 300 million for overall investigations for Hydel sites in the Northern parts of the country and AJK have also been made under "Planning and Investigation" of Major Projects Programme.

### Transport and Communications

34. Against the Fifth Plan allocation of Rs. 300 million Rs. 411 million were incurred. The total length of roads in 1982-83 is estimated at 3648 Kms, 1143 Kms metalled and 2505 Kms unmetalled. The overall availability of roads in the area thus averages 0.274 Kms per sq. Km. as against 0.42 Kms in Pakistan.

35. For the Sixth Plan an allocation of Rs. 1000 million including throwforward of Rs. 198.6 million has been made for the construction of 589 Kms of new roads and improvement of 685 Kms of existing roads.

## Education

36. At present 93 per cent boys and 45 per cent girls in the age group of 5 to 9 years are in primary schools. The participation rate in the middle stage classes is 42 per cent for boys and 20 per cent for girls. During the Sixth Plan, it is expected that 100 per cent boys and 70 per cent girls will be attending schools. To ensure that the gains of primary education are consolidated, the targets of participation rates for boys and girls at middle stage have been fixed at 65 and 41 per cent respectively. For this purpose 1250 primary, 250 middle and 100 high schools will be required.

37. For the balanced development of educational facilities, Mono-Technics, Commercial and Vocational Institutes and Trade Schools will be set up. Facilities at the existing six Degree Colleges will be consolidated/improved and the University Project will be completed. Presently 62 per cent of the teachers in Azad Kashmir are untrained. To train the teachers, two more elementary colleges will be established and capacity in the existing institutions will be doubled.

38. An allocation of Rs. 543 million has been made for education in the Sixth Plan compared to Rs. 102 million actually spent during the Fifth Plan.

## Health

39. The existing health facilities include 873 hospital beds, 7 rural health centres, 319 basic health units/MCH Centres and 158 doctors. The major objectives for the Sixth Plan are :

- protection of all children against diseases of childhood;
- reduction of infant mortality by 30 per cent;
- increase of hospital beds by 85 per cent;
- increase of the number of doctors from 158 to 358; and establishment of a Medical College.

## NORTHERN AREAS

40. The Northern Areas are spread over 70416 sq. kms. with a population of 573,614. The density of population is 8 per sq. km. and the level of literacy is 9.5 per cent. The *per capita* income is very low though *per capita* consumption is being maintained through subsidised foodgrains and other necessities of life.

### Past Development Effort

41. Development outlays have increased from an average of about Rs. 4 million per annum in 1960–65 to about Rs. 31.10 million in 1970–78 and further to Rs. 131.40 million per annum during the Fifth Plan period (1978–83). With the opening of Karakoram highway and Gilgit-Skardu road, the region is now open both for development and tourist trade. Barter trade by road with People's Republic of China has expanded manifold since 1979 (from Rs. 0.24 million in 1969 to Rs. 3.90 million in 1982) and more trade is expected due to the opening of the land route from Khunjarab border to China with resultant larger flows of income to the region.

### Sixth Plan

42. During the Sixth Plan period, both the Federal agencies as well as local administration would be spending larger amounts of money for the development of these areas. An outlay of Rs. 1768 million, nearly three times that of the Fifth Plan, is envisaged. The policy would be to accord priority for completion of on-going projects and to initiate short gestation projects which would yield quick results. The comparative Fifth Plan and Sixth Plan allocations, priorities and achievement are detailed below :

	(Million Rs.)	
	Fifth Plan	Sixth Plan
1. Agriculture and Water.	100	170
2. Industry and Minerals.	5	50
3. Power.	92	300
4. Transport and Communications.	170	520
5. Physical Planning and Housing.	151	300
6. Education.	101	270
7. Health.	58	158
8. Others.	48	—
Total . .	725	1768

## Agriculture and Water

43. Forests and horticulture are the main segments of agriculture sector in Northern Areas. During Fifth Plan, Rs. 73 million were spent on the development of afforestation, fruit nurseries and production of trout fish. In line with the Sixth Plan strategy for the rapid development of less developed regions, the allocation for the Sixth Plan has been increased by 84 per cent from Rs. 73 million in Fifth Plan to Rs. 90 million. The programme of afforestation/regeneration and development of horticulture and trout fish will be continued in Sixth Plan period.

44. During Fifth Plan a sum of Rs. 27 million was spent on the development of water resources. In all 16 small schemes irrigating about 320 hectares were completed. During the Sixth Plan a sum of Rs. 80 million has been provided for small irrigation schemes to bring about ten thousand hectares of new area under irrigated cultivation.

## Transport and Communications

45. During the Fifth Plan a sum of Rs. 170 million was spent on the construction of roads and bridges. Among the major projects, Gilgit-Skardu road was nearly completed and KKH-Astore road was widened to make it truckable. The total length of the existing roads in the Northern Areas is 2877 Kms besides 267 bridges. The existing network provides 0.04 Kms of roads per sq. km.

46. During the Sixth Plan, an allocation of Rs. 520 million has been made for the construction of 935 Kms jeepable/truckable and 182 Kms of black topped roads. Some of the major roads/bridges likely to be completed/continued include construction of :

- (i) River view road from KKH Jutial to Basin;
- (ii) Jeepable road from Deosai Top to Gutasi;
- (iii) Jeepable road from Dumsum to Konodas and 400 feet Span suspension bridge at Dumsum; and
- (iv) 500 feet span suspension bridge Imit and Ishkoman.

47. In the field of communication, the area was linked with the national broadcasting network through the installation of two Radio Stations at Gilgit and Skardu. In addition, the Skardu Airport was modernised and a new Airport at Chilas is proposed to be constructed in Sixth Plan period.



## Energy

48. Northern areas lie in the Himalays and hence provide good sites for the Hydro-electric generation on small scale. So far 46 out of the total of 641 villages have been electrified with an installed capacity of 4064 K.W.

49. In the Sixth Plan, work will be taken up on 6 stations at Rattu, Gorikote, Hoshpi, Tolty and Parshing each of 160 KW (200 KVA), 3 stations at Danyore, Jalalabad, Sumayar each of 100 KW (125 KVA), a stations at Khyber and Hassanabad (Phase-II) each of 400 KW (500 KVA), and one station each at Gup's 600 KW (750 KVA), Thore 80 KW (100 KVA), Olding 108 KW (135 KVA) and Dormushko 200 KW (250 KVA). Apart from this, a Hudel Station at Naltar at a total cost of Rs. 18.75 million will be set up by WAPDA.

50. In Sixth Plan an allocation of Rs. 300 million has been made over and above the specific allocation for projects to be undertaken by Northern Areas Administration and Works Organisation. Besides included in WAPDA's ADP is Rs. 187 million allocation for Bhasha Hydel investigation and Rs. 300 million for the overall investigations for Hydel sites in the Northern part of the country.

## Minerals

51. Northern areas are believed to have large potential of mineral deposits especially precious stones. As a result of investigation so far carried out by the various agencies, copper, zinc and lead deposit have been identified. During Sixth Plan, GSP and PMDC will carry out geological survey and prepare pre-investment feasibility report of commercially viable mineral deposits. A provision of Rs. 10 million has been made in the Sixth Plan in addition to the provision made by other federal agencies, (GSP, PMDC, GEMCP) working in the area.

## Education

52. While the participation rate of 65 per cent for boys is comparable with the national average, the enrollment of girls, is only 17 per cent. For the Sixth Plan the primary level enrollments are projected at 95 and 40 per cent for boys and girls respectively. Due to small enrollment at the primary level in 1982-83. The scope for the expansion of enrollment of girls at the secondary levels remains limited. As the enrollment at college level is

also limited, therefore the existing two intermediate and two degree colleges will be consolidated and improved. In addition, small size mono-technics, commercial and vocational institutes, and trade schools will be set up. For the development of education sector Rs. 270 million has been provided in the Sixth Plan against the Fifth Plan's estimated expenditure of Rs. 101 million.

### **Health**

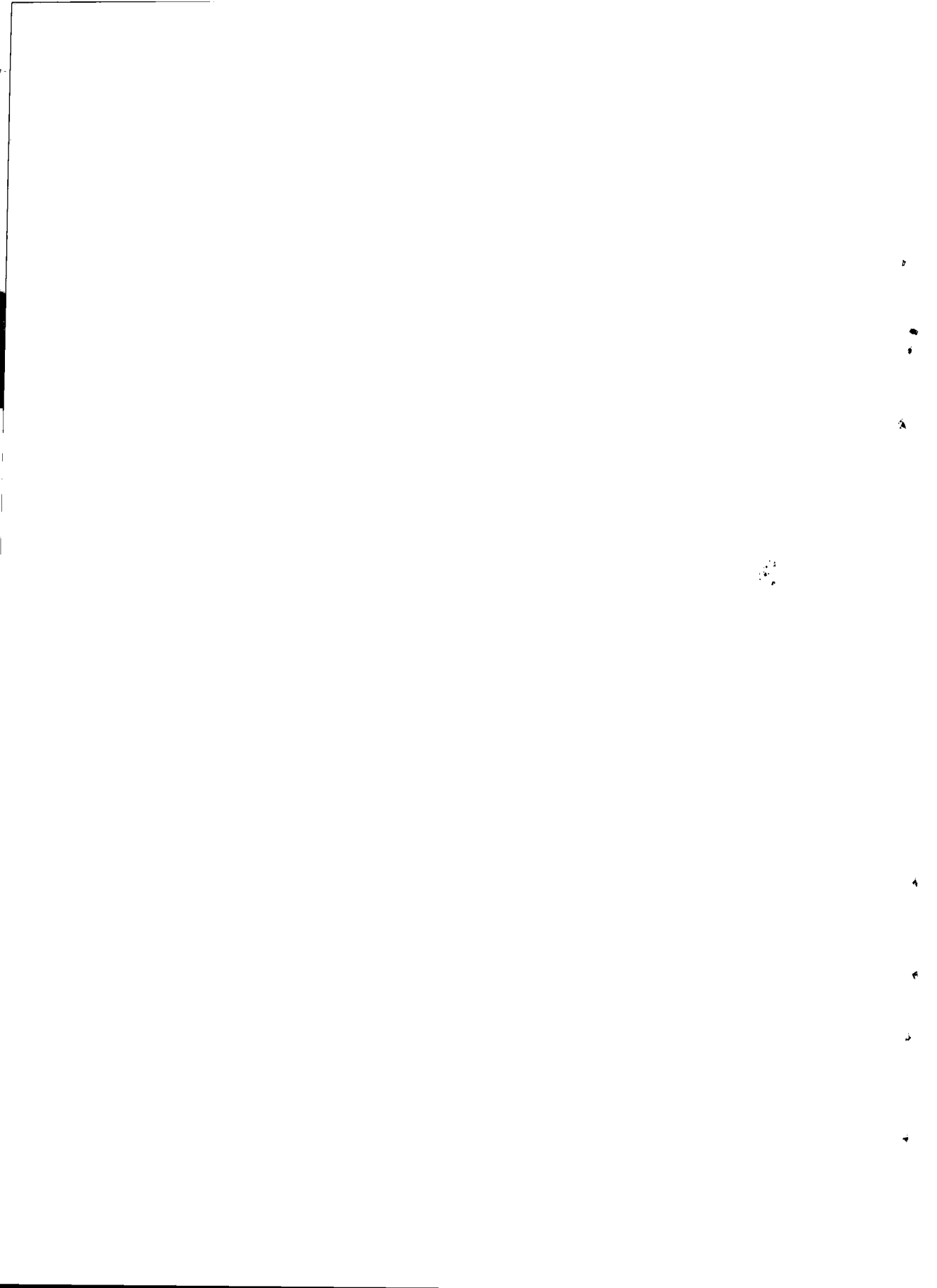
53. Under the Health Programme, it is envisaged to increase the hospital beds from 587 to 797 and number of doctors from 56 to 106, besides, increasing the number of nurses and paramedics. A sum of Rs. 158 million or about 9 per cent of the total public allocation for the Northern Regions has been provided for the Health Sector.

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PART III

**STRENGTHENING THE  
DIMINISHING  
INFRASTRUCTURE**

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*He is the One Who  
Sends to His Servant  
Manifest Sign that He  
May Lead you from  
The Depth of Darkness  
Into Light.*

*Al-Hadid  
(LVIII-9)*

## CHAPTER 14

### ENERGY : A NATIONAL ENERGY PLAN

 ENERGY issue occupies a dominant position in the Sixth Plan. Pakistan, being energy deficient, was one of the most seriously affected countries, when the international energy crisis erupted on the international horizon in the early seventies. Both the prices and the supplies were affected by the scarcity of world energy. The first round of oil price increase witnessed a jump from roughly \$ 2 per barrel in 1972 to around \$ 12 in 1974. The second round starting late 1978 carried the price to an official \$ 34 level, with much higher spot prices. This period (1973-83) saw fundamental changes in world economy. Most important among these was the remarkable adjustment made by the industrial economies to reduce their dependence on imported energy. In March 1983, for the first time in a decade, official oil price was reduced by \$ 5 a barrel.

2. Unfortunately, the initial process of adjustment in Pakistan was confined to (a) arranging credits for financing the high cost of energy and (b) cushioning the impact on energy cost by rapidly increasing the domestic supply of natural gas at prices substantially below the world level. This had the effect of post-poning the more basic and painful adjustment to the world energy crisis. In fact, it tended to magnify the future adjustment problems.

3. The Fifth Plan tackled the energy issue as part of the overall programme for the rehabilitation and stabilization of the economy. However, within a multiplicity of problems, particularly those posed by the

second round of energy price increase, recession, decline in commodity prices, adverse movement in the terms of trade and geo-political developments in the region, the Plan could not overcome the entire backlog of adjustment from the past. Energy is the only sector where the financial allocations were deliberately raised above the original plan, though physical shortfalls could not be avoided. Energy demand at the same time was rising at a significantly faster pace. By the end of the Plan period, energy shortages acquired a serious magnitude.

4. The Sixth Plan faces formidable tasks. It has to overcome the shortages which have already acquired disturbing proportions. It must provide adequately for augmenting supplies to support economic growth and new investment during the Sixth Plan. Simultaneously, there should be initiation of long range planning for the Seventh Plan and beyond to avoid shortages re-emerging at a later date. Exploration and development of domestic sources of energy is essential both for medium and long-term plans—Coal, oil, gas and hydro have to contribute towards reducing dependence on imported energy. Technology (nuclear, solar) and renewable sources of energy (forestry, solar, mini/micro hydro) must get adequate priority right now to secure future energy supply. All this must be combined with investment of resources in energy conservation and more efficient use of energy. An attempt has been made in the Sixth Plan to make a beginning towards such a comprehensive planning of the energy sector. The programme would be kept under review and elaborated further as part of the long-term perspective plan for energy.

### **Pakistan's Energy Profile**

5. The total primary energy consumption in Pakistan is currently estimated at around 23 million tons of oil equivalent (MTOE). Of this, two-third is met by commercial energy resources with about one-third of the consumption being based on non-commercial energy resources like firewood, charcoal and cowdung.

6. The primary commercial energy consumption of 15 MTOE is largely based on the use of hydrocarbons, as is brought out in the following table :

TABLE 1

*Primary Energy Consumption*

Sources of Commercial Energy	Primary Energy Consumption 1982-83 (MTOE)	Percentage Share	
		1982-83	1947
Gas	5.81	38.7	—
Oil	5.85	39.0	37.8
Coal	0.76	5.1	59.1
Hydro	2.49	16.6	3.1
Nuclear and other	0.09	0.6	—
	15.00	100	100

7. Oil and gas account for more than three-quarters of the energy consumption in the country. Gas has proved over the years as the leading domestic source of energy, partly replacing coal. Pakistan has large coal reserves though of low quality. Oil is by and large an imported source of energy-imports of oil accounting for 90 per cent of oil consumption in the country and 35 per cent of commercial energy consumption. Oil is produced in relatively small quantities from a number of fields many of which are old and depleting. Recently, oil production has been supplemented by development of Meyal. New oil discoveries at Adhi and Khashkheli have helped offset the decline in production from old wells and to maintain the ratio of domestic production to the total oil consumption at around 10 per cent. The most dramatic changes in the last thirty five years are the major decline in the use of coal, greater reliance on artificially cheap natural gas and steady development of country's hydro potential.

8. The end-use consumption pattern of the commercial energy for 1980-81 shows that 46 per cent is utilized by industry, with transport sector ranking next with 31 per cent. Household commercial consumption accounts for around 15 per cent of the commercial energy use. Agriculture sector lags behind as a user of only 8 per cent of commercial energy. The share of agriculture is expected to increase significantly with the proposed farm mechanization.

9. The *per capita* primary commercial energy consumption has increased dramatically over the period since 1947, reflecting rapid rate of industrialization and a shift from non-commercial to commercial sources of energy. In terms of oil equivalent, *per capita* commercial energy consumption in Pakistan was mere one-seventh of a barrel of oil in 1947. In 1982-83, *per capita* commercial energy consumption is estimated at 1.3 barrels of oil equivalent, indicating a compound growth rate of 6.5 per cent for the period 1947-83.

10. According to the statistics available for 1979, the *per capita* consumption of primary energy in Pakistan was about one half of the average of low-income developing countries, 1/9th of world average and 1/48th of the U.S. average.

11. The household consumption of commercial energy has started increasing rapidly. According to the census figure of 1980, 71 per cent of the urban households have got electricity connection. More than one-third of the villages have been electrified.

### **Fifth Plan Experience**

12. The growth in the primary energy consumption in the first four years of the Fifth Plan was around 8.5 per cent per annum, with demand being recorded at even higher rate resulting in some shortages and load-shedding. With the growth in GDP during this period at 6.2 per cent, elasticity was about 1.4 against the Fifth Plan projection of 1.14. At this level, the elasticity was even higher than the historical trend, reflecting the improvement in the living standards of a significant part of the population which started receiving remittances from abroad both in cash and kind.

13. On the supply side also, the position remained difficult. The delay in the implementation of the various projects led to considerable shortfall in physical terms. The oil production during 1982-83 is estimated at 13,000 barrels per day against the Fifth Plan projection of 36,800 barrels per day. This was mainly due to the delay in the development of Dhodhak condensate field. Detailed study of this field is in progress. The production from Meyal and Toot fields has also been much less than the projected targets. This has been partly offset by the discovery and early development of the Khashkheli (Badin) field.



14. The average gas supply was to increase from 496 MMCFD in 1977-78 to 856 MMCFD in 1982-83, against which the actual achievement was 852 MMCFD. The demand for gas increased much faster than projected earlier. The number of gas consumers was projected to increase from 0.3 million to 0.8 million in 1982-83. At the end of the Plan, their number is estimated at 0.9 million. Gas supply posed such serious problems in 1982-83 that relief had to be provided by either closing down or converting some of the cement factories to furnace oil.

15. In the field of exploration and development of oil and gas, a total of 70 wells were to be drilled—50 by OGDC and 20 by the private sector. While OGDC has drilled only 20 wells during this period, the private sector managed 62 wells. Deficient availability of rigs and the technical staff constrained the performance of OGDC.

16. In the power sector, the Fifth Plan sought to increase supply from 3,280 MW to 5,370 MW by 1982-83. The actual installed capacity is likely to be 4780 MW in 1982-83 excluding 29 MW taken over from Rawalpindi Electric Supply Company (REPCO) and Multan Electric Supply Company (MESCO) showing a shortfall of about 11 per cent compared to the Plan target. Main shortfall in WAPDA system was on account of delay in the implementation of Tarbela units 9 and 10. In Karachi system, serious problems were created by the delay in the completion of Pipri-I steam power station of 200 MW combined with the continuing uncertainty regarding the availability of power from Karachi Nuclear Power Plant (KANUPP) and constraint on the allocation of gas for continuous running of gas turbines in Karachi.

17. Simultaneously, the demand for electricity rose at a much higher rate than assumed in the Fifth Plan. The elasticity in the case of electricity came close to 2, with electrical energy consumption having grown at over 12 per cent a year and the household demand at a staggering pace of over 24 per cent a year. In part, this was the result of a housing boom and the conversion of a number of houses from other fuels to electricity and the enhanced use of air conditioners and other electrical gadgets.

## SIXTH PLAN

18. The Sixth Plan is designed to focus its major effort in the energy sector on the unfinished task of adjustment to the international energy crisis. Energy is an increasingly scarce resource in the world and

would continue to be in limited supply for the foreseeable future, the so called oil glut of early 1983 notwithstanding. No developing country can, therefore, hope to maintain a reasonable rate of growth in the economy without a forceful and comprehensive national energy policy.

19. Pakistan has already delayed any basic adjustment to the world energy crisis and lags far behind some of the more successful cases where energy consumption has been reduced in a planned manner. Growth in energy consumption at a rate 35 to 40 per cent above the real output growth in the economy cannot be sustained indefinitely. In the industrialized countries, energy saving measures have brought down the elasticity of energy demand in relation to economic growth to about 0.5, meaning that annual energy consumption increases by half as much as national income. This has played a major role in improving their bargaining power *vis-a-vis* the energy producers and exporters, and was also an important factor in their recent economic recovery. Middle and high income developing countries have also brought about a reduction in income elasticity for energy consumption, though not so dramatically. In the newly industrializing countries of South Asia and Far East, the elasticity has been less than unity in recent years.

20. The essential task is to delink growth from energy demand or at least to weaken this link. The industrial countries with high dependence on an energy-intensive style of life have succeeded in breaking this close link. The adjustment was painful but has been rewarding. In Pakistan, where the transition to an energy-intensive alien style of life is still limited to a relatively small minority, early measures are essential to avoid more difficult adjustments later.

21. Basic adjustments require a tenacious approach over a long period. A forceful beginning has to be made within the Sixth Plan : the target is to bring down the elasticity of energy demand to 1.15, on the way to being brought to less than 1.0 in the Seventh Plan.

The basic objectives of the Sixth Plan are :

- To ensure adjustments for realizing growth targets of the sixth Plan in an energy-efficient manner;
- To arrange inter-fuel adjustments with the objective of minimising import-dependence within the Plan period;
- To prepare the ground for growing self-reliance in energy during the Seventh Plan and beyond;

- To develop indigenous resources of energy, intensify the search for yet undiscovered resources, develop nuclear and renewable energy resources and to acquire full command on technology relating to energy substitutes;
- To ensure coverage of the entire rural population residing in compact villages by rural electrification;
- To evolve mechanisms for greater participation of the private sector in meeting the energy requirements of the nation;
- To ensure proper institutionalization of longer-term energy planning, monitoring and evaluation.
- To rationalize energy prices.

22. In the conservation of energy and enforcing efficient use of energy, proper pricing is the heart of the strategy. Apart from the clearly identified justification to raise the price of gas to ensure its use for most essential and high priority purposes, other price measures would need to be carefully evolved. Technical arrangements may have to be made as a prerequisite for peak hour and peak-season charges. It is equally essential to use non-price instruments. These will include an educational campaign to create general awareness regarding the need for conservation, dissemination of knowledge about techniques and methods, incentives for investment in energy-saving devices and purchase of energy-efficient equipment, introduction of a system of labelling energy-efficiency and life-cycle costing of various equipment and appliances, measures for more efficient interfuel substitution, ban on import and manufacture and use of equipment having energy-efficiency level below the prescribed standards.

23. Social pressures and legislative measures would need to be combined to discourage adoption of energy-intensive life style. This would require basic changes such as a more extensive use of public transport in preference to personalized means of transport, discouraging the use of household electrical appliances and architectural designs requiring less heating and cooling. A host of measures employed successfully in other countries, from which we may also benefit, are listed below :

- (a) closure of shops earlier in the evening and consideration of adopting day-light saving time;
- (b) introduction of a system of 5-day week with longer working hours as well as staggered holidays and shifting times in industrial estates and industrial areas;
- (c) encouraging industries to close for plant maintenance during the critical energy supply period of December to May;

- (d) investigating more energy efficient means of bulk transportation such as the use of pipelines and the inland water ways;
- (e) carrying out energy audits which will be made mandatory for major sectors of energy consumption in due course;
- (f) availability of funds at relatively easier terms for energy conservation and efficiency improvement programmes;
- (g) penalising wasteful or ostentatious energy use through the price mechanism, particularly for decorative purposes or for advertisement;
- (h) introduction of an energy management legislation after ensuring that the people have been made adequately aware of the necessity of energy conservation and improvement in efficiency and have access to adequate service and appropriate energy information for this purpose.

### National Energy Conservation Plan

24. It is proposed to embark upon an aggressive energy conservation plan. The key steps involved are institutional arrangements such as a National Energy Conservation Unit, system of energy surveys and audits, continuing analytical work, training of experts, institutionalized financing for conservation investment, demonstration and dissemination of information and setting up of efficiency standards, etc. M/s International Energy Development Consultant (IEDC) have analysed the conservation potential in the country using various measures. The conclusions of the IEDC analysis are summarized below :—

ENERGY SAVINGS ASSUMED IN SIXTH PLAN PROJECTIONS (Per cent reduction per unit of activity compared to 1979-80)	
	1987-88
<b>Measures involving regulation, reinforced by price increases: low or no cost</b>	
– Household & commercial : enforce standards on cooking and heating appliances using commercial fuels.	10
– Industry & Agriculture : establish energy audit programme; develop and disseminate information.	5
– Transportation : establish & enforce efficiency standards for autos, trucks and buses.	5
– Electric energy use in air-conditioners appliances and industrial motors.	5
<b>Additions resulting from cost-effective investments (payback under 5 years)</b>	
– Industry & Agriculture : furnances, processes, etc.	4
– Industry & Agriculture : electric drive.	5
– Transportation : driver training & inspection centres for autos, trucks & buses.	5

*Note* :—Derived from international survey data presented and supported by sector analyses reported by IEDC.  
Source : M/S. IEDC.

25. On the supply side, the price policies will provide a strong impetus to new investment in the energy sector by improving profitability of energy production from various sources. The supply scenario is governed, in addition, by three strategic considerations. Firstly, there is need to augment supplies within the next five years to support incremental GDP and investment in industrial sector. Secondly, the long lead time involved in project completion necessitates heavy investments to meet the long-term energy needs. Thirdly, the length of lead-time has in the past resulted in the adoption of inefficient make-shift alternatives to meet shortages. A long-term view helps to avoid these burdensome costs.

### A Broad View of Energy Development Programme

26. The Energy Sector Plan involves a clear departure from the past in seeking to provide for a quantum jump in investment and future supplies. The proposed investment of Rs. 116.5 billion in the Energy Sector would involve a near tripling over the outlays of Rs. 39 billion in the Fifth Plan. As a matter of fact, about 50 per cent of the increase in public sector investment over the Fifth Plan outlays is being set aside for this sector. In the part of the Plan which is to be financed from the budgetary resources, almost 70 per cent of the proposed increase in the ADP size would be the increment in energy development alone.

TALBE 2

#### *Energy Development Programme*

	(Rs. Billion)		
	Develop- ment Budget ADP	Public Corpora- tions	Total
I. Power:			
(1) Power Generation.	40.7	11.9	52.6
(2) Transmission and Distribution including Rural Electrification.	24.6	6.1	30.7
(3) Special Area Programmes and others.	3.1	0.5	3.6
(5) Provincial (Distribution and Village Electrification).	0.5	-	0.5
Sub-Total (Power).	68.9	18.5	87.4

	Develop- ment Budget ADP	Public Corpora- tions	Total
<b>II. Oil and Gas Development :</b>			
(i) Development of Gas Fields.	3.2	—	3.2
(ii) Development of Oil and Condensate Fields.	3.4	—	3.4
(iii) Strengthening of Oil and Gas Development Corpora- tion.	1.9	—	1.9
(iv) New Exploration Programme.	6.5	—	6.5
Sub-total (OGDC).	15.00	—	15.0
(v) Public Sector participation in Private Sector explora- tion.	1.9	—	1.9
(vi) Gas Transmission & Distribution.	1.2	2.7	3.9
(vii) Oil Refining, Distribution and Storage.	0.9	4.8	5.7
(viii) Miscellaneous (Fuels).	—	1.0	1.0
Sub-Total (Fuels).	19.0	8.5	27.5
Of which transferred to public Corporations.	—3.0	3.0	—
Sub-Total:	16.0	11.5	27.5
<b>III. Energy Planning, Research, Conservation and Renew- ables.</b>	1.6	—	1.6
Total (Energy).	86.5	30.0	116.5
Of which Provincial programme.	0.5	—	0.5

27. The bulk of the allocation (roughly three-quarters) is earmarked for the power sector, as this remains the most important form in which energy is at present consumed. The balance of the programme is for developing domestic energy resources for the future-renewable as well as non-renewable. Following are the major highlights of the programme :

- About Rs. 53 billion or 45 per cent of the total allocation is earmarked for programmes of additional power generation during the Sixth Five Year Plan. This includes an allocation of Rs. 8 billion for 900 MW Chashma Nuclear Project expected to be completed during the Seventh Five Year Plan. The allocations are designed to increase the power generation capacity by 3,800 to 8,600 MW. Roughly 83.4 per cent of the incremental

capacity would be thermal, designed to help reduce the current load-shedding problem at peak demand. Rs. 30.7 billion or 26.4 per cent of the total allocation is designed to extend and augment the transmission system for power and to extend the distribution network to 3.2 million additional consumers. A programme of Rs. 3.6 billion in the power sector relates to small generation units and distribution, general programmes of PAFC as well as rural electrification in Azad Kashmir, Federally Administered Tribal Areas and outlying northern mountainous region.

- A programme to electrify 20,000 additional villages, thereby extending the benefit to 81 per cent villages by the end of Sixth Plan period (discussed in Chapter 27).
- A programme of Rs. 27.5 billion has been formulated for the development of oil and gas resources and exploration in search of new oil and gas resources.
- Over the Sixth Plan period, average day gas supply would increase from 622 MMCFD in 1982-83 to 825 MMCFD by the terminal year of the Plan in SNGPL and SGTC systems. This would have to be combined with price adjustment and allocation of gas according to a very strict order of priority if the deficit in the supply of gas by the end of the Plan period is to be eliminated.
- Results of both development and exploration drilling in the oil sector have been estimated highly conservatively at this stage in view of the uncertainty surrounding any activity in the extraction of oil. Production of crude oil is projected to increase from 13,000 barrels per day to around 21,000 barrels per day. Since the number of exploratory and development wells is being increased from 82 in Fifth Plan to 250 in Sixth Plan, a high probability should be attached to the expectation that actual production of oil would be increasing at a higher rate during this period.
- In the oil refinery sector, two major projects are contemplated. Hydro-Cracker Project located near existing National Refinery would be converting low value furnace oil into high value middle distillates for reducing the import cost of the fuel. The

mid-country refinery to be located at Multan would improve the capacity utilization of the existing pipeline for the transport of crude oil. Both these projects would be based on self-financing and commercial borrowing outside the ADP, with only a small provision for equity participation by the Government.

- Rs. 1.6 billion has been provided for research, energy planning and development of the renewable energy programme. Special attention would be paid to the programme of tree plantation for energy for which a provision of Rs. 0.6 billion has been included.

28. The programme is of a large magnitude and requires heavy acceleration. Implementation capacity may act as a constraint at the margin, though every effort will be made to remove administrative bottlenecks, particularly by the new Projects Wing. Special monitoring of energy projects has been instituted in the Planning Ministry.

29. Policies are being formulated for encouraging the private sector to set up electricity generation facilities for selling to WAPDA and/or KESC at pre-determined rates. The rates would be fixed in a manner to allow attractive profits on efficient generation. Possibilities would also be explored for increasing private participation in the exploration and development of oil and gas resources and in the two refinery projects envisaged in the Sixth Plan.

30. In the light of the above, the net public sector programme of the energy sector is estimated at Rs. 116.5 billion; Rs. 86.5 billion to be implemented through annual development programmes financed from the budget and the balance by public sector corporations through market borrowing and self-generation of resources.

### **Private Sector Investment in Energy**

31. The private sector has been actively participating in the exploration and development of oil and gas in the country. The Government has evolved attractive terms for the companies seeking to explore oil and gas in Pakistan. A number of companies are already functioning in this field. The Government has also announced clearly articulated formula for the pricing of the products for the development of oil and gas fields to assure attractive return on investment. In addition, private sector participation is expected in the hydro-cracker and mid-country refinery projects. Table



below indicates that, on existing indications Rs. 15.7 billion is expected to be invested by the private sector companies in the energy sector. Greater participation of the private sector could be expected as it is decided to allow private participation in power generation, particularly based on coal.

TABLE 3

*Break-up of Private Investment and Corresponding Share of Public Investment in Oil and Gas*

	(Rs. million)			
	Private	Public	Total	Remarks
<b>Exploration</b>				
1. Contribution in New Joint Ventures.	4,250	750	5,000	15% estimated GOP share.
2. Union Texas (Khashkheli area).	390	263	653	40% GOP share.
3. Pakistan Petroleum Ltd. (Chak-Beli Khan).	257	—	257	
4. Joint Ventures with OGDC.	1,190	210	1,400	15% GOP share.
<b>Development</b>				
<i>Oil</i>				
1. Union Texas (Khashkheli).	540	360	900	40% GOP share.
2. POL (Meyal).	600	—	600	
3. PPL (Adhi).	614	—	614	
<i>Gas</i>				
1. PPL (well-head compression).	1,713	—	1,713	
2. PPL (Sui Development).	546	—	546	
3. PPL (Khandkot).	769	—	769	
4. *Pak Stanvac (Mari).	554	532	1,086	49% GOP share.
<b>Refining</b>				
1. Hydrocracker.	1,310	2,430	3,740	
2. PARCO mid-country Refinery Multan.	1,400	2,200	3,600	
<b>Storage</b>				
1. Development of New storage.	500	50	550	
2. Filling up existing storage.	1,073	—	1,073	
Total ..	15,706	6,795	22,501	

\*Being taken over by Fauji Foundation.

## Energy Budget

32. The energy programme is designed to increase the availability of primary energy for consumption during the Sixth Plan by a little less than 60 per cent. The components of the energy supply are given in the table below :

TABLE 4  
*Primary Energy Consumption*

	1982-83		1987-88		Annual Growth Rate %
	Energy Consump- tion MTOE	%Share	Energy Consump- tion MTOE	%Share	
1. Oil (excluding bunkers and non-energy use).	5.85	39.0	10.01	42.2	11.3
Of which : Domestic.	(0.65)	(4.3)	(1.04)	(4.4)	9.9
2. Gas (excluding feedstock).	5.81	38.7	8.32	35.0	7.4
3. Coal.	0.76	5.1	1.16	4.9*	8.8
4. Hydro.	2.49	16.6	4.01	16.9	10.0
5. LPG.	0.07	0.5	0.22	0.9	25.7
6. Nuclear.	0.02	0.1	0.02	0.1	—
Total . .	15.00	100	23.74	100	9.6

TABLE 5  
*Primary Energy Consumption*

	1982-83		1987-88		Annual Growth Rate %
	Energy Consump- tion MTOE	%Share	Energy Consump- tion MTOE	%Share	
1. Oil (including bunkers and non-energy use).	6.40	38.6	10.90	42.2	11.2
2. Gas (including feedstock).	6.86	41.3	9.51	36.8	6.8
3. Coal.	0.76	4.6	1.16	4.5*	8.8
4. Hydel.	2.49	15.0	4.01	15.5	10.0
5. LPG.	0.07	0.4	0.22	0.9	25.7
6. Nuclear.	0.02	0.1	0.02	0.1	—
Total . .	16.60	100.0	25.82	100.0	9.2

\*The share will increase significantly in later years as a result of investments made in the Sixth Plan.

33. The programme thus provides for an annual growth rate in the consumption of energy of 9.6 per cent. It has been designed keeping in view the eventuality that a high demand scenario may actually materialise. The projected 6.5 per cent growth in the GDP during the Sixth Plan will lead to an annual increase of about 9 per cent in energy consumption on the basis of past experience. The supplies are arranged with the objective of taking care of the suppressed demand during the Fifth Plan period and to remove the shortages which characterised the final year of the Fifth Plan. Oil imports would act as the balancing item. The projected oil imports during the Sixth Plan reflect a margin of safety. It would be necessary to monitor the energy demand regularly and to adjust the oil imports accordingly, from year to year. The projection given above should be regarded as representing the maximum.

34. The programme keeps in view the objective that dependence on imported energy should be minimised. As the above table show, dependence on imported energy increases from 35 per cent in 1982-83 to 38 per cent in 1987-88. This is mainly because the demand increase is projected at a high annual rate to allow for the absorption of suppressed demand from the Fifth Plan and because the addition in the gas availability is expected to be increasingly subjected to the limitation of known reserves. While no credit is being claimed for the results of exploration activity, the results of the development of known reserves of oil are also being projected at a conservative level.

35. Over the longer period, investment in coal reserves would provide another important growth point for the domestic energy resource. The investment contemplated in the nuclear energy during the Sixth Plan would also bear fruit in the Seventh Plan.

36. The detailed programme and issues relating to various sources of energy are discussed in the following sections.

### ELECTRIC POWER

37. Most of the energy consumption in the country, leaving aside the transport sector, takes the form of electric power. A substantial part of gas and oil are converted into electricity together with the primary energy derived from hydro power. Electricity demand is growing at a faster rate than other fuels, reflecting the high value of this energy form in specific uses. Although the generation and distribution losses are high for electric

power, this energy form is much more efficient than other fuels in such uses as the motive drive and the pumping, and is uniquely suited to other uses such as lighting and the operation of appliances. Electricity is also a capital intensive sector of the energy system and thus consumes a large proportion of the energy investment for the Sixth Plan.

### Demand

38. The maximum demand recorded in the WAPDA system around mid-1982-83 is 2,794 MW. A demand of 3,050 MW was experienced on the system in July 1982 but could not be met with available capacity, leading to load shedding. WAPDA estimates a maximum demand of 3,118 MW during 1982-83. In KESC system, the maximum demand that could be met in 1982-83 was 618 MW whereas the estimated maximum demand is 640 MW.

39. In view of the large investment required in this sector, demand forecasts were prepared by two different approaches. The growth rate based upon projections of past trends and amended by judgement on the basis of growth rates in past two years has been calculated by WAPDA to be 12.3 per cent for the Sixth Plan period, 11.2 per cent for the Seventh Plan period and 8.3 per cent thereafter (for WAPDA and KESC systems combined). In WAPDA's own system, this is projected to be 12.9 per cent whereas for KESC system it is 9.7 per cent per annum. An alternative set of demand forecast has been prepared by M/s. International Energy Development Consultants (IEDC) which show un-constrained growth ranging up to 12.4 per cent in the overall demand, for WAPDA and KESC system combined during Sixth Plan and 9.3 per cent thereafter. The IEDC demand forecast is based upon the targetted activity levels for the end year of the Sixth Plan. M/s. IEDC have further advised that the annual growth in the demand can be reduced from the 12.4 per cent level by various conservation and demand management measures to about 10.6 per cent per annum.

40. The consumption analysis of WAPDA system shows an actual growth rate of 12.2 per cent between the period 1977-78 to 1981-82. Accordingly, a growth rate of energy consumption of 12.5 per cent has been assumed by the Planning Commission for the Sixth Plan period. From this growth rate of energy consumption the primary power demand has been worked out as explained below.

41. The energy losses, including the auxiliaries, in 1982-83 are estimated at 29 per cent. These losses are expected to go down by 2 per cent

each year. Taking these factors into account and also taking annual load factor of 61 per annum, the demand of WAPDA system is expected to go up from 3,118 MW to 4,926 MW showing an annual growth rate of 9.6 per cent. In case of KFSC, the demand of 640 MW in 1982-83 is expected to grow at the rate of 9.6 per cent per annum, giving 1,012 MW in 1987-88. The diversified maximum demand in 1982-83 estimated at 3,649 MW is expected to go up to 5,765 MW in 1987-88, showing a growth rate of 9.6 per cent per annum.

### Supply

42. The installed capacity of WAPDA in 1982-83 was 3,954 MW (including 29 MW REPCO and MFSCO), including 2,547 MW hydel, 943 MW steam and 464 MW gas turbines. During the Sixth Plan it is proposed to increase the installed capacity by 2,895 MW, bringing the total to 6849 MW. The additional capacity of 2,895 MW during the Sixth Plan will comprise 630 MW hydel, 1,540 MW steam and 725 MW gas turbines. As far as 630 MW hydel capacity is concerned, it will comprise Tarbela 9 and 10 (350 MW), Mangla 9 and 10 (200 MW), Gilgit (10 MW) and Small Hydel (70 MW). The capacity addition in steam totalling 1,540 MW will comprise Guddu steam units 4 and 5 of 210 MW each, combined cycle Guddu 150 MW, Lakhra steam 300 MW, Jamshoro steam 250 MW and Multan steam 420 MW. The capacity addition in gas turbines of 725 MW will comprise 300 MW gas (combined cycle) at Guddu, 25 MW at Quetta and 400 MW at Multan.

43. In KFSC system, the installed capacity of 855 MW will be increased by 900 MW, bringing the installed capacity to 1,755 MW. The additions in the generating capacity in KFSC system will comprise Pipri steam unit 1 and 2 of 400 MW, Pipri steam unit No. 3 and 4 of 400 MW and 100 MW combined cycle unit with gas turbines at SITE area in Karachi.

44. The total installed capacity of the two systems (WAPDA and KFSC) will thus be increased from 4,809 MW in 1982-83 to 8,604 MW in 1987-88, thus resulting in total addition of 3,795 MW. The additional generating capacity will comprise 630 MW hydel, 2,440 MW steam and 725 MW gas turbines.

TABLE 6

*Installed Capacity*

	1982-83		Addition during Sixth Plan (1983-88)		Additions during (1987-88)	
	MW	%	MW	%	MW	%
Hydel .. .. .	2,547	53.0	630	16.6	3,177	36.9
Steam .. .. .	1,436	30.0	2,440	64.3	3,876	45.1
Gas Turbines .. .. .	689	14.2	725	19.1	1,414	16.4
Nuclear .. .. .	137	2.8	-	-	137	1.6
Total .. .. .	4,809	100.0	3,795	100.0	8,604	100.0

TABLE 7

*Generation Projects*

Name	Capacity (MW)	Date of Commissioning
A. Fifth Plan on-going projects to be completed in Sixth Plan.		
Hydel:		
1. Tarbela 9 and 10 .. .. .	350	December, 1984 and June, 1985
2. Gilgit Station .. .. .	10	June, 1988.
	Sub-Total:	360
Steam:		
3. Guddu Unit 4 .. .. .	210	August, 1985
4. Pipri D-1 .. .. .	200	September, 1983
5. Pipri D-2 .. .. .	200	September, 1984.
	Sub-Total:	610
Gas Turbines		
5. Second G.T. Quetta .. .. .	25	May, 1984
	Sub-Total:	995
B. New Projects to be started and completed during Sixth Plan.		
Hydel:		
Mangla 9 and 10 .. .. .	200	December, 1986
Small Hydel .. .. .	70	June, 1988
	Sub-Total:	270

Name	Capacity (MW)	Date of Commissioning
<b>Steam :</b>		
Guddu 5 .. .. .	210	March, 1988.
Lakhra Unit I .. .. .	300	March, 1988.
Combined Cycle Steam Guddu .. .. .	150	February, 1987.
Jamshoro Thermal .. .. .	250	January, 1987.
Multan Steam Unit 1 & 2* .. .. .	420	January, 1988.
Combined Cycle (KEFC) .. .. .	100	February, 1987.
Pipri D-3 .. .. .	200	December, 1987.
Pipri D-4 .. .. .	200	March, 1988.
	Sub-Total:	1830
<b>Gas Turbines :</b>		
Combined Cycle Gas Turbines Guddu .. .. .	300	June, 1985.
Emergency additional generation** .. .. .	400	April 1985 (200 MW). July, 1985 (200 MW).
	Sub-Total:	700

\*Ultimate capacity of 630 MW is under consideration.

\*\*Commissioning dates are for 400 MW gas turbines. However, Barge Mounted 100 MW Plant, is also under consideration.

TABLE 8

*Projects initiated in the Sixth Plan and to be completed after Sixth Plan*

Name	Capacity (MW)	Date of commissioning
<b>Hydel</b>		
Tarbela 11 .. .. .	406	August, 1989
Tarbela 12 .. .. .	406	December, 1989
Tarbela 13 .. .. .	406	March, 1990
Tarbela 14 .. .. .	406	June, 1990
Tarbela 15 .. .. .	406	April, 1993
Tarbela 16 .. .. .	406	August, 1993
Tarbela 17 .. .. .	406	April, 1994
Kohala (1-4) .. .. .	600	March, 1992
Kalabagh-1 .. .. .	880	September, 1993
Additional Small Hydel .. .. .	230	June, 1991
Additional Hydel (Bunji/Basha) .. .. .	800	October, 1993
Thal Reservoir .. .. .	-	December, 1990
	Sub-Total:	5,352*

\*Ground Zam is under investigations.

Name	Capacity (MW)	Date of commissioning
<b>Steam</b>		
Multan unit No. 3	210	December, 1989
Lakhra 2 (Jamshoro Oil/Coal Units 3 and 4)	600	February, 1990
Mid-country Steam Thermal (1 and 2)	600	December, 1990
Additional Thermal (Units 1 and 2)	600	April, 1991
Thatta Steam	1000	July, 1992
Duki Coal	100	February, 1993
Pipri D-4	300	February, 1991
	<b>Sub-Total:</b>	<b>3,410</b>
<b>Gas Turbines</b>		
Nuclear	Nil	
Chashma Nuclear-I	900	February, 1991

44. *Power Balance-Deficit/Surplus.*—Taking into consideration the maintenance reserves and also the spinning reserves, integrated system demand growth rate of 9.6 per cent and capacity additions as discussed above, the overall power balances work out as follows during the Sixth Plan :

TABLE 9  
*Power Balance (Month of September)*

	System* Capability in September	Maintenance and Spining Reserves	Net Availability	Demand	Deficit/ Surplus
1982-83 (WAPDA+KESC)	4,755	614	4,141	3,545	+596
1984-85 (WAPDA+KESC)	4,755	614	4,141	3,892	+249
1984-85 (WAPDA+KESC)	4,963	714	4,249	4,262	-13
1985-86 (Integrated)	6,339	787	5,552	4,534	+1,018
1986-87 (Integrated)	6,339	1,012	5,327	4,971	+356
1987-88 (Integrated)	7,044	1,012	6,032	5,454	+578

\*Allowing for the increase in hydel generation during higher water months.



TABLE 10  
*Power Balance (Month of May)*

	System* Capability in May	Maintenance and Spining Reserves	Net Availability	Demand	Deficit/ Surplus
1982-83 (WAPDA+KFSC)	3.467	414	3,053	3,635	-582
1983-84 (WAPDA+KFSC)	3.657	514	3,143	3,983	-840
1984-85 (WAPDA+KFSC)	4.072	514	3,558	4,361	-803
1985-86 (Integrated)	4.756	314	4,442	4,640	-198
1986-87 (Integrated)	5.414	314	5,100	5,087	+13
1987-88 (Integrated)	6.674	314	6,360	5,581	+779

\*Allowing for decline in hydro capacity in lean water months.

Note -Demands for 1982-83, 1983-84 and 1984-85 are undiversified and subsequently when WAPDA and KFSC systems are integrated from 1985-86 onward, the demand is diversified.

TABLE 11  
*Power Surplus or Deficit 1982-83 to 1987-88*

	September	May
1982-83 (WAPDA+KFSC)	596	-582
1983-84 (WAPDA+KFSC)	249	-840
1984-85 (WAPDA+KFSC)	-13	-803
1985-86 (Integrated)	1018	-198
1986-87 (Integrated)	356	+13
1987-88 (Integrated)	576	+779

45. It may be observed from the above table that the power situation would be deteriorating during the early years of the Sixth Plan. Month of May, in the above table, stands for the lean month when the water availability in the rivers considerably reduces the potential of the hydro-generation units. The situation is likely to be particularly difficult in 1983-85. Improvement can be expected in 1985-86, if there is no slippage in the implementation of the projects underway. The present projection shows that by 1986-87 it would be possible to eliminate the deficit. It is suggested that

measures for demand management and orderly shedding of the load in the lean months be initiated well in advance in order to avoid serious dislocation in the first two years of the Sixth Plan.

### Transmission of Electricity

46. During the Sixth Plan, construction of 500 kV line from Multan to Jamshoro will be completed and the entire line from Faisalabad to Jamshoro would be energised at 500 kV. From Jamshoro to Karachi, two lines of 220 kV each will be connected. By 1985-86, Karachi system would be merged with the WAPDA network, providing for a more balanced and economical energy management. Second 500 kV line from Tarbela to Faisalabad will also be completed and feasibility study and preliminary works will be initiated in respect of 3rd 500 kV line from Tarbela and 2nd 500 kV line from Faisalabad to Jamshoro. These are required to transmit additional energy from Tarbela. Besides, 220 kV Faisalabad-Sahiwal line, 220 kV Mardan-Peshawar line, 220 kV Dadu-Khuzdar line, 220 kV Guddu-Sibbi line and 500 kV Faisalabad-Ludewala-Daud Khel line will be completed and commissioned alongwith the grid stations. Feasibility study and initial work will also be initiated on 220 kV Kot Addu-Loralai line, tapping of Faisalabad-Dadu Khel line and 220 kV Kohala-Rawalpindi line.

TABLE 12

#### *Transmission Projects*

	Name of the Transmission Line	Expected date of Completion
A.	<b>Projects On-going in Fifth Plan to be Completed in Sixth Plan :</b>	
	Power Development in Azad Kashmir	1983
	220 kV Faisalabad-Sahiwal Line	1983
	500 kV Faisalabad-Multan-Guddu-Karachi Transmission Line	1985
	Second 500 kV Tarbela-Faisalabad Transmission Line	1985
B.	<b>New Projects to be Started and Completed in Sixth Plan :</b>	
	220 kV Mardan-Peshawar Transmission Line	1984-85
	220/500 kV Faisalabad-Ludewala-Daud Khel Line	1987-93
	220 kV Dadu-Khuzdar Transmission Line	1987-88
C.	<b>Projects Initiated in Sixth Plan to be Completed after Sixth Plan :</b>	
	Second 220 kV Guddu-Sibbi Transmission Line	1989
	3rd 500 kV Transmission Line from Tarbela	1990-91
	2nd 500 kV Transmission Line from Faisalabad to Jamshoro	1992-93
	220 kV Kot Addu-Loralai Transmission Line	1990
	220 kV Mid Country Thermal to Multan Line	1991
	Tapping Faisalabad-Daud Khel Line for Chashma Nuclear	1991
	220 kV Kohala-Rawalpindi Line	1992

47. *Secondary Transmission Lines and Grid Stations.*—In order to transmit power in bulk from primary transmission line, during the Sixth Plan period 2,660 km. of 132 kV, 1,840 km. of 66 kV transmission lines will be drawn and 370 grid stations including extension, augmentation and conversion will be set up, leading to a total capacity of 7,000 MVA. The execution of this project will help in substantially reducing the power losses.

### Distribution of Power

48. As spelt out in the strategy for the Sixth Plan, the main emphasis in distribution of power will be on the agricultural and industrial consumers. An attempt will be made to clear the backlog of the agricultural and industrial connections and to meet all the requirements of agricultural and industrial consumers. The Sixth Plan targets prepared in the light of this strategy are given below :—

TABLE 13

*Targets for Power Distribution during Sixth Plan*

	(Numbers)		
	Additional Connections during Sixth Plan		
	WAPDA	KESC	Total
Domestic	2,400,000	200,000	2,600,000
Commercial	420,000	50,000	470,000
Industrial	40,000	2,500	42,500
Agricultural	40,000	50	40,050
Total ..	2,900,000	252,550	3,152,550

### Village Electrification

49. At the beginning of the Fifth Plan, *i.e.* 1st July, 1978, the total number of villages electrified were 7,609. During the Fifth Plan, 8,791 villages were electrified, according to estimates giving an average of 1,758 per year. The total number of villages electrified by the end of the Fifth Plan are estimated to be 16,400. In order to expeditiously electrify the remaining

villages, taking into consideration the generation and the transmission being added and also the capabilities of funding organizations during the Sixth Plan, it is proposed to strive to electrify 4,000 villages per annum by supplying electricity through conventional means, non-conventional renewable sources for electricity generation such as mini/micro hydel, solar energy etc. The break up of the proposed programme is given below :

	<i>Number of Villages/p. Annum</i>
WAPDA through its own ADP	3,100
Provinces	300
AK, NA, FATA	400
Non-Conventional	200
	-----
Total . .	4,000
	-----

50. The total number of villages to be electrified for which effort will be made during the Sixth Plan is 20,000, bringing total number of villages electrified to 36,400 which represents 81 per cent of the total (45,000) villages in Pakistan. The success in these efforts depends upon the commitment of the agencies involved, availability of adequate funds, success in reducing/controlling cost of electrification and the contribution by Provinces and beneficiaries. The sensitivty of the overall achievement to these parameters is quite significant and therefore, the real achievement will depend upon the interaction of these parameters.

## OIL

51. The proven recoverable reserves as of July, 1982 in the country are 52.6 million barrels of oil in the existing oil producing structures. In addition, 34 million barrels of condensate reserves are estimated at Dkhdak which is expected to be an additional oil producing area in the Sixth Plan.

### Demand

52. The demand for POL is expected to increase by 11.3 per cent per annum in the Sixth Plan period on the average. Major increase is likely to take the form of demand for furnace oil (replacement of gas), high speed diesel oil (required mainly for transport) and motor spirit.

## Supply

53. The total indigenous production of oil in the country is estimated to be 13,000 barrels per day in 1982-83. This is expected to go up to 21,000 barrels per day in 1987-88 from the development of the fields already known. No assumption of additional oil from new discoveries which may taken place during the 6th Plan has been made, though the size of the exploratioon programme and the survey work done earlier indicate high probability. This conservative approach is adopted in order to avoid under-estimation of fuel bill in future. The field-wise estimates of production are given in the table below.

TABLE 14

### *Oil Production in Sixth Plan*

Name of Field	(Barrels per day)	
	Production	
	1982-83	1987-88 (Projection)
Meyal	5,803	6,294
Balkassar	555	345
Joya Mir	302	400
Dhulian	104	—
Toot	2,169	5,700
Dhodak	—	3,648
Khaskheli	3,647	3,000
Adhi	394	1,446
Khaur	7	—
Total . .	12,981	20,833

54. As against an achievement of 16.4 wells per annum on the average during the Fifth Plan period, it is proposed that an average of 50 wells per annum may be drilled during the Sixth Plan for both exploration and development. A break-up of the exploration and development targets is given below :

TABLE 15

(No. of Wells)

Activity	OGDC	Joint Venture	Private	Total
Exploration	29	25	29	83
Appraisal	9	—	—	9
Development	58	—	100	158
Grand Total . .	96	25	129	250

### Oil Refining

55. There are at present three refineries in Pakistan, two of them (namely, National Refinery Ltd. in the public sector and Pakistan Refinery Ltd. in the private sector) are located at Karachi. Their capacities are 2.1 million tons each. The third refinery is at Attock with the capacity of 2 million tons which is located in the north near Rawalpindi. The capacity at Attock is not fully utilized due to low production of crude oil in the area. The total refining capacity is 6.2 million tons per annum. In order to upgrade the low cost furnace available from the refineries of NRL and PRL into the high cost middle distillate, particularly the High Speed Diesel (HSD) and Superior Kerosene (SK), a hydrocracker project with a capacity of 1.35 million tons per year at Korangi near NRL refinery is proposed to be set up.

56. In order to meet the demand of the furnace oil for 420/630 MW Steam Power Station at Multan and also to meet the demand of petroleum products in the north, PARCO Multan Refinery with a capacity of 2 million tons per year is planned to be set up near Multan. The imported crude would be transported from Karachi through the 16 inch 860 Kilometers of PARCO pipeline which is at present being under-utilized. The important components of PARCO Multan Refinery will be atmospheric distillation, fluid catalytic cracking and visbreaker.

## Oil Transmission

57. It is proposed to extend PARCO Pipeline from Multan to Lahroe *via* Faisalabad. This pipeline will facilitate transmission on petroleum products to various market areas in Lahore and Faisalabad. This will also allow saving in the energy consumed in oil transportation by reducing the burden on road and rail transport.

## Storage and Distribution

58. The existing storage for 215 thousand tons petroleum products in the up country (excluding Kemari installation and refineries) including PARCO tankage roughly provides a storage cover of 16 days. Additional storage needed to raise the coverage to 30 days at the end of the Sixth Five-Year Plan is estimated at 283 thousand tons. The increase in storage would be provided by the distribution companies in the private sector at a total cost of Rs. 567 million.

## GAS

59. The total recoverable reserves of gas as on 1st July, 1982 are estimated at 15.852 trillion cubic feet (TCF) with the calorific value ranging from 308 to 1,233 BTU per cubic foot (CFT). This is equivalent to 13.1 TCF if converted to Sui Main Lime Stone equivalent gas with a calorific value of 933 BTU per CFT. Natural gas is being supplied from Sui, Mari, Sari-Hundi and is also being supplied from associated gas fields at Meyal and Toot. The gas field at Mazarani, Uch, Zin and Khairpur with a total reserve of 3.6 TCF were not developed because of the low heating value and small size of the fields and because of early concentration on more attractive areas. The economics of the development of these reserves is being examined in the light of increased energy prices. Some of the reserves are proposed to be developed during the Sixth Plan.

60. The consumption of gas is envisaged to increase from 310 BCF in 1982-83 to 439 BCF in 1987-88, giving an annual growth rate of 7.3 per cent. This represents an average off-take of 852 MMCFD in 1982-83 and 1,204 MMCFD in 1987-88. The corresponding aggregate daily demand of natural gas is estimated to be higher than this level as shown in the following table :

TABLE 16  
Gas Demand

	(MMCFD)	
	Average Demand 1982-83	Maximum Demand 1982-83
SNGPL	366	591
SGTC	336	388
Sub-Total ..	702	979
Mari	154	200
Khandkot	—	—
Guddu	76	110
Aggregate	932	1,289

#### Supply Development Programmes

61. In order to meet the projected requirements of natural gas, following are the development projects/activities envisaged during the Sixth Plan :

- (i) Development of Sui field by drilling 14 wells at Sui, installing well head compression and associated facilities to achieve the optimum production target of 880 MMCFD.
- (ii) Development of Mari field by drilling 30 development wells and laying gas gathering system and other facilities to increase the production capacity from 200 MMCFD to 387 MMCFD.
- (iii) Development of Pirkoh gas field in three phases by drilling 2 remaining wells in the first phase and 6 wells each in the phases 2 and 3. This will enable commencement of supply of 40 MMCFD of gas in December, 1983 and 72 MMCFD from July, 1984 under phase-I. Additional gas will become available from the other two phases.
- (iv) Additional well head compression is proposed for Sari/Hundi field to maintain the current level of production of 6 MMCFD from this field.



- (v) Khandkot field will be developed by drilling 8 wells to produce 40 MMCFD of natural gas for supplying to WAPDA's Guddu unit No. 4.
- (vi) Projects for the development of Uch and Jandran field are also being prepared. Tentative targets are that 2 appraisal wells will be drilled at each of the two fields in the first phase and 8 wells at Uch and 9 wells at Jandran in the second phase.
- (vii) The reservoir study at Dhodak is in progress and it is expected that as a result of this study some associated gas could be available for supply through the pipe line net work.
- (viii) Khairpur, Zin, Mazarani, Rodho, Kothar are also under consideration. These fields are either small in size and/or low in heating value. If their uses are found feasible, these fields will also be developed.
- (ix) To match the development of gas resources, the transmission and distribution projects include a major project by SNGPL (SNGPL project No. 5) envisaging laying of 694 Kilometres of transmission line of various diameters, 4 compressor units, installation of additional purification bank of 60 MMCFD, upgrading of telecommunication net work and expansion of distribution system. Besides, the pipeline from Pirkoh to Sui which is already under construction will be completed. Installation of gas purification and compression facilities which have already been initiated by SGTC will be completed. SGTC will also construct 56 Kilometres of 14 inch diameter pipeline to Lasbela for the supply of gas to the Galadari and Attock cement factories in Hub Chowki area of Baluchistan. Indus Gas Company (IGC) and Karachi Gas Company (KGC) will be engaged in the normal distribution programme. Indus Gas Company will also complete its projects of distribution of natural gas in Quetta and a number of towns enroute.

## Supply/Demand Position

62. An analysis of supply and demand position in the following table shows that deficits will be encountered during the Sixth Plan period as the maximum day availability of natural gas for the net works of SNGPL and SGTC will fall short of the maximum demand. This will necessitate demand management measures as discussed in the subsequent paragraphs.

TABLE 17

### *Demand-Supply Position of Gas*

(MMCFD)

Year	SNGPL System			SGTC System			Total		
	Demand	Supply	Surplus (+) Short- fall (-)	Demand	Supply	Surplus (+) Short- fall (-)	Demand	Supply	Surplus (+) Short- fall (-)
<b>Maximum Day :</b>									
1982-83	591	426	-165	388	266	-122	979	692	-287
1987-88	668	499	-169	453	417	-36	1121	916	-205
<b>Average Day :</b>									
1982-83	366	366	-	336	256	-80	702	622	-80
1987-88	436	436	-	403	389	-14	839	825	-14

63. The seasonal fluctuations of demand create a serious problem. There are differences in the demand pattern between the SNGPL and SGTC systems. There are further differences between the two systems of gas distribution and the demand from the units generating power related to Mari and Khandkot. In general, November–March are peak months of the demand for gas. There are two sources of this peak demand. The household demand increases during these months for heating purposes: During the same months, the low availability of hydel power requires operation of thermal units for peaking purposes. The following table shows the composition of demand from various major consumers during 1982-83 and projected for 1987-88.

TABLE 18

	(Percentage)	
	1982-83	1987-88
Power	23.6	27.4
Cement	8.9	8.8
Fertilizer	29.0	23.2
Domestic	9.8	11.2
Commercial	2.8	3.5
General Industries	22.0	22.5
Others	3.9	3.4
Total ..	100.0	100.0

64. The cement factories are being converted to use furnace oil as fuel during peak months. Thus, it would be possible to reduce the demand of gas supply during peak months when domestic demand rises. In the power sector, which accounts for roughly one quarter of the demand, two factors would operate. Firstly, Mari gas development would be roughly allocated to the power sector and would not be available in the main stream of distribution for other purposes. Secondly, the existing steam stations are being converted to rely on furnace oil. New power units would be set up with dual firing system and would be able to use both furnace oil and gas according to availability. The situation would, therefore, improve.

65. Gas is a very valuable resource in the country. The best long term use for gas is in the form of feed-stock for chemical fertilizer. With the present low prices of gas compared to any other fuel, the demand is growing at a faster pace. It would be difficult to meet all the demand arising at this low price by development of the gas resources. It is essential that the gas price be adjusted so that at least the price factor is neutral in the choice of the fuel used by the consumer. So long as the price is not adjusted, it is essential that direct control is exercised in extending the use of gas by limiting new connections.

66. During the Sixth Plan, the programme envisages 1,10,000 new connections per year. In view of the shortages of gas which are evident from the projections it is proposed that no new industries shall be given gas connection till more gas is developed and realistically priced.

## COAL

67. The estimated coal reserves in the country including the proven, indicated and the inferred are about 1,178 million metric tons. Out of this, about 102 million metric tons are in the category of proven reserves. The coal is mostly of lignite or subbituminous quality.

68. The present reported production of coal is 1.7 million tons a year. Besides, there is also some unreported production for which authentic information is not available. The public sector contribution to coal is 15 per cent of the total. At present, the largest use of indigenous coal is in brick kilns (96 per cent). The rest is utilized in domestic sector and to a small extent in electricity generation.

**Demand**

69. In the Sixth Plan, the target for coal production capacity is 5.4 million tons. However, capacity utilization will be 2.6 millions tons in 1987-88 because of time lag in demand development. Full capacity utilization is expected in 1988-89. Thus implied compound growth rate is 8.8 per cent per annum in coal consumption for the Sixth Plan period.

70. For generating a higher demand for coal consumption, various avenues are, (i) reported demand of brick kilns and domestic sector will be increased at 7.1 per cent per annum, (ii) a power station of 300 MW will be commissioned at Jamshoro based on Lakhra coal, (iii) Duki coal will be developed for generation of power and (iv) a start will be made in the direction of manufacturing smokeless briquettes and coal gassification. Moreover, coal will be increasingly used as natural gas price increases over the Sixth Plan period.

**Supply Development Programmes**

71. During Sixth Plan, it is proposed to increase production from the existing mines namely Makerwal, Salt Range, Sor Degari, Khost, Sharigh, Mach, Duki, Pir Ismail Ziarat, Jhampir-Meting and Lakhra. In respect of Lakhra, a major development programme is conceived which will increase the production from Lakhra to a level which should sustain operation of 300 MW unit based on Lakhra Coal. The development programme aims at further increasing the production of Lakhra mines to meet the requirements of another 300 to 600 MW steam power capacity in the years beyond the Sixth

Plan. Detailed studies of Duki Field are also in hand in order to increase its production to meet the requirements of a proposed 70 to 100 MW power plant at Duki. During the Sixth Plan, a modern coal sector using upto-date technologies is proposed to be created. Necessary institutions to coordinate and organize this sector are proposed to be created. It is proposed to provide adequate funds and to support PMDC as well as provide judicious set of incentives to the private sector for the quick development of mines to meet the targets of coal production. The coal development programme is discussed in detail in the Chapter on Minerals (See Chapter 11).

#### Liquified Petroleum Gas (LPG)

72. LPG currently meets about 0.3 per cent of the total commercial energy requirements. The total production of LPG during 1982-83 is estimated at 197 tons per day from the three refineries and the LPG plant installed at the Meyal field.

73. The total number of domestic and commercial consumers using LPG is about 350,000. There are at present six LPG distribution companies operating in the four provinces, Azad Kashmir and Northern Areas.

74. Generally it is considered that one ton of LPG is sufficient for meeting the requirements of about 1500 domestic consumers per month. On volume replacement basis, one ton of LPG replaces about 1.7 tons of kerosene. In order to meet the increasing fuel requirement in the domestic sector, all additional sources of LPG will be developed during the Sixth Plan period. These sources have been identified as follows :

TABLE 9

#### *Additional Sources of LPG*

Year	Hydrocracker Project	Multan Refinery	Toot (OGDC)	Dhodak (OGDC)	Total
1983-84	—	—	10	—	10
1984-85	—	—	10	—	10
1985-86	—	—	10	100	110
1986-87	—	220	10	100	330
1987-88	82	220	10	100	412

75. The future supply of LPG, after the envisaged additions during the Sixth Plan, will be about 609 tons per day indicating a 25 per cent average annual increase. The number of consumers is expected to increase to roughly one million, which may be compared with the present number of 0.9 million domestic and commercial consumers receiving natural gas.

### Renewable Energy Resources

76. Renewable energy resources (apart from conventional hydel) provided about 35 per cent of the total energy consumption in Pakistan in 1982-83. Almost all of this was derived from biomass (firewood, crop residues and animal wastes), which is the dominant energy source for the majority of the population. The statistics for 1979-80 show that energy needs for cooking and for space and water heating were met to the extent of 99 per cent in rural households and 61 per cent in urban households by biomass fuels.

77. Although it is generally true that conventional "commercial" energy sources are more convenient to use than biomass and are preferred by individuals who can afford them, it may not be possible to provide conventional energy to all individuals for a long-time because of high capital or import costs, high transport or distribution costs and the lack of rural infrastructure.

78. Major efforts to increase the supply of biomass trees and to improve the efficiency of their use are, therefore, included in the Sixth Plan.

79. In addition biomass and hydel, here are many other renewable energy sources that will be promoted during the Sixth Plan.

80. These include solar photovoltaic systems ("solar electric cells"), solar thermal collectors for water heating biogas and other methods for converting biomass into "clean" fuels, and wind power. Studies will be made on the feasibility of other renewable energy sources, including "gasohol" from sugarcane/molasses and electricity generation from urban garbage.

81. While these sources are unlikely to provide substantial amounts of energy during the Sixth Plan, they could make very useful local contributions, especially in remote areas. In the long term, at least some of them may become significant sources of energy. The emphasis of the Sixth Plan will be to select and develop the more promising technologies.

82. It must be recognized that the real challenge of increasing renewable energy supplies is not primarily a matter of providing the physical raw-materials, as in the development of electric power, gas or oil. Many renewable technologies are not yet "proven" technically or economically, or in their social acceptability. The main challenge is to test and develop a large range of approaches and to persuade and assist the population to take up the proven methods as they are seen by the people to provide a clear benefit. Because of this, supply targets for the Sixth Plan cannot be defined precisely. Rather, the Sixth Plan renewable energy programme should be seen as a period of experimentation, development and evaluation of renewable energy resources leading to widespread adoption of the technologies that prove successful on technical and economic basis in Pakistan's conditions.

### **Biomass/Firewood**

83. Pakistan consumes about 13 million tons of firewood each year. This is expected to increase to 22 million tons by the year 2000. Replenishment of forest resources is essential to maintain future supplies at prices which can be afforded. The shrinking of forests (1 per cent a year) speeds up the process by which arid countryside becomes desert while the growing reliance on burning cow dung deprives the soil of an important natural fertilizer.

84. Because of these trends, there is an urgent need to increase the supply of firewood (and other biomass) by growing more trees.

85. The largest single renewable energy project in the Sixth Plan is the Energy Plantation project, which aims at producing 5 to 6 million tons of firewood (2 MTOE) by 1992-93. Between 1,500 and 2,000 million trees will be planted over ten years. This is equivalent to about 60-80,000 hectares of plantations annually; a small fraction of the country's 19 million hectare of cultivated land. The main emphasis of the project is on training and building up a large cadre of foresters and extension workers to liaise with farmers and villagers. The total cost of the project is estimated at Rs. 612 million during the Sixth Plan.

### **Bio-Gas**

86. Utilization of bio-gas for domestic cooking and lighting specially in the far flung and rural areas, has already been introduced on a small scale in Pakistan. The Directorate General of Energy Resources (DGER) has

already completed Phase-1 of a bio-gas development project which was of a demonstrative nature. Phase-2 of the project has also been embarked upon recently which envisages establishment of 1140 family size bio-gas units (200 CFT per day capacity) and 45 community size units (2000 CFT per day capacity) in the country. Mainly the bio-gas system will be used for heating, cooking, lighting and also for electrification. The target for the Sixth Plan is to install 3000 family size units per year. A regular evaluation of the installation and operation of the bio-gas projects at regular intervals is proposed to be carried out during the Sixth Plan period in order to ensure the success of this technology in Pakistan.

### **Solar Energy**

87. In addition to the energy from biomass, the other important resource of renewable energy is solar energy. Pakistan receives a large amount of solar energy and, therefore, this can be harnessed to a great extent in future. At present state of technology, solar energy is costlier than the other conventional and non-commercial energy resources. Pakistan has, therefore, started a modest programme of Research and Development and Demonstration (RDD) of solar energy so that once the breakthrough in technology is made in the world and the cost of solar energy is reduced, Pakistan should be in a position to quickly benefit from this natural resource. The main projects which will be on-going during the Sixth Plan period are development of solar energy, renewable energy for village electrification, rural energy project, solar energy for remote areas and solar electrification in Baluchistan. These projects will be developed and executed by DGER whereas research and development work will also be done at centres of excellence : ATDO, Silicon Technology Centre, universities and Pakistan Atomic Energy Commission. These activities range from development of silicon cells to testing and demonstrating technologies of photovoltaic cell and solar collector system with tracking and non-tracking heliostats. The main uses are proposed to be generation of electricity, water pumping, water heating and solar cooking.

### **Wind Energy**

88. Although wind speed in Pakistan is generally low and unsuitable for wind power devices, wind energy can be usefully exploited in lower Sind, Mekran and up land valleys. Both DGER and ATDO have planned to explore these possibilities through practices by demonstration projects.



### Miscellaneous Energy Resources

89. Other renewable energy resources such as garbage power, ethenol production from sugarcane etc. will be studied during the Sixth Plan and their potential established.

### Energy Resources Assessment

90. Under this project, it is proposed to carry out a survey of the various renewable energy resources in order to assess their potential for exploitation. A nation-wide survey of renewable energy resources in different parts of the country will be made and its integration with the primary commercial energy resources will be studied.

### Small Hydel Stations

91. A scheme of installation of small hydel stations in Northern Areas, Azad Kashmir and NWFP was started in 1974 under the Federal Government. In view of the fact that the cost of small hydel stations initiated under this project was anticipated to be very high, the scheme was restricted to only 10 sites. Power stations at eight of these sites have been completed and the remaining two will be completed in the first year of the Sixth Plan. Though, in reality the cost per KW of the completed station has been very high (Rs. 40,000—Rs. 77,000 per KW) but it is felt that out of experience, ways and means can be found to reduce the per unit cost. A number of implementation measures are being contemplated. In order to ensure that this activity can be continued if the cost reduction and better implementation is found feasible, a provision of Rs. 200 million has been made in the Sixth Plan.

92. Besides setting up small hydel stations under the Federal project, agencies in A.K and N.A. have been setting up small hydel stations in the past whereas NWFP Government is also contemplating to initiate this activity. Besides a number of sites which will be selected through investigations and studies by the agencies concerned in the Sixth Plan, small hydel stations will be set up a Hunza area at Khyber and Hassanabad.

## ENERGY

## A. POWER

*Financial Allocations 1983-88*

(Million Rupees)

S.No.	Major Porgrames	Sixth Plan Allocation
	POWER (WAPDA)	61,330**
1.	Generation	(36,699**)
2.	Transmission	(7,631)
3.	Secondary Transmission and Grid Station	(7,500)
4.	Distribution and Village Electrification	(9,500)
	PAEC	9,000
1.	Generation	(8,000)
2.	Others	(1,000)
	A.K.	1,000
	N.A.	300
	FATA	450
	Misc. Projects	800*
	Total ..	72,880
	KESC OUTSIDE ADP	14,000
1.	Generation	(7,873)
2.	Transmission	(3,527)
3.	Distribution	(2,600)
	PROVINCES	520
	Total (Power) ..	87,400

\*Includes Rs. 500 million outside ADP.

\*\*Includes Rs. 4000 million outside ADP.

**ENERGY****B. FUELS***Financial Allocations 1983-88*

(Million Rupees)

Major Programmes	Sixth Plan Allocation
<b>A. ADP :</b>	
<b>I. OGDC :</b>	
(i) Development of Gas Fields	12,000
(ii) Development of Oil and Condensate Fields	(3,200)
(iii) Strengthening of OGDC	(3,400)
(iv) New Exploration Programme	(1,900)
<b>II. Petroleum Concession (Public Sector Participation in Private Sector exploration)</b>	(6,500)
<b>III. Gas Transmission and Distribution</b>	1,900
<b>IV. Oil Refining Distribution and Storage</b>	1,200
	900
<b>Total (A) . .</b>	<b>16,000</b>
<b>B. Public Corporations :</b>	
(i) OGDC	11,500
(ii) Gas Transmission and Distribution	(3,000)
(iii) Oil Refining, Distribution and Storage	2,700
(iv) Misc. Projects	(4,800)
	(1,000)
<b>Total (Fuels) . .</b>	<b>27,500</b>
<b>C. Energy Planning, Research, Conservation and Renewables</b>	
(i) DGER	1,600
(ii) HDIP	(348)
(iii) Energy Plantation	(100)
(iv) Energy Planning Conservation (USAID)	(612)
(v) Energy P and D and Instt.	(350)
(vi) National Institute of Power	(150)
	(40)

## ENERGY

## A. POWER

*Physical Targets*

S. No.	Major Programmes	Unit	Sixth Plan 1983-88
WAPDA :			
1.	Energy Generation*.	Million Kwh	26,323
2.	Installed Capacity addition.	MW	2,895
3.	No. of Consumers (addition).	No.	2,900,000
4.	Village Electrification including others (additions).	No.	20,000
KESC :			
5.	Energy Generation*.	Million Kwh	5,400
6.	Installed Capacity addition.	MW	900
7.	No. of Consumers addition.	No.	252,550

\*The generation data relate to the terminal year of Plan period.

## B. FUELS

*Physical Targets*

Major Programmes	Unit	1987-88 (Target)
Crude Oil Production (Yearly average).	Barrels/day.	21,000
Drilling of Wells (Yearly average).		
OGDC:		
Exploratory and App.	Nos.	7.6
Development.	No.	11.6
Joint Ventures.	Nos.	5
PRIVATE:		
Exploratory and App.	Nos.	5.8
Development.	Nos.	20
TOTAL		
Exp. and App.	Nos.	18.4
Development.	No.	31.6
Total.	No.	500
LPG Production.	Tons.	200,970
Refining Capacity.	Million Tons annum	8
Gas Consumption Power.	MMCF	120,287
Fertilizer.	"	101,886
Cement.	"	38,618
Genl. Industries.	"	99,024
Commercial.	"	15,330
Domestic.	"	49,348
Other.	"	14,965
Total.	"	4,39,460
Gas Consumer (New).	Nos.	110,000



*He Who has made for you  
The earth like a carpet  
Spread out; has enabled you  
To go about therein by roads  
(And channels);*

*Ta Ha  
(XX-53)*

## CHAPTER 15

### TRANSPORT AND COMMUNICATIONS: PROVIDING THE MISSING INFRASTRUCTURE

**I**NFRASTRUCTURE requires careful maintenance, continued improvement as well as expansion to cater effectively to the growing demands of an expanding economy. Any deficiency allowed to develop therein can seriously jeopardize efficacy of the intricate network of backward, forward and lateral linkages which is so crucial to sustained economic growth. Inadequate past investment in the transport and communications sector has not only caused the infrastructure capacity in the country to lag far behind the demand but also exposed the system to a menacing rate of deterioration and depletion. Attempts in the Fifth Plan to reverse these trends were not entirely successful which makes it imperative that the Sixth Plan sector programme should focus on optimising efficiency of the national transport and communications system through improvement of existing capacity and its expansion in a carefully planned manner.

#### **Fifth Plan Overview**

2. The Fifth Plan programme was aimed at bringing about a significant improvement in the systems capacity to meet projected traffic requirements by clearing up the backlog of needed rehabilitation work and implementing a modest expansion programme in respect of the existing infrastructure.

3. The growth rates for freight/passenger traffic during the Plan period were projected at 7.5 and 8 per cent per annum, but the actual growth recorded was substantially lower *viz.* 6.9 per cent and 4.1 per cent respectively. However, the intermodal distribution was seriously disturbed, particularly in respect of freight traffic; there was a decline in railway

freight traffic by 4.5 per cent per annum (average), resulting in diversion to the road network of a traffic load higher than projected. The net shift of freight traffic from rail to road in the last five years—the basic cause of which was the inability of the railways to achieve optimal utilization of the inherent systems capacity—is reflected in the following figures :

	Percentage of total freight traffic carried	
	Rail	Road
Projected . . . . .	38	62
Actual . . . . .	25	75

This decline in the remunerative freight traffic inevitably resulted in heavy financial loss to the railways and the increased haulage of freight by road over-strained the highway network seriously. Furthermore, diversion of even long haul freight traffic to the relatively uneconomical mode of transport by road involved extra costs and, therefore, a net loss to the national economy.

4. The projected growth rate for air traffic turned out to be too low. The volume of passenger traffic handled at all airports was 18 per cent higher than anticipated. In absolute numbers, this unexpected rise amounted to around 1 million extra passengers per year—about 80 per cent of the increase occurring in international traffic. This resulted in considerable congestion at the major airports and severely strained the existing terminal/infrastructural facilities, which have remained relatively stagnant.

5. *Achievements.*—The Plan programme was mainly rehabilitation oriented but also provided for modest capacity increases in the existing road network, railways and ports.

6. Major railway projects completed during the period include the Pipri Marshalling yard, second bridge at Kotri, 327 kms of complete track renewal/improvement, 148 kms of rail renewal, 303 kms of sleeper renewals and rolling stock replacement (68 new locomotives, 720 carriages). In spite of completion of these projects, no improvement in output of the railways was visible.

7. In the Federal and Provincial highways sub-sector, major rehabilitation of 5,245 kms of main highways was completed. In addition, 5,250



kms of new roads were constructed thereby increasing the total length of black top roads in the country to about 57,250 kms. Three major bridges (Moro, Attock and Nowshera) were also completed. Rural or farm to market roads are in addition and have been discussed separately.

8. As regards ports, the ore/coal terminal at Port Qasim was completed and commissioned; 75 per cent of work on bulk cargo berths 1-7 was also completed. At Karachi Port, the major works completed include 4 berths at Juna Bunder, re-modelling of M. I. Yard, an oil pier of 4 million tonnes capacity, Jinnah road bridge, and purchase of one suction hopper dredger.

9. The Telephone department had set a target of providing 200,000 additional connections during the Plan period so as to increase the telephone density per thousand population from 3.86 to 5.45. The actual performance fell much below this target level, the additional number of telephones installed being only 122,000—a shortfall of 39 per cent. The telephone density achieved was 5 per thousand population.

10. In shipping, the national fleet could only achieve a productivity level of 3.7 tonnes per dead weight tonne against the modest target of 4.8 tonnes per DWT, even though 14 new ships were acquired. This performance is considered rather disappointing. The national shipping line has been incurring heavy losses for the last many years; the loss for the year 1981-82 being about Rs. 80 million.

11. In the Civil Aviation field, work on improvement and expansion of airport facilities was slower than expected. Extension of terminal buildings and strengthening of runways at Quetta and Peshawar was completed. Three new airports—Saidu Sharif, Bannu and Pasni—were commissioned.

#### STRATEGY FOR SIXTH PLAN

12. The basic issue for the Sixth Plan continues to be a rational allocation of inland freight traffic between rail and road networks. An unabated continuation of the existing trends would take the rail/road traffic ratio from 25 : 75 in 1982-83, to 23 : 77 in 1987-88, which would have extremely adverse implications for the national economy. The extra cost involved due to increased requirement of petroleum products, trucking capacity, improvement and expansion in the existing highway network, and unutilized capacity of the railway system would be enormous. A significant shift of freightage towards railways to achieve optimal utilization of its inherent capacity would be necessary to reduce relative transportation costs. The benefits would be maximized if roads become a preferred means of transport for high-value and short-haul freightage and rail network for long-haul and heavy cargoes. As the transport plan perspectives generally extend

considerably beyond a five-year period, the long-term policy objective is to achieve a rail/road freight traffic ratio of 33 : 67 by the year 2000. In the Sixth Plan, programmes and projects will be initiated to speed up progress in this direction.

13. Inter-model allocations of traffic in the Sixth Plan will thus be made on the basis of relative transport costs. The forecast of volume and pattern of traffic demand is based on a projected growth in G.D.P. of 6.5 per cent per annum, using an elasticity factor of 0.90 in case of passenger and 1.07 in case of freight traffic. The inland freight/passenger traffic is expected to grow to 42,989 million tonne kms/129,925 million passenger kms, respectively, by 1987-88, with average annual growth of 7 per cent and 5.9 per cent respectively. Demand projections for the Plan period in respect of various modes of transport are given in the following table.

TABLE 1

*Projections of Transport Demand*

Mode of Transport	Unit	Bench- mark 1982-83	Target for 1987-88	Annual Com- pound Growth Rate%	
				Fifth Plan	Sixth Plan
<b>Railway</b>					
Freight	Million Tonne Kms.	7,500	11,100	(-) 4.5	8.2
Passenger	Million Passenger Kms.	16,502	21,000	4.1	4.9
<b>Road</b>					
Freight	Million Tonne Kms.	21,200	29,294	9.8	6.7
Passenger	Million Passenger Kms.	79,513	106,885	4.0	6.1
<b>Port</b>					
Dry	Million Tonnes.	8.958	12.915	10.8	7.6
Liquid	Million Tonnes.	8.4	11.449	6.3	6.4
<b>Air</b>					
<i>Domestic</i>					
Passenger	Million Passengers.	4.092	6.423	8.8	9.4
Freight	Million Tonnes.	0.031	0.069	2.1	18.0
<i>International</i>					
Passenger	Million Passengers.	2.671	3.777	16.4	7.2
Freight	Million Tonnes.	0.079	0.126	15.2	9.8
Pipe Line	Million Tonne kms.	1,609	2,566	—	9.8

14. An integrated systems approach will be developed during the Sixth Plan to ensure greatly improved performance of the national transportation network. On the one hand, maximum stress will be laid on optimal utilisation of the existing capacity of the system by rehabilitation and better maintenance of assets as well as enforcement of efficient operational techniques and managerial practices; on the other, capacity expansion will follow the optimal inter-modal traffic allocation.

15. Financing of the infrastructure projects has been a problem area. While normal ADP allocations are being increased considerably, the available resources cannot meet the growth of demand fully. The Sixth Plan proposes accelerated cost recovery programmes, rational pricing policies for services provided by the public sector, larger self-financing by the public corporations, and induction of the private sector in programmes of roads, airlines, civil aviation and telephone industry.

### **Policies and Programmes**

16. *Railways.*—The freight carrying capacity of the railways in the recent past has remained significantly underutilized for various reasons. In 1982-83, rail/road freight traffic ratio stands at 25 : 75. If the existing trend continues, the ratio will deteriorate to 23 : 77 at the end of the Sixth Plan. It is proposed to reverse this trend by making railway freight service more attractive through improved efficiency, quality of service, and elimination of delays. These measures are expected to improve the rail/road freight ratio to 27 : 73 in 1987-88. For railways freight traffic would have a growth rate of 8.2 per cent per annum and a volume of 11.1 BTKm.

17. For passenger traffic, the inter-modal allocation under the optimization plan does not envisage any significant change from the existing trend; the increase in Railway passenger traffic is estimated at 4.9 per cent per annum. The traffic estimated for 1987-88 stands at 21.0 BPKm.

18. The investment required to eliminate the existing deficiencies, rehabilitation and to meet the future demands of the railways would be enormous. At present, the railways are running at a considerable loss (Rs. 1380 million for 1982-83) and, unless steps are taken to improve their

financial situation, it would be difficult to find the necessary resources for the required investment. The problems and issues which need early resolution are :

- A number of branch lines are uneconomical and do not meet even the running costs of the services. At places where reasonably good road transport is available, measures need to be taken to close the uneconomical lines gradually.
- Traction power presently available with railways is not being used efficiently. Powerful engines (2500—3000 HP) are being used for hauling light passenger trains even on main lines. The number of carriages per train will need to be increased so as to reduce the total number of trains on the system; operationally, this will be more economical and will also release more traction power for goods traffic.
- Two-thirds of the railway earnings are derived from freight traffic. The revenues from freight are currently being used for cross subsidisation of passenger service. Instead of occasionally *ad hoc* increase, the outmoded tariff structure will have to be revised particularly passenger fares as a whole to reflect real costs.

19. An investment of Rs. 10 billion, including on-going programme of Rs. 3.606 billion is envisaged for the Plan period.

20. The salient components of the Sixth Plan programme for railways are :

- On-going programme totalling Rs. 3.606 billion, comprising locomotive factory, rehabilitation of 42 locomotives, 30 new diesel electric locomotives, tele-communication and improved signalling and the XIth Railway Project of the World Bank which includes modernization of locomotive maintenance facilities, will be completed.
- New development programme costing Rs. 6.394 billion, comprising the following components will be undertaken.
- rehabilitation of 74 diesel electric locomotives, and induction of 105 new diesel electric locomotives.

- in order to have a continuous stretch of up-graded track, renewal work on the remaining 470 Kms of the main line will be given the highest priority; sleeper and rail renewal will also be carried out on main and branch lines.
- all bridge works will be completed on sections where rail and sleeper renewal has already been done.
- manufacture of 400 new carriages—248 for replacement and 152 for additional traffic.
- electric traction will be introduced on Abegum-Kolpur Section.
- relay inter-locking will be provided on important sections of the main line to improve signalling.

21. The productivity of railway system will be increased by introduction of fast through goods unit trains between selected points of origin and destination, better stock control through the newly installed telecommunication system, and improved operational techniques. A system of annual monitoring and evaluation will be established so that following performance criteria are achieved by the end of the Sixth Plan :—

- Reduction of the turn around time of wagons from 18 to 14 days.
- Increase in daily engine kilometerage by 15 per cent—from 245 to 300.
- Increase in net tonnage per freight train by 15 per cent—from 578 to 650.
- Increase in daily system loading from 1700 to 2100 wagons per day.
- Reduction in the percentage of ineffective locomotives from 15 per cent to 10 per cent.
- Enhancement in the capacity of passenger trains from present 16 to 22 coaches per train with better design of passenger coaches to increase the capacity per coach.

22. *Roads.*—During the Fifth Five Year Plan, there occurred a considerable shift of freight traffic to road transportation. The freight traffic increased at an annual rate of 9.8 per cent against planned forecast of 7.5 per cent only. This, apart from higher cost of transportation, caused the roads to come under severe strain. The Sixth Plan proposes a relative shift of this traffic back to the railways. Nevertheless, the road system will continue to be under severe strain due to growing traffic (projected annual increase in freight/passenger traffic placed at 6.7/6.1 per cent) and heavier axle loads of recently introduced large size trucks.

23. Pakistan has about 113,000 Kms of all types of roads giving an average density of 0.16 km. per square km. of area, which is approximately 1/3rd of the generally accepted standard for developing countries with similar topography and level of economic development. The systems deficiency is, therefore, of the order of 247,000 Kms. This huge deficiency can be made good only through a long term construction programme stretched over many Plan periods. In addition to this quantitative shortfall, there are serious capacity and structural deficiencies in about 6,000 Kms. of existing roads which require to be remedied within the Sixth Plan period. The following policies and programmes, backed up by an allocation of Rs. 14 billion in the public sector and Rs. 5 billion in the semi public sector, are proposed for the Sixth Plan. These should have a far reaching effect in improving the system.

- It is proposed to construct 5,800 Kms. of new roads (3,650 Kms. of black top and 2150 Km of shingled roads) and improve/widen about 7,860 kilometres of the existing ones. Projects for new roads will be limited to only cases involving opening up of isolated areas. Under the improvement programme, priority ranking would be assigned to sections on the basis of actual traffic needs and projected economic returns.

Major projects include completion of the on-going Third Highway Project, overlay on Karachi-Hyderabad super highway, 1210 Kms. of second carriageway along Karachi-Peshawar National Highway, 214 Kms. Dalbandin-Kohi Taftan section RCD highway. Besides special Development Programme will cover all weather road link between Nowshera and Chitral, the Kohat Tunnel and Sibi-Rakhni road.

- The proposed second carriageway between Karachi and Nowshera will be financed largely by the private sector, with some government equity, and this private investment will be repaid after ten years with a good rate of return out of the tolls to be levied on the highway traffic.
- A provision of Rs. 5.54 billion has been made for the provinces to complete their on-going projects and carry out necessary improvements to their existing roads. Some new road links will be constructed to connect isolated areas.
- Six new major bridges namely Talibwala on Chenab, Khushalgarh on Indus, Kotri Bye pass bridge and Jhelum, Gujrat, Chenab 2nd carriage way bridges would be constructed on main rivers and other streams to ensure all weather connections between various parts of the country. In addition, D. I. Khan and Ghazi Ghat Bridges, currently under construction, will be completed.
- In case of inter-provincial links, the 746 kilometres long Peshawar-D. I. Khan-Khutchlak road would be improved to a higher standard by the Federal Government. This would provide the shortest link between the provinces of Baluchistan and N.W.F.P. as well as develop a shorter route west of Indus, between Karachi and Peshawar.

24. In addition to the above programme, it is proposed to launch a large programme of rural road construction during Sixth Five Year Plan to develop a dependable farm-to-market road network in the country. An amount of Rs. 2.1 billion through the ADP has been earmarked for this purpose. In addition Rs. 2 billion are likely to be spent by local bodies from their own resources which is not being treated as planned expenditure. This would provide 40,000 Km of additional roads (by bringing 30,000 Km. of existing canal roads under public use and constructing 10,000 Km. of new roads using stage construction techniques).

25. *Road Transport.*—As discussed earlier, the shift of freight traffic from rail to road during the Fifth Plan caused the road transport system to come under great strain. The situation was further aggravated due to lower than planned induction of trucks by the private sector (about 17,000 against the Plan target of 26,000). The system reached a point of virtual breakdown in 1978-79 and the National Logistic Cell stepped in to save the situation by

induction of about 1,250 large trucks/trailer units with a capacity equivalence of 2,500 standard trucks. The main reason for the inadequate induction of truck capacity by the private sector was the exorbitant cost of heavy commercial vehicles (trucks and buses) and the lower returns on capital investment as compared to light commercial vehicles—the preferred mode of investment.

26. Passenger transport on the whole fared better. Induction of new buses in the public sector fleet was slower than envisaged, but the private sector investment, though short of the Plan projections, was satisfactory. The number of standard buses (50 seater) inducted by the private sector was slightly less than 5 thousand—about one third of the planned target. However, there was an abnormal increase in the light commercial vehicles which, to a considerable extent, made good the shortfall in procurement of buses.

27. The objectives and the programme for the road transport sub-sector during the Sixth Plan are proposed as under :

- Urban transport would continue to be a joint responsibility of the Government and the private sector. The size of the public sector bus fleet will be doubled by the terminal year of the Plan. The remaining transport requirement, estimated at around 3,200 buses or equivalent light commercial vehicles, will be provided by the private sector.
- Inter-city passenger and freight transport, too, would continue to be shared as at present by the public and the private sector. Public transport service in this field will be strengthened. But the bulk of the investment will continue to be made by the private sector. It is anticipated that the private sector will induct around 18,000 new buses, both to meet the current shortfall and the new requirements. In addition, the number of light commercial vehicles in service will be doubled.

28. The total additional requirement of trucks to meet the Sixth Plan freight traffic demand is projected at 31,000 including 10 per cent annual allowance for replacement of existing fleet. Except for about 1,000 trucks to be imported by the NLC on self-financing basis, the entire fleet will be provided by the private sector.



29. The public sector transport system, particularly in the urban areas, has since long been incurring heavy losses and stringent remedial measures are required to prevent the situation from getting totally out of hand. Some of the important measures needed are :

- (i) Improvement in operational efficiency and maintenance.
- (ii) Improvement in the accounting and financial management systems.
- (iii) Effective control on revenue leakage and pilferage of stock which is currently estimated at over 30 per cent.
- (iv) Rationalization of the fare structure to ensure financial viability of operations.

30. The Public sector investment has been estimated at about Rs. 1,500 million. In addition, NLC will invest Rs. 671 million from self-financing.

31. The requirement of the private sector investment in road transport is projected at around Rs. 33 billion, but the likely availability is estimated at Rs. 23 billion. Even this would be more than twice the actual investment of around Rs. 10 billion during the Fifth Plan period. Such a large investment would be possible only through profitability oriented incentives and large credit availability. In this regard, the following policy measures would be urgently taken.

- The fares, both for inter-city and urban transport, will be gradually increased to enhance the profitability of transport operation. This measure will not only help the public sector transport corporations, but also attract larger investments from the private sector.
- The present system of concessions in bus fares encourages misuse and adversely affects profitability of the service. Transport operators expect and must be allowed due financial return. Any concessions considered necessary must be channelized through the concerned educational institutions. It will be the objective of the Sixth Plan to evolve an alternative and more rational system of concessions.
- Effective measures will be taken to improve the labour situation in the transport sector.

- At present, transport sector does not enjoy any credit facilities for financing capital investment. In view of the significantly higher level of private investment envisaged in this sector during the Sixth Plan, transport and transport related facilities should be made eligible for credit financing.

32. The other problems and issues which would receive appropriate consideration during the Sixth Plan period are :

- Training facilities of skilled manpower—drivers and mechanics required for road transport will be established on priority basis.
- The present policy of indiscriminate import of vehicles of different makes will be gradually discontinued and only 2 to 3 makes would be standardized for use in the country.
- To improve the quality and safety of service, all private operators will be required to form transport companies.
- To regulate bus services, a proper time table system will be introduced.
- Induction of greater number of large size trucks for freight transport will be encouraged subject to axle load limitation of tonnes for single and 18 tonnes for tandem axles.
- Emphasis will be laid on highway safety programme through extensive driver education and enforcement of rules.

33. *Ports and Shipping.*—The Port facilities were considerably improved during the Fifth Plan. The programme formulated for the Sixth Plan envisages completion of on-going projects and further augmentation of facilities already created in the ports sector so as to cater to the projected increase in cargo traffic of 7 per cent per annum over the Plan period. Policies will have to be designed for the optimum utilization of both the national ports Karachi port and Port Qasim—through cross subsidisation of tariffs and by creating a National Port Authority to manage both the ports.

34. The major elements of this programme are :

*Public Sector:*

- (i) Port Qasim to be commissioned as a bulk cargo handling port by:
  - (a) Completion of the on-going programme, acquisition of mechanical cargo handling equipment and construction of transit silos.
  - (b) Acquisition of its own dredger to avoid the excessive cost of dredging through contract.
  - (c) Developing an oil terminal of 3-million tonne capacity.
- (ii) Execution of the second phase of the Jinnah Bridge.
- (iii) Construction of a mini-port at Gwadar.

The estimated cost of this programme in the public sector is Rs. 1,884 million.

*Semi-Public Sector:*

- Construction of a 1.7 million container terminal and an oil products berth as well as acquisition of cargo handling equipment/tugs for Karachi Port (estimated cost Rs. 1,570 million).

35. *Shipping.*—As mentioned earlier, the performance of Pakistan National Shipping Corporation in the Fifth Plan was far from satisfactory. The productivity level achieved was only 3.7 tonnes per dead weight tonne, well below the modest target of 4.8 tonnes per DWT set for it.

36. An evaluation of the current PNSC fleet indicates that out of the total of 43 ships as many as 24 are over 15 years of age. Some of these would require replacement if the present carrying capacity is to be improved. The Plan provides for such replacement and in addition, acquisition of:

- (i) Four full container ships either by PNSC or the private sector by the time the container terminal comes into operation; and
- (ii) Five multi-purpose cargo "sister" ships (*i.e.* with identical designs) by the PNSC.

37. With increased productivity, the PNSC fleet can carry 1.8 million tonnes of general cargo against the projected traffic of 4.7 million tonnes *i.e.* upto the maximum limit of 40 per cent for general cargo as fixed by the Conference Lines.

38. The Sixth Plan will mark a policy shift of re-opening of shipping to private sector. In the event of sufficient private interest, NPSC will concentrate only on consolidation of its existing fleet, while private sector will be allowed to induct/expand their fleet.

39. By the close of the Plan period Pakistan Steel Mill is expected to import about 1.4 million tonnes of coal and 2 million tonnes of iron ore. To handle this cargo, four 50,000 DWT bulk carriers will be acquired. A special product tanker of about 15,000 DWT will also be acquired to develop sufficient capacity for transporting edible oil. For the National Tanker Company, it is proposed to acquire an additional second hand crude oil tanker of about 80,000 DWT. An allocation of Rs. 3,000 million has been made for the shipping sector programme.

40. *Civil Aviation.*—In adequate infrastructure is a major deficiency in the air transport sector and passenger as well as freight handling capacity of all the major airports needs expansion for long term requirements. The creation of an autonomous Civil aviation Authority recently will provide administrative flexibility necessary to take up projects in this field on commercial or self-financing basis. The proposed Plan programme is as under :

- The international airports at Karachi, Islamabad and Lahore will be provided with new terminal buildings and facilities as commercial ventures.
- At other airports, terminals, runways and other physical infrastructure will be augmented to meet the future traffic requirements.
- Nawabshah airport will be developed as an alternative airport to Karachi in case of emergencies.
- New airports will be constructed at Chilas and Hazara Division.
- Augmentation and improvement of air navigational aids and air communication system for ensuring greater operational safety will be accorded the highest priority.

- Cargo handling facilities and cargo terminals will be developed at 7 airports namely, Karachi, Islamabad, Lahore, Peshawar, Faisalabad, Multan and Quetta.
- Feeder services will be introduced from 3 to 4 feeder stations. In addition, air shuttle services between congested points will also be considered, possibly in association with the private sector.

41. The Sixth Plan will be financed on the following pattern :

	(Rs. Million)
<b>Total Plan size</b> .. . . . . .	4,000
(a) Public Sector Financing as equity ..	1,000
(b) Self-financing by C.A.A. ..	1,500
(c) Commercial financing .. . . . . .	1,500

42. The public sector financing will be linked with year to year generation of resources by the Civil Aviation Authority.

43. International air traffic during the Sixth Plan period is projected to increase by 7.1 per cent per annum in case of passenger and 10.5 per cent in case of freight. Domestic forecasts stand respectively at 7.8 and 6.5 per cent per annum. These forecasts would require a substantial augmentation of PIA fleet. Considering the difficult financial situation of the PIA it is proposed to consider the possibility of allowing a second airline in the private sector to operate on domestic routes only.

44. The policy framework for the PIA will be as follows :

- Consolidation of the route network and traffic during the first half of the Plan period and moderate growth during the second half.
- Phasing out of Boeing 707 and 720-B aircraft.
- Continuous emphasis on cost control, including reduction of manpower employed per aircraft, higher utilization of fleet and load factors etc. It is proposed to increase the seat factor from 64.6 per cent in 1982-83 to 67 per cent in 1987-88. Similarly, the load factor for cargo will be increased from 49.6 per cent in 1982-83 to 51.4 per cent in 1987-88.

- Improvement in liquidity position to generate funds for financing purchase of new aircraft.

45. The investment proposed for the PIA during the Sixth Plan period is Rs. 2,720 million. As a result of this investment, the capacity of PIA will change as follows. The table also indicates the gap to be filled by private sector.

TABLE 3

*Traffic/Capacity*

	Bench Mark 1982-83	Projection 1987-88	Capacity 1987-88	Gap to be filled in by the Private Sector
Passenger . . . . .	5,941 MPKS	8,437 MPKS	6,965 ASKS	1,472 MPKS
Freight . . . . .	249.3 MFTKS	404.8 MFTKS	183.4 AFTKS	221.5 MFTKS

46. The suggested second airline in the private sector will cater for a traffic of 1,472 MPKM. The private sector would have to invest Rs. 2,721 million in the following equivalent capacity of new aircraft :

- (i) 2 Air buses, A-300 B4
- (ii) 6 Twin Jet Aircrafts.

47. *Telegraph and Telephone.*—During the Fifth Five Year Plan, there has been a very large increase in communication traffic while the system development could not keep pace with the demand resulting in overloading and pent up demand. The policy and strategy for this sector during the Sixth Five-Year Plan will be :

- To provide for a quantum jump in telephone connections to clear the backlog in demand as far as possible and the expansion of telephone facilities to rural and under-developed areas.
- To augment long distance and subsidiary trunk route capacity.
- To complete nation-wide dialling facilities for 107 towns and cities.

- To develop local manufacture of sophisticated telecommunication equipment.
- To augment international telecommunication channels *via* satellites.
- To introduce automaticity, wherever possible, so as to cut down on current and arbitrary billing.

48. In physical terms, it is proposed to give more telephone connections during the Sixth Plan period than preceding 35 years taken together. The telex line units and STD/NWD channels would also be doubled in the Plan period.

49. The implementation of such a programme would require an investment of Rs. 10.1 billion in the public sector, with a significant foreign exchange component. The issues which will have to be tackled to make this programme a success are :

- Substantial enhancement of Telephone and Telegraph Department's efficiency and examination of the possibility of converting it into a self-financing corporation.
- Setting up of a cable factory with foreign collaboration. Telecommunication development in Northern Areas and Azad Kashmir have been provided separately with an amount of Rs. 02. billion.

50. A major policy shift in the Sixth Plan will be the induction of private sector in the manufacture of telecommunication equipment. The size of proposed investment in the private sector is Rs. 3 billion.

51. *Post Office.*—The number of post offices in the country will reach 11,528 by June 1983; 2,535 in urban areas and 8,993 in rural areas. Each post office would, on an average, serve an area of 69 sq. km and a population of 7,375 persons. According to the United Postal Union, the area and population served by a post office should average between 20 to 40 sq. km and 3,000 to 6,000 persons. It is, therefore, necessary to open at least 1,500 new post offices during the Sixth Plan period, out of which 1,000 would be in rural and 500 in urban areas. An allocation of Rs. 650 million has been made in the Sixth Plan to back up this programme.

52. The Post Office Department, in spite of being a no profit no loss service, has been facing deficits; the situation could be eased if this department was allowed to utilize the Postal Life Insurance Fund, currently amounting to Rs. 479 million to develop revenue generating assets. Since the opening up of the Middle East window, post offices have become an important channel for transferring remittances from overseas Pakistanis. During the Sixth Plan, efforts will be made to institute new incentives for mobilization of private savings through post offices.

53. *Research.*—The following research programme is proposed for the Sixth Plan.

- (i) *National Transport Research Centre.*—An allocation of Rs. 30 million has been made for continuation of Research Studies in the fields of Road Transport, Railways and Civil Aviation during the Sixth Plan.
- (ii) *National Highway Research Institute.*—It is proposed to establish a National Highway Research Institute at a cost of Rs. 50 million to undertake research in highway design and construction. An allocation of Rs. 30 million is proposed for the Plan period.
- (iii) *Research and Development in Railway.*—An allocation of Rs. 50 million has been made for Research and Development for increasing productivity of the Railways.
- (iv) *Expansion of Telecommunication Research.*—The existing research facilities would be expanded for undertaking research on new technology and on improvement of the existing facilities with an allocation of Rs. 40.0 million.

54. *Other Research Studies.*—An allocation of Rs. 10 million has been made for undertaking feasibility and other planning studies as and when required, in different fields of transportation.

55. To sum up, the development of transport and communications infrastructure claims an investment of about Rs. 83.5 billion out of the total Plan outlay of Rs. 490 billion for the Plan. Of this total, Rs. 57.5 billion has been earmarked for the ADP and public corporations. The amount earmarked for the private sector is about Rs. 26 billion as against an investment of Rs. 9 billion only during the Fifth Plan period. This jump is due to



the new policy of the induction of the private sector in the field of road construction, tele-communications and civil aviation. If, for some reason the new responsibilities being given to the private sector do not materialize, the public sector will have to be prepared to pick up the slack.

56. Investment in a medium term plan cannot be expected to close the huge infrastructure gap accumulated over a long period of inadequate rehabilitation, replacement and expansion of assets. But the Sixth Plan does initiate a policy framework that helps to provide the missing infrastructure in a longer term perspective.

57. The details of financial allocations and physical targets are given in Annexures I and II respectively.

## TRANSPORT AND COMMUNICATIONS

FINANCIAL ALLOCATIONS 1983-88

(Million Rupees)

Sl. No.	Sub-sector	Sixth Plan Allocation
1	2	3
I. Public Sector :		
1.	Pakistan Railways.	10,000
2.	Civil Aviation.	1,000
3.	D.G. Ports and Shipping.	1,884
4.	National Highways.	
	(a) Highways and Bridges (including traffic programme).	4,921
	(b) Major Bridges.	757
	(c) Third Highway Programme.	281
5.	N.L.C.	—
6.	F.W.O.	170
7.	Other Roads.	500
8.	Roads in Special Areas :	
	(a) Azad Kashmir.	1,000
	(b) Northern Areas.	250
	(c) FATA.	680
9.	Road Transport :	
	(a) Urban Transport.	—
	(b) Inter-city Road Transport.	—
10.	Research :	
	(a) N.T.R.C.	30
	(b) National Highway Research Institute.	30
	(c) Others.	10
11.	Communications :	
	(a) T&T.	10,100
	(b) S.C.O.	200
	(c) Post Office.	650

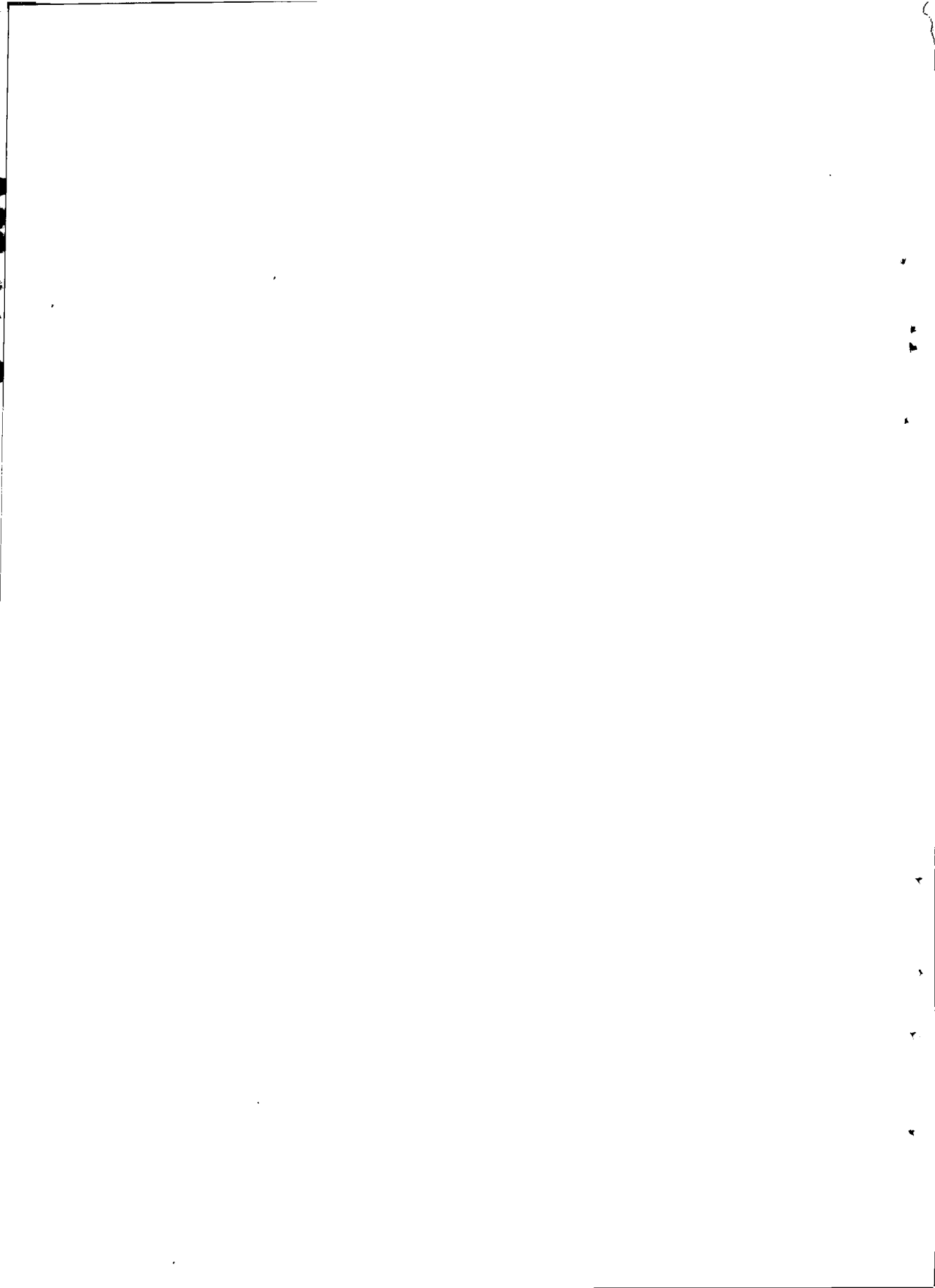
1	2	3
12.	Provincial Roads and Road Transport :	
	(a) Punjab Roads.	2,300
	(b) Sind Roads.	1,720
	(c) N.W.F.P. Roads.	1,065
	(d) Baluchistan Roads.	456
13.	Rural Roads.	2,100
	Sub-total (Public Sector) ..	<u>40,104</u>
II. Public Corporations :		
1.	Roads.	5,000
2.	Road Transports :	
	(a) Urban Transport.	1,000
	(b) Inter-city Transport.	1,150
3.	K.P.T.	1,553
4.	P.N.S.C.	3,000
5.	Civil Aviation Authority.	3,000
6.	Airlines.	2,720
	Sub-total (Semi-Public) ..	<u>17,423</u>
	Total ..	<u>57,527</u>

## TRANSPORT AND COMMUNICATIONS

## PHYSICAL TARGETS

Sl. No.	Major Programmes	Unit	Sixth Plan Target
1.	2	3	4
<b>A. TRAFFIC :</b>			
I. Rail :			
	(a) Passenger.	MP Km.	21,000
	(b) Goods.	MT Km.	11,100
II. Airlines :			
	(a) Passenger.	MP Km.	8,437
	(b) Goods.	MT Km.	404.8
III. Roads :			
	(a) Passenger.	MP Km.	106,885
	(b) Goods.	MT Km.	29,294
IV. Ports :			
	(a) Liquid Cargo.	Million tons.	11.449
	(b) Dry Cargo.		12.915
V. T & T :			
	(a) Trunk Traffic.	(Million Calls)	279
	(b) Telex traffic.	(Annual paid minutes in million)	22.42
<b>B. PHYSICAL TARGETS</b>			
I. Railways :			
A. Track Rehabilitation :			
	(i) Rail Renewals.	(Kms).	100
	(ii) Sleeper Renewals.	(Kms).	200
	(iii) Complete Track Renewals.	(Kms).	470
B. Rolling Stock :			
	(i) Locomotive acquisition.	(Nos).	135
	(ii) Rehabilitation of Locomotives.	(Nos).	116
	(iii) Passenger Carriage & other Coaching Vehicles.	(Nos).	440

1	2	3	4
	(iv) Wagons (Replacement work).	(Nos).	300
II. T & T			
	Telephone.	(Nos).	934.000
III. Post Offices.			
		(Nos).	13.028
IV. Aviation :			
	(i) Extension of terminals and terminal Bldgs. Constt/ex-tension.	(Nos).	Const. of three major terminals at Karachi, Lahore and Islamabad, improvement of 7 airports, augmentation of navigation and communications system, and necessary infrastructure.
	(ii) Strengthening of Runways.		
	(iii) Construction of Basic Aerodromes facilities.		Hazara division and Chilas.
V. PIA :			
	(i) Fokker F 27.	(Nos).	One DC-10-30
	(ii) Bowing 720.		One Airbus A-300 B 4 and 6 twin Engine Jet Aircrafts.
	(iii) Boeing 707.		
	(iv) Boeing 747.		
	(v) D.C. 10.		
	(vi) Air Bus A 300 B4.		
VI. Roads :			
	(i) New const.	(Kms).	5,800
	(ii) Improvement.	(Kms).	7,860
Road Transport :			
	Buses (Procured/replaced).	(Nos).	47.330



*"And He has (also) made the  
rivers subservient to you"*

*Ibrahim  
(XIV-32)*

## CHAPTER 16

### IRRIGATION WATER: A DIMINISHING RESOURCE

A large irrigation network covering 70 per cent of Pakistan's agriculture, is potentially the most richest asset possessed by the country. Its inadequate utilisation is reflected in the present low average yields of the various crops grown in the country. In order to realize the full potential of this great asset, it is essential that, apart from improving agricultural practices, the irrigation system itself is improved, protected and extended by the public sector action and that the private sector is encouraged to adopt more efficient irrigation practices.

2. The two major sources of water availability for irrigation are (i) surface water and (ii) groundwater. The surface water is derived from annual flow of the Indus and its western tributaries (Jhelum and Chenab), whereas the groundwater is exploited by drawing water from the ground reservoir by various methods, namely, tubewells, open wells, *karezes*, etc. The mean annual flow of the Indus, the Jhelum and the Chenab at their rim stations is about 133 million acre feet (MAF) based on 20 years average (1962-63 to 1981-82). Out of this, 111 MAF (84%) flow during *Kharif* and 22 MAF (16%) during *Rabi*. The total annual designed capacity of the canal system is 180 MAF. In an average river-flow year, the canal system delivers 101 MAF of water at canal-head annually, 64 MAF in *Kharif* and 37.5 MAF in *Rabi*. The latest research has indicated that roughly 60% of the water is lost during conveyance and application at various points *viz.*, canals and distributaries, sanctioned watercourses, *zamindara* watercourses and fields.

Taking account of the above losses, the average surface water availability at farm-gate during *Kharif* and *Rabi* comes to about 38.4 MAF and 22.4 MAF, respectively.

3. These losses from the canal system, fortunately, are not permanent. At present, the irrigated plains of Indus Basin are underlain by an extensive groundwater aquifer. Out of 40 million acres (MA) underlain by groundwater, about 14 MA contain fresh groundwater with less than 1000 parts per million (ppm) total dissolved solids, about 5 MA have groundwater of moderate salinity with 1000 to 3000 ppm (2000 ppm in lower Sind) and 21 MA possess groundwater of high salinity with more than 3000 ppm (2000 ppm in lower Sind). The physical characteristics of the aquifer are generally very favourable for large scale tubewell development. The aquifer mainly consists of soft alluvial layers of various textures which permit the extraction of groundwater. This groundwater is exploited by both public and private tubewells.

4. The main objective of the private tubewells is to increase the water availability for extending irrigation and supplementing the canal supplies. There are two types of public tubewells, namely, Scarp Fresh Groundwater Tubewells and Irrigation Tubewells. The primary aim of SCARP Tubewells is to reclaim waterlogged lands by lowering the water-table and the secondary aim is to supplement canal supplies for increasing cropping intensity. In contrast, Irrigation Tubewells are installed by the provincial governments for irrigation purposes only. The ratio of the electric and the diesel driven private tubewells is 2 : 3, while, all the public tubewells are electrically driven.

5. Benchmark data relating to private and public tubewells is given below :

TABLE 1  
*Public and Private Tubewells*

Type of Tubewells	No. of Tube-wells	Average designed capacity (cusecs)	Operating Efficiency (%)	Delivery Losses (%)	Estd. Annual Pumpage per T.W. (A.F.)	Total Annual Pumpage (MAF)
1. Private Tubewells.	1,81,200	1.05	20	5	145	26.3
2. SCARP Rubewells. (FGW)	12,608	2.0	50	15	615	9.4
3. Public Irrig. Tubewells.	1,569	1.5/1.0	50	15	416/307	0.6
Total . .	1,95,377	-	-	-	-	36.3



6. Although the Indus Basin Irrigation System includes pioneer innovations, the system has to operate under certain constraints which are :

- (a) The main aim of irrigation was to cover maximum area. The designed cropping intensity was kept as low as 40% of Canal Commanded Area. This led to unnecessary increase in the length of canals and the eventual increase in operation and maintenance cost.
- (b) Almost all the irrigation channels of the system are unlined and designed on the regime (non-silting and non-scouring) theory with the result that canals can be operated within a narrow range of discharge. This rigidity in the operation of earthen channels is a serious limitation in meeting the timely water requirements of crops.

7. The canal system has deteriorated in recent years due to lack of proper maintenance. The major reason for lack of maintenance has been the ever increasing gap between the irrigation charges collected from the farmers and the cost of maintenance. Usually, the maintenance budget was spent on head works and main canals with little or nothing remaining for smaller channels, with the result that their carrying capacity gradually diminished due to siltation, especially in the tail reaches. Long deferred maintenance and rehabilitation also resulted in frequent breaches in distributaries and minors, flooding the fields and interrupting the irrigation supplies.

8. The water is distributed to a farm within a watercourse command by a weekly time-rotation, commonly called "*Warabandi*". Each farmer is allotted a specified time period, in proportion to his land holdings. In other words, this system disregards the crop consumptive use, frequency and timely application of irrigation water. For maximizing crop production, this constraint in the system would have to be removed. During the Sixth Plan, the emphasis is laid on curtailing the losses in the sanctioned watercourses by introducing technical improvement and better maintenance through the Water Users Associations. However, during the Seventh Plan, an attempt would be made to the rigidity in the existing irrigation system for meeting the crop consumptive use on 10-daily basis.

9. The water balance of the Indus Basin has significantly been disrupted since the advent of irrigation; firstly, by the continuous and expanding irrigation system and secondly on account of virtual absence of drainage.

As a result of large losses in the conveyance system, serious waterlogging problem has occurred over the years. The latest surveys indicate that about 11 MA and 5 MA are within 5 feet water-table depth during October and June, respectively. The area within 10 feet watertable depth during October and June is 23.5 MA and 23.0 MA respectively. The area having groundwater table within 5 feet depth is classified as disastrous area.

10. The appreciable amount of salts which existed in the Indus Basin due to geologic formation of the basin, has increased since the introduction of irrigation. According to some studies, nearly 16 million tons of salts are being added to the soil and the groundwater annually. According to the latest soil survey (1977-78) by WAPDA, nearly 24% of the area surveyed has saline/sodic soils.

11. The country is subjected to heavy flooding during the monsoon. The existing flood protection arrangements are not adequate to take the onslaught of exceptionally high floods. It is estimated that such floods cause monetary damages of Rs. 4 to 6 billion and inundate more than 10 MA of canal irrigated area. The flood protection programme is essential for protecting the existing infrastructure and providing reasonable security for investment in agricultural production.

### REVIEW OF FIFTH PLAN

12. The allocation for the Water Resources Development Sector in the Fifth Plan was Rs. 17,120 million. Of this, due to resources constrains, about 15,767 million was actually spent, giving a percentage utilization of 92. Within this total, a substantially larger amount was required for the essential repairs and ancillary works at the completed Tarbela Dam. This drastically reduced the availability of investment resources for the Drainage and Reclamation Programme. The implementation of this programme was reduced by one-third in financial terms and by a little more than half in real terms.

13. The sub-sector-wise allocation and expenditure of funds in the Fifth Plan is shown below :

TABLE 2

*Financial Allocation and Utilization*

Sub-sector.	(Rs. Million)		
	Allocation	Expenditure	Percentage
1. Tarbela/IBP.	2,289.0	5,552	243
2. Irrigation.	4,375.5	3,697	84
3. Drainage and Reclamation.	6,702.1	4,003	60
4. Flood Control.	1,794.9	1,209	67
5. On-farm Water Management.	767.1	555	72
6. Survey, Investigation and Research.	899.4	751	63
7. Miscellaneous.	292.0	—	—
Total . .	17,120.0	15,767	92

14. The physical targets and corresponding achievements in the main sub-sectors, as a result of implementation of development programme in the Fifth Plan, are discussed below:

**Tarbela/IBP**

15. The Tarbela Dam plays a vital role in the overall economy of Pakistan. It is the last of the major projects built under the Indus Basin Settlement Plan. It stores 9.3 MAF of assured Rabi supply and has potential to generate 2100 Mega-Watts (MW). During the initial test operation of the intake gates of diversion tunnels 1 and 2, in 1974, the central intake gate of tunnel 2 got stuck. The unchecked flow of water caused heavy damage to tunnel 2, the outlet gate chamber of tunnel 3 and the outlet chutes of tunnels 3 and 4. Sink-holes and cracks over the upstream blanket were also observed. The damaged portion of tunnel 2 was rebuilt and the outlet works of tunnel 3 and 4 were repaired. Further, as a safeguard against sinkholes and cracks, the impervious blanket was strengthened by additional fill material. In February 1975, the reservoir was again allowed to rise. Tunnels 1 and 2 were closed and irrigation water allowed to pass through tunnels 3 and 4. After nearly seven months of operation, it was observed that the stilling basin 3 and the divide wall between basins 3 and 4 were seriously damaged. This resulted in closing the tunnels and releasing water through the service and auxiliary spillways which were operated for the first time in August, 1975. After repairing the damages under a crash programme, the tunnels

were again operated in April, 1976. But, unfortunately, both the basins again failed to take the brunt of the fast flowing water. Subsequently, the basin 3 was repaired and has since been operating satisfactorily. Whereas, for basin 4, it was decided to convert it into a flip bucket.

16. The problems did not end here. In August 1977, it was observed that the Service Spillway exhibited undesired erosion which posed danger to the safety of the structure as a whole. The remedial works were constructed and the spillway was put to operation in 1980. Undesirable scour was also noticed in the plunge pool of the Auxiliary Spillway. As a preliminary measure, during 1977-79, two small spurs and a rollcrete dyke were constructed. But, unfortunately, operation of the spillway during 1979 established the necessity of full scale remedial measures. In order to maintain appropriate level in the plunge pool of the spillways, the natural *Dal Daar Weir* in the spillway channel was improved during 1978-79 by excavating the crest to a uniform level and capping it with 5 ft. thick concrete. Besides, 40 ft. high guide banks were constructed on both sides, upstream of the weir. Further, during 1979-80, downstream face of the *Dal Daar* was excavated and provided with 5 th. thick concrete cover over the portions where protection of exposed rock was deemed necessary. The upstream of the weir was also protected with 10 feet thick rollcrete.

17. In September 1977, a sinkhole on the upstream slope of auxiliary dam No. 1 was observed. It was feared that leaching and cracking of clay core had occurred. In order to study it in detail, an inclined seven feet diameter exploratory shaft nearly 200 feet deep along the downstream face of the core was excavated. After confirming that the clay core was quite safe, the shaft was backfilled. In the same area, two more sinkholes appeared which were treated by grouting and backfilling.

18. During the Fifth Plan period, unexpected high expenditure on these works was responsible for creating a major distortion in the physical targets expected to be achieved in other sub-sectors. Amongst the other IBP works, the implementation work of the Mangla Watershed Management Project continued. Considerable progress was also achieved in the resettlement of persons affected due to the construction of the Tarbela Dam. The total allocation to Tarbela/IBP during the Fifth Plan period was Rs. 2,289 million but the actual expenditure was of the order of Rs. 5552 million or about 243% more than its original allocation.

## Water Availability

19. Owing to successful implementation of surface and groundwater irrigation programmes in the Fifth Plan, the target relating to the increase in water-availability was not adversely affected. At the end of the Fifth Plan, about 101.49 million acre feet (MAF) of water was made available against a target of 102.90 MAF. The surface and groundwater availability at farmgate is given below :

TABLE 3

*Surface and Groundwater Availability at Farm-gate*

Source	Fifth Plan Targets	Estimated Achievements	Percentage Achievement
Surface.	62.93	65.24*	104%
Groundwater.	39.97	36.25	91%
Total . .	102.90	101.49	99%
-----			
*Canal withdrawal (Av. Annual Estimated).	60.81 MAF		
Water Course Improvement.	3.57 MAF		
Small Irrigation Schemes.	0.86 MAF		
Total . .	65.24 MAF		

20. Completion of the Hub Dam was in time for adding to the irrigation water availability within the Plan period. Completion of the Khanpur Dam in the final year of the Plan would affect irrigation water supplies in the first year of the Sixth Plan. Under the On-Farm Water Management (OFWM) Programme, about 2,877 water-courses were improved against the target of 8,668 water-courses. These contributed about 0.43 MAF of additional surface at farmgate by preventing water losses. In addition, under the "Crash Programme" of water-courses, about 60,300 watercourses were renovated. Improvement of watercourses and providing of *Pucca Nukkas* under the

Crack Programme caused major increase in the water availability at farmgate. The increase in water availability due to this programme exceeded the Fifth Plan targets.

21. Additional water availability from groundwater fell short of the target because of low SCARP tubewell implementation due to inadequate resources. The achievements of Private Tubewells could not be monitored rigorously. However, it is estimated that the plan targets have been substantially achieved. It is estimated that about 32,200 private, 579 public irrigation tubewells and 1,523 SCARP useable groundwater tubewells were installed. Out of 32,200 private tubewells, 5,800 tubewells were installed under the tubewell subsidy programme. Groundwater contribution to water availability was as follows:

Item	Unit	Fifth Plan Targets	Achievement	Percentage Achievement
SCARP Tubewells.	MAF	3.07	0.94	31
Private Tubewells.	MAF	5.87	4.68	80
Public Irrigation Tubewells.	MAF	0.51	0.17	33
	Total . .	9.45	5.79	61

### Drainage and Reclamation

22. The physical targets achieved during the Fifth Plan fell short of the targets envisaged in the drainage and reclamation sub-sector as shown below:

TABLE 4  
*Achievements under Drainage and Reclamation*

Province	Fifth Plan Targets		Achievements				
	New T.W.	Rep. T.W.	New T.W.	%	Rep. T.W.	%	
Punjab.	2,770	938	707	25	529	56	
Sind.	1,995	150	546	27	174	116	
N.W.F.P.	275	—	270	98	—	—	
	Total . .	5,040	1,088	1,523	30	703	65

23. The drastic cuts in allocation for the programme due to the diversion of resources to the Tarbela, as explained earlier, was mainly responsible for shortfalls in physical implementation. Increase in costs, more than proportionate overhead charges for a reduced programme and high interest charges for a protracted period, added to the problem.

24. It was anticipated that about 7 MA would be given protection from waterlogging and salinity. But, only 2.14 MA were protected which comes to an achievement of 30%.

### Water Management

25. The overall programme during the Fifth Plan was for 8,668 watercourses. In addition, a "Crash Programme" of watercourse renovation was carried out mainly in the Punjab which was not anticipated earlier. Details of targets and achievements during Fifth Plan are given below :

TABLE 5

*Watercourse Renovation*

Province	Unit	Targets	Achievements	Percentage
Punjab.	Nos.	5,759	2221	39
Sind.	Nos.	1,595	282	18
N.W.F.P.	Nos.	1,267	337	27
Baluchistan.	Nos.	47	37	79
	Total ..	8,668	2,877	33

26. The pilot On-Farm Water Management (OFWM) Programme was allocated Rs. 623 million in the Fifth Plan. The expenditure was Rs. 555 million which was about 72% of the allocation.

27. Progress on precision land levelling, was to the tune of 78,408 acres against the Fifth Plan target of about 4,14,000 acres which showed an achievement of 19%. The progress was affected by the withdrawal of government subsidy on land levelling.

## Flood Control Protection

28. In January, 1977 Federal Flood Commission was constituted to look after the flood control and protection measures through Federal financing. The actual releases of funds for flood works were about 54 per cent of plan allocation. During the plan period, 1719 million cubic feet (MCF) of earth work and 84 MCF of stonework, 77 miles long new bunds, 825 miles long existing bunds and 246 spurs were strengthened/constructed in all the four provinces. The province-wise details of completion are as follows :

TABLE 6

### *Flood Protection Works Completed*

Province	Earth work	Stone work	Length of New bunds	Length of bunds strengthened	Spurs Constructed
	MCF	MCF	MILE	MILE	No.
Punjab.	447	29	75	125	21
Sind.	1,200	22	—	700	—
N.W.F.P.	5	25	2	—	225
Baluchistan.	27	8	—	—	—
Total ..	1,719	84	77	825	246

## SIXTH PLAN STRATEGY AND OBJECTIVES

29. For developing the Water Resources in the Sixth Plan, a three pronged strategy namely, Protection, Improvement and Extension of the irrigation system (PIE) is proposed. This includes firstly, protection of fertile lands and infrastructure from the onslaught of waterlogging, salinity, and floods; secondly, improvement in the existing ailing irrigation and drainage system; and thirdly, extension of irrigation for achieving higher agricultural production. The principal objectives of the programme are as follows :

### *A. Protection of land and infrastructure :*

- (i) to protect the Tarbela Dam and the IBP works by quickly completing the repair and remedial works.



- (ii) to protect fertile lands from waterlogging and salinity, by giving priority to the disastrous area having saline groundwater underneath.
- (iii) to protect lands and infra-structure from floods by completing phase-I of the flood programme and by undertaking some portion of the Phase-II programme.
- (iv) to protect groundwater irrigation by replacing the deteriorated public tubewells.

*B. Improvement of Existing Irrigation and Drainage System :*

- (i) to improve the water delivery efficiency of canals and drains by remodelling.
- (ii) to achieve equitable distribution of water by rehabilitating the existing irrigation and drainage system.
- (iii) to improve the overall working efficiency of the irrigation and drainage system by appropriate training of personnel and re-organizing the institutional framework.
- (iv) to achieve optimal use of water by introducing command water management.
- (v) to achieve high irrigation efficiency by reducing water losses through an accelerated 'On-Farm Water Management Programme'.

*C. Extension of Irrigation and Drainage System :*

- (i) to initiate new irrigation schemes in areas suffering from water deficiency.
- (ii) to embark on construction of new medium-size reservoirs for increasing cropped acreage.
- (iii) to exploit groundwater by installing public tubewells in under-developed areas.

- (iv) to construct small surface irrigation schemes, check dams, infiltration galleries, diversion weirs, delay action dams, flood irrigation schemes in FATA and Baluchistan.

### PROGRAMME

30. A comprehensive programme has been prepared to implement the strategy for water resources development. An amount of Rs. 32,100 million has been allocated to the sector. Allocations made to the various sub-sectors are as follows :

TABLE 7

*Sixth Plan Allocation for Water Resources*

(Rs. Million)

Sub-sector	Allocation	Percentage
1. Drainage and Reclamation.	13,815.	43
2. Irrigation.	10,919	34
3. Flood control.	1,867	6
4. Tarbela/IBP.	2,690	9
5. On-Farm Water Management Programme.	1,060	3
6. Survey, Investigation & Misc.	1,346	4
7. Research.	425	1
Total ..	32,100	100

31. The pattern of investment in the water sector during the Sixth Plan, has been drawn up on a broad evaluation of the effectiveness of various sub-sectoral programmes. Many of the on-going programmes will continue in the Sixth Plan. Over two-fifth of the total allocation is earmarked for drainage and reclamation sub-sector which constitutes the largest single sub-sector. Other sub-sectors are being expanded to ensure a coordinated and streamlined approach for achieving self-sufficiency and increasing export of food and fibre.

32. The expenditure incurred on various sub-sectors during the Fifth Plan period is compared with the corresponding allocations proposed in the Sixth Plan period in the table below :

TABLE 8

*Sub-sectoral Expenditure on Water Resources during Fifth Plan  
and allocations in Sixth Plan*

Sub-sector.	(Rs. Million)		
	Fifth Plan Expenditure (1978-83)	Sixth Plan Allocation (1983-88)	Percentage Increase Decrease
1. Drainage and Reclamation.	4,003	13,815	245
2. Irrigation.	3,697	10,919	195
3. Flood Control.	1,209	1,867	54
4. Tarbels/IBP.	5,552	2,690	(-)52
5. OFWM Programme.	555	1,060	91
6. Survey, Invest. & Misc.	751	1,749	133
7. Research.			
Total ..	15,767	32,100	104

33. Against a total increase in the Water Sector programme of 104 per cent, drainage and reclamation programme is expected to increase by 245 per cent. Irrigation programme would increase by 195 per cent. The relative share of Flood Control programme would increase and the Tarbela programme would be halved in absolute sum, with major repairs completed.

34. The allocations made in the Sixth Plan to various sub-sectors consist of Rs. 16,170 million for the on-going programmes and Rs. 15,930 million for new projects which give 51 per cent and 49 per cent of the total

allocation respectively as detailed below :

TABLE 9

*Status of Allocations*

Sub-sector	(Rs. Million)		
	Throw-forward	New Projects	Total
1. Drainage and Reclamation.	6,467	7,348	13,815
2. Irrigation.	5,489	5,430	10,919
3. Flood Control.	—	1,867	1,867
4. Tarbela/IBP.	1,289	1,401	2,690
5. OFWM Programme.	60	1,000	1060
6. Survey, Invest. & Misc.	473	891	1,364
7. Research.	246	139	385
Total	14,024	18,076	32,100

**Tarbela/IBP Works**

35. Appropriate importance has been given to this sub-sector in the Sixth Plan. The on-going works as well as all future possible new works of the Tarbela Dam will be completed during the plan period. Under the other Indus Basin works, the Mangla Watershed Management project will continue, Remodelling of existing canals, namely LCC and UJC as a consequence the IBP works will be completed alongwith remaining works on the Chashma Barrage and the CJ link. Provision has also been made for a reservoir maintenance facility project to up-dated WAPDA's operation and maintenance capabilities at Tarbela, Mangla and Chashma with the assistance of World Bank and UK.

36. An amount of Rs. 2,690 million has been allocated to this sub-sector, of which Rs. 1,465 million or about 54 per cent of total sub-sectoral allocation will be spent on the Tarbela Dam, and about Rs. 780 million (29 per cent of total) on works of existing canals, the Chashma Contract Claims, the Settlement and the Chashma Barrage/CJ Link, etc. The remaining amount of Rs. 445 million will be utilized by the new reservoir maintenance facility project, financed by IBRD and UK.

## IRRIGATION

37. The irrigation sub-sector consists of surface and groundwater irrigation.

**Surface Irrigation**

38. The development of surface irrigation is achieved through reservoirs, new/extension of canals, canal remodelling, canal rehabilitation, small dams, small schemes and command water management. Proposed improvement/extension of each of the above components are discussed below :

39. During the Fifth Plan, studies relating to *Thal, Sehwan, Manchar, Chotiari, Sanjwal Akhori* and *Dhok Pattern* reservoirs were carried out. Besides conducting studies for the above reservoirs, detailed feasibility report was prepared for the Kalabagh Dam. The construction of this dam will commence in the Sixth Plan and its financial allocation has been provided in the Energy Sector because its major benefit would be power generation.

40. During the Sixth Plan, there might be a small throw-forward of liabilities of Khanpur Dam and similar allocation for additional/remedial works on the Hub Dam. Investigations will be continued for off-channel storages and northern storages on the Indus. The programme of survey and investigation for *Chotiari* and *Manchar* Reservoirs will also continue. A provision of Rs. 200 million has been made for the reservoir programme.

41. *Canal Remodelling.*—The following allocations have been made for the remodelling of canals in various provinces :

- (a) In the Punjab, Rs. 800 million have been allocated, of which Rs. 600 million would be used to finance the remodelling component of SCARP VI Project. It is expected that at the end of the Sixth Plan, in all, about 1795 miles of canals will be remodelled in the Punjab which will benefit about 0.04 MA.
- (b) In Sind, Rs. 435 million have been allocated for remodelling of canals, re-conditioning of banks, barrages and regulators. The major project in Sind will be remodelling of the Rohri Canal system.
- (c) In NWFP, Rs. 651 million have been allocated for remodelling of the Lower Swat Canal to provide additional water for meeting the full irrigation and reclamation requirements.

42. *Canal Rehabilitation.*—The irrigation and drainage/system, over the years, have deteriorated because of inadequate allocation for its operation and maintenance. The programme would rehabilitate 39,000 miles of canals and 3,700 miles of drains in an area of about 42.0 MA. The current project of this programme which is of three years duration would cover about 10 per cent of the total programme by 1984-85. The remaining portion of the programme would be covered by the new projects which would continue even beyond the Sixth Plan. With this consideration in view, a sum of Rs. 1,550 million has been provided in the Federal allocation and Rs. 673 million in the Provincial allocation (Rs. 350 million for Punjab, Rs. 216 million for Sind, Rs. 59 million for NWFP and Rs. 48 million for Baluchistan) in the Sixth Plan.

43. In addition to rehabilitation of civil works, it is also envisaged in this project to provide machinery and equipment to facilitate operation and maintenance works in all the four provinces. The existing equipment fleets with the Provincial Irrigation Departments are imbalanced in varying degrees Punjab and Sind have sufficient earth-moving capacity but lack in compaction capability. Practically, all the provinces are deficient in servicing and field maintenance units. All the provinces also need spare parts for rehabilitation of existing repairable equipment. Other facilities under the programme include: supply/replacement of machine tools, weed-cutting boats and workshop buildings, where necessary. The above equipment will strengthen the capabilities of the Provincial Irrigation Departments to undertake the operation and maintenance programmes efficiently. Under another component of the project, local as well as international training will be imparted to the officers and the staff.

44. *Small Dams.*—Up till now, 17 small dams in the Punjab and 8 in the NWFP have been constructed. With the construction of small dams in the Punjab, about 0.05 MA of land would be brought under irrigation in addition to providing facilities for drinking water and fish culture. A sum of Rs. 300 million has been provided in the Sixth Plan for the construction of 10 new small dams in the Punjab.

45. In Hazara and Kohat Division of NWFP, where the sources of developing surface water are limited, the construction of small dams is desirable. An amount of Rs. 40 million has been provided in the Sixth Plan for the construction of 2 small dams in the NWFP. The area benefitted by these small dams would be about 6,000 acres.

46. In Sind Province, for the development of Kohistan area of Dadu and Karachi Districts, work on 3 small dams would be initiated during the Sixth Plan, for which an amount of Rs. 20 million has been allocated.

47. *Small Irrigation Schemes.*—The small irrigation schemes in the less developed regions, such as Baluchistan, Federally Administered Tribal Areas (FATA), Azad Jammu and Kashmir (AJ & K), Kohistan and Northern Areas (NA) are as important as the integrated development of large irrigation systems in the settled areas of the Indus Basin. The economic activity in the less developed regions, by and large, depend on the development of small irrigation schemes.

48. At present, the Baluchistan province has 150 small irrigation schemes in operation which provide irrigation water to 0.5 MA. During the Sixth Plan period about 87 additional small schemes will be completed at a cost of Rs. 256 million, which would supply irrigation water to about 0.61 MA of additional area. Of these as many 87 surface irrigation schemes will be planned and executed by the provincial Irrigation and Power Department, whereas 89 foreign funded schemes will be executed by WAPDA and the Provincial Irrigation, Agricultural Extension and Planning Departments. These small schemes would benefit the population of *Humani Lora Valley, Zehri Sub-basin, Killi Saifullah Valley, Mangocher Valley, Segi Area in Pishin, Murgha Kibzai, Sibi, Dhaddar and Lora Lai.*

49. In FATA, nearly 0.059 MA were brought under irrigation at the end of the Fifth Plan. During the Sixth Plan period nearly 139 small surface irrigation schemes will be completed, which would irrigate an additional area of about 0.04 MA. A sum of Rs. 290 million has been allocated for the implementation of the small surface irrigation schemes. The distribution of schemes among the various agencies of FATA has been based on the probability of water availability. The distribution will be: Mohmand 3 No., Khyber 1 No, Orakzai 13 No., Kurram 39 No., North Waziristan 21 No., South Waziristan 13 No. Bajaur 6 No. and F. R. areas 18 No., New identified Schemes 25 No.

50. For the Northern Areas, an amount of Rs. 80 million has been kept in the Sixth Plan for the development of small irrigation schemes. It is expected that nearly 10,000 hectare new area would be brought under irrigated cultivation.

51. A sum of Rs. 90 million has been allocated in the Sixth Plan to Azad Jammu and Kashmir. The main schemes included in the Plan are: *Andaral, Chakswari, Khari, Sarawa-Panjera, Mandal and Garhi Dopatta*

*irrigation* schemes. Out of which four schemes would be completed during the plan period and about 19,700 acres would be brought under irrigation.

52. *Command Water Management.*—The Command Water Management Programme is aimed at increasing the agricultural production and farmer's income by improving the management of irrigation water in the canal command areas. A need, therefore, was felt for integrating the management of irrigation water at all levels within canal command. The programme was initiated in the Fifth Plan. Pilot projects, one in each province, at a cost of Rs. 10 million were carried out.

53. The proposed project would initially cover 0.62 MA of culturable commanded area, having 0.3 MA in the Punjab, 0.15 MA each in Sind and NWFP and 0.02 MA in Baluchistan.

54. On the basis of results and experiences gained from the pilot project, the programme would be extended to other areas of Pakistan. A sum of Rs. 280 million has been provided for the project in the Sixth Plan, of which Rs. 150 million will be for Punjab, Rs. 75 million for Sind, Rs. 25 million for NWFP and Rs. 30 million for Baluchistan. The Command Water Management Programme has been reflected as an item in the Water Resources Sector, but its whole expenditure would be met from the allocation of the Agriculture Sector.

### Groundwater Irrigation

55. The second largest contribution to the total water availability comes from the groundwater reservoir. The sub-soil water is being exploited by the public SCARP, public irrigation and private tubewells. The SCARP tubewells form a part of reclamation and drainage programme and have been discussed in a separate section. The public irrigation and the private tubewells are discussed below.

56. *Public Tubewells.*—Under new tubewells, Baluchistan, FATA and NWFP are the main areas where public irrigation tubewells are installed. In the above areas, particularly Baluchistan, the small surface irrigation schemes are mostly constructed to increase recharge rate of aquifers for enhancing discharges in *karez*s and tubewells. The following groundwater



potential has been ascertained in Baluchistan on the basis of groundwater investigations carried out during the Fifth Plan and earlier :

TABLE 10

*Groundwater Potential in Baluchistan*

Areas Investigated	Surface Water Potential available (cusecs)	Recommended Development Level (cusecs)	Tubewells
Sibi-Dhadar.	50	50	80
Loralai.	30	25	40
Human Lora.	28	20	25
Zehri.	16	10	15
Qila Saifullah.	35	20	40
Mangochar.	20	10	20
Sigi Area.	20	10	20
Murgha Kibzai.	25	10	20
Total ..	224	155	260

57. A sum of Rs. 150 million has been allocated for exploitation of groundwater in the above areas during the Sixth Plan in addition to the substantial allocations which are being provided in the Special Programmes for these regions. The development and completion of 260 tubewells will provide sustained water-supply of about 155 cusecs to irrigate an additional area of 15,500 acres. The Baluchistan Irrigation Department and WAPDA would install 140 and 120 tube wells respectively.

58. In FATA an amount of Rs. 186 million has been provided for installation of public tubewells during the Sixth Plan period. A total number of 275 tubewells will be installed which will supply irrigation water to 24,700 acres of new land in FATA. Of these tubewells, 40 will be installed in Mohmand Agency, 14 in Khyber Agency, 79 in the F.R. Bannu, Kohat and Peshawar, 39 in Orakzai and Kurram Agency, 67 in North and South Waziristan and 36 in the areas which are being investigated. The groundwater investigations in FATA will be continued during the Sixth Plan on the basis of which future development schemes will be prepared for implementation in the Seventh Plan.

59. *Replacement programme of tubewells.*—The SCARP programme which started in the 1950s resulted in the installation of more than 12,000 public tubewells upto 1982-83. However, not all the SCARP tubewells are in operation. About 50 per cent of the tubewells have deteriorated to such an extent that their operation has become un-economical. One of the major causes of tubewell failure is the lack of maintenance of screen and gravel pack which leads to critical problems, such as : corrosion, encrustation and closing. Some techniques have been developed for the maintenance and rehabilitation of tubewells, but these require large quantities of chemicals, special equipment and a high degree of skill. Public sector tubewells have to be replaced continuously, as it is felt that after 12–15 years of pumping, their discharge decreases below 50 per cent which makes their operation un-economical. Consequently, in 1975, a tubewell replacement programme was started in the completed SCARPs. Initially, 800 tubewells were rehabilitated over a period of 4 years in the Punjab and Sind upto June, 1982. The number of tubewells to be replaced stood at over 1200. It was decided by the Government that replacement of tubewells should initially be done under the Federal Programme of Drainage and Reclamation. After this initial phase, the replacement programme should be carried out by the respective Provincial Governments.

60. During the Sixth Plan, a modest provision has been made under the federal programme to complete the replacement of the initial phase. about 254 tubewells will be replaced in the Punjab and 123 in Sind. Another replacement programme of SCARP tubewell during the Sixth Plan period will be carried out by the Provincial Governments. In this programme about 750 and 60 tubewells will be replaced in the Punjab and Sind respectively. An amount of Rs. 325 million has been allocated under the provincial programme of Drainage and Reclamation.

61. *Private Tubewell Subsidy.*—Private tubewells have played an important role in the exploitation of fresh groundwater. To further encourage installation of private tubewells, the Government launched a Tubewell Subsidy Programme in 1972-73. The capacities of tubewells under the programme vary from 0.5 to 1 cusecs. Upto 1982-83, an amount of Rs. 211.6 million has been given to the farmers as subsidy, against which 19,433 tubewells have been installed.

62. Under the proposed programme for Sixth Plan, a total amount of Rs. 102 million has been allocated for installation of 8,195 tubewells. Of these, 7,450 tubewells will be installed in the Punjab, 530 in Baluchistan

and 215 in NWFP. The year-wise installation of private tubewells under subsidy programme in various provinces and the amounts proposed to be disbursed, are tabulated below :

TABLE 11

*Sixth Plan Tubewell Subsidy Programme*

Year	Alloca- tion	Punjab (Rs. M)	T.W.	N.W.F.P. (Rs. M)	T.W.	Baluchistan (Rs. M)	T.W.	Tube- wells (Nos.)
1983-84	14	12.81	1200	0.37	25	0.88	70	1295
1984-85	17	15.44	1350	0.44	30	0.96	80	1460
1985-86	20	18.30	1500	0.58	40	1.32	100	1640
1986-87	24	21.57	1600	0.68	50	1.84	130	1780
1987-88	26	23.88	1800	0.93	70	2.00	150	2020
Total ..	202	92.00	7450	3.00	215	7.00	530	8195

63. In addition to the above Federal allocation to the Provinces, an equal amount of money will be allocated by each province. The total allocation for subsidy programme in the Sixth Five Year Plan will, therefore, be Rs. 202 million. Per tubewell subsidy has been increased due to higher cost of tubewell installation in recent years. Subsidy would be provided in related areas, where private tubewells are expected to be installed without such encouragement. This is part of an overall programme of 25,000 private tubewells which is to be discussed latter.

### Drainage and Reclamation

64. Since the advent of canal irrigation, the Indus Basin has experienced an adverse effect on its water and salt balance. The first salinity control and reclamation project (SCARP) was initiated as late as 1950.

65. In the fifth Plan, the strategy was to give priority to the affected area having useable groundwater. This strategy was adopted due to four major reasons; firstly, it was thought that reclamation of this area would improve the net income of the farmers and it would be possible to reclaim the area underlain by saline groundwater by transferring the part of the burden of reclamation to the private sector by increasing the water-rates

in the completed SCARP areas. Secondly, the reclamation projects in the usable groundwater zones had higher economic benefits than the projects in the saline groundwater zone. Thirdly, these projects being less expensive were expected to give protection to a larger area than the project in the saline zone. Lastly, the projects in the usable zone were expected to increase the water availability which was supposed to supplement the canal supplies for increasing the cropping intensity and for leaching the excess salts from the affected soils.

66. The major objective of the Accelerated Programme was to stabilize water level at 10 feet depth. Reclamation projects were prepared with the above strategy and objective in view. Instead of confining the project's boundaries to the 10 feet water-table depth contour, the project areas were designed on the basis of gross areas, and, in one case the whole of doaba was considered as the project area. Further, instead of treating SCARP projects as pure reclamation projects, these were treated as the over-all agricultural development projects.

67. According to the latest (1980-81) survey conducted by WAPDA, nearly 23.5 MA (68 per cent of CCA) have water-table within 10 feet depth, whereas, 11.8 MA (34 per cent of CCA) and 5.1 MA (14 per cent of CCA) have water-table within 5 feet depth in the months of October and June respectively. Out of 42.2 MA of gross commanded area, nearly 7.6 MA (18 per cent) are covered by more than 20 SCARPs having 11,200 and 1,260 Fresh and Saline Groundwater Tubewells respectively and a network of open and tile drains.

68. In the completed SCARP areas, the waterlogging is, in no way, under control. In accordance with the original definition of waterlogging, nearly 5 MA (72 per cent of CCA) are waterlogged (water-table within 5 feet during the months of October and June respectively). With the limited resources at the disposal of the country it would not be possible, in the near future, to lower and maintain the water-table at 10 feet depth. It has therefore been decided to concentrate the effort and resources to the most seriously affected area which is described as Disastrous Area.

69. It is generally agreed that while considering the water availability and cropping intensity in the country, the maximum desirable depth of water-table should be 10 feet. But one school of thought argued that the disastrous area should be classified as the three years enveloped area having 0-5 feet water-table depth. A second school advocated that the area, having water-table within 5 feet during winter should be classified as disastrous area.

A third group defined the disastrous area as the area having 0–5 feet water-table depth during summer. All the three schools gave cogent reasons for the adoption of their respective definition of disastrous area. Approximate disastrous area according to each concept is as follows :

Envelope concept	14 M.A.
Winter concept	12 M.A.
Summer concept	5 M.A.

But the definition of the third group was adopted, as it was felt that with the limited resources at our disposal it would not be possible to reclaim even the disastrous area defined by the school of thought.

70. While considering the above facts, a dynamic approach for solving the problem of waterlogging and salinity has been chalked out. The general strategies for controlling waterlogging and salinity during the Sixth Plan period are :

- (i) Instead of reclaiming large gross commanded areas, emphasis would be laid on the disastrous area where water-table is within 5 feet depth in summer.
- (ii) The disastrous area would be divided into four parts, namely, area under completed SCRAPs, area under ongoing SCARPs, area under new SCARPs and the remaining area.
- (iii) Most of the on-going projects in Fresh Ground Water (FGW) zone would be completed as originally conceived.
- (iv) Priority would be given to the areas underlain by SGW on the basis of productivity of land, types of crops grown, density of population and rate of rise of water-table.
- (v) The reclamation of FGW zone where cultivation of crops is possible, would be left to the private sector. The private sector would be encouraged to install tubewells by providing closely spaced electric grid, advancing loans and giving tubewell subsidy.
- (vi) An effort would be made to improve the efficiency of the existing and new open drains by launching a programme of

construction of field drains through the Provincial Agriculture Departments.

- (vii) As against straight line pattern of tubewells along canals and distributaries, the tubewells during the Sixth Plan would be located according to the position determined by analog/digital computers so that water-table in the entire area under the SCARP is maintained at the design depth.

71. The break-up of the total disastrous area, underlain by different qualities of water, expected to be reclaimed in the various provinces during the Sixth Plan period is summarised below.

	Area MA
Completed SCARP's	1.17
On-going SCARP's	0.96
New SCARP's	0.75
	-----
Total ..	2.88
	-----

72. The disastrous area is not expected to exist in the completed SCRAPs. However, its occurrence may be attributed to the following reasons :

- (i) Early deterioration of tubewells and delay in their replacement.
- (ii) Low pumpage of tubewells due to lack of operation funds.
- (iii) More than average diversion of canal water from 1979-80 to 1981-82.
- (iv) More than average effective rainfall.
- (v) Conversion of non-perennial canals into perennial canals.

73. In the completed SCRAPs, nearly 4.42 MA of disastrous area is underlain by SGW. This area exists in patches mainly in Sind. Reclamation of this area would be unjustifiable firstly, due to uneconomical implementation of projects for small scattered areas, and secondly, due to its pre-mature classification as disastrous area. It is expected that the extent of this area would decrease owing to completion of surrounding SCRAPs and normal weather conditions. Further, this area would be reclaimed by adoption of better water management practices for which appropriate funds have been

provided under the OFWM programme. In addition, the excess storm-water would be drained to the public surface drains through field drains constructed by the private sector under the supervision of Provincial Agriculture Departments. With the above strategy it is expected that 0.42 MA of disastrous area underlain by SGW would be reclaimed.

74. The extent of disastrous area underlain by FGW having water table within 5 feet depth in various provinces is given below :

TABLE 12

*Disastrous Area with Water Table within 5 ft.*

Province	(Million Acres)	
	Summer	Winter
Punjab	0.558	1.090
Sind and Baluchistan	0.149	0.443
N.W.F.P.	0.039	0.049
Total . .	0.746	1,582

75. The above area would be reclaimed by adopting the following strategies :

- (i) Installation of tubewells by private sector through credit and subsidy facilities.
- (ii) Encouraging the private sector to install tubewells by providing close electric grid through the public sector.
- (iii) Disposing excess rain-water to the public drains through field drains.
- (iv) Reducing seepage of water through OFWM programme.

76. While adopting the above strategy, nearly 25,000 private tubewells would be installed in this area. Out of this, nearly 8,195 tubewells would be installed under the subsidy programme for which an amount of Rs.202 million has been allocated in the Sixth Plan. The remaining tubewells would be installed through credit facilities which would be extended by the Agriculture Development Bank of Pakistan and the local banks. In addition to the above, close electric grid would be installed in the Energy Sector under the rural electrification programme.

77. In the on-going SCARPs, out of 2.2 MA, nearly 1 MA falls under disastrous area. The distribution of disastrous area for the on-going SCARPs is given below :

TABLE 13  
*Distribution of Disastrous Area for the Ongoing SCARPs*

Province	Disastrous Area, M.A. (Summer)		
	FGW	SGW	Total
Punjab	0.28	0.19	0.47
Sind	0.08	0.37	0.45
N.W.F.P.	0.04	—	0.04
Total ..	0.40	0.56	0.96

78. An amount of Rs. 6467 million has been allocated to the on-going projects. A strict control would be exercised during the Annual Development Programmes so that the emphasis does not shift from the reclamation of hazardous area to the other area having more than 5 feet water table depth. The major ongoing projects are : Punjab Abbasia and Lower Rechna Remaining in the Punjab; Left Bank Outfall Drain (Core Programme), East Khairpur Tile Drain, Rohri South Fresh Groundwater and Ghotki in Sind; and SCARP Mardan in NWFP. The onfly project in Baluchistan will be phase II of Hairdin Surface Drainage Project.

79. Nearly 0.75 MA can be classified as disastrous area in the new projects. Details of these areas are given below :

TABLE 14  
*Distribution of Disastrous Area for the new SCARPs*

Province	Disastrous Area M.A. (Summer)		
	FGW	SGW	Total
Punjab and A.K.	0.17	0.06	0.23
Sind and Baluchistan	—	0.51	0.51
N.W.F.P.	0.01	—	0.01
Total ..	0.18	0.57	0.75



80. The projects have been located in such a manner that they may give protection to maximum disastrous area. An allocation of Rs. 7348 million has been made to the new reclamation projects for reclaiming 0.75 MA of disastrous area. About 15 new projects will be undertaken, 6 in Punjab, 4 in Sind, 3 in NWFP and 1 in Baluchistan). In Azad Jammu and Kashmir there will be one new project. In addition to the traditional projects, provision has also been made for the study of transferring SCARP tubewells to the private sector under the SCARP transition programme.

81. A total allocation of Rs. 13,815 million, Rs. 13,500 million Federal component and Rs. 315 million Provincial component has been made to the Accelerated Programme of waterlogging and salinity control. This being mainly a federal programme undertaken on behalf of the provinces, the major allocation is shown under the federal programmes. The allocation to the provinces, as directed by National Economic Council has been made in the proportion of 43 : 43 : 14 for Punjab, Sind and NWFP respectively. The allocation for one project each in Baluchistan and Azad Jammu and Kashmir, being relatively very small, is reflected in overall allocations for Sind and Punjab respectively.

82. The physical targets expected to be achieved during the Sixth Plan are given below :

Fresh Groundwater Tubewells	2,488 Nos.
Saline Groundwater Tubewells	1,824 Nos.
Surface Drains	3,065 Miles.
Tile Drains	8,381 Miles.
Replacement of Tubewells	810 Nos.
Gross Area Covered	5.3 MA.
Disastrous Area Protected	2.88 MA.

### **Flood Control and Regulation**

83. The flood damages during three years (1973, 1975 and 1976) amounted to about Rs. 20.0 billion particularly for the agricultural sector and the rural infrastructure. Uncontrolled floods pose a threat to the economy in general.

84. Until 1976, the affairs of flood control and protection remained the responsibility of the Provincial Governments. Persistent stringency of the Provinces did not allow construction of flood protection works adequately. The annual allocations remained too low to even maintain, remodel or strengthen the existing works appropriately. No flood control-cum-protection plan was formulated at the national level.

85. Government of Pakistan constituted a Federal Flood Commission in 1977 and took over the responsibility of new flood control protection in all the four provinces. The National Engineering Services (Pakistan) Ltd. (the Consultants engaged by the Federal Commission) prepared a National Flood Protection Plan which proposed planning strategies and objectives, recommended improvements in flood management, evaluated flood protection priorities, and suggested investment schedule and programme for ten to twelve years, from 1978 to 1990. They recommended an investment of Rs. 6,317 million for the programme, of which Rs. 1,767 million was for the Fifth Plan, Rs. 3,000 million for the Sixth Plan and Rs. 1,500 million for the first two years of the Seventh Plan.

86. During the Fifth Plan the Federal Government allocated Rs. 1,795 million for flood works, but the actual releases amounted to Rs. 1209 million (67 per cent).

87. In the Sixth Plan period the pace of work will have to be accelerated to meet previous shortfall and to achieve the goals as projected in the National Flood Protection Plan. With the streamlining of the procedures and a break-through in the Fifth Plan, the works have gained momentum.

88. With the funds allocated to the Flood Control Programme in the Sixth Plan, the physical achievements, namely, earth-work and stone-work, will be 1,600 million cubic feet (MCF) and 60 MCF respectively. About 900 miles of Flood Protection Bunds would be strengthened/constructed. The vulnerable reaches of the embankments would be strengthened with an armour of stone pitching. Remodelling of a number of barrages and bridges would be initiated for safe passage of flood flows. Studies relating to better understanding of the flood management would be carried out.

89. A tentative distribution of resources and physical targets among various provinces/agencies is shown below :

TABLE 15

*Flood Control Programme during Sixth Plan*

Agencies	Earth work		Stone-work		Remodelling of Barrages, Bridges etc. Feasibility Studies Consultancy etc. (Million Rs.)	Total allocations (Mill. Rs.)
	Qty. MCF	Amount Mill. Rs.	Qty. MCF	Amount Mill. Rs.		
Federal Area	200	120	5	38	—	158
Punjab	600	360	15	112	212	684
Sind	500	300	15	112	170	582
Baluchistan	50	30	5	38	—	68
N.W.F.P.	150	90	15	112	—	202
FATA DC & AJ&KC	100	60	5	38	—	98
Feasibility Studies	—	—	—	—	10	10
Total ..	1600	960	60	450	392	1802

90. While preparing the Flood Protection Programme for the Sixth Plan, maximum opportunity for employment of manual labour has been considered. Due regard has also been given to the mechanical earth moving capabilities of the provinces. Owing to the above considerations the maximum quantity of earth-work and stone-work has been kept at 1,600 MCF and 60 MCF respectively.

**Water Management**

91. The Indus Irrigation System has over 87,000 number of water-courses which command nearly 34.5 MA of culturable area. Each water-course draws 1 to 3 cusecs of water from a canal distributory or minor through an outlet (*mogha*) and has the capacity to irrigate an average area of 400 acres (*chak*) covering about 35 farms. The irrigation water is applied to the fields, by the farmers, according to weekly time rotation (*warabandi*) which is based on the size of holding of each farmer. Water from the outlet flows in the Government Watercourse (*sarkari khal*) and is diverted in the

farmer's watercourse (*zamindara khal*) by constructing a small earth dam across the Government watercourse at the junction (*nukka*). Further, the water is diverted to the farmer's field by cutting the bank of the farmer's watercourse. The Government is responsible for the design and the layout of the Government watercourse and location of the *nukkas*; whereas, the farmers are responsible for the construction and maintenance of all types of watercourses. But unfortunately the farmers failed to maintain the watercourses due to lack of cooperation among themselves and inadequate technical assistance provided to them by the Government. Consequently, the delivery efficiency of the watercourses dropped considerably. Extensive field surveys indicate that out of the total 60 per cent losses, about 35–40 per cent of water entering the water-course is lost during its conveyance. These exceptionally high losses not only created water shortage for crops, but also gave rise to water-logging and salinity.

92. In collaboration with the USAID, a pilot On-Farm Water Management project was prepared by the Ministry of Food and Agriculture and executed by the Provincial Agriculture Departments. The project essentially comprised improvement of watercourses with about 10–15 per cent lining and installation of 40 concrete control structures (*pucca nukkas*) per watercourse. In addition, training of personnel and precision land levelling was also included. The farmers provided all manual labour, while the Government provided material and technical assistance. The achievements and the targets of the pilot project are compared below :

	Targets	Achievement Upto June, 1981
Watercourse improvement (Nos.)	1,530	1,316
Precision land levelling (Acres)	4,31,830	74,857
Field Team (Nos.)	70	56

93. Though the achievement fell short of the physical targets, yet the project achieved its major objective of creating realization among the farmers of the importance and usefulness of the programme. Besides, the trainee personnel further gave impetus to the programme. Although the precision land levelling has great advantages, it failed to pick up popularity among the farmers mainly due to high cost. The Punjab Government, in order to reap the benefits quickly, launched a Crash Programme under which

heavy cleaning, resectioning and realigning of the watercourses through farmers' labour was envisaged. Cooperative societies were organized for getting loans from the banks for the installation of *pucca nukkās*. However, because of some technical problems and lack of credit facilities the programme suffered from initial set back, but soon recovered. Under the Crash Programme, more than 52,000 watercourses were improved by July, 1982. The pilot project and the Crash Programme created such a realization among the farmers that the On-Farm Water Management became highly popular. The farmers are taking active interest and initiate requests for considering their active participation in the programme.

94. After the success of the Pilot Project and the Crash Programme, modified Projects were initiated with the assistance of the World Bank, Asian Development Bank and others. The details of these projects are given below :

TABLE 16

*Watercourse Improvement and Cleaning*

	Punjab	Sind	N.W.F.P.	Baluchistan	Total
Watercourse improvement (Nos.)					
IDA/IFAD	1,500	360	150	55	2,065
ADB	800	-	450	-	1,250
Watercourse cleaning (Nos.)					
IDA/IFAD	12,000	2,100	1,200	1,200	16,500

95. These on-going projects will extend upto the first two years of the Sixth Plan. It is expected that 1,700 watercourses will be improved under the above programmes. Out of this, 1,090 watercourses will be improved in the Punjab, 238 in Sind, 349 in NWFP and 23 in Baluchistan.

96. The tempo of the Crash Programme will be maintained by improving 20,000 watercourses in a period of two years, of which 18,100 will be improved in the Punjab, 900 in Sind, and 500 each in NWFP and Baluchistan.

97. In addition to the above programmes, full improvement (installation of *pucca nukkās* and lining) will be completed on 8,000 watercourses which would have already been partially improved under the Crash Programme.

98. An allocation of Rs. 1,060 million has been made to the provincial On-Farm Water Management Programmes. The allocations are summarised below :

TABLE 17

*Allocations For The OFWM Programme*

Provinces				(Rs. Million)
	Regular	Crash	Improvement of Crash	Total
Punjab	105	53	582	740
Sind	14	3	131	148
NWFP	48	1.5	25.5	75
Baluchistan	3	1.5	32.5	37
Federal Cell	—	—	—	60
Total ..	170	59	771	1,060

99. The On-Farm Water Management Programme will add 2.05 MAF to water availability at the end of the Plan. The increment in water availability due to various types of On-Farm Water Management Projects are given below :

Types of projects	Water/Availability (MAF)
Regular Improvement.	0.25
Crash Improvement.	1.04
Regular Improvement of Crash.	0.76
Total ..	2.05

100. The Water Users Associations are conceived as a mechanism for creating a cooperative framework for improvement of watercourses. Necessary legislation has been promulgated by the provinces for the purpose. Under those ordinances, association of the farmers on watercourse can be formed as a corporate body with the powers to hold property, enter into contracts and carry out other legal proceedings. The primary purpose of

these associations is to improve and maintain the watercourses. The secondary purpose of the association is to perform other functions that relate to obtaining of other agricultural inputs.

101. During the Sixth Plan, it is apprehended that the capacity for implementation of such a large on-farm water-management programme may be beyond the capacity of Provincial Agriculture Departments. These agencies have a limited number of trained field teams that can be organized for supervising the task of improving about 2,000 watercourses per year. Each the on-going proposed that the services of the Provincial Irrigation Departments which have extensive trained field staff may be utilized for undertaking the additional work load. In addition, the Local Government Institutions with the necessary supply of trained manpower, could also be encouraged to participate and help accelerate the activities in the field.

#### **Survey, Investigation and Miscellaneous Programme**

102. This sub-sector comprises the survey and investigation programme undertaken by the Federal and the Provincial Governments. In order to utilize fully the available surface and groundwater for the development of Indus Basin and other less developed areas, extensive surveys and detailed investigations are proposed to be carried out during the Sixth Plan. The Federal Survey and Investigation Programme will be undertaken by three, namely, WAPDA, Pakistan Meteorological Department (PMD) and Survey of Pakistan (SOP). Their programmes are discussed in the following paragraphs:

103. The WAPDA undertakes surveys and investigations of not only those projects which are implemented by it, but also the projects which are to be implemented by the provinces. Previous efforts made by WAPDA are given in detail elsewhere. During the Sixth Plan, WAPDA will undertake detailed investigations in the following major fields.

- (i) Planning and project preparation of main-channel and off-river storage, particularly *Thal*, *Manchar* and *Chotiari*.
- (ii) Water resources development and management planning in Baluchistan and NWFP.
- (iii) Improvement of existing hydromet and river-flow forecasting and warning systems.
- (iv) Monitoring of SCARP's to cover 13.6 MA with greater density of observation points.

104. The PMD provides data and information relating to agriculture, meteorology, civil aviation, weather and climatic forecast. The existing observational network of this agency consists of 78 First Class Observatories, 32-Aero-Met. Stations, 52 Upper Air Station 33-Forecasting Met. Officers, 8 Weather Surveillance Radars, 56 Telecomm. facilities, 19 Remote Recording Stations, 7 Flood Forecasting/Warning Centres, 12 Seismic and Geomagnetic observatories, 15-Agro-met. Stations, 3 Air Pollution Stations and an Institute of Met. and Geophysics which provides training facilities. During the Sixth Plan, the agency will up-date and modernise its data collection network by installing Satellite Readout Station, Weather Surveillance Radar, Pilot Balloon Observatories and will improve its telemetric network. The ongoing programmes include establishment of remote recording equipment at 10 airports, provision of additional meteorological facilities in Northern Region, establishment of Agro-met. Centres, Weather Surveillance Radar, establishment of Pilot Balloon Observatories and improvement of its Institute of Meteorology and Geophysics alongwith Data Processing Centre at Karachi. Some of the new projects are Pilot Balloon Observatories, Back-up Radar at Flood Forecasting and Warning Centres, Aero-nautical Station, Weather Surveillance and Wind Finding Radars and Numerical Weather Prediction Schemes. An amount of Rs. 128 million has been allocated for programmes of the Pakistan Meteorological Department.

105. The SOP provides the basic topographic and contour surveys for planning development projects. As part of its multipurpose survey activities, it requires 1,200 Geodetic survey marks all over the country. It has so far established 841 survey marks and the balance will be installed during the Sixth Plan period. A provision of Rs. 20 million has been made for programme of the Survey of Pakistan. The programme is indicated below.

- (a) Multipurpose geodetic survey marks in which remaining 359 geodetic survey marks will be installed.
- (b) Construction of Astronomical Observatory which will be located at the proposed Training Survey Institute in Islamabad.
- (c) Establishing remote sensing and doppler survey facilities. Under this on-going scheme, procurement of doppler satellite position fix sets and remote sensing techniques are planned.



- (d) *Survey training institute.*—The agency does not possess a regular establishment for giving training in surveying techniques. An institute with proper equipment will be established in Islamabad.
- (e) *Miscellaneous.*—This includes construction of drawing hall laboratory at Islamabad, construction of directorate for southern region at Karachi and construction office building at Rawalpindi.

106. In FATA, survey and investigation for surface and ground-water schemes will be undertaken in the 12 Tribal Agencies. In the Punjab, extensive surveys and detailed investigations are proposed for survey for water development and drainage schemes. These will be concentrated in the upland areas of the Punjab. Miscellaneous schemes in the Punjab include provision of physical infrastructure facilities, improved telegraph and telecommunication facilities for the irrigation system and provision/improvement of buildings, etc. In Sind, surveys will be conducted relating to small dams and deep tubewell projects in the Kohistan, Nagarparkar and riverian (Kucha) areas. Investigations will be conducted for lift canal from Kinjhar lake, for supplying additional water, to Karachi city. In addition, miscellaneous programmes for provision and improvement of physical infrastructure will continue. In NWFP, surveys will be conducted for remodelling of existing canals and for determining feasibility of irrigating small patches of *barani* lands lying along banks of stream/nalas. Groundwater investigation will also continue under the Dutch assisted programme. In Baluchistan, the investigation programme will be concentrated towards determining groundwater potential of various valleys. In addition, feasibility studies will be completed for the Mirani Dam project and other small dams.

107. An allocation of Rs. 1364 million has been made for survey, investigation and miscellaneous programme during the Sixth Plan for the various federal and provincial agencies.

### Research

108. Research programme have always formed an important part of water resources development sector. These programmes provide support and feed back for confirming conventional approaches and providing new techniques which are tested through the pilot projects. Although research programmes were not allocated the desired finances in the past, the organizations engaged in research gave substantial help to the development agencies

and planners. Some of the major achievements during the Fifth Plan were the various technologies tested and developed by WAPDA at its Mona Reclamation Experimental Project for the improvement of watercourses. It was on the basis of these findings that the pilot on-farm water management programme was launched, which later proved to be a great success. WAPDA also collected data on operation and behaviour of link canals which was used in the design of irrigation channels and improvement of their operation and maintenance procedures. Data, on the drainage techniques in the East Khairpur tile drainage project, was also collected and analysed by the Irrigation, Drainage and Flood Control Research Council. The provincial research programmes also assisted their own departments in the operation and maintenance of tubewells and irrigation network.

109. As the major thrust in the Sixth Plan period continues to be on the control of waterlogging and salinity and enhancing water availability at farmgate, research efforts will be geared accordingly. Under the Federal Programme, research will be undertaken by WAPDA on the following :

- (a) Mona Reclamation Experimental Project—where applied research on all aspects of effective use of water and land resources and reclamation of soils, detailed groundwater management and tubewells performance studies determining optimum cropping input-output relationship, and transferring knowledge to farmers and inducting its application, will be continued.
- (b) Lower Indus Water Management and Reclamation Research Project—similar to the work being done at Mona. This project will undertake applied research in the special environment prevailing in the southern part of the country.
- (c) Tubewell Rehabilitation Research—work will be initiated to develop Manuals for the rehabilitation of deteriorated tubewells.
- (d) International waterlogging and Salinity Research Institute—This institute is being established to coordinate the research in the field of waterlogging and salinity. The institute will employ research scholars of international fame. The headquarters of the institute would be at Lahore, and the main research station will be located in Jhang.

- (e) Prototype Research on Alluvial Channels—work will continue on collection of data on rivers and large canals for determining better designs of alluvial channels.

110. The Irrigation Research Council, which has been allocated Rs. 100 million during the Sixth Plan, aims to continue work in the following fields.

- (a) Establishment of National Institute of Hydrology.
- (b) Strengthening and modernizing existing Irrigation Research Institute, Punjab to enable it to study problems of immediate nature in the water resources sector.
- (c) Strengthening Hydraulic Laboratory, Karachi.
- (d) Study of the drainage projects and their monitoring.
- (e) Establishment of Hydrological Institute.
- (f) Establishment of Pakistan Desertification Monitoring Unit Phase 2.
- (g) Creation of Water Harvesting Unit.

111. In the Provinces, research will include the following :

- (a) In the Punjab, research will be continued at the Irrigation Research Institute and Directorate of Land Reclamation. An amount of Rs. 50 million has been allocated for research programme in the Punjab.
- (b) In Sind, research programme at the Hydraulic Laboratory, Karachi will be strengthened and work will continue on other schemes. An amount of Rs. 10 million has been allocated for this programme.

112. The allocation for research programme has been increased to Rs. 385 million during the Sixth Plan to accelerate research activities in the Water Sector.

### General Issues

113. Some of the unresolved issues which deserve special attention during the Sixth Plan are elaborated below :

114. *Decision on apportionment of Indus Water.*—The Government of Pakistan on 15th October, 1970 constituted 'Justice Fazal-e-Akbar Committee' with (Late) Justice Fazal-e-Akbar as its Chairman and one

Member from each Province. The Committee submitted its report to the President of Pakistan on 29th November, 1971. Later, in March 1977, another Commission for apportionment of Indus Waters was constituted. This Commission was headed by the Chief Justice of Pakistan with four Provincial Chief Justices as Members. The report is still awaited. In the absence of apportionment of Indus Waters, appropriate planning of the excess water availability becomes difficult. Further, the existing *ad-hoc* distribution of water among provinces has created a state of uncertainty among the farmers with the result that no farmer is willing to invest in the factors of agricultural production. It is expected that provinces would settle the problem of water allocation among themselves expeditiously. Pending the resolution of this issue, the Sixth Plan has adopted a pragmatic approach of accommodating those new irrigation schemes in each province which are justified on their merit and which will improve water resource utilization and enhance the welfare of the people. These schemes include: Greater Thal Canal in Punjab, Makhi-Farash Link Canal in Sind, Pehur High Level Canal in NWFP and Pat Feeder Canal in Baluchistan.

115. *Federal-Provincial Distribution of Responsibility.*—The limited availability of resources with the Provinces affected their ability to execute sizable projects in the water resources sector. The Federal Government perceived the importance and urgency of helping the provinces in the area and accepted responsibility of financing, and in some cases, executing projects in certain sub-sectors. This has resulted in a sizable transfer of responsibility particularly in the following areas :

Large Dams (Mangla & Tarbela).

Medium Dams of inter-provincial character (Khanpur & Hub).

New Irrigation Project (Chashma Right Bank Canal).

Drainage and Reclamation Accelerated Programme.

Flood Protection (Flood Protection Programme).

Watershed Management (Mangla & Tarbela Watershed Management). On-Farm Water Management (Cell under the Ministry of Food & Agriculture).

General Investigations (Surface Hydrology & CMO, WAPDA).

Research (Mona, Tando Adam & Jhang Institute).

Planning (Master Planning and Planning & Investigation, WAPDA).

Rehabilitation Programme (Cell under the Ministry of Water & Power).

116. The above Federal/Provincial distribution of responsibility has caused the following problems :

- (i) There exists a strong tendency for the water sector investment choice process to be viewed by the Provincial Governments as an advocacy system to maximize the flow of federal resources into the provinces.
- (ii) Distortions in investment choices.
- (iii) Reduction in incentives for provinces to raise additional revenues to finance provincial investments in the water sector.
- (iv) Poor maintenance of works.
- (v) Advocacy for expensive projects.
- (vi) Preparation of costly programmes.
- (vii) Degradation of provincial capabilities in the fields of planning, designing, implementation and research.

117. The development of Water Resources, with the exception of high dams and works of inter-provincial nature, should be the responsibility of the provinces. WAPDA should act as a consultant/contractor to the provinces. Financial allocation to the provinces, for the development of water, should be fixed by the Planning Commission in consultation with the Provincial Governments.

118. *Implementation arrangements in the less developed regions.*— The water resources development programme proposed in the Sixth Plan for the less developed regions involves an expenditure of Rs. 2,217 million as compared to Rs. 1,101 million utilized in the Fifth Five Year Plan. An acceleration of physical work while considering the likely future cost contingency, works out to be 100 per cent higher than the physical works in the Fifth Five Year Plan. Besides the above allocation made in the Sixth

Plan, a substantial amount is provided for the development of less developed regions, or Federally Administered Tribal Areas and Baluchistan under the Special Development Programme. Speedy implementation of works provided in the Sixth Five Year Plan and Special Development Programme is important.

119. The sizable acceleration of implementation will increase pressure on the existing implementing organizations which are already deficient in managerial, technical and ministerial staff. To deal with the problem of inadequate construction capability, special efforts would have to be made in strengthening and reorganizing the existing organizations. Adoption of appropriate ways and means for attracting professionals and other assisting staff to work in the region would be absolutely essential for successful implementation of the Sixth Five Year Plan. The implementing organizations should not under-estimate the work-load and remain purely dependent on their own capabilities. Instead they should create an appropriate milieu for active participation of private contractors.

120. *Maintenance of Irrigation System.*—Proper maintenance of irrigation system is a matter of considerable economic importance for Pakistan, as its dependence on irrigation for agriculture is very high. Water is the most crucial input for agriculture and its price relative to other inputs, can have considerable bearing on cropping pattern and total agricultural productivity. In the past, irrigation played a substantial role in contributing to the provincial revenues. Traditionally, the expenditure remained within the receipt from irrigation, though this has proved impossible lately. But since the Provincial Governments do not have a sizable potential for taxation, inadequate receipts from irrigation compel them to cut down their provision for operation and maintenance to grossly unsatisfactory levels. The additional burden of operation and maintenance of private tubewells has further aggravated the problem of adequate operation and maintenance of irrigation system of all the provinces. The government, has increased the water rate but not to the extent of meeting fully the operation and maintenance cost of irrigation system.

121. In view of the above, the water rates should be increased steadily during the Sixth Five Year Plan period in order to be able to meet the expenditure required for proper operation and maintenance. A detailed study should be conducted reflecting an empirical analysis of the problem. This analysis should indicate future strategies and proposals for enhancing the water rates in stages.

112. *Standards for suitability of Groundwater.*—Out of 34.5 MA of the total culturable command area, only 14 MA lies over non-saline zone. The quality of groundwater under the remaining area varies and the total dissolved solids at some places are even more than 5,000 ppm. It is apprehended that ground-water quality would deteriorate in the near future, except for the ground-water located near the major sources of recharge. Experience gained from the countries of the world regarding the use of high saline waters for irrigation indicates that reliable drainage mechanized farming, efficient farm management and use of gypsum might be the pre-requisite for adopting poor quality of ground-water standards for irrigation.

123. In Pakistan, water being a valuable commodity, standard for suitability of ground-water for irrigation would have to be prepared on rational basis. If liberal standards are adopted, it may result in the deterioration of soil. On the other hand, application of strict standards would not only make a large portion of the ground-water resources unusable but would also have serious impact on the viability of reclamation projects. Problem of how to make the best use of saline water has to be tackled immediately. Standards for evaluating the suitability of the tubewell water for irrigation are being prepared after conducting pilot studies, with a view to using the water in a most economical manner.

124. *SCARP Transition.*—Evaluation carried out from time to time has highlighted the following drawbacks in SCARPs:

- (i) Operation and maintenance of SCARP tubewells has been in-efficient and tubewells have been under-utilized.
- (ii) Cost recovery (*Abiana* rates) have not been sufficient to meet the O&M costs,
- (iii) The future requirements of O&M will increase very rapidly.

125. Consequently, a UNDP financed and World Bank supervised study is being undertaken to consider ways and means of transferring initially two SCARPs to the private sector. It is envisaged that, not only, the burden of O&M will be shifted from the public sector to the private sector, but also the operation of SCARPs will become more efficient.

126. *Master Planning.*—To provide strong technical support to the Planning Commission it is necessary to have a Master Planning Unit attached to the Water Resources Section. This unit would continually adjust and

review the Revised Action Plan prepared earlier. It would be invaluable in providing information for annual and medium term plans. It would also monitor all proposed and on-going water programmes/projects. Besides, it would provide information for technical review of all programmes/projects and serve as a nucleus for training provincial officials whose capabilities would be built up in project planning and preparation. The unit would, in addition, prepare background information for deliberating upon policy issues.



## WATER RESOURCES DEVELOPMENT

Financial Allocation 1983 - 88

(Million Rs.)

Sub-Sector	Federal	Punjab	Sind	NWFP	Balu-chistan	Azad Kashmir	FATA	NA	Total
I. Tarbela/IBP	2,690								2,690
II. Irrigation	4,250	2,610	1,582	1,118	603	200	476	80	10,919
A. Surge Irrigation									
(i) Reservoirs	200	-	-	-	-	-	-	-	200
(ii) New/Extension of Canals	2,400	668	716	200	-	106	-	-	4,090
(iii) Canal Remodelling	-	800	435	651	-	-	-	-	1,886
(iv) Canal Rehab	1,550	350	216	59	48	-	-	-	2,223
(v) Small Dams/Check Dams	-	300	20	40	112	-	-	-	472
(vi) Small Schemes	-	50	100	40	256	90	290	80	906
(vii) Command Water Management	-	150	75	25	30	-	-	-	280
B. Groundwater									
(i) Public T/wells									
1. New	-	-	-	100	150	4	186	-	440
2. Replaced	-	200	20	-	-	-	-	-	220
(ii) Private T/well subsidy	100	92	-	3	7	-	-	-	202
III. Drainage and Reclamation									
(i) Federal	13,500	-	-	-	-	-	-	-	13,500
(ii) Provincial	-	300	10	5	-	-	-	-	315
IV. Flood Control Regulation									
(i) Federal	1,802	-	-	-	-	-	-	-	1,802
(ii) Provincial	-	50	10	5	-	-	-	-	65
V. Water Management									
(i) Federal	60	-	-	-	-	-	-	-	60
(ii) Provincial	-	740	148	75	37	-	-	-	1,000
VI. Survey, Investigation and Miscellaneous	598	250	40	192	160	-	124	-	1,364
VII. Research	320	50	10	5	-	-	-	-	385
Total ..	23,220	4,000	1,800	1,400	800	200	600	80	32,100



*Behold ! In the creation  
Of the heavens and the earth;  
In the alternation  
Of the Night and the Day  
In the sailing of the ships  
Through the ocean  
For the profit of mankind  
In the rain which God  
Sends down from the skies,  
And the life which He gives therewith  
To an earth that is dead;  
In the beasts of all kinds  
That He scatters  
Through the earth;  
In the change of the winds,  
And the clouds which they  
Trail like their slaves  
Between the sky and the earth  
(Here) indeed are signs for a people that are wise.*

*Al-Baqarah  
(II-164)*

## CHAPTER 17

### SCIENCE AND TECHNOLOGY : EXPANDING FRONTIERS

#### SUMMARY

- Quantum jump in Science and Technology allocations—from Rs. 1,462 million of actual utilization during the Fifth Plan to Rs. 5,809 million—to accelerate progress towards early attainment of self-reliance in Science and Technology.
- Creation of “National Commission on Science and Technology” (NCST) an apex decision making and coordinating body headed by the Chief Executive of the country, so as to provide the requisite political will and authority to the national scientific effort.

- Setting up a permanent inter-ministerial committee for identifying future growth points in applied sciences and planning long-term technological development in the country.
- Existing research institutions to be reactivated and provided the needed additional resources to ensure a high level performance.
- Science and Technology Research Institutes i.e. Electronics, Silicon Technology, Oceanography and Power set up during Fifth Plan to be upgraded and expanded.

Universities to be developed as centres of high quality research and provided with special allocation for the purpose.

- Following new institutions to be set up to fill critical gaps in the National Science and Technology system :
  - a. International Level Institutions : Institute of Science and Technology, Water-Logging and Salinity Research Institute.
  - b. National Level Research Institutes : Building Research, Road Research, Clinical Research, Hydrology, Desert Studies, Machinery Design, Energy Research, Dairy Science and Bio-Technology.
- Utilization of about 75 per cent of technical assistance received from various international organizations for setting up/strengthening of Science and Technology institutions in the country.
- Creation of a National Endowment Fund with a grant from the Government and tax deductible contribution from the interested organizations/individuals—to support Science and Technology programmes/projects for which necessary funds are not available under any other programme.
- Creation of Scholarship Foundation to generate substantial funds for supplementing the existing local and foreign fellowship/scholarship programmes for advanced training of scientific personnel.

- Specialized training institutes to be set up for producing high quality sub-professional manpower in different scientific fields.
- Motivation of Science and Technology manpower by enlarging their career advancement opportunities through the establishment of a separate service cadre for scientists, increased opportunities for professional interaction at national/international level and the introduction of well-defined accountability/reward procedures.
- Firm foothold to be acquired in emerging technologies (micro-electronics, bio-technology, lasers, computers, renewable energy sources, fibre optics, nuclear and space technologies) by creating necessary institutional facilities and developing a sizable pool of highly trained manpower in these fields.
- Development programmes in each sector to be supported with matching input of Research and Development.
- Each federal and provincial research institute to be linked with one or more universities in the country.
- A scientific information network to be set up with modern facilities for ready acquisition, retrieval and dissemination of scientific information.
- Research institutions will, as far as possible, be decentralized to provide adequate geographical coverage and bringing them closer to the intended beneficiaries of their research.
- Substantial allocations provided in the provincial programme for strengthening existing research institutions and setting up new ones wherever necessary.
- Active participation of the private sector in research activities—specially in industrial research, consultancy services, technical training, scientific equipment manufacture/maintenance, and scientific testing/quality control services—to be secured through appropriate public policy measures and fiscal incentives.

- Demand for locally manufactured goods as well as indigenously developed technologies to be stimulated through appropriate revision of import policy.
- Local consultancy organizations to be provided maximum encouragement and opportunities for the award of professional assignments so as to help reduce dependence on foreign expertise.
- Institutional arrangements to be created for supporting, with necessary risk money, promising Science and Technology projects derived from indigenous research and innovative entrepreneurs with limited resources who may wish to expand/upgrade their operation.
- Special efforts to be made *inter-alia* through use of mass-media and setting up of Science and Technology museums/libraries etc. to popularise science in the society.
- Strong circular linkages to be established between research institutes, universities, industry and other user agencies.
- Allocation for providing financial support to Non-Governmental scientific organizations to be enhanced substantially.

## INTRODUCTION

**S**OLUTION of the complex developmental problems of our age requires extensive and sustained application of sophisticated scientific knowledge and technological skills. For this reason, it is now widely recognized that Science and Technology must constitute not an esoteric input but an integral component of all investments related to the national development process. As a developing country, our priority goals include, *inter-alia*, provision of basic necessities like food, clothing, shelter and health cover to the common man, increase in industrial/agricultural productivity; modernization of communications system, meeting energy requirement and optimal utilization of natural resources. Meaningful progress towards attainment of these objectives cannot be achieved rapidly until effectiveness of the relevant development programmes is appropriately enhanced through regular infusion of latest technical know how which can be provided only by a dynamic and creative scientific community. Unfortunately, the Science

and Technology sector in Pakistan has remained weak due to years of neglect and, if the system is now to make its due contribution to speedy socio-economic uplift of the country, it must be greatly strengthened without delay in terms of human as well as material resources.

2. Pakistan inherited a very weak base in Science and Technology at the time of independence. There was only one fully functional university and three or four inadequately equipped small research institutions. While considerable progress has been made during the last thirty five years and the number of universities and research institutions have multiplied manifold, the system is still faced with numerous serious problems such as :

- (i) sub-critical input of vital resources like scientific manpower, funds and physical facilities for research and development;
- (ii) isolation of the Science and Technology system from the national economic planning process as well as from the major user agencies;
- (iii) lack of well-defined priorities for scientific research and imbalance in the sectoral allocations;
- (iv) insufficient opportunities for Pakistani scientists to maintain professional links with active centres of learning the world and non-availability of easy access to latest scientific information;
- (v) absence of effective coordination between scientific establishments leading to unnecessary fragmentation of national research effort;
- (vi) unsatisfactory quality of scientific manpower coming out of our universities as well as inadequacy of university programmes for post-graduate research degree work;
- (vii) a marked national tendency for packing excessive reliance on foreign sources of technology/expertise;
- (viii) lack of a proper accountability and reward system for individuals as well as institutions engaged in research work;

- (ix) absence of effective institutions at the grass-roots level for rapid dissemination of technical information and creation of site-specific technologies.

3. The existence of such constraints has adversely affected the quality and quantity of research output in the country and resulted in low pay-off. Realizing the urgent need for initiating necessary remedial measures, a comprehensive set of proposals has been formulated and also incorporated in the draft national Science and Technology Policy, which is in the final stages of approval by the Federal Cabinet. The Policy would serve as a blue print of action for reactivation, upgradation and expansion of the national Science and Technology system so that it can fully meet current and future technological challenges. A key element in this plan is the promotion of self-reliance and the generation of capacity for endogenous growth in Science and Technology so that the country can reduce its dependence on foreign expertise and may soon become a producer of new technology instead of being just a passive recipient.

#### FIFTH PLAN REVIEW

4. The Fifth Plan development programme for the Science and Technology sector had to be restricted to a modest level because of severe resource constraints. The planned investment in the sector was only Rs. 1,838 million but the actual utilization was only Rs. 1,462 million *i.e.* even well below this low target. However, in spite of the paucity of funds, steady progress was maintained and a number of important initiatives were undertaken. A brief description of some of the major achievements during the Fifth Plan period is given below.

##### **National Institute of Electronics**

5. Recognizing the key role of electronics technology in modern development, a National Institute of Electronics was set up at Islamabad during Fifth Plan period; the main objectives of the Institute include design and development of indigenous electronic products and providing technical assistance to the fledgling electronics industry in Pakistan. The current first phase of the project covers three divisions—Circuits Division, Components Division and Technical Support Division. A Microwave Division and a Micro-Electronics Division will be added in the second phase of the project which is scheduled to be undertaken during the Sixth Plan.



6. Teething troubles, particularly in respect of recruitment of highly qualified research personnel, have since been largely overcome and a number of research groups have been organized to undertake research work on various types of laboratory measuring instruments, electronic telephone exchange (PABX), micro-processor based products and the development of engineering software. Arrangements are being made with industry for commercial production of instruments already developed.

#### **Silicon Technology Development Centre**

7. The recent spectacular breakthrough in silicon microchip technology presage early dramatic changes in not only industrial production methods, communications systems, energy generation etc. but also in most other facets of human lifestyles all over the world. In order to speed up the process of developing indigenous capability in this vital and fast changing field, setting up of a Silicon Technology Development Centre was initiated with UN assistance at Islamabad during 1981. The project, which is estimated to cost Rs. 19.9 million, is progressing very well; equipment worth \$ 1.4 million has been procured and the setting up of laboratory facilities and foreign training of technical staff is in progress. The Centre is expected to be fully operational by June, 1984.

#### **National Institute of Oceanography**

8. The enormous potential of maritime areas as a rich source of food, minerals and energy in future makes it imperative that institutional arrangements be available in the country to carry out, on a continuing basis, detailed survey/investigation of our coastal areas and compilation of all relevant technical information for use by the concerned agencies. Accordingly, the first phase (estimated at Rs. 4.8 million) of the project for establishing the National Institute of Oceanography was undertaken in 1981. This phase covers only a nucleus start-up operation involving procurement of a few essential items of equipment, training of some technical staff, setting up of urgently required shore facilities and acquisition of basic coastal data. Phase II of the scheme, which envisages development/expansion of the existing nucleus set up into a full-fledged Institute, will be undertaken during the Sixth Plan period.

#### **National Institute of Power**

9. A pilot project, as Phase I of the National Institute of Power, was established at Lahore in 1981-82 with a view to undertaking a detailed study

of numerous technical problems encountered in generation and distribution of electrical power as well as developing technology for indigenous design and fabrication of electrical equipment. The nucleus organization so far has done useful research work relating to development of short-circuit testing model for locally manufactured distribution transformers and transient network analyser for power supply system, corrosion studies for high voltage transmission towers, and documentation of existing research manufacturing facilities in the field of electrical power.

10. This pilot set-up will be expanded and upgraded during the Sixth Plan into a full-fledged Institute of Power (estimated cost of Rs. 40 million) comprising a number of research divisions.

### **Pakistan Council for Scientific and Industrial Research (PCSIR)**

11. The level of research activity at the PCSIR was improved considerably during the Fifth Plan period. Major structural changes were brought about with a view to improving research planning and linkages with the universities, the industry and other user agencies. PCSIR has now established formal collaborative arrangements with a number of industrial units in the country resulting in a ten fold rise in its project leasing/consultancy income. During the Plan period, extensive research work was done on indigenous minerals which is of particular significance for the local ceramics and glass industry. The PCSIR has also developed the capability to set up a medium-scale industrial unit for mineral beneficiation. Furthermore, work is in hand on pilot plants for manufacture of laboratory glassware and high grade refractories. Another area in which PCSIR has achieved considerable success recently is dehydration of fruits and vegetables. The processes developed by the PCSIR in this field have been successfully adopted by the local food industry. A number of other such projects are in the promotional stage and are expected to be brought to commercial utilization stage in the near future.

### **Drainage and Reclamation Institute of Pakistan**

12. A pilot research project covering 2,000 acres of agricultural land in Khairpur (Sind) was launched in collaboration with the Netherlands Government to determine the feasibility of introducing tile drainage system in various parts of Pakistan for controlling waterlogging, keeping in view local soil conditions and other relevant parameters. This project has provided the Institute an excellent opportunity to gain valuable know-how and

experience in various aspects of tile drainage technology—including design, layout and construction of various components of the system—as applied under extremely unfavourable site conditions.

13. In addition to the above project, the Institute carried out a vigorous research programme on important problems relating to reclamation of saline and alkaline lands as well as irrigation and water management practices. Results of these research studies are likely to be available for utilization within the next one to two years.

#### **Pakistan Agricultural Research Council**

14. Achieving food self-sufficiency was one of the major aims of the Fifth Five Year Plan. Recognizing the key role of research in improving productivity, the allocations for agricultural research were enhanced manifold and a massive programme was launched through the Agricultural Research Council. Furthermore, the needed administrative changes were brought about to provide full operational autonomy to the Council. As a result of the conducive climate thus created, there has been an impressive upsurge in agriculture research activity in the country. A large number of research projects, some with international assistance, covering various aspects of agriculture, have been launched. This has started to produce a handsome pay-off for the national economy.

#### **SIXTH FIVE YEAR PLAN**

15. The swiftly expanding frontiers of science and technology are fast transforming the traditional pattern of human life and have fueled an unprecedented rate of obsolescence of new products and processes developed after long and painstaking research. The phenomenal speed and scope of this continuing change makes it imperative for a developing country like Pakistan to equip itself without delay so as to cope effectively with the technological challenges of the 80s and beyond. The price of being left behind can be incalculable. It is therefore proposed to introduce a major policy shift in the Sixth Plan and make speedy progress in science and technology which are the cornerstone of our development strategy. Unlike in the past, the programmes and projects formulated for each sector will provide for a matching input of science and technology. Furthermore, the needed structural changes will be initiated during the Sixth Plan to inject a new dynamism into the system and provide it with necessary resources to make its

full contribution to the national development. This requires a bold programme of action, combining both the short term and the long term measures, focussed on accelerating the technological transformation of the nation.

16. The Science and Technology system of a country comprises, broadly speaking the following key elements which share a complex inter-dependence :

- (i) Quality Manpower
- (ii) Conducive Environment for Creative Work
- (iii) Institutional Infrastructure
- (iv) Adequate Financing.

17. The strength of the whole system being determined by its weakest link, it is necessary to adopt an integrated "broad spectrum" approach for overcoming deficiencies in the system's elements so as to optimise its contribution to national development. Adhocism or disjointed effort cannot yield the desired results. The existing situation and the corrective measures proposed to be taken during the Sixth Plan period in respect of each of the above components are briefly discussed in the following paragraphs :

### **Quality Manpower**

18. Quality manpower is the most precious resource of any nation. Its development must, therefore, receive the highest priority in the national uplift plans. Effective application of modern Science and Technology to the development process can become possible only when cadres of high quality engineers, scientists and other technical experts/personnel as well as trained technicians are available in adequate numbers throughout the research and production system. Unfortunately, Pakistan is today faced with an acute shortage of high quality scientific manpower at professional as well as sub-professional level. All our development planning can come to nought if these are not supported by the programmes to produce the requisite quality of manpower to implement these programmes efficiently. Manpower training in key areas of relevance to the development strategy of the country is thus of critical importance.

19. A multi-pronged strategy will be pursued to harness the full potential of all available sources for creating an adequate pool of high

quality manpower in scientific disciplines relevant to national needs. The action proposed covers a broad range of activities and will include :

- (i) providing necessary assistance to the universities to help them fulfil their traditional role as centres of higher learning and research at doctoral|post-doctoral level ;
- (ii) creation of a Scholarship Foundation to generate substantial funds to supplement and vastly enhance programme of scholarships/fellowships for advanced training of scientific personnel ;
- (iii) utilization of services of senior scientists of outstanding merit who are still physically and intellectually active but have had to retire at a relatively early age due to normal civil service regulations ;
- (iv) attracting back eminent Pakistani scientists working abroad by providing them necessary facilities for easy relocation and making available to them appropriate professional openings with realistic emoluments and good working conditions.

20. Since universities are the real nurseries for high calibre scientific manpower, special efforts will be made to develop strong research programmes in selected disciplines and create a climate of intellectual excellence at our universities. Existing research facilities will be greatly improved by providing required modern equipment in the laboratories and enhancing allocations for operational research. To speed up the process of establishing traditions of superior standards of academic and creative scientific work, collaboration between local universities and foreign universities of repute will be encouraged through sisterhood relationships. Furthermore, some of the fast developing new areas of study such as Computer Sciences, Micro-Electronics, Advanced Metallurgy, Ocean/Earth/Space Sciences, Ecology, Material Sciences, New and Renewable Sources of Energy, Natural Resources Development, Technology Transfer/Appropriate Technology, Research Management/Policy Planning, Emerging Trends in Science and Technology, and Technologies for Rural Development etc. will be included in the teaching/research programmes of the technical universities and the science faculties of a few general universities. Expatriate professors will be invited to participate in post-graduate teaching and research on problems of national importance at our universities. Pakistani graduate students studying abroad would be encouraged to undertake research under the joint supervision of Pakistani and foreign supervisors at Pakistani universities/research institutions in fulfilment of their theses requirements.

21. **High level scientific manpower** can perform effectively when proper back-up services, which can only be provided by competent sub-professional staff, are available. To overcome speedily the existing severe shortage of trained manpower of this category, a carefully planned programme of technical training at sub-professional level will be launched in the country on top priority basis. By extending appropriate fiscal incentives the private sector will also be encouraged to set up such training institutes.

#### **Conducive Environment**

22. Creative scientific activity requires superior natural gift specialized training, a high level of motivation and conducive environment. The two last mentioned elements comprise a finely balanced mix of tangibles and intangibles. These include : adequate organization, funds, laboratory and library facilities ; a tradition of achievement, competence and confidence ; a minimum critical mass of active scientists to provide a sense of challenge, participation, criticism and peer approval ; superior leadership and management to ensure efficient project formulation and optimal utilization of manpower|equipment resources ; opportunities for interaction with active|creative scientists at scientific moots and visits to outstanding centres of research ; good career prospects and a feeling of belonging to a meritocracy with assured rewards for superior performance ; and, above all, **working conditions which do not un-necessarily inhibit professional initiative and drive.** In the ultimate analysis, the creativity of the committed research worker is largely determined by the degree of job satisfaction afforded to him. Bureaucratic structures and procedures are hardly designed to promote creativity— in fact, they effectively stifle it. Also, professional isolation really amounts to intellectual death in the fast changing world of Science and Technology. Hence the insistence of the scientific community on a minimum of intervention by management and freedom for un-hampered interaction with fellow scientists at national and international level.

23. Listed below are some of the specific measures proposed to be taken to improve the working environment for Science and Technology personnel :

- (i) Career structure, basic pay scales and fringe benefits etc. for professionals in science and technology will be considerably improved and made commensurate with the high level of qualifications and ability required.
- (ii) A separate service cadre for scientists will be created to substantially enlarge their career advancement opportunities through horizontal as well as vertical mobility.
- (iii) Promotion to higher basic pay scales will be delinked from availability of posts and linked, instead, with research merit and achievement. In the case of highly competent research scientists, it would

be possible to allow promotions right upto Basic Pay Scale 22 without shifting them from their research positions to higher administrative posts.

- (iv) **Research Councils and Institutes** will be allowed considerable administrative flexibility in order to enable them to make *ad hoc* appointments whenever a needed highly qualified research worker becomes available.
- (v) Scientific professionals will be given ample opportunities to participate in important seminars and conferences held within the country and abroad without having to go through the trying procedures of obtaining No Objection Certificate from various Government agencies.
- (vi) Exchange of scientists|technologists between research institutions, universities and industry will be encouraged. They will help in the development of strong organizational linkages and professional interaction which are absolutely vital for improving the effectiveness of the system and up-grading the quality of research and teaching in the nation.
- (vii) Para-scientific facilities such as libraries, instrument repair workshops etc will be greatly improved.
- (viii) Research scientists/technologists will be allowed relatively free movement from one organization to another so that persons with similar training but working in different organizations can join hands to form effective research groups for collaboration on important projects.
- (ix) A system of well-paid contract appointments will be introduced in research institutions for carrying out specific research tasks for which requisite highly qualified manpower is not available within the institution.
- (x) Opportunities for pre-service and in-service training in subjects like **Research Policy Planning, Programming and Administration of Scientific Institutions** etc will be made available for scientific personnel by arranging such courses at national training establishments (*e.g.* Administrative Staff College, NIPA etc) and the Universities. This would help equip scientific personnel for leadership and managerial roles for which they would be called upon in future.
- (xi) Study leave for improving qualifications would be allowed liberally to scientific personnel who have put in a specified minimum length of service and have been able to produce good work.

- (xii) Well defined accountability procedures, which would permit evaluation, on a continuing basis, of the performance of individual scientists research groups as well as institutions, would be introduced to ensure that merit is adequately rewarded and inefficient research managers and unproductive workers are weeded out without undue delay.

#### **Institutional Infrastructure**

24. The existence of a separate Ministry of Science and Technology, which handles approximately one-third of the national Science and Technology budget (through its affiliated Research and Development organizations) and a fairly large number of Research Councils/Institutes at the federal level creates an illusion of a well-developed infrastructure and vigorous research activity in the nation. In fact, the entire system is riddled with serious weaknesses, resulting largely from sub-critical resource inputs and administrative constraints, which greatly impair its effectiveness. The position is much worse at the provincial and grass-root levels where hardly any effective institutions exist for the promotion of research in scientific fields or rapid dissemination of relevant technical information for achieving improved efficiency of development programmes in agriculture, industry, health, housing, highways and other sectors which are mainly the responsibility of the provinces.

25. Aggravating the above unhappy situation is the fact that, unlike in the advanced and the more progressive developing countries, the private sector in Pakistan does not play an active role in creating dynamic and well-endowed scientific institutions. Unfortunately, the development of science and technology in Pakistan has till now been almost entirely confined to the public sector *i.e.* government sponsored research establishments, consultancy organizations, manufacturing units and the universities etc. There has been very little involvement of the private sector in science and technology related programmes and projects. Our industrialists have till now shown very little enthusiasm for developing significant in-house research capability. Such attitude is largely due to a lack of proper awareness of the tremendous pay-off in terms of improved productivity, product quality and manufacture processes that investment in Research and Development can bring. This poses a serious problem which can be overcome by appropriate policy actions designed to promote establishment of a strong base for Research and Development and other scientific activities in the non-governmental sector.

26. Following are some of the important measures proposed to be taken up to strengthen the institutional structure of the overall system in the public as well as private sectors :

- (i) A high powered National Commission for Science and Technology (NCST), headed by the Chief Executive of the country, will be set up



as the apex decision-making and coordinating agency so that the overall effort for promotion of Science and Technology in the nation and its application to the development is linked with the requisite political will and authority.

- (ii) A Committee comprising representatives of Planning Commission, Ministries of Science and Technology, Commerce, Industry and Production will be created on permanent basis for identifying the growth points of applied sciences and bringing together investors, industrialists, scientists and technologists for planning future technological developments in the country.
- (iii) Strengthening of the existing research institutions would be given the highest priority so as to ensure the desired high level of their performance.
- (iv) New institutions will be created to fill critical gaps in the existing system *i.e.* where no such institutions already exist in subject areas of crucial importance to the nation.
- (v) Research potential of the universities will be greatly improved by upgrading existing laboratory facilities, enhancing allocations for operational research, providing advanced training facilities to existing research staff and inducting high calibre research personnel, if necessary on contract basis, as well as establishment of close linkages with universities/research institutes of repute in advanced countries.
- (vi) All federal/provincial research institutes shall be linked with one or more universities in the country. Research work done at these institutes would be recognized for award of degrees by the universities.
- (vii) Strong circular linkages will be established among research institutes, universities, industry and other user agencies.
- (viii) All research institutes shall enjoy complete administrative and professional autonomy.
- (ix) In order that benefits of scientific progress may reach the common man, suitable institutional arrangements will be made at grass-roots level to provide ample opportunities for direct participation by people at large in the application of Science and Technology to fields which have a direct impact on their socio-economic uplift and quality of life. To achieve the objective, research institutions, as far as possible, will be decentralized to provide adequate geographical coverage and bring them in close proximity to the intended beneficiaries of their research.

- (x) The highest priority, in order to avoid obsolescence and maintain competitiveness of our industry, will be given to establishment of effective Research and Development Units in all nationalized industries and large private industrial organizations. Smaller sized enterprises, which cannot afford to set up individual Research and Development Units of their own, will be encouraged to organize Research and Development associations for mutual benefit.
- (xi) Highly qualified and experienced professionals in the private sector will be encouraged to set up consultancy services in engineering and other technical fields including standardization and quality control of manufactured goods, maintenance and calibration of physical standards and general Research and Development work, etc. Necessary fiscal incentives will be provided to assist such professionals in setting up whatever laboratory facilities are needed for the purpose.
- (xii) In order to minimize waste of scarce foreign exchange expended in importing relatively un-sophisticated scientific equipment, special attention will be paid to the creation of a strong indigenous base for design, manufacture and maintenance of scientific equipment in the country. Some rudimentary facilities for equipment manufacture and maintenance do exist within the country both in the public and the private sectors. These are far from adequate and require to be greatly strengthened. Necessary incentives will be provided to the private sector to upgrade their capabilities to international standards and expand these facilities so as to meet a major portion of the country's requirements.
- (xiii) A modern Science and Technology information network with requisite computer facilities and teleprinter linkages with major international scientific data bases will be set up to provide latest information in respect of Science and Technology not only to the scientists but also to planners and decision-makers.

### **Adequate Financing**

27. Our national investment in Science and Technology has, unlike that of some progressive developing countries, remained static for many years at well below 0.2 per cent of GNP, which is less than one-fifth of the minimum recommended (*viz* 1 per cent of GNP) for poor developing countries under the UN World Plan of Action (1971) for the Application of Science and Technology to Development. On the other hand, the corresponding figure for developed countries is as high as 3 to 5 per cent of their incomparably larger GNP. Apart from the gross inadequacy of our overall Research and Development investment, the sectoral

distribution of research funds is badly skewed and, as a consequence, some vital development sectors have remained deprived of the much needed research support. To rectify this situation, it is proposed to effect a quantum jump in Science and Technology allocation during the Sixth Plan and ensure a proper sectoral balance in the the distribution of available resources.

28. The allocation earmarked for Science and Technology activities in the Sixth Plan is Rs. 5,809 million (Rs. 4,809 million under various sectors and Rs. 1,000 million block allocation for new programmes and projects not covered under sectoral allocations) which is about four times the outlays during the Fifth Plan period ; furthermore, unlike in the past, the development effort in each sector will provide for a matching input of Research and Development. Even with this steep rise in allocations, the level of Science and Technology investment by the end of the Sixth Plan will be less than 0.5 per cent of GNP. The momentum generated through successful implementation of the programmes incorporated in the Sixth Plan will however enable us to further accelerate our efforts in subsequent years so that the target investment level of 1 per cent of GNP is attained by the terminal year of the next (Seventh) Plan.

#### **Major Programmes and Projects**

29. The salient features of the major programmes and projects proposed to be undertaken during the Sixth Plan period are as under :

- (i) The existing research institutions under the federal government and in the provinces will be reactivated and provided needed additional resources to ensure high level performance.
- (ii) Keeping in view the key role of universities in the development of Science and Technology capability in any nation, the financial allocation for university research is being increased manifold for upgrading existing research facilities and financing research programmes/projects at the universities. Release of funds, which will be non-lapsable and non-reappropriatable, will be made only against approved research projects sponsored by researchers—individuals or groups—working at the universities.
- (iii) The research institutes newly set up during the Fifth Plan (*e.g.* Electronics, Silicon Technology, Oceanography and Power) will be expanded and upgraded to effectively fulfil their projected important role in national development.
- (iv) A number of new institutions will be set up to fill the existing serious gaps in the national Science and Technology system. The following items, however, need special mention :

- (a) *Institute of Science and Technology*.—During the last fifteen years there has been a very rapid expansion of the university system without a corresponding increase in resource inputs which has resulted in an alarming decline of academic standards. While the new universities established during the period by and large meet the scientific manpower requirements of the country in quantitative terms, the prevailing poor academic standards at these institutions do not help overcome the serious deficiency of high quality manpower. It is therefore proposed that in addition to strengthening and improvement of the existing universities, a new privately endowed institute be established under a Charter to be granted by the Government. The institute would be completely autonomous in terms of determining the courses of studies, admission criteria, terms and conditions of service for faculty, rates of tuition fee and receiving/administering endowments from local as well as foreign sources etc. The level of physical facilities provided and calibre of faculty recruited would be comparable to the best universities in advanced countries. The institute will initially offer courses in a limited number of Basic Sciences/Technologies at the graduate and post-graduate level. The programme shall expand as more endowed chairs are established. The institute will have a very active research as well as academic programme. In addition, it will offer a sufficiently large number of research fellowships to attract talented students.
- (b) *Institutes of High Technology*.—A number of new areas e.g. New and Renewable Sources of Energy, Micro-Electronics, Bio-Technology have recently emerged in the scientific field which are likely to have a far reaching impact on human life and development. It is extremely important for a country in our situation to acquire adequate technical capability at the earliest in these critically important areas of high technology. It is therefore proposed to set up necessary research facilities in these disciplines during the Sixth Plan period. While a separate division would be added to the existing National Institute of Electronics to undertake research in micro-electronics, new institutes will be set up for Energy and Bio-Technology research.

**(c) International Institute of Water Logging and Salinity Control.—**

An international level research institute will be set up to overcome the twin menace of water logging and salinity in the country. The Institute will be located at Lahore and would be staffed by highly qualified research workers in this field.

(v) In view of the serious shortage of high level scientific manpower in the country, it is proposed to embark on a programme of advanced training in scientific fields both within the country and abroad. Necessary institutions will also be created locally—both in the public and the private sectors—to provide for training of sub-professional level staff in various scientific fields.

(vi) A Special Research Endowment Fund will be created to provide financial support for Science and Technology Programmes and research projects of national importance sponsored by any individual researcher/research group/organization for which necessary funds are not available under any other programme. The Fund will be started with a grant from the Government and the tax deductible contributions by the interested international/national organizations and philanthropic individuals. The Fund will be administered by an autonomous Board of Governors to be constituted for the purpose by the Federal Government.

(vii) Substantial allocation will be provided in the provincial programme for improving the existing research institutions in various sectors and setting up new ones wherever needed.

**Other Policy Measures**

30. Following are some of the other important policy measures that will be introduced to achieve speedy improvement of technological capability in the nation :

- (i) demand for locally manufactured goods as well as indigenously developed technologies will be stimulated through appropriate revision of the existing import policies ;
- (ii) to ensure rapid promotion of Research and Development in the private sector (including industry), appropriate income tax relief (for twice the amount actually invested in Research and Development) will be allowed for all the private sector investments in research excluding market research and advertisements. The research establishments set up by the private sector would, however, be able to qualify for tax exemption only if recommended by a committee of experts appointed by the Government for this purpose ;

- (iii) local consultancy firms will be given preference in award of professional assignments. Appointment of foreign consultants will not be resorted to except where complexity of the technology/expertise involved renders it unavoidable. In all such situations, the appointed foreign consultants will be required to associate with Pakistani consultants who would fully participate in all aspects and stages of the professional assignment ;
- (iv) Pakistani experts working within the Government or in the private sector in the country shall be eligible to compete for the job of experts required under various technical assistance programmes ;
- (v) suitable institutional arrangements will be created to support with necessary risk money :
  - (a) promising scientific projects based on new inventions|innovations derived from indigenous research ;
  - (b) innovative entrepreneurs with limited resources wishing to set up small new production units or expand existing ones based wholly or partly on indigenous technology.
- (iv) Special efforts will be made *inter-alia*, through, use of *mass media* and setting up of Science and Technology museums/libraries etc to propagate science in society and to provide greatly increased financial support to Non-Governmental Science and Technology Organizations.

31. Implementation of various programmes/measures under the Sixth Plan would ensure rapid technological progress and help launch the nation on the road to early attainment of the goal of self-reliance in Science and Technology.

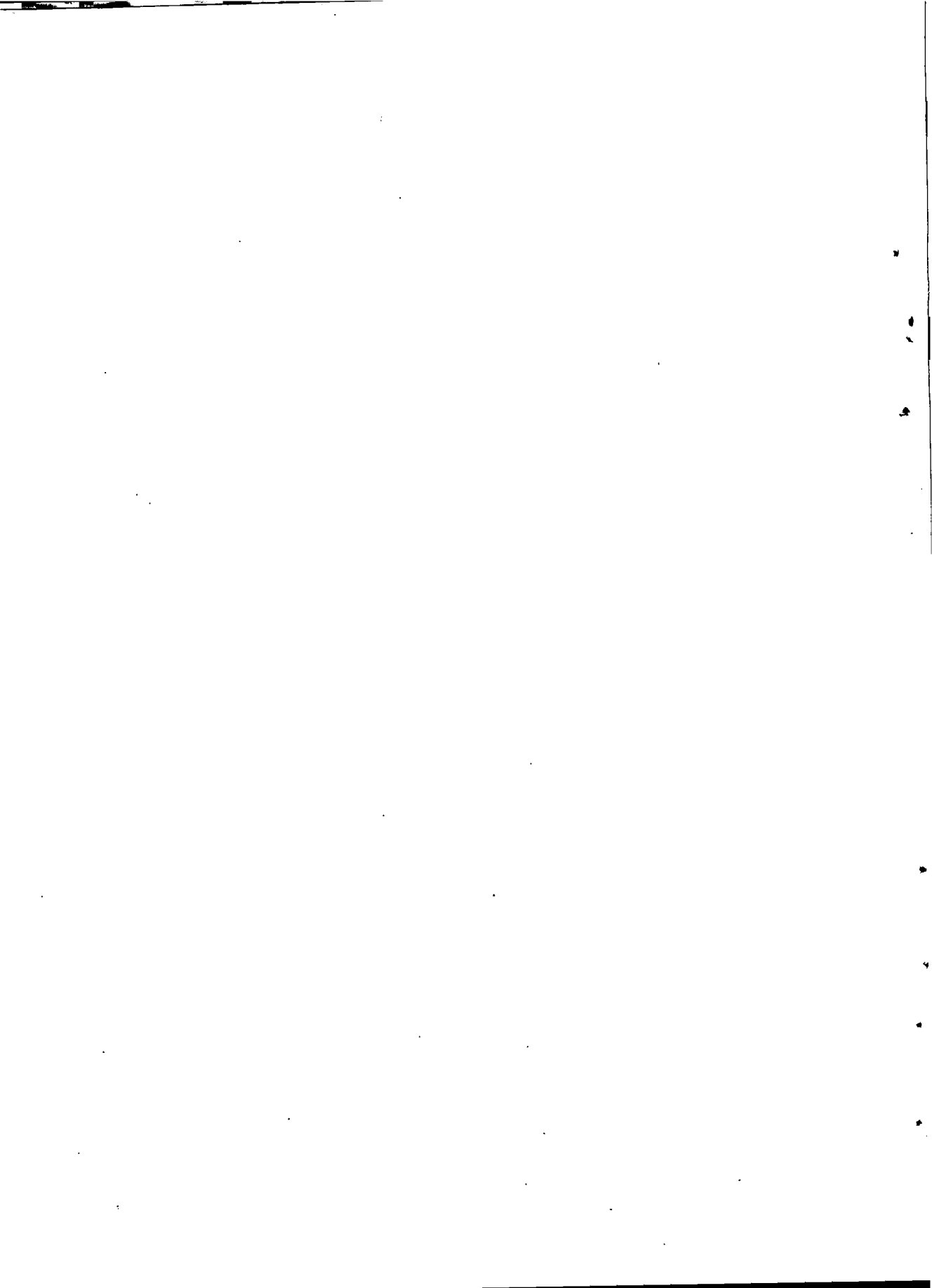
32. The sector-wise details of financial allocations for the Sixth Plan are given in the Annexure.

## SCIENCE AND TECHNOLOGY

*Financial Allocations 1983—88*

(Million Rupees)

Sl. No.	Sector				Sectoral Allocation	S&T Under Block Allocation	Total
1	2				3	4	5
<b>A. Federal :</b>							
1.	Agriculture	..	..	...	1533	175	1708
2.	Industry	..	..	...	700	130	830
3.	Health	...	..	...	320	—	320
4.	Water	—	..	...	320	—	320
5.	Power	...	..	...	190	—	190
6.	Fuels	—	..	...	100	—	100
7.	Minerals	—	...	...	59	—	59
8.	Transport & Communications	..	..	...	100	50	150
9.	Physical Planning and Housing	...	..	...	50	—	50
10.	Education	..	..	...	950	620	1570
11.	Population Welfare	..	..	...	10	—	10
12.	Others	..	..	...	—	25	25
Sub-Total (Federal) ..					4,332	1,000	5,332
<b>B. Provincial :</b>							
1.	Agriculture	—	—	..	317	—	317
2.	Water ..	...	..	...	105	—	105
3.	Physical Planning and Housing	..	..	...	55	—	55
Sub-Total (Provincial) ..					477	—	477
Total ..					4,809	1,000	5,809



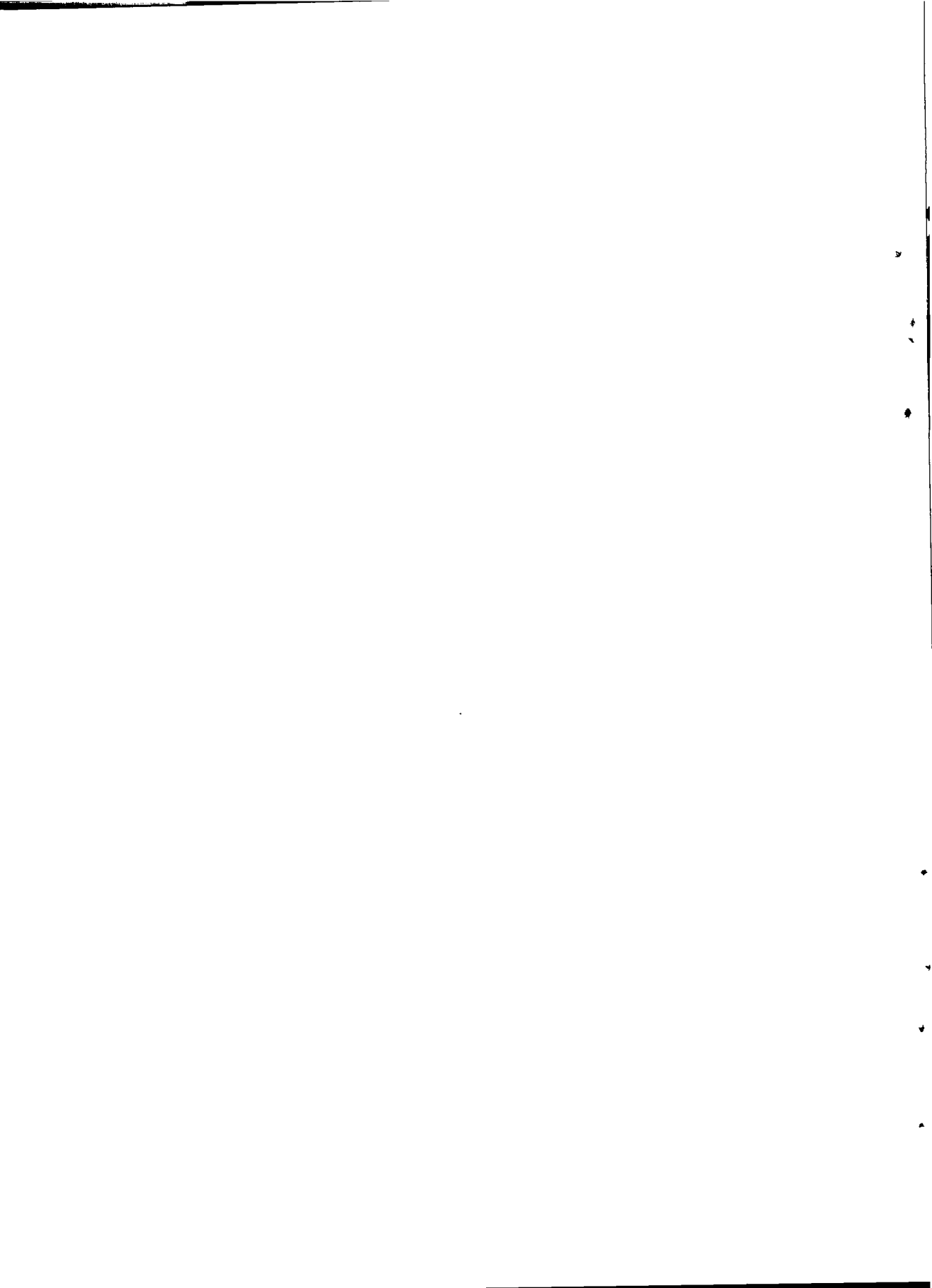


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PART IV

**INVESTMENT IN  
HUMAN RESOURCE  
DEVELOPMENT**

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*Proclaim ! And thy Lord  
is most Bountiful,—  
He Who taught  
The use of the Pen,—  
Taught man that  
Which he knew not.*

*Al-Alaq  
(XCVI—3 to 5)*

## CHAPTER 18

### EDUCATION : A VITAL INVESTMENT IN HUMAN RESOURCES DEVELOPMENT

**E**DUCATION is the most vital investment for any programme of socio-economic development. Its neglect can cost generations. No uneducated society has ever achieved the heights of economic and political power. No educated society has ever been left behind in the relentless march of history.

#### **Past Review**

2. Thirty-five years after independence, Pakistan has a literacy rate below 25 per cent and less than half the primary school going age children are in schools. These indices place Pakistan amongst the least developed nations, far below its rank according to other criteria, including the aggregate measure of *per capita* income. This status must be changed for several reasons. Literacy enriches life and enhances the learning capability of workers. Access to primary education is the key to equality of opportunities. The quality of university students visibly improves as a result of wide choice provided by primary education. At the scale at which it persists, illiteracy is a blot on our social image and the chief impediment to our long-term economic and technological advance.

3. Except for the Second Plan, the performance of education sector in the planned and non-plan period ending 1977-78 remained utterly deficient. The Second Plan largely achieved its physical and financial targets. Overall, the participation rate of primary school age population improved from 17 per cent to 48 per cent during the first thirty five years of our independence.

4. During the last year of the Fifth Plan, the position did improve a little as a result of the implementation of the Priority Sector Special Development Programme of Primary Education in the last year of the Plan. The mosque schools opened during this year of the Plan alone constituted 45 per cent of the total primary schools opened during the entire Plan period. Despite higher investment and realization of 80 per cent of the target of opening new schools (excluding mosque schools), the enrolment increased only marginally. Worse, the participation rate actually declined from 54 per cent in 1977-78 to 48 per cent in 1982-83 and the female participation rate remained far less than the average. The problem partly emanated from inadequate allocation of funds but more from the absence of a suitable machinery for planning, implementation and supervision of schools. The share of government expenditure on education as a proportion of the GNP also declined from 1.8 per cent in 1977-78<sup>1</sup> to 1.5 per cent in 1982-83.

5. Moreover, while the base of the pyramid did not expand satisfactorily, its top was raised further by the opening of new colleges and universities. Four new universities were established against none provided in the Fifth Plan. Nothing could portray the upside-down state of our educational priorities better than the Fifth Plan experience—the co-existence of the quantitative expansion of the consumptive higher education and the falling participation rates of primary education. The key note of the Sixth Plan strategy is to reverse this trend.

### SIXTH PLAN SHIFTS

#### Primary Education

6. The Sixth Plan approaches primary education with the earnestness and urgency that it has always deserved but never received. Serious efforts will be made to institute universal education by ensuring that all boys and girls of the relevant age group get enrolled in class-I latest by the terminal year of the Plan. The timing for the attainment of this goal in various parts of the country will however, depend on the present level of enrolment in the respective areas and their state of preparedness towards the attainment of this goal. A minimum of five years of schooling will be made obligatory to begin with and the tenure will gradually be raised to 10 years.

7. To accomplish this task a very special effort is required by the Government both at Federal and Provincial levels. The Sixth Plan provides a sum of seven billion rupees for the development of education facilities at the primary level. Fifty per cent of this amount has been provided under the programmes of the Provinces and other executing agencies while the remaining fifty per cent has been earmarked for Special Development Programme of Primary Education. The Special Development Programme shall be designed on the pattern of the Special Programme implemented during 1982-83 with the difference that this

amount will be disbursed to the Provinces and other executing agencies as Federal grants to be available on matching basis. The Special Primary Education Programme will be administered by a Federal Coordinating group headed by Minister for Planning and Development and will be monitored by a specially constituted Federal Coordinating Unit headed by Secretary, Ministry of Education. It is expected that through the proposed Federal grants for Special Primary Education Programme the momentum for the expansion of primary education will gain the desired impetus. It will be ensured that during the Plan period the programme for the expansion of primary education gets duly institutionalized so that after 1987-88 the entire responsibility of this programme can be taken over by the Provinces and other executing agencies.

8. Participation rate of children in primary schools is targetted to increase from 48 per cent in 1982-83 to 75 per cent in 1987-88. This implies that over 5 million additional children will be provided with primary schooling, an increase of over 80 per cent over the base year enrolment of 6.8 million children. Primary education indices are presented in the following table. As will be observed, larger increases are planned for the more neglected sections—for rural areas and for the girls.

**TABLE 1**  
*Primary Education Indices*

	1982-83	1987-88	Absolute increase	% increase
<b>A. Enrolment (In Million)</b>				
Total	6.8	12.3	5.5	81
Rural	4.1	8.3	4.2	102
Urban	2.7	4.0	1.3	48
Boys (Total)	4.6	7.7	3.1	67
Rural	3.2	5.6	2.4	75
Urban	1.4	2.1	0.7	50
Girls (Total)	2.2	4.6	2.4	109
Rural	1.0	2.7	1.7	170
Urban	1.2	1.9	0.7	58
	Participation Rate		Literacy Rate	
	1982-83	1987-88	1982-83	1987-88
<b>B. Participation and Literacy Rates (%)</b>				
Total	48	75	23.5	48
Rural	40	70	15.0	42
Urban	72	95	43.6	62
Boys (Total)	63	90	32.0	49
Rural	58	88	23.3	43
Urban	77	98	51.7	61
Girls (Total)	32	60	13.9	47
Rural	20	50	5.7	40
Urban	68	93	33.9	63

9. No matter how forceful the push, an increase in primary education cannot raise literacy rates very much in a five-year plan. A marked, short-term improvement in literacy would necessarily require programmes covering the mass of the illiterate population which has already gone past the primary school age. Reaching adults, specially the child-bearing mothers, would not only increase the literacy rate but would also facilitate the entry of girls into primary schools and the learning environment of both boys and girls in their homes. In view of these considerations, it has been decided to launch a mass literacy programme, aimed at a coverage of 15 million persons, the greatest concentration of which would be on women in rural areas. The programme will have an in-built component of evaluation in order to determine whether or not it is attaining its desired objectives of providing literacy and motivating the entry of children into primary schools.

10. A sum of Rs. 7.8 billion is being provided for primary education and the mass literacy programme compared with an outlay of Rs. 1.4 billion during the Fifth Plan period, or an increase of five and half times. Financial outlays are shown in Table 2.

TABLE 2  
*Financial Allocations for Education*

	(Rs. billion)					
	Fifth Plan Expenditure	Sixth Plan Allocation	Percentage increase	Per cent shares		
				Fifth Plan	Sixth Plan	
Total—Education and Manpower	5.6	19.9	255	4.6	8.2*	
Primary, Secondary and other basic education programmes	2.9	11.4	293	52.5	57.3	
Technical and Vocational education programmes	0.6	2.3	283	10.2	11.6	
Higher and miscellaneous education programmes	2.1	6.2	195	37.3	31.2	

\*Education and Manpower as Percentage of total ADP.

11. The spread of education in the country is not a matter of financial allocations alone. A number of other obstacles have also to be faced and satisfactorily overcome. The first of these is the issue of education of girls, particularly in the rural areas. Participation rates in primary education range from almost 77 per cent for urban boys to 20 per cent for rural girls. As a matter of fact, the position is probably worse—perhaps due to high drop out rates—because literacy rate amongst rural females has yet to cross the level of 6 per cent.

Amongst the major obstacles are the indifference of communities and parents to education in general and that for girls in particular, the demands on girls to help mothers with house-hold chores and often the need for having separate schools for girls even at the primary level. Community pressures will have to be developed and brought to bear on families to overcome these constraints.

12. Another problem pertains to the scattered pattern of population in large parts of the country. It is estimated that at least 20 per cent of population in rural areas lives in settlements of less than 300 persons. Under these circumstances, the provision of a school building becomes an expensive proposition because of the small number of students that are likely to enrol. The problem becomes unmanageable if separate schools are to be provided for boys and girls. It will be necessary to devise special programmes such as mosque schools, or mobile schools, with lowered qualifications for teachers in order to reach this population. The Sixth Plan programme has, therefore, been designed on the principle of flexibility to allow creation of educational facilities in accordance with the specific requirements of each location. The major components of the programme are :

- utilization of mosques to accommodate classes I to III of new schools and over-crowded existing schools ;
- provision of school buildings both for existing and shelterless schools and for classes IV and V after completing class III from mosque schools ;
- construction of sheds/buildings in urban areas to supplement the space available in the mosques for opening new schools ;
- introduction of the system of mixed enrolment in all new and existing schools in classes I to III ;
- provision of separate girls schools wherever mixed enrolment is not possible ;
- provision of two teachers in each mosque school including the Imam, and one teacher each for classes IV and V in all schools against the present system of one or two teachers for all five classes ;
- creation of a separate implementation agency for primary education at Federal, Provincial and subsequent levels.

13. A major problem that affects the quality of education and results in high drop out rates is the curriculum in primary schools. It is not a curriculum designed to serve the needs of the average school in the country where one teacher instructs five classes seated in two rooms or all five classes together

out in the open. The curriculum is too demanding and as such fails to attain even the most basic objective. It has to be simplified and school hours limited to induce a larger number of children to come and stay in the schools and to learn to read and write. It is, therefore, proposed that during the first three years of schooling only religious instruction, reading and writing and elementary arithmetic will be taught, and subjects of social studies and general science will be taught as an integral part of the course on reading and writing. Teaching of full curriculum will be started from class IV.

14. The role of communities and local bodies is of key significance to the success of the proposed programme. Presently also local bodies and private sector is participating in the development of facilities of primary education, but the scale of their participation is quite limited. The requirements of universal primary education are extremely large and are beyond the capacity of the Federal and Provincial Governments which have many other claims on their resources. It is essential that in future local bodies and the communities share a much bigger proportion of the responsibility of the schooling facilities, their maintenance and supervision. In fact the need for the community involvement extends much beyond these tasks. Community pressure will be necessary to ensure that people realise that acquiring education and literacy is as much the family's responsibility to the society as the provision of education facilities is the Government's responsibility to the people. Moreover, community interest would help improve the quality of education, the motivation of teachers, the state of school facilities and the relevance of the curriculum, school hours and vacations to the local needs.

### **Secondary Education**

15. While the main emphasis of the Plan would be on primary education, it is desirable that the level of universal education would also be progressively increased from class V to class VIII, then from class VIII to class X and finally to class XII. The process would probably take three Plan periods and involve a functional transfer of the first two years of college education. In any case, the Sixth Plan provides for additional enrolment of about one million children in secondary schools, an increase of about 40 per cent over the base year level. A number of secondary schools will also be equipped to provide vocational training in one selected discipline corresponding to local needs.

16. Secondary education is of vital significance for the consolidation of the gains of primary education and for making them permanent. It is also important because it is the terminal stage of education for a large number of boys and girls and because it is on completion of secondary education that



students are channelled to courses in various fields. Secondary education, therefore, has to be broad based, flexible and of high quality. It should enable those not continuing education beyond this stage to participate in useful economic activities and get gainfully occupied in productive work without being required to take long training courses. It should, on the other hand, provide sound academic base to those who either proceed to pursue various technical and professional courses or enter the higher secondary stage of education in humanities, science, agriculture or commerce. The curriculum of secondary education will be so designed as to offer a wide variety of options to enable students to select subjects of their own choice and suited to their temperament and aptitudes.

17. Despite the diversity of educational requirements of students, there is a hard core of subjects including Islamiat, Pakistan Studies, languages, mathematics and science. These subjects have to be essentially studied by all students in order to have correct understanding of the Islamic principles and the Pakistan ideology on the one hand, and a sound academic base on the other. In view of the rapid technological advances resulting from scientific inventions and discoveries, study of a strong course in science and mathematics is becoming increasingly essential for all students. Hence the teaching of these subjects will receive special emphasis in the development of secondary education.

18. The main concerns of the proposed secondary education programmes are maximum feasible expansion of secondary education facilities in the rural areas and qualitative improvement of teaching programmes, with special emphasis on science and mathematics. At present, there are over 60,000 primary schools in the rural areas while the number of secondary schools, most of which teach upto class VIII, is just about 6,000. This means that one out of 10 students who complete class V in the rural areas has any chance of studying beyond class V, unless the students leave of their homes to stay in the hostels. In view of the prevalent indifference of most rural parents towards the education of their children coupled with their financial limitations, the chances of many students, especially girls, leaving their homes to receive education are very remote. Any attempt to raise the educational level of rural areas and for the promotion of the principle of equality of educational opportunity shall have first to concentrate on the development of secondary education in the rural areas. Hence the highest priority in the proposed programme is assigned to raising rural primary schools to middle standard to provide education up to class VIII, followed by the programme of raising middle schools to high standard to increase the opportunity of rural students to receive secondary education. Implementation of these two programmes will greatly improve the availability of secondary education facilities for the rural youth and will also reduce the level of

disparity between the urban and rural boys and girls as shown in the following table :

**TABLE 3**  
*Participation Rates at Different Levels of Secondary Education*

	1982-83			1987-88		
	Male	Female	Total	Male	Female	Total
<b>A. Participation Rates in Classes VI—VIII</b>						
Total	35	14	26	44	19	33
Urban	64	39	52	71	45	59
Rural	23	4	15	34	8	22
<b>B. Participation Rates in Classes IX-X</b>						
Total	21	8	15	26	12	20
Urban	49	27	39	52	36	45
Rural	10	1	6	16	2.5	10

19. To bring about a qualitative improvement in secondary education, physical facilities of schools would be improved and special attention paid to the provision of laboratories, science apparatus, library books and qualified staff. Migration of experienced science teachers has greatly weakened teaching programmes of science and there are no science teachers in a number of high schools. To provide graduate science teachers to the schools, it is proposed to train the teachers through a special training programme financed by the Federal Government. Under this programme, F.Sc. qualified young men and women with at least a high second division will be financially supported to take B.Sc. and B.Ed. courses at government expense provided they are willing to teach in high schools for a minimum period of 5 years. To begin with the programme will offer financial support to 200 students and the number in the subsequent years, will be fixed on the basis of the actual requirement identified by the Provinces and other agencies. The programme will be reviewed in the last year of the Plan period to determine whether or not it should be continued beyond that period.

20. To provide a broad-based education at the secondary level, the programme of teaching agro-technical groups of subjects, including training in industrial arts, agriculture and commerce, will be strengthened. The on-going training programmes in about 3,000 schools at the middle stage and 200 schools

at the high stage will be consolidated and strengthened and training in these subjects will be introduced in 400 more schools in class VI to VIII and 100 high schools in classes IX and X. In addition, trade/technical schools and vocational institutes will be set up mostly in the rural areas which will provide training in technical trades to the drop outs from the education system on completion of class VIII or even earlier. Those not in possession of class VIII certificate shall have to take a one-year preparatory course at the trade school before admission in the regular trade school programme.

### **Teacher Training**

21. The primary and secondary schooling targets would require an additional 200 thousand teachers including approximately 40 thousand Imams. Another 45 thousand teachers will be needed for replacement. Teachers training facilities are adequate for the new teachers and to cater to in-service training but curricula will be redesigned and crash courses introduced for less qualified teachers in the far flung rural areas.

22. There are 71 institutions for the training of primary and undergraduate secondary school teachers. Graduate teachers are trained in 14 colleges and four university departments. Institutes of Education and Research of the universities of the Punjab, Sind and Peshawar and a few training colleges offer courses in master of education. Capacity of the existing institutions is sufficient to train about 120 thousand primary and 50 thousand secondary school teachers required for the proposed programmes of primary and secondary education. This capacity is adequate to meet the training requirement under the new system being adopted. In addition to the training conducted in these institutions, short intensive training programmes shall be organized for the training of less qualified teachers in areas/regions facing shortage of teachers with the required qualifications.

23. Availability of teachers both for primary and secondary schools is becoming a problem. It is already quite serious in Punjab in respect of male teachers. Training institutions for male teachers are functioning at about 20—30 per cent of the capacity. To meet the shortage of trained primary school teachers, untrained matriculates are being recruited as teachers. It is proposed that Provinces/Regions facing such a situation introduce a modified system of teacher training under which teachers may be placed for training after recruitment. The training may be completed in 3 instalments of 5, 3 and 2 months duration. After the completion of the first training unit of 5 months, teachers should be placed in teaching jobs and should be enabled to complete the remaining 2 units within 3 years of the first appointment. These teachers may be given the initial salary scale of trained teachers from the date of their first appointment but should be allowed to draw annual increments on completion of full training. Gradually, the entire training programme of primary

and secondary teachers may be structured on this pattern. This will have the advantage of increasing the annual output 100 per cent, enabling teachers to gain from their experience of class room teaching, and developing a strong training programme through the resultant feed back system.

### Technical Education

24. Technical manpower is vital for enhancing the productive capacity of the nation and for ensuring implementation of development plans. The quality and quantum of the developments which take place in any country are, in the last analysis, determined by the technical excellence of the manpower and the extent to which scientific knowledge and technological skill can be utilized for raising the quality of development work. The training programmes of technical manpower are therefore, of crucial significance for providing the trained manpower required for the accomplishment of development objectives. It is in recognition of the critical position of the technical manpower that the Sixth Plan places high priority on the development of training programmes of all categories of trained manpower both in quality and size.

25. There is a large variety of training programmes both in the public and the private sectors which produce trained manpower of different categories. In the public sector, training is imparted through formal training programmes provided in engineering universities and colleges, polytechnics, mono-technics, colleges of technology, technical training centres and vocational, technical and commercial institutes of different categories. The existing training programmes of engineering and other institutions training the technical manpower will be strengthened and expanded and new institutions for increasing the training capacity will be set up. A significant addition to these programmes will be a network of technical/trade schools and vocational institutes which will be established all over the country to provide training in technical skills to those leaving the school system at various stages before completing education upto matriculation. In the private sector training is provided through apprenticeship and on the job training programmes. Training programmes of different categories of technical manpower are discussed in the following paragraphs.

26. *Training of Engineers.*—Despite the existence of four engineering universities, of which one is over 20 years old, the present teaching programmes are largely confined to B.Sc. engineering courses. Only limited progress has been made in the development of M.Sc. engineering programmes, and facilities of research are practically non-existent. Sometimes the quality of the engineering graduates produced by these institutions is considered even inferior to even those engineers trained in some of the other developing countries. Proposed programmes therefore lay greater emphasis on qualitative improvements by restricting growth of under-graduate enrolment at universities, and making

provision of adequate facilities of workshops, machinery, laboratory materials and books and by establishing linkages with employers and providing expatriate Pakistani experts as visiting professors.

27. The Centre of Excellence in Water Resource Engineering at Lahore will be further strengthened so that the quality of M.phil and Ph.D degree programmes is adequately improved. Selected departments at other Engineering universities will be developed into Centres for Advance Studies. These centres will be properly equipped and staffed and shall develop the academic programmes in collaboration with reputed foreign universities.

28. In addition, projects of the newly created NFWP University of Engineering and Technology and Khuzdar Engineering College will be completed and training in new technologies such as electronics, light and heavy engineering, irrigation, drainage, buildings and transport will be emphasized. Since the requirements of engineers will be larger during the next and the subsequent plan periods, the intake capacity of B.Sc. Engineering course will be increased in existing institutions to the optimum level, and work will also be initiated on a new project for the setting up of a new Engineering College in the Punjab.

29. *Training of Technicians.*—There are at present 28 polytechnics including 5 for women and 6 mono-technics for the training of technicians. Seven of these polytechnics also offer training in B. Tech. courses and have been named as colleges of technology. These institutions have a combined capacity of training about 17,300 in diploma courses and about 1,700 in B. Tech. courses. About half of these institutions are being provided the required facilities under a development project aided by Asian Development Bank. This project will be completed and the remaining institutes will be improved and strengthened : 19 new polytechnics (12 for men and 7 for women) and 10 mono-technics will be established. Setting up of mono-technics will better suit smaller and less developed regions/places because training can be provided according to identifiable local demand which will also serve as a check on out-migration of trained persons to bigger cities.

30. *Training of Skilled Workers.*—Skilled workers are being trained through a large variety of programmes some of which are managed and controlled by the Government while others are operating under autonomous, semi-autonomous and private organizations. In the Government sector there are some 50 training institutions which are managed by Provincial Labour Departments. Of these 37 institutions known as Technical Training Centres/Vocational Institutes are being developed under the National Vocational Training Project aided by IBRD|ILO|UNDP. Organizations such as WAPDA, Steel Mill, Railways, Karachi Shipyard, PIA, Health, Industries, Agriculture Departments, Small Scale Industries Corporation and numerous other employing agencies train

their own skilled manpower. Available information indicates that of the approximately 50,000 skilled workers trained annually, only about 10 per cent are being trained through the public sector training institutions. The system of training of skilled workers through private, non-formal system of employers will be encouraged to expand because this training can be made more effective both in content and quality to suit the manpower needs of the country. It will be ensured that these training programmes are evaluated and standardized with the assistance of the National Training Board.

31. During the Sixth Plan, efforts will be made to encourage expansion and qualitative improvement of the training programmes in the private and non-formal sector. The training programmes in the Government sector will also be improved and expanded by opening new technical training centres. In addition, facilities will also be provided for the improvement of employment services and data generation, and programmes of labour welfare will be undertaken both in public and the private sector.

32. *Commercial Education.*—Commercial institutes offer post-matric certificate and diploma level training programmes in the fields of secretarial practice, commerce, banking and insurance. With the increase in industrial and agricultural production and in banking and commerce, the demand of personnel with the requisite skills in banking and commerce is bound to increase. However, as in the case of training in vocational skills, a very large training programme in commercial skills is being carried out in the private sector, especially in big cities. This is bound to increase along with the increase in demand. However, to meet the training requirements of areas with no private initiative, provision has been made for the setting up of 30 new commercial institutes of which 10 will be for women.

### **Higher Education and Research**

33. Science and technology and higher education will receive a different kind of emphasis during the Sixth Plan. Universities will be consolidated and the allocations to them will be confined to improvements in quality rather than further expansion. No new university will be set up and enrolment will be more or less stabilized in the aggregate, with some shift towards science and technical subjects. The restriction on the setting up of any new university will be a temporary phase. Pakistan can absorb a much larger number of high quality university graduates than are being currently turned out. But a striking proportion of graduate and post-graduate students fails which is a waste of their time and the nation's resources. Besides, there is a recognition that the quality of those who do pass is deteriorating over time. It is necessary, at this stage, to emphasize qualitative improvement rather than quantitative expansion which requires, in turn, that funds and other resources are restricted to improvement of existing

universities, on the one hand, and to expanding, on the other, the base of the education pyramid from which university entrants will be selected.

34. Universities will also be one of the main beneficiaries of R&D programme being launched on a large scale in the Sixth Plan. Scientific research and technological development allocations are being increased from Rs. 2 billion in the Fifth Plan to Rs. 7 billion in the Sixth Plan. Based on an indepth inventory of existing facilities, the Sixth Plan aims at creating certain specialized institutes of international standards; and strengthening the capability of existing research and development institutes most of which are of sub-critical standard, some for lack of staff, some for poor and out-dated equipment and almost all for low funding.

35. Improvement in the teaching of science is a critical factor in bringing about the required break through in science and technology. This will be attained through a comprehensive programme aimed at removing the deficiencies in curricula, textbooks, laboratory equipment, library resources and teacher competencies. The programme shall cover all levels of education from secondary to post-graduate.

36. The following-strategy is proposed for the realization of these objectives at various levels of higher education:

- (i) improvement of physical and human resources of existing institutions through additional inputs and establishment of collaborative linkage between institutions imparting education at different levels;
- (ii) improvement of the management of institutions by delinking the intermediate section from the degree colleges and under-graduate programmes from the universities under a phased programme;
- (iii) development of selected university departments into Centres of Advanced Studies, specially for updating knowledge and skills of teachers through M. Phil. and Ph. D. programmes;
- (iv) development of reputed government colleges with considerable academic and administrative freedom;
- (v) induction of the private sector at all levels of higher education for introducing healthy competition and reducing state liability and control.

37. *Intermediate Level.*—The Sixth Plan programmes will gradually integrate education of classes XI and XII with secondary education and this process of re-structuring will be completed in the Seventh Plan. The practice of adding classes XI and XII to the high schools which has already been adopted

by a number of prestigious and autonomous institutions shall be extended to other government schools under a phased programme to meet additional demand. The Plan proposes a number of steps for qualitative improvement of instruction at this level. These include improvement of laboratory and library facilities, provision of visiting lecturers from degree colleges/universities to teach newer concepts and theories, and reintroduction of the system of annual inspection by the Secondary Education Boards to ensure that the required standard of physical facilities and instruction is being provided.

38. *Degree Level.*—Education at this level is being imparted either in colleges with a considerably larger student body at the intermediate level or in universities whose primary concern is post-graduate education and research. At both these institutions degree level education does not receive the importance it deserves. The Sixth Plan proposes to encourage growth of institutions imparting only degree level education. To encourage growth of such institutions necessary administrative and financial changes shall be made in respect of a few reputed colleges in the first instance with a view to enabling them to recruit better qualified staff on higher salaries, to set higher admission criteria, charge adequate fee, and enjoy a much larger measure of freedom in the administration and management of staff and students. These colleges shall be empowered to award degrees. The Plan also proposes to encourage opening of private institutions imparting education only at the degree level. These colleges shall also be granted considerable freedom in matters of tuition fee and determining admission criteria while the Government shall provide grant assistance.

39. In addition the Plan proposes to implement the following programmes designed to improve the quality of instruction :

- Admission tests covering academic aptitude, communication skills and proficiency in academic subjects proposed to be studied ;
- Science laboratories and libraries shall be provided better equipment and latest books and journals ;
- Teachers shall be provided facilities and incentives to improve their qualification through study at Pakistani and foreign universities ;
- arrangement for in-service training ;
- services of expatriate Pakistani scholars shall be made available to degree colleges as visiting professors particularly in scientific disciplines.

40. *Post-Graduate Education and Research.*—The Sixth Plan seeks to restructure university education to consolidate its human and physical resources.



The following policies and measures are proposed to be adopted during the Plan period to this end :

- existing university campuses and facilities will be completed and improved at an accelerated pace (the past pattern of slow, lingering construction will be changed ;
- no new university will be opened in the public sector ;
- under-graduate programmes at universities will be discontinued ;
- a system of admission test and make-up courses for removing the deficiencies (assessed through the admission tests) will be introduced ;
- selected university departments will be developed into Centres of Advanced Studies (with physical facilities and faculty resources comparable to advanced countries) ;
- a privately endowed university for science and technology will be established with complete freedom to determine contents and duration of courses of studies, admission criteria, salary and qualification of teachers, rate of tuition fee, etc. It shall have linkages with foreign universities and its physical facilities, teaching faculty, and quality of instruction and output shall be comparable to best institutions abroad ;
- scholarships to talented students, particularly in scientific fields, will be awarded. To make higher education a privilege for the talented, special award of scholarships will be introduced for talented students from low income groups cover the entire expenses which will be financed out of Zakat and Ushr funds ;
- the quality of science education suffers greatly due to non-availability of funds for the purchase of consumable materials in colleges and universities. It is proposed to meet the recurring expenditure of these items from the development funds on an experimental basis in accordance with the scale of expenditure to be determined by the Boards of Education and the University Grants Commission.

### **Scholarships**

41. While the priorities and requirements of the education system have changed substantially over time, the Government policies for the award of scholarships have not been modified to reflect the changed needs. Further, quite a large number of scholarships are also awarded by autonomous educational agencies such as University Grants Commission, Boards of Education, universities, Pakistan Science Foundation, other local and foreign educational foundations, philanthropic organizations, foreign aid giving agencies, etc. But there is no

system through which information can be obtained about these programmes and assessment made of the overall size of expenditure and the utility of these scholarships. It is proposed to devise a system to ensure that in future all scholarships are in line with national education priorities. A National Scholarships Coordination Committee headed by the Federal Secretary of Education and consisting of representatives of the Ministry of Finance, Planning Commission and the Provincial Governments will be set up which will give policy guidelines to various agencies for award of scholarships and for laying down the conditions of eligibility.

#### **National Scholarship Foundation**

42. In addition it is proposed to launch a comprehensive programme of scholarships meant exclusively for the children and youth coming from families having limited incomes. This scholarship programme will provide financial assistance to students of all levels of education, and for studies within the country and abroad. These scholarships will be financed through zakat and ushr funds and will be administered by a specially created foundation to be called the, National Scholarship Foundation. The foundation shall be managed by a Board of Governors consisting of people drawn from all walks of life including a large number of non-government members. Through the award of these scholarships it would be ensured that no poor student is denied education because of the poverty of the parents. The award of these scholarships would go a long way in the fulfilment of the larger policy objective of the plan namely the evolution of a more equitable social order. It is estimated that about Rs. 1,000 million may be spent for this purpose during the Sixth Plan period through the National Scholarship Foundation.

#### **Mass Literacy Programme**

43. The Plan seeks to improve the literacy level by means of a two-pronged attack by accelerated expansion of primary education and through the launching of a functional literacy programme. The present number of illiterates of age 10 years and over (nearly 43 million) is too large to be brought under the first literacy programme to be implemented in a limited period of 5 years. A selective approach will, therefore, be adopted in the determination of the target groups. In view of the vital significance of younger age groups and the reality that they would give the maximum returns, it is proposed to cover 15 million persons (6 million males and 9 million females) of the age group 10 to 24 years under the programme of functional literacy. In view of the catalytic role of women and the need to reach rural population, higher priority will be given to women in rural areas.

44. The functional literacy programme will be delivered through a variety of media and methodology which will include first hand teaching and distant

teaching with audio-visual aids. The strategy is to involve the youth through drafting all students passing matriculation examination for literacy work for one year. Necessary legislative cover will be provided for this purpose. In addition interested individuals, non-government organizations (some of which are already working in this field) and the local governments will be actively involved in the implementation of the proposed programme. These agencies will be encouraged through financial assistance, supply of instructional material and training of literacy teachers. Necessary administrative cover would be provided to ensure that (i) no illiterate is employed in Government offices and in semi-public and private corporations after a specified date; and (ii) existing illiterate employees of the government or semi-public and private corporations are provided with education facilities within a specified period of time. The responsibility for providing facilities to illiterate employees for acquiring literacy shall rest with the employers. Since the proposed programme lays higher priority on women, greater reliance shall have to be placed on Women's Division and major women's organizations in the implementation of the functional literacy programmes for women.

45. Non-conventional approaches will be tried which have worked successfully in other developing countries, e.g. requiring government offices and industrial establishments to teach their illiterates staff within a specified period; offering special scholarships or academic credits to college students to induce them to spread mass literacy; providing liberal financial support to NGOs to participate in the nation-wide literacy campaign. These measures will be designed to provide necessary motivation of illiterates to acquire literacy and give necessary back-up support to various Government and non-government agencies engaged in the elimination of illiteracy. It would be realized that adult literacy campaign have generally failed in most countries where exclusive reliance has been placed on traditional methods. Without innovation and nation-wide participation the effort may not meet the desired degree of success in Pakistan as well.

#### **Library Services**

46. It is proposed to develop a public library system within the guidelines provided by the recommendations of the Cabinet Committee headed by the Finance Minister. The on-going project of the National Library provides for a modest programme. It is being re-examined to ensure that the National Library can be set up on a scale which is comparable to the best libraries elsewhere in the world and which becomes a permanent tribute to the vision of the present generation.

#### **Educational Guidance and Placement Services**

47. A comprehensive guideline and counselling service can be offered only if standardized, reliable and valid psychological tests are available, and teachers

have necessary expertise in administering and interpreting these tests. Simultaneously, it is important that there is a constant flow of literature about career opportunities and indications of future trends in the labour market for which an organized system of market-research is essential. Considering our state of preparedness, it would not be feasible to establish comprehensive guidance services. The Plan accordingly seeks to make a beginning in this direction and proposes to :

- make necessary preparation for establishing limited guidance services on an experimental basis in four hundred and fifty secondary schools (six schools in each district of which at least two will be girls' schools) ;
- establish placement services in all universities.

#### **Preparation, Production, Publication and Supply of Books**

48. Provincial Textbook Boards are responsible for preparation, printing and publication of books for classes I to XII which are approved by the Ministry of Education. The responsibility for books of higher education rests with University Grants Commission. Most of the books used for engineering, medical and scientific subjects and in English are generally imported. However, the language of imported books for polytechnic students poses a serious problem of comprehension by the students and no books have so far been produced within the country. Perhaps one of the major causes of poor quality of training at the polytechnics is the absence of suitable books. It is necessary that the Ministry of Education, in consultation with the Provincial Governments, Boards of Education and University Grants Commission, develop a plan to generate sufficient interest and provide incentives for the writing of books particularly the technical books within Pakistan.

#### **Development of Education in Special Areas**

49. The special areas include Azad Jammu and Kashmir, Northern Areas and Federally Administered Tribal Areas (FATA). The position in respect of each of these areas is briefly discussed below :

50. *Azad Jammu and Kashmir*.—This area has great potential of faster development in education than even some of the more developed parts of the country. Expansion of education facilities in this area has been remarkably encouraging in the recent past, specially at the primary and middle stages of education. Over the past 10 years enrolment at the primary level increased by 70% and at the middle stage by more than 100%. A highly promising feature of the development in Azad Jammu and Kashmir is a much higher rate of

growth of girls education. Compared to national participation rates the position in Azad Jammu and Kashmir works out to be much better as indicated by the following figures.

TABLE 4  
*Participation Rate in 1982-83*

	Pakistan			Azad Kashmir		
	Boys	Girls	Total	Boys	Girls	Total
Primary stage classes (I-V)	63	32	48	93	45	69
Middle stage classes (VI-VIII)	35	14	26	42	20	32

51. Based on the above position it is planned that by 1988, 100 per cent boys and 70 per cent girls will be attending schools, against the target of 90 per cent for boys and 60 per cent for girls for the country as a whole. In view of the keenness of the people of this area to educate their children it is expected that the target of 100 per cent enrolment of boys may be attained within a couple of years. To ensure that the gains of primary education are consolidated a sufficiently big programme has been proposed at the secondary level specially at the middle stage, where the target of participation rates for boys and girls are 65 per cent and 41 per cent respectively against the corresponding national targets of 44 and 19.

52. To ensure a balance development of educational facilities special emphasis will be placed on the development of good quality higher secondary schools teaching upto class XII, improvement of existing intermediate colleges and use of the underutilized facilities for teaching classes IX-X, and improving teaching of science at all levels. Mono-technics, commercial and vocational institutes and trade schools will be set up to provide programmes for the training of technicians and skilled workers. Facilities of the existing six degree colleges will be consolidated improved specially to establish strong science teaching programmes; and the project of Azad Jammu and Kashmir University will be completed.

53. *Northern Areas.*—With the present participation rate of 65 per cent for boys, Northern Areas is favourably compares with the national position of 63 per cent. But the enrolment of girls is only 17 per cent and the scale of facilities available at the subsequent educational levels is extremely limited. The Sixth Plan programme therefore, provides for an accelerated rate of growth of educational facilities. The primary level enrolments are projected at 95 per cent and 40 per cent for boys and girls respectively. Due to small enrolment at the primary level in 1982-83 the scope of the expansion of enrolment at the secondary level remains very limited in the case of girls. However, a maximum feasible programme has been provided in the Plan both for the boys and the girls.

54. At present, there are no facilities of technical training of any kind. During the Sixth Plan, small size mono-technics, commercial and vocational institutes and trade schools will be set up to provide training to technicians and skilled workers in trades related to local needs. Two intermediate and two degree colleges are existing with very limited enrolments. These colleges will be consolidated and improved and classes XI and XII will be added to selected high schools to meet the demand of education at this level.

55. *Federally Administered Tribal Areas (FATA)*.—The education scene in FATA is quite different from that of other parts of the country. Against the present participation levels of 54, 15 and 10 per cent of boys at primary, middle and high stages of education, the enrolment of girls is negligible even at the primary stage. For boys there are over 1,100 primary schools, 300 secondary schools, 9 colleges, one Cadet College, a polytechnic and a few commercial and vocational institutions. But the number of girls schools is very small with only about 150 primary and 25 secondary schools each having an enrolment of about 30 to 40 girls.

56. The Sixth Plan programme for boys education includes accelerated expansion of enrolment at all school levels, consolidation of colleges, completion of the on-going programme of the poly-technic at Wana, opening of a mono-technic and setting up of commercial and vocational institutes and trade schools. Provision has also been made for expansion of facilities for girls education at primary and secondary school levels. Implementation of the proposed programme will have to be preceded by research studies to identify the causes of present indifference towards girls education and to suggest measures to overcome it.

#### **Establishment Division**

57. The need of pre-service and in-service training of civil servants cannot be over-emphasized. A well-trained civil servant has very important role to play in realizing our development objectives. Training in all fields of planning with an emphasis on modern concepts of project planning and project management is highly useful and needs to be institutionalized. In order to achieve this objective, the Sixth Plan provides for various pre-service and in-service training programmes. A renewed effort, will be made to improve implementation capability of the development administration.

58. The Plan envisages improvement, expansion and strengthening of existing NIPAs at Karachi and Lahore; Pakistan Academy for Rural Development, Peshawar and Pakistan Administrative Staff College, Lahore. Institutes of Public Administration will also be established at Quetta and Peshawar. Funds have also been provided for the construction of the building of the Secretariat

Training Institute at Rawalpindi. Provision has also been made for the continuation of scholarships for the children of Federal Government employees.

### Policy Issues

59. Three main issues have a major bearing on the Sixth Plan education programme. One of them, which mainly applies to basic education, is involvement of local bodies in planning, management and maintenance of educational facilities. As referred to already, such a delegation is necessary for the sake of financial contribution and more so for the purpose of motivating families to send children to school, improving the quality of school facilities and keeping pressure on the relevance as well as quality of instruction received by the students. The Provincial Governments should consider various ways of involving local bodies and adopt measures that suit most their local conditions. It must be ensured that teachers are paid salaries by the Provincial Governments and that grants in aid are provided depending upon the effort made by each local body and the state of poverty in the area.

60. The second basic issue is of user charges which applies to all levels of education but especially higher education. An expansion in the education base and qualitative improvement at higher levels can never be adequately tackled unless the existing collections, (which is very little) are considerably raised. Consequently, it is intended to recover a sizeable part of the costs of education through the introduction or enhancement of fees. Scholarship programme will be expanded so that no under-privileged students are kept out of schools, and the meritorious out of colleges and universities for want of finances. Some of the scholarships will be funded by collection of Zakat and Ushr. It is also being considered whether the latter funds should be deployed to build primary schools and basic health units.

61. The third issue is that of the role of the private sector. The nearly comprehensive nationalization of educational institutions and the accompanying policy of free education ten years ago had at least two casualties. An already impoverished Government was landed with a large financial burden which restricted it from expanding education. And many of the schools of high quality, some of them run by education conscious communities, lost their excellence under the public control. Thus, in both quantity and quality, the policy was counter-productive. The private sector has now been allowed to open schools. In the Sixth Plan, it is proposed to return the existing schools back to the original owners wherever it can be ensured that the quality and coverage will not suffer as a result.

### Plan Allocations

62. In the Sixth Plan a sum of Rs. 19850 million has been allocated for the development programmes in the sector of Education and Manpower. It is

estimated that implementation and maintenance of the proposed programme will involve a recurring expenditure amounting to Rs. 8500 million. This recurring expenditure shall be in addition to Rs. 31900 million required for meeting the recurring cost of maintaining the education programmes existing in 1982-83. Thus the total amount required for meeting the recurring cost during the Plan period will be approximately Rs. 40400 million. In the past non-availability of sufficient funds, in the revenue budgets of executing agencies, has been one of the most important bottle-necks in the success of education programmes specially those of primary education. Implementation of the proposed programme will thus greatly depend on the availability of adequate amount in the revenue budgets for meeting recurring expenditure both of existing and new programmes.

63. During the Sixth Plan period education facilities are designed to expand at an accelerated pace. This is indicated by the fact the total expenditure in the public sector would increase from Rs. 6380 million in 1982-83 to Rs. 14700 million in 1987-88, an increase of 130 per cent. In terms of the proportion of GNP, expenditure on education will rise from 1.5 per cent to 2 per cent.

64. In addition to the increased efforts in the public sector special monetary and non-monetary measures will be adopted to motivate and encourage the private sector to fully participate in the development of education facilities in the country. It may be clearly recognised that, after the decision of the government in 1977 to allow opening of private educational institutions, private sector has been playing a perceptible role in providing education facilities in the urban areas, without any support or encouragement from the government. In the Sixth Plan, funds have been earmarked for extending grants-in-aid for supporting private effort in establishing educational facilities. It is estimated that during the Sixth Plan period an investment of over Rs. 1000 million may be made in the private sector. With the coming into existence of local government it will also be possible to generate additional resources for establishing education facilities both in rural and urban areas. What is required more is the recognition of the importance of education and they will to educate children than the financial resources which can always be found if the programmes are considered of high priority.

65. The essence of the Sixth Plan education strategy is to ensure a quantum jump in the spread of primary education, and consolidation and restructuring of higher education to improve quality. In this, the Plan is guided by the desire to create a literate society and to train high-level scientific, technical and professional manpower capable of meeting the requirements of economic development and providing leadership in all walks of life.

65. The details of financial allocations and physical targets are given in Annexures J and II respectively.



## EDUCATION AND MANPOWER

Financial Allocations, 1983—88

(Million Rupees)

Sub-sector	Federal	Provincial	Punjab	Sind	NWFP	Baluchistan	Total (col. 2&3)
1	2	3	4	5	6	7	8
Primary Education .. ..	3980	3020	1320	770	740	190	7000
(i) Under executing agencies ..	(480)	(3020)	(1320)	(770)	(740)	(190)	(3500)
(ii) Special Programmes ..	(3500)	(—)	(—)	(—)	(—)	(—)	(3500)
Secondary Education .. ..	945	3180	1615	730	570	245	4125
Teacher Education .. ..	60	245	80	80	60	25	305
Technical Education .. ..	1155	1180	700	180	180	120	2335
(a) Deptt. of Education ..	(505)	(810)	(450)	(150)	(130)	(80)	(1315)
(b) Deptt. of Labour .. ..	(650)*	(370)	(250)	(30)	(50)	(40)	(1020)
College Education .. ..	370	930	430	240	190	70	1300
University Education .. ..	2100	(1358)£	(491)£	(431)£	(310)£	(126)£	2100
Scholarship .. ..	395	265	170	35	60	(50)**	660
Mass Literacy .. ..	750	—	—	—	—	—	750
Dev. of Public Library System ..	300	155	80	25	30	20	455
Miscellaneous .. ..	145	425	330***	40	30	25	570
Programmes of Establishment Div.	250	—	—	—	—	—	250
<b>Total ..</b>	<b>10450</b>	<b>9400</b>	<b>4725</b>	<b>2120</b>	<b>1860</b>	<b>695</b>	<b>19850</b>

\*For programmes under Ministry of Labour, Manpower and Overseas Pakistanis.

£To be funded by the Ministry of Education.

\*\*Provided in the Revenue budget.

\*\*\*Including Rs. 180 million for deferred maintenance of buildings.

## PHYSICAL TARGETS

## A. Primary Education

1. No. of primary schools in the last year of the Plan.	Number	1,14,173 (Including 40,000 mosque schools)
2. Primary schools opened during the Plan Period.	"	44,198 (Including 40,000 mosque schools)
3. Primary schools improved during the Plan period.	"	24,850
4. Enrolment in class I—V in the last year of the Plan.	(In 000)T M F	12,354 7,712 4,642
5. Additional Enrolment in class I—V by the end of Plan period.	"	5,600
6. Participation Rate in the last year of the Plan.	T M F	75 90 60

## B. Secondary Education

1. No. of middle schools in the last year of the Plan.	Number	10209
2. No. of High schools in the last year of the Plan.	"	5530
3. During the Plan period up-gradation of :		
(i) Primary schools .. .. .	Number	4880
(ii) Middle schools .. .. .	"	1073
(iii) Opening of New High schools .. .. .	"	236
4. During the Plan period improvement of :		
(i) Middle schools .. .. .	Number	2000
(ii) High schools .. .. .	"	1000
5. Enrolment in last year of the Plan		
I. (a) Classes VI—VIII	(In 000) T M F	2508 1807 701
(b) Participation rate	(Per cent) T M F	31 41 19
II. (a) Classes IX-X	(In 000) T M F	919 651 268
(b) Participation rate	(Per cent) T M F	18 24 12

III.(a) Classes VI—X	(In 000)	T	3427
		M	2458
		F	969
(b) Participation rate	(Per cent)	T	26
		M	35
		F	16
6. Additional enrolment during the period :			
(i) Classes VI—VIII	(In 000)		795
(ii) Classes IX—X	"		236
(iii) Classes VI—X	"		1031
<b>C. Teacher Education</b>			
1. No. of Primary teacher training institutions.	Nos.		71
2. Training Capacity of primary teacher training institutions	Nos.		21000
3. No. of institutions for training of Secondary school teachers.	Nos.		18
			(Including Deptts. of Education at universities)
4. Training capacity of secondary school teacher training institutions.	Nos.		4500
<b>D. Technical Education</b>			
1. Engg. universities	Nos.		4
2. Engg. Colleges	"		3
3. Poly/Monotechnic	"		63
4. Trade Schools	"		200
5. In-take Capacity of :			
(a) B. Sc. Engg. Course	Nos.		5000
(b) Poly-technical/Mono-technic	"		7425
(c) Trade Schools	"		4000
6. Enrolment of :			
(i) Engineering graduates	Nos.		15500
(ii) Diploma classes in :			
(a) Engg. Colleges			
(b) Poly-technical/Mono-technic	Nos.		20950
(iii) Trade Schools	"		4000
7. Annual out-put of :			
(i) Engg. graduates	Nos.		3550
(ii) Diploma Holders	"		4996
(iii) Trade Schools	"		4000
8. Opening of :			
Engg. Colleges	Nos.		2
Poly/Mono-technic	"		29
Trade Schools	"		200

## E. College Education

(i) Intermediate .. .. .	Nos.	324
(ii) Degree .. .. .	"	278
i. Enrolment in Classes		
(i) XI—XII .. .. .	(In 000)	335
(ii) XIII—XIV .. .. .	"	90
2. No. of general Universities.	Nos.	15
3. Enrolment in general universities	Nos.	18500

*If any one saves a life, it  
Shall be as though he had  
Saved the lives of all mankind.*

*Al-Maidah  
(V-32)*

## CHAPTER 19

### HEALTH: TOWARDS A COMPREHENSIVE NATIONAL COVERAGE

#### Current Situation

**A**T the time of Independence, the country, inherited a situation of insanitary environmental conditions, a general state of under nutrition, insufficient medical facilities and deficient maternal care. Thereafter, the expansion of health facilities apart from health manpower, has been painful slow, which has led to extremely inadequate health facilities in both urban and rural areas.

2. *Mortality.*—The crude death rate was around 40 per thousand during the early part of the century. It declined gradually to about 30 per thousand by 1950. By mid-1960 the crude death rate had declined to 16 per thousand. Since mid-1960's the crude death rate is estimated to have declined to the present level of 12 per thousand. The maternal mortality is about 6–8 per thousand live births. A major reason for a high maternal mortality can be attributed to poor help during child birth. Infant mortality declined from 178 per thousand in 1950's to 136 per thousand in 1960. The present infant mortality rate is estimated at 100 per thousand. The leading causes of death are diarrhoea and pneumonia among preschoolers, and accidents, tuberculosis, cardiovascular diseases and malignancy for the remaining age groups.

3. *Morbidity.*—The disease pattern is characterised by high morbidity due to infectious and communicable diseases. The most common causes

of illness amongst children are measles, whooping cough, tetanus, and diarrhoeal diseases. About 1.6 million persons have radiologically active tuberculosis, including more than 250,000 open cases. Protein-energy-malnutrition (PEM) is still a problem; with 7 per cent of children (less than 5 years a  $\text{e}$ ) exhibiting 3rd degree malnutrition. Other nutritional problems include anaemia and goitre.

4. Cardiovascular diseases have emerged rather abruptly as a public health concern in age groups in which productivity and social and family responsibilities are highest. Cancer is rapidly becoming a major cause of morbidity and mortality. The minimal incidence rate for cancer is estimated to be 40–50 per 100,000 of population. Seriously incapacitating mental disorders are likely to affect, at least, 1 per cent of the population at any one time and, at least, 10 per cent at some time in their life.

5. Cavitation of teeth affect children more than other age groups. Gum diseases afflict a large number of the population. Diseases affecting the tissues around teeth range between 7–9 per cent of the children and a majority of the adult population.

6. Table below gives some health related indicators with a comparison of countries of middle income economies:

TABLE 1  
*Health Related Statistics*

		Pakistan			Middle income economies
		1965	1978	1983	1977
Life expectancy at birth (years)	M	47	54	55	61
	F	45	53	54	
Infant mortality rate. (aged 0–1)	(per 1,000 live births)	140	105	100	60
Child death rate (aged 1–4)	(per 1,000)			10	5
Crude death rate.	(per 1,000)	16	14	12	9

7. *Health facilities.*—There is at present one doctor for 4,600 persons, one dentist for 83,000 persons, one nurse for 6.4 hospital beds, one paramedic for 2,486 persons, one primary health care facility for 12,943 persons and one hospital bed for 1,790 persons. Primary health care facilities other than hospitals, are offered by 1,715 basic health units (BHU), 374 rural health centres (RHC), 867 Maternity Child Health (MCH) centres, 3,994 dispensaries and 632 sub-centres.

8. *Health manpower.*—A major expansion of medical colleges, from 7 to 16 during the last 10 years, has led to a current output of 4,000 new doctors every year. The standard of education has gone down substantially since there are not enough class rooms, laboratory facilities and teaching equipment. Also there is a shortage of 8,000 teaching hospital beds. The pace of training of specialists/teachers has lagged behind the production of graduates in the country.
9. There is a mal-distribution of doctors due to neglect of rural areas which have not been provided roads, communication facilities, electricity, schools, and potable water with unattractive employment system. There are less than 1,000 posts of doctors in rural areas as against 6,000 in urban areas even though rural areas contain approximately 70 per cent of the total population.
10. In the rural areas, a very large number of posts for female doctors are lying vacant. Out of the paramedics, very few girls are being trained. Most of the medical, nursing and paramedical personnel belong to the urban areas and like to serve in urban areas.
11. *Medical research.*—The problem facing medical research in the country is lack of adequate probe into the pressing health problems, on the one hand, and limitation of research workers on the other.
12. *Drugs.*—It is estimated that the total domestic demand for drugs and medicines is approximately Rs. 3.5 billion. Fifteen firms control about 70 per cent of the market. The drug market is growing at an annual rate of about 25 per cent. At present, there are about 6,500 registered medical products; out of which 4,500 are processed and packed locally by 206 units. The remaining 2,000 are imported. Drug prices are controlled by the Ministry of Health.
13. *Logistics.*—Transport availability at most of the RHCs is very limited. There are very few permanent useful roads. Lack of transport and communication prevents medical officers from visiting basic health units and lady health visitors (LHVs) from visiting villages. Maintenance facilities for keeping vehicles on roads are inadequate.
14. *Health data.*—Information systems are complex and suffer because of inaccuracy and incompleteness. Health workers have little training to gather accurate information necessary for effective planning, control and evaluation of their work.

15. *Vertical programmes.*—There are some vertical programmes such as Malaria Control, Tuberculosis Control, World Food Programme, the recently introduced Expanded Poly-immunization (EPI), Oral Rehydration Salts (ORS) and training of Traditional Birth Attendants (TBAs). The malaria control programme has been merged with the general health services, although complete administrative integration has not been achieved.

16. *Management.*—There is no process for linking planning with implementation throughout the health system. There is inadequate authority for workers at each level to make decision relating to their own work. Community participation remains to be developed and organized.

17. *Private sector.*—There are approximately 6,125 private doctors in the country with around 500 doctors joining private sector each year. Private doctors are to be found least in the rural areas. About 51,539 traditional healers cover the gap for curative services.

18. *Traditional medicine.*—As is normally understood traditional medicine exists in form of *Tibb-e-Unani*, *Ayurvedy* and Homoeopathy. There are estimated to be 3,216 qualified tibb practitioners, 31,784 registered unqualified *hakims* 3,102 qualified and 12,898 unqualified homoeopaths and 539 unqualified registered *vaid*s. The Government approved traditional medicine in 1977 and recognized the three systems and established boards for these for registration of various categories of traditional medicine practitioners.

19. *Users' charges.*—At present user charges vary among the provinces. There is no charge in Baluchistan and by the Federal Government. The charge per outpatient treatment is Re. 1 in the Punjab, Sind and NWFP. For inpatients, there is a registration fee of Rs. 5 in NWFP, while there is a graduated scale of payments (depending on income) for food provided for inpatients in the Punjab. Rs. 2 are charged per inpatient per day in Sind. Fees are charged for private patients in Government facilities in all the provinces, but these are considerably below the cost of providing the service.

20. *Health allocations—The fundamental problem.*—The capital expenditure on health care system has ranged between 3-4 per cent of the total development outlays and around 2 per cent of the revenue budget. On a comparative basis, Pakistan has been spending only one-fifth as much as other low-income developing countries on national health care.

21. The most important difficulty facing the public sector health service is insufficient funds to meet the recurring expenditure. In many cases



the infrastructure is available but cannot be utilized in full because of the shortage of funds for personnel, medicines and maintenance.

### Review of Fifth Plan

22. The Fifth Plan, contained the following objectives :

- (i) To provide modern health coverage within 2–4 miles for the entire population.
- (ii) To reduce the crude death rate from 14 per thousand to about 10.2 per thousand.
- (iii) To reduce infant mortality from 105 per thousand to 79 per thousand live births.
- (iv) To increase the life expectancy from 54 years for men to 60 years and from 53 to 59 years for women.

23. All this was to be achieved at an estimated cost of Rs. 6.6 billion at 1978 prices. The expenditure incurred during the Fifth Plan, at current prices, was Rs. 4,584 million. Discounting for inflation, the amount allocated for the health sector adds upto Rs. 3,615 million at 1978 prices or 55 per cent of the envisaged allocation during the Plan period. Taking into account the budgetary cuts, the allocation has not been more than 50 per cent of the estimated cost of the Plan requirement. The achievement in terms of vital health indices is as follows :

TABLE 2

*Physical Achievement in vital Health Indices*

Index	1978	Fifth Plan Targets for 1982-83	(per 000)	
			Achievement upto June, 1983	
Crude death rate .. ..	14	10.2	12	
Infant mortality rate .. ..	105	79	100	
Maternal mortality rate .. ..	6–8	—	6–8	
Life expectancy at birth :				
Males .. ..	54 years	60 years	55 years	
Females .. ..	53 years	59 years	54 years	

24. A total of 206 RHCs and 1617 BHUs were built, out of a total of 625 RHCs and 4596 BHUs planned during 1978-83. The achievement could have been much better if the budgetary allocations would have been adequate. The table below gives the achievement during 1978-83 :

Category	Target	Achievement	Percentage achievement
<b>Physical Facilities</b>			
(i) Basic Health Units/Dispensaries MCH Centres.	4,596	1,617	35.2
(ii) Rural Health Centres.	625	206	33.0
(iii) Hospital Beds.	25,820	5,308	20.0
<b>Health Manpower</b>			
(i) Doctors/Dental Surgeons.	13,512	10,203	75.5
(ii) Nurses.	4,780	4,246	88.88
(iii) Paramedics/Auxiliaries.	24,886	13,576	54.5
(iv) Community Health Workers/Dias.	50,371	9,000	17.9

25. From the year 1982 onwards, the production of 4,000 doctors led to lack of job opportunities in the government service during the later part of the Plan period. Employment avenues for doctors outside the country also diminished gradually owing to more restrictive immigration policies abroad. The expansion in private clinics was also slow as only 500 doctors could find employment in the private sector every year. The later part of the Plan period, therefore, emerged with an apparent surplus of doctors and national concern for their employment. The President of Pakistan constituted a special committee and a Cabinet Committee to look into the health care and employment of doctors. These committees were chaired by Mr. Qamar-ul-Islam and Dr. Mahbub-ul-Haq respectively.

26. The short term measures approved to ease the situation were provision of a third doctor at the already functioning RHCs, provision of a doctor's position at the existing BHUs after providing residential accommodation, starting second shift in the outpatient departments in teaching, district and *tehsil taluka* hospitals and provision of house jobs for 100 per cent of graduate doctors in a phased manner.

27. The situation of facilities for training of different categories of health manpower compared with that of 1978 is given below :

TABLE 3

*Training of Health Manpower*

S. No.	Category	No.	1978		1983	
			Yearly output	No.	Yearly output	No.
(i)	Medical Colleges.	15	4,000	16	4,260	
(ii)	Dental Schools.	4	117	4	120	
(iii)	Nurse Training Schools.	28	750	44	840	
(iv)	LHV Training Schools.	8	389	10	600	
(v)	Medical Technician Training Schools.	—	—	26	650	

28. *Preventive Programmes: Ploy-Immunization.*—The poly-immunization programme was designed to meet a long term goal of reducing mortality from six preventable diseases *viz.*, diphtheria, pertussis, tetanus, polio-myelitis, measles and tuberculosis, at least, by 90 per cent by 1990 and to eliminate neonatal tetanus by giving tetanus toxoid to pregnant ladies. The programme progressed satisfactorily but its targets were pitched too low to serve the purpose of the programme. It could only immunize 1.0 million children as against 3.5 million born every year.

29. To take care of the backlog and come to a stage when only new borns would be immunized, the programme was accelerated manifolds in 1982-83, the last year of the Plan. It is estimated that under the accelerated programme 3 million children were immunized during 1982-83.

30. *Diarrhoeal Diseases Control.*—A similar acceleration was given to the control of diarrhoeal diseases by oral rehydration therapy. It was proposed to provide 5.0 million packets during 1982-83, a target which has since been achieved.

31. *Training of Birth Attendants.*—The training of birth attendants was also given a boost during the last year of the Plan to accelerate the availability of assistance during child birth. It is estimated that 5,000 TABs were trained during 1982-83 which is a five-fold increase.

32. The special accelerated health programmes have affirmed that the entire child population of the country can be immunized in a fairly short

period. The same holds true for control of diarrhoeal diseases by oral rehydration therapy and assistance during child birth by trained birth attendants. These programmes provide a great promise in the Sixth Plan.

33. *Malaria Control.*—The efforts during the Plan period have succeeded in containing the incidence of malaria to a level which has not posed a real public health problem in the country inspite of a number of weaknesses in the programme.

34. *Medical Research.*—The number of research centres established by Pakistan Medical Research Council in the medical colleges of the country increased from 5 in 1978 to 13 during 1982-83. In addition, old centres were strengthened with manpower and equipment to enable them to conduct objective research.

35. *Private Sector.*—It is estimated that 2,100 doctors established private practice during the Plan period. About 6,125 doctors are expected to be in the private sector. This compares favourably with the Plan targets. The progress of hospital beds has been slower than expected. About 1,200 beds were added, raising the number to 10,000.

36. *Financial Utilization.*—The percentage utilization of allocations registered a positive trend during the Fifth Plan (98.5 per cent) as compared to an average of about 70 per cent during the years 1971-78. This indicates that given necessary funds the targets for the Fifth Plan were not ambitious.

### **Sixth Plan Programme**

37. In order to improve the quality of life, there is a crying need to remove the general scarcity of adequate health services. It is considered necessary to establish a nation-wide integrated system of health care. This would involve a nation-wide consolidation and expansion in terms of physical infrastructure properly equipped and staffed by adequately trained and motivated persons. The traditional medicine (*tibb*, homoeopathy and *ayurvedy*) will be given its due place in the National Plan. Obviously, the allocations both for capital expenditur and revenue budget will have to be increased manifolds as inadequacy of funds has been the main constraint for unfulfilment of an integrated nation-wide health care system. To meet part of the expenses, it would be necessary to charge from the health users especially for maintenance and operating costs. The private health sector will be given special incentives so that it can contribute effectively and play a complementary role to the public health sector.

38. To find a fundamental solution to the nation-wide scarcity of good health services, the allocations for capital outlay and revenue budget for health sector are being increased considerably for the Sixth Five-Year Plan. The total capital outlay being proposed for Sixth Plan is Rs. 13.0 billion, as against Rs. 4.58 billion spent in current prices during Fifth Plan. This is nearly three times the expenditure of the Fifth Plan. The allocation is 6 per cent of the capital outlay through ADP, as against 3.7 per cent in the previous Plan. The quantum jump of about three times can be explained on the basis of the size of Sixth Plan in comparison to the Fifth Plan.

39. *Objectives.*—In terms of final results, health and health related programmes of the Sixth Plan will have the following objectives :

- (i) To reduce the crude death rate from the present 12 per thousand to about 10 per thousand.
- (ii) To reduce the infant mortality from 100 per thousand live-births to 60 per thousand.
- (iii) To increase the life expectancy from 54-55 years to a little over 60 years.
- (iv) To reduce the communicable diseases from the present 30 per cent to a negligible level.
- (v) To protect all children and new borns against six preventable diseases of childhood, on a regular basis.
- (vi) To eliminate third degree malnutrition among children.
- (vii) To provide assistance during child birth to every mother, by trained birth attendants.
- (viii) To prevent, as far as possible, occurrence of disabilities and care of the disabled for better prospects of life.

40. *Policy shifts.*—The Sixth Plan policy shifts are as follows :

- (i) Emphasis on preventive care by protecting all children by poly-immunization against the six preventable diseases of childhood, diarrhoeal diseases control and improved maternal care.

- (ii) Consolidation of existing facilities in contrast to expansion and development of rural health infrastructure. Expansion is only envisaged in un-served areas.
- (iii) Each rural health facility to be manned by a qualified doctor and not by a substitute.
- (iv) Double shift in the out-patient departments of all teaching, district and *tehsil/taluka* headquarters hospitals.
- (v) Freezing of seats in medical colleges and stress on quality vs quantity.
- (vi) Rehabilitation of disabled and prevention of disabilities.
- (vii) Government patronage to traditional medicine.
- (viii) Involvement of community, *viz.* local bodies, in primary health care.
- (ix) Proper management training to health functionaries.
- (x) Introduction of users' charges to reduce subsidy.
- (xi) Rapid expansion of private sector.

41. *Nation-wide Health Care.*—The nation-wide health care for the Sixth Plan will provide a systematic link between the village community and the super-structure of the modern health system. Depending upon the density and scatter of the population, a basic health unit will be provided to serve about 5,000 to 10,000 population. The basic health unit will be responsible for comprehensive health care. This will include, among other things, midwifery, child care, immunization, diarrhoeal diseases, malaria control, child spacing, mental health and school health services within its area. Outreach services will be provided primarily for maternity and child health care through trained birth attendants. Depending on the terrain and communication, 5 to 10 basic health units will be linked to a rural health centre (RHC). Each rural health centre may have upto 25 beds with laboratory, X-ray and minor surgery. The RHC will be linked through *tehsil/taluka* hospital to District Headquarters Hospital which will have all medical facilities. Other existing facilities such as dispensaries and MCH Centres etc. will be upgraded as BHUs.

42. All the BHUs (new and upgraded) will be staffed by a doctor with 2-3 paramedics/technicians while the RHCs will play a pivotal role and act as a *focal point* in the Nation-wide Health Care System and will have 3 doctors' positions out of which one will be a female. It will also be provided with a dentist. Where physical facilities permit, more beds (up to 25) will be added. This will become the rural/community hospital. This will remove the disparity between urban and rural areas and meet the aspirations of the rural population.

43. The present EPI, Diarrhoea Control, TBAs training, Malaria Control and Tuberculosis Control Programmes will become part of the Nation-wide Health Care System. These services will become the main activities of the BHUs and RHCs network.

44. The posting of a doctor in each BHU will not only improve the quality of care but will also improve the overall working of the basic health units and reduce referrals and hardship which the community faces in taking their sick to urban areas. Burden on hospital beds will be minimized. Residential accommodation for doctor will have to be provided at each BHU. Those under construction will incorporate such facility.

45. *Tehsil/Taluka and District Hospitals.*—The *tehsil/taluka* hospitals are far from satisfactory at this stage. Being the first contact, where referral care will be made by the RHCs, they need to be strengthened. Additional doctors need to be posted for emergency care in, at least, three basic specialities and dentistry. The basis for strengthening and optimal utilization of *tehsil/taluka* and district headquarters hospitals will be as under :

- (i) One general duty doctor for 15 beds at *tehsil/taluka* hospitals, civil hospitals and district hospitals as against 30 beds at present.
- (ii) One doctor per 50 outdoor patients per day.
- (iii) One doctor each at *tehsil/taluka* hospital for emergencies and medico-legal work.
- (iv) Three doctors for emergencies and medico-legal work at district headquarters hospital.
- (v) Six to ten specialists at district hospital.

- (vi) Extending the out-patient timings from 8 A.M. to 8 P.M. by providing more staff, medicines and diagnostic facilities; and
- (vii) Hospital pharmacies to be manned by graduate pharmacists.

Strengthening of district and *tehsil/taluka* hospitals will make them suitable for training of fresh graduates as house surgeons/physicians in a number of specialities. This will be further strengthened by merging the teaching and general specialist cadres, as these hospitals will, then develop a strong link with the teaching hospitals.

### Targets

46. *Physical infrastructure.*—The physical infrastructure needed to meet the requirements of a nation-wide network will be as follows:

- (i) Conversion of 2,620 existing facilities into BHUs with doctors' residences.
- (ii) Construction of 2,600 new BHUs with attached residences for doctors and staff.
- (iii) Construction of 355 new rural health centres.
- (iv) Construction of 1,715 doctors' residences at the existing BHUs.
- (v) Provision of 3,500 teaching beds in existing medical colleges and another 3,500 in district hospitals and 1220 beds in tehsil hospital for referred care.
- (vi) Hotel accommodation for house surgeons, physicians and trainee resigtrars.

47. *Targets in human terms.*—The above mentioned inputs aim at improving the quality of life by safeguarding off-springs, their mothers and reducing misery of life by :

- (i) Protecting 24 million children against six major killers of childhood.



- (ii) Protecting 8 million children against complications and mortality of diarrhoeal diseases through oral rehydration salts.
- (iii) Protecting 1.25 million children suffering from third degree malnutrition.
- (iv) Providing help during pregnancy and child-birth from the present 24 per cent to 100 per cent of mothers through 45,000 trained birth attendants, backed by lady health visitors and female doctors.
- (v) Rehabilitating 100,000 disabled and prevention of occurrence of disabilities.
- (vi) Availability of primary health care to nearly all and referral care where needed.

48. The position, at the end of the Sixth Plan, in terms of physical facilities and health manpower, will be as follows :

TABLE 4

*Physical Facilities and Health Manpower 1987-88*

Facility	Targets	Cumulative Total June, 1988
<b>A. Infrastructure :</b>		
(i) Hospital beds.	11,770	63,170
(ii) Rural Health Centres.	355	729
(iii) Basic Health Units.	2,600	4,315
(iv) Sub-Centres, Dispensaries and MCH centres.	Upgradation of 2,620 institutions into BHUs.	2,620
<b>B. Manpower Development :</b>		
(i) Doctors.	21,000	36,000
(ii) Dentists.	600	1,700
(iii) Nurses.	5,000	10,000
(iv) Paramedics.	38,000	75,000
(v) Dais/CHWs.	30,000	45,000

49. The change in terms of populaion per facility in June, 1988 would be as follows :

TABLE 5

*Change in Population per facility, 1988*

Facility	Benchmark 1983	Population per facility	End Posi- tion 1988	Population per facility
<b>Infrastructure :</b>				
(i) Hospital beds.	51,400	1,790	63,170	1,678
(ii) Rural Health Centres.	374	172,241	729	101,133
(iii) BHUs/Sub-Centres/Dis- pensaries/MCH Centres.	6,490	12,943	9,090	9,820
<b>Manpower: .</b>				
(i) Doctors.	20,000	4,600	36,000	2,940
(ii) Dentists.	1,100	83,000	1,700	62,350
(iii) Nurses.	5,530	1/6.4 beds	10,000	1/5 beds
(iv) Paramedics.	37,000	2,486	75,000	1,413
(v) TBAs.	15,000	1/3 villages	45,000	1/village.

50. *Preventive programmes.*—All the preventive programmes will radiate from BHUs, RHCs and other health outlets. The term is just functional and will be part of the nation-wide health care system. Based on the experience of the last year of the Fifth Plan, these programmes will be the main-stay and lead programmes of the Sixth Plan to improve the quality of life, particularly in the rural areas. The main targets are as under :

- (i) Immunization. 24 million children.
- (ii) Control of diarrhoeal diseases. 8 million children.
- (iii) Training of birth attendants. 30,000.

51. *Poly-immunization.*—The poly-immunization programme designed for the Sixth Plan is based on the experience of 1982-83. It will aim at vaccinating all children of the country, not protected so far, and all new borns. This will lead to a reduction level of these diseases by at least 80 per cent. Proper logistics support, along with community participation, and massive educational campaign are the key components of the programme. To undertake this, all health facilities will be mobilized for immunization activities to immunize 24 million children during the Plan period.

52. *Diarrhoeal Diseases Control.*—Diarrhoeal diseases are very common among small children particularly in infants. Diarrhoeas are usually accompanied by vomiting and considerable loss of bodyfluids and a change in the electrolytic balance. It is well recognized that if fluid intake is maintained, along with requisite chemicals, the babies recover without much medication. Thus, it helps in reducing mortality appreciably.

53. An important factor in prevention of diarrhoea is to convince mothers that fluids, along with various salts, have the key role in changing the shape of the disease. This will require massive communication support, particularly by the community. To reach every one, ORS will be made available at all the health outlets, chemists shops and grocery shops. Manufacturing capability will be strengthened to meet the total demand of 25 million packets during 1983–88.

54. *Malaria control programme.*—Efforts will be made to maintain the current level of malaria endemicity so that it does not pose a public health problem. Nearly 20 per cent of the houses in the operational areas will be sprayed by insecticides. The selection of areas will depend on epidemiological parameters. Case detection will continue by screening of fever cases through house to house visits and from out-patient departments of health institutions.

55. *Health education.*—The challenge of primary health care has brought to light the need for more dynamic health education, based not on teaching people to utilize available resources as passive receivers, but on the fact that individuals, regardless of their level of education, are capable of making suitable decisions in respect of their own health, when properly informed and motivated. The Sixth Plan will, therefore, incorporate health education as an essential element of health services. It aims at utilizing all educated females and women representatives of local bodies. *Pesh Imams* will be used as health educators, after short-term training, for community education in preventive health programmes. Non-government organizations will be used to the extent it is feasible. An allocation of Rs. 50 million has been made for educative programmes, as a component of preventive health programmes.

56. *Medical Research.*—During the Sixth Plan period a National Clinical Research Institute will be established for conducting research on

national health problems and provide support to programmes of primary health care. Other improvements will be as follows :

- (i) Establishment of research centres in the remaining teaching institutions of the country.
- (ii) Strengthening of research component in institutes where potential for medical research already exists.
- (iii) Creation of a cadre of medical research workers with appropriate career structure.
- (iv) Augmentation of health services research with involvement of planning, executing agencies and academia.

An allocation of Rs. 85 million has been made for medical research during the Sixth Plan period.

### **Health manpower**

57. *Doctors.*—It is expected that approximately 21,000 doctors will be produced during the Sixth Plan period. It may be possible to provide employment opportunities to about half of these new doctors in the public sector health facilities in the Nation-wide Health Care System being developed for the Sixth Plan. There can be, as such, no guarantee for absorbing all the doctors in public sector. The Plan, therefore, proposes incentives which will lead to a rapid absorption of doctors in the private sector with freezing of seats in medical colleges and gradually increasing tuition fees to reduce subsidy.

58. If the targets for rural health facilities are achieved, there would be an additional 7,325 posts for doctors in the rural areas. It is expected that doctors will move into the rural areas if reasonable residential accommodation is provided. Rural service would be linked with promotion, training abroad and monetary reward. Doctors posted in rural areas below town committee level and allowed private practice, shall be given a practice compensatory allowance @ Rs. 200 per mensem for males and @ Rs. 300 per mensem for females. In case of failure of voluntary system of posting of doctors to rural areas, a compulsory national rural health service will be introduced, which will be two years for males and one year for females.

59. The training of doctors is week in primary health care. The aim of the Sixth Plan will be to produced a doctor who will be a health care provider both in the public or private sector with potentials to become a specialist and or a teacher in the future. He should be able to provide primary health care, assist management of secondary and tertiary care, manage and train staff, maintain information on health indices, be able to correspond and maintain accounts and work as a team member and a leader or a guide when required. The training will be adjusted accordingly.

60. *Specialists.*—The requirement of specialists during the Sixth Plan is estimated to be about 2,000 or 400 every year for employment within country. It is neither feasible nor appropriate to aim at providing 400 specialists per year in the immediate future. The aim in the Sixth Plan, therefore, will be at doubling the output of specialists from about 135 to about 250.

61. The following measures will be adopted to meet the requirements of doctors and specialists for the Sixth Plan :

- (i) Deficiencies in existing medical colleges will be removed and teaching hospitals will be provided 3,500 beds. Another 4,875 beds will be added at District and *Tehsil/Taluka* Hospitals to convert them into teaching hospitals in specialities which will have full staffing complement. Every medical graduate will be required to do one year of rotating internship and compulsory rural health service of 1-2 year's duration in rural areas depending upon sex.
- (ii) After rural service, the medical graduates selected for specialist training will have to do a house job in his/her chosen speciality for one year, in the institutions which are recognised by the Pakistan Medical and Dental Council or accredited by the College of Physicians and Surgeons, followed by residency as registrarship of two years. Registrarship will be on a tenure basis to be filled by the heads of the institutions where such jobs exist.
- (iii) Training positions will be created in all institutions, including district headquarters hospitals and hospitals in private sector, accredited by the College of Physicians and Surgeons as may be suitable for the purpose.

- (iv) The postgraduate education, as a continuation of undergraduate education, will be carried out in all the 16 medical colleges. The missing link between undergraduate and postgraduate education in the medical colleges will be remedied by creating a postgraduate cell in each medical college and designating a person specifically to oversee postgraduate education.
- (v) The programme of postgraduate training will be uniform at the national level in all the medical colleges. It would, therefore, be necessary to formulate a curriculum committee for this purpose. The College of Physicians and Surgeons should play the lead role in this respect.
- (vi) The medical education and research unit in the Ministry of Health will be strengthened. Similar units will be created in the provincial health departments.
- (vii) The existing postgraduate medical institutions *viz.* College of Physicians and Surgeons, Basic Medical Sciences Institute, Karachi, Post-graduate Medical Institute, Lahore, de'Mont Morency College of Dentistry and College of Community Medicine, Lahore will be strengthened. Specialists in basic sciences and community medicine will be given special incentives.

62. *General Practitioners.*—There is a need for continuous education and upgradation of skills of general practitioners (GPs). Ministry of Health and Provincial Health Departments will formulate courses for the augmentation of their knowledge. Pakistan Medical and Dental Council will devise a methodology by which the training of GPs can be taken as a yard-stick for re-registration.

63. *Dentists and dental services.*—There are only limited oral health services in the form of dental clinics at district and *tehsil/taluka* hospitals for emergency services and for care on demand. These services are inadequate to the extent that there is no oral health service particularly for purposes of prevention.

64. There is one qualified dentist for a population of 83,000. The number of dental technicians and dental hygienists in the country is negligible.

65. The ultimate aim of dental services should be the provision of dental care to the entire population. For the Sixth Plan period, the target group will be the school age population by extending existing dental services to the level of rural health centres with appropriate set up at *tehsil/taluka* and district hospitals. All industrial units with labour strength of more than 2,000 workers will have a complete dental clinic as part of the Employees Social Security Scheme. Departments of dentistry in medical colleges will be re-designated as dental schools/colleges and weaknesses removed. Till this is achieved, *status quo* will be maintained in the yearly intake of students.

66. Training of para-dental staff will be initiated in all teaching institutions including the dental department of Jinnah Postgraduate Medical Centre, Karachi. To meet the requirements of the public sector 350 dental technicians and hygienists are required. Pay and service prospects of the dentists and paradental staff will be at par with those of doctors and para-medical staff.

67. A beginning will be made towards manufacture and maintenance of dental equipment during the Sixth Plan. Structural adjustments will be made at various levels to implement the dental programme.

68. *Pharmacists*.—It is estimated that 600 pharmacists are qualifying each year from six pharmacy institutes of the country. Their services are not being utilized properly. This is affecting the overall drug delivery system. Hospital pharmacies upto *tehsil/taluka* level shall be managed by pharmacy graduates. In large hospitals, pharmacist, on an average, will be employed for every hundred beds.

69. *Nurses*.—It is estimated that only 5,530 nurses are available in the country. On the basis of one nurse for 5 beds, the requirement for the existing beds needing bed-side nursing (35,000) is 7,000. There is thus a shortage of 1,470 nurses. Through a combination of low staffing ratios, hospitals are dependent on student nurses whose training is frequently interrupted because of service demand.

70. The additional need for nurses during the Plan period with an increase in the hospital beds to be staffed by nurses, of 15,000 beds (all sectors) at the rate of 1 nurse per 5 beds will be 3,000. Taking into account the backlog of 1,470, the total requirements will be 4,470, nurses or an average of 1,000 per annum not taking into account the attrition by various channels. This will, in fact, mean increasing the output by 200 per year which would be possible in the wake of teaching beds being added during the Sixth Plan.

71. To provide primary health care, it is absolutely necessary that LHV's working in MCH Centres/BHUs etc. are given adequate supervisory support. This is only possible if a Public health Nurse (PHN) is deployed at each district. Considering the scarcity, 80 PHNs will be trained by training senior LHV's in general nursing and the general trained nurses/midwives in public health for one year.

72. Like PHN the country is very short of nurses specialised in different clinical disciplines. Senior graduate nurses will be trained in specific specialities at home and abroad.

73. Other measures, to improve nursing services and care during the Sixth Plan are as follows :

- (i) Award of degree of B.Sc. (Nursing) to all trainees and a much better starting salary than the one allowed at present with promotion prospects. A general/charge nurse will be in scale B 14 instead of B 11.
- (ii) Delinking service from education with an allocation of Rs. 140 million for training of nurses.
- (iii) Establishment of a Federal Nursing Examination Board to coordinate basic and post-basic nursing education. The board will also be responsible for continuing nursing education.
- (iv) Development of male nurses in regions with insufficient lady recruits.

74. *Paramedics.*—Given an approximate need for 38,000 paramedics, a school for paramedics will be established in most of the district and *tehsil/taluka* hospitals. This would require strengthening of the district and *tehsil/taluka* hospitals with necessary staff and other facilities. For effective staffing of the BHUs and RHCs the medical technicians cadre will have to be a *tehsil/taluka* cadre. The paramedical staff have been allowed improved pay scales and selection grades for all cadres, which have been denied so far.

75. *Traditional birth attendants.*—At present most of the deliveries are conducted by untrained *dias*, elder sisters and mothers-in-law. There is hardly any ante-natal and post-natal care. Not surprisingly the maternal mortality is very high. It is estimated that at present there are 15,000 Trained Birth Attendants. To cover the entire country, it is proposed that a TBA be trained and made available per village and for each urban slum.



76. Training will be imparted in the villages. The duration of training will be 2-3 months. The village community will select a person, who has to be a female of mature age who is already a traditional birth attendant and is unlikely to leave the village. She will be supported by the community and will provide services on a fee for service basis. She will be attached to the nearest health outlet for orientation, replenishment of supplies and for reporting live births. A total of 30,000 TBAs will be trained 1983-88.

77. *Cardiovascular diseases.*—The prevention and control of cardiovascular diseases will be undertaken at the community level. With full participation of the community, it is possible to reduce the percentage of the population with elevated blood pressure as well as the percentage of smokers and thus consequently reduce the incidence of stroke and myocardial infarction. A National Institute of Heart Diseases at Rawalpindi, to cater to the population of the northern parts of the country, will be established during the Plan.

78. *Accidents.*—There has been a marked increase in mortality from accidents during the last five years. The stabilization of or decline in mortality in different groups of accidents will require legislation and environmental and behavioural research.

79. These can be best studied by a centralized body constituted specifically for this purpose. This could be a National Institute for Traumatology. This would study the whole range of protective measures and restraint systems to management in hospitals and rehabilitation.

80. *Malignant neoplasms.*—In recent years, great advances have been made in the understanding and the management of cancer. Application of the presently available knowledge can greatly ameliorate the sufferings of cancer patients. It is proposed that the Government will create a 'National Advisory Committee on Cancer' to coordinate and oversee all cancer activities in the country. The committee will review the existing activities and facilities for the treatment of cancer in the country; formulate a National Cancer Control Programme; and monitor the implementation of the programme.

81. *Mental health.*—The aim of mental health during the Sixth Plan will be towards integration of mental health services and treatment of priority mental disorders as an essential component of Primary Health Care. The institutional form of care will be provided at district and teaching hospitals. A Brain Research Institute will be established to provide research support to programmes of mental health and serve as a centre of excellence.

## Disabilities

82. The available data indicate that disabilities affect 4–6 per cent of the population, particularly children and blindness in old age. The causes of disabilities are inadequate nutrition of mothers and children, poor maternal and child health services, infectious diseases, accidents, environmental pollution and certain unknown factors.

83. The Sixth Plan strategy includes provision of a package of integrated services for disability prevention and rehabilitation programme. A multi-disciplinary approach will offer the services to deal with the problems arising out of disabilities. Efforts would be made to involve voluntary agencies and community leaders in the programmes and projects for the disability prevention and physical rehabilitation of the handicapped. The co-operative and coordinative links will be established with sectoral organizations concerned such as Social Welfare, Education, Health, Manpower and Employment.

84. To provide care for all the four categories of the disabled persons diagnostic, treatment and training centres would be established in all the district hospitals of major cities and towns of the country. Such centres would make special provision for counselling and guidance services. Every teaching hospital would have a centre for early detection and assessment of deafness, blindness, mental retardation and other neurological or biochemical deficiencies. The children will be given priority so that the disabilities interfere in their growth to a minimum.

85. The Plan envisages rehabilitation of 100,000 disabled. It will also provide full coverage to about 62,000 disabled children. According to the Plan, Professionals in the field will be given an expanded opportunity to develop their skill and apply them under improved conditions through team work. The Plan also stresses community based disability prevention and rehabilitation services by providing necessary infrastructure at the federal and provincial level in the public sector. Non-Government Organisations (NGOs) will be encouraged to develop facilities for the disabled.

86. An autonomous National Institute for the Handicapped/Disabled will be established at Islamabad with its ancillary units in the Government Hospitals at provincial headquarters. The primary objective of the Institute will be provision of professional training for rehabilitation workers e.g. speech therapists audiometricians, physio-theraphists, play and recreational therapists, and occupational therapists. It will also have a

research cell for better understanding of the problems of the handicapped as well as evaluation of the contemporary rehabilitation aids, techniques, processes and skills with a view to improving, adopting and adjusting them according to Pakistan's own resources and conditions. National Trust for the handicapped children will be created, which will manage the affairs of the Institute for promotion and achievement of its objectives.

87. The Plan has made a special allocation for the betterment of the disabled persons. Rs. 720 million have been set aside for such programmes and projects. Out of this, Rs. 500 million will be expended in the Health Sector and Rs. 220 million will be incurred through Social Welfare Sector. The following table indicates the major programmes and the total outlay of the Plan for the disabled.

(Million Rupees)

Major Programmes	Provincial	Federal	Total
(i) Rehabilitation Service Centres/Institutions .. .. .	392	200	592
(ii) Rehabilitation Centre at Islamabad ..	—	30	30
(iii) Training of Rehabilitation/Technical personnel .. .. .	—	33	33
(iv) Manufacturing of artificial limbs and gadgets units at hospitals .. .. .	—	15	15
(v) Establishment of a National Institute for the Handicaped Disabled, Islamabad.	—	50	50
Total ..	392	328	720

88. *Pharmaceuticals.*—The Sixth Plan will aim to rationalize prices and the number of drugs, as the majority of population cannot afford the vast array of expensive modern drugs. There is a need for concentration of resources on meeting the requirement of drugs for the most common ailments by compiling a basic or essential drug list. The next step will be to rationalise the whole list of drugs available in the country. This rationalised list would contain some 600 to 1000 drugs, including those on the essential drug list, and would provide sufficient medication for secondary and tertiary health care (primary health care being met by essential drugs). The main aim of such rationalization would be (i) to minimize imitative products which add nothing to therapy, (ii) to eliminate combination products which are

therapeutically undesirable or ineffective, (iii) to eliminate drugs with unacceptably high toxicity, and (iv) to reduce the commercial pressures on the part of the manufacturers to produce trivial new drugs.

89. A drug schedule will be formulated for different type of health facilities *viz.* Basic Health Units, Rural Health Centres, and hospitals in the sector. This will ensure that the prescribing is only from a standard list. Sale of drugs and medicines will not be allowed without prescription of a registered medical practitioner by Pakistan Medical and Dental Council. Licences for dealing in drugs and medicines will be restricted to persons possessing a degree or diploma in pharmacy.

90. The Sixth Plan will promote indigenous industrial and technological development. The pharmaceutical sector, and with it the fine chemical industry sector, can attempt to expand into the production of intermediate and basic chemicals required for pharmaceutical manufacture.

91. An important aspect is the supply of correct and unbiased information about drugs to the medical profession. A promising way for carrying unbiased drug information to all physicians may be production of advertisement free drug journal by the government. The provision of adequate information will require full data of new therapies and their relative benefits and costs alongwith doctors findings on efficacy and adverse reactions.

92. *Traditional medicine.*—Traditional medicine encompassing *Tibb*, Homoeopathy and *Ayurvedic* systems of the medicine will get Government patronage. Specific measures to promote Traditional Medicine during Sixth Plan are as follows :

- (i) Development of traditional system of medicine within its own fundamental principles.
- (ii) Establishment of a Traditional Medicine Research Institute.
- (iii) A Council for Medicinal Botany will be established as an autonomous body.
- (iv) Establishment of five colleges of Traditional medicine with affiliated 50-bedded hospitals in the public sector—one at the federal level and one each at provincial capitals. These colleges will impart training in unani and homoeopathic disciplines. One of these, at the federal level, will have a department of *Ayurvedic* medicine.
- (v) Preparation of a National Formulary for *unani* drugs by the National Council for *tibb*.

- (vi) Enactment of a Drug Act of *unani*, homoeopathic and *ayurvedic* medicines and drugs.
- (vii) Establishment of dispensaries of traditional system of medicine in the rural areas, unserved by the modern system and outdoor hospitals at *tehsil/taluka*, district and divisional levels.
- (viii) Increase in grant-in-aid to homoeopathic and *tibbia* colleges.
- (ix) Structural and organizational adjustment at the federal health ministry and provincial health departments to implement the recommendations mentioned above.

93. A separate allocation of Rs. 375 million has been made for promotion of Traditional Medicine during the Sixth Plan period which will not be diverted to other uses.

94. *Drug abuse control.*—It is estimated that 1.3 million persons are wrongly using various types of drugs in the country. Out of these, about 10–15 per cent are heroin addicts. The activities for drug abuse control during the Sixth Plan will be directed towards strengthening and expansion of detoxification and rehabilitation facilities, training of manpower and monitoring of the incidence and prevalence of drug dependence, besides measures which are being taken to control the production and sale of illicit drugs.

95. *Planning and Management.*—To improve the present situation, planning of health facilities will be carried out in respect of districts. The District Health Officers and Medical Superintendents will be responsible for their respective districts. Planning units will be developed or strengthened with properly trained manpower in the Health Division and the provincial health departments. Similar units will also be set up for district or division (group of districts) and for major hospitals.

96. For proper management, the entire technical staff will be trained in the management of health services including specialists, district health officers, medical superintendents, general duty doctors, nurses and paramedics. They will be trained in the basic principles of management of health services. Health Division will set up a Health Services Academy for the training of health personnel in planning and management on a priority basis.

97. *Financial implications.*—The capital outlay and operational expenditure required are given below :

- (i) *Development expenditure.*—On the basis of targets, the capital outlay required during the Sixth Five Year Plan will be Rs. 13,000 million as under :

TABLE 6  
*Capital Outlay for Health Sector*

Sl. No.	Sub-sector	Million Rs.	Per cent
(i)	Medical education .. .. .	975	7.50
(ii)	Hospital beds including teaching beds ..	3,295	25.35
(iii)	Preventive programmes .. .. .	1,490	11.46
(iv)	Rural health programme .. .. .	5,660	43.54
(v)	Provision of dental care in the existing facilities	250	1.92
(vi)	Medical research .. .. .	85*	0.65
(vii)	Traditional medicine .. .. .	375	2.89
(viii)	Disabilities .. .. .	500	3.85
(ix)	Nutrition programmes .. .. .	250	1.92
(x)	Miscellaneous .. .. .	120	6.92
	<b>Total ..</b>	<b>13,000</b>	<b>100.00</b>

\*The total allocation for medical research is Rs. 320 million and the balance is reflected under other sub-sectors.

- (ii) *Recurring expenditure.*—The public health sector will be requiring about Rs. 4.5 billion per annum (current prices) towards the end of the Sixth Plan. This has been worked out on the following basis :

	Million Rs.
(i) 7000 BHUs.	875
(ii) 729 RHCs.	218
(iii) 17,000 teaching beds.	850
(iv) 15,700 non-teaching beds in DHQ/THQ hospitals.	315
(v) Drugs and medicines for the public health system for out-patients.	500
(vi) District, Provincial Headquarters, Health Division and other contin- gencies.	500
	<u>3,258</u>
Add User Charges :	1,250
	<u>4,508</u>

98. It will be worthwhile to review the growth of recurring expenditure during the Fifth Plan period. This has increased from Rs. 646 million in 1978-79 to Rs. 1,299 million during 1982-83 as indicated in the table below :

TABLE 7

*Recurring Expenditure on Health, 1978-83*

(Million Rs.)

Year							Expenditure
1978-79	..	..	..	..	..	..	646.20
1979-80	..	..	..	..	..	..	727.40
1980-81	..	..	..	..	..	..	763.80
1981-82	..	..	..	..	..	..	986.00
1982-83	..	..	..	..	..	..	1299.00

The recurring expenditure has increased at an annual rate of 15 per cent. The Sixth Plan envisages a growth of 20 per cent per year. At this rate, the expenditure will increase to Rs. 3,234 million in the last year of the Sixth Five Year Plan. This will be supplemented by Rs. 1,250 million to be collected by introduction of user charges.

99. The aim of the Sixth Plan is to improve the quality of services. This will require larger operational expenditure in the first two years than what could be covered by the 20 per cent annual increase. Additional allocations will be required in the current budget for the first two years to provide better service to the beneficiaries. This is also considered necessary so that beneficiaries, subsequently, are not reluctant to pay charges for services utilized. It will be difficult to introduce user charges in the beginning, as no body will be prepared to pay for poor services. The system must function efficiently and provide quality service before charging people.

100. *Private sector.*—The existing incentives/advantages given to the doctors have not been enough to attract the doctors to settle in the private sector, inspite of the fact that a large number of doctors have been qualifying in the last 2-3 years and over 1,000 doctors are reported to be unemployed at present.

101. A determined effort will have to be made to quadruple the rate of absorption of doctors in private practice from the present 500 a year to about 2,000 a year by the end of the Sixth Plan so that, at least, half of the annual output of doctors finds employment in the private sector.

102. In the Sixth Plan, it is intended to have a network of hospitals, polyclinics and solo-clinics, particularly, in the urban areas. Those who wish to settle in the rural areas will be given better encouragement than the urban areas. It is expected that 20,000 hospital beds will be established in the private sector with about 750 polyclinics and 10,000 clinics to be manned by one or 1-2 doctors. The following measures are considered essential to attain the overtly ambitious target :

- (i) Financial institutions (banking and non-banking) should earmark separate funds to advance loans to doctors on a fairly liberal scale for establishing private practice. These loans may range up to Rs. 0.2 million each against the mortgage of the assets to be create out of these loans. Higher loans can be considered for those doctors who have served for a minimum of two years in the rural areas.
- (ii) All essential items of medical equipment will be placed on free list which could be imported without any restriction by all registered doctors.
- (iii) Those doctors who have been working abroad and now wish to return home to set up private practice be allowed to import medical equipment, out of their own foreign exchange earnings, free of any custom duties.
- (iv) Accelerated depreciation of equipment and appliances will be admissible.
- (v) Income as investment towards capital development will be exempt from income tax.
- (vi) Government will refrain from duplication of facilities where the private sector is picking up.



### Non-Government Organizations (NGOs)

103. In the private sector, the importance of NGOs cannot be minimized. There are 4-5 thousand such organizations. A detailed study, about the assessment of various agencies, will be carried out by the Planning Division. The NGOs will be graded according to their functional capability and capacity to undertake health projects. Requisite support will be provided to these NGOs to supplement and complement efforts of the Government. Liberal tax exemptions will be allowed to facilitate donations on a generous scale to NGOs by philanthropists. Coordination between the Government and NGOs will be undertaken by the Federal Health Ministry.

104. *User charges.*—User charges are justified as a means to :

- (i) Raise additional revenues specially for drugs and medicines.
- (ii) Eliminating excessive demand; and
- (iii) Removing subsidy to those who have the capacity to pay and utilize private facilities in public establishments.

105. It is obvious, therefore, that greater cost recovery is required from the beneficiaries of the health services. Indigents will be charged through zakat fund while no fees will be charged for preventive services.

106. In all urban areas, upto town committees, fees for out-patient consultation will be raised from Re. 1 per person to Rs. 5 per person per treatment toward the end of the Plan. In the rural areas, the consultation will be half as much as that of the urban areas.

107. All patients will be required to pay for supportive diagnostic services to assure judicious use of such facilities. These will be introduced in a phased manner so as to recover the full cost of X-ray films, chemicals, reagents etc. A bed charge of Rs. 5 per day will be introduced for all in-patients and Rs. 5 per day will be charged for diet from all inpatients, in addition to Rs. 10 as admission charge. The charges in private wards will be made realistic and all subsidy eliminated.

108. These measures can give, on an average, a revenue of Rs. 500 million per year; Rs. 200 million in the first year and Rs. 1,250 million in the last year.

## Nutrition

109. According to the Food Balance Sheet of 1982-83, on an aggregate basis, the average *per capita* Calorie (2,464) and protein (65 gram) availability is satisfactory. There still exists mild to severe malnutrition among the vulnerable groups and under specific geophysical conditions.

110. There has been no significant decline in the magnitude of malnutrition during Fifth Five-Year Plan inspite of better *per capita* food availability. The main reason for failure for development of nutrition programmes was lack of proper infrastructure and institutional framework at all levels.

111. The objectives of the Sixth Plan will be :

- (i) Elimination of third degree malnutrition.
- (ii) Reduction of anaemia of pregnant and lactating mothers.
- (iii) Substantial reduction in the incidence of goitre in endemic areas.

112. Keeping these objectives in view, the Sixth Plan will aim at :

- (i) Developing the Federal, Provincial and Districts' capability to deal with food and nutrition programmes.
- (ii) Integration of nutrition related activities in the health network through Primary Health Care and Family Welfare Centres.
- (iii) Developing strong and viable linkages of nutrition programmes with other disciplines like agriculture, education and rural development.
- (iv) Fortification programmes *viz.* salt iodation, lipoidal therapy and iron supplementation will extend to cover target groups and target areas.
- (v) Institutionalizing nutrition as a discipline by creating a proper infrastructure for the implementation, monitoring and evaluation of nutrition programmes and projects. An institute of Human Nutrition to undertake research, training, dissemination of knowledge and technical coordination will be established.

113. An allocation of Rs. 250 million has been made for nutrition programmes.

### Constraints

114. The following major constraints are identified :

- (i) *Posting of doctors to rural areas.*—It is expected that doctors will go to rural areas when residential accommodation, civic amenities and incentives proposed in the Plan are made available in the rural areas. It may be difficult to post female doctors on voluntary basis. Posting of doctors to rural areas will have to be kept under constant review, so that if compulsory service has to be introduced, at any stage during the Plan period, the Government should not be reluctant for such an action is proposed in the Plan.
- (ii) *Managerial capabilities to implement the Plan.*—A number of weaknesses exist in planning, implementation and monitoring of the health programmes. It may be possible to achieve financial and physical targets, but functional, aspects may linger on. The structural adjustments suggested in the Plan will have to be implemented as a *priori* to the successful implementation of the Plan. This will require imparting of necessary background of skills to personnel of health services.
- (iii) *Recurring liabilities.*—It is envisaged that operational expenditure of health facilities proposed in the Plan is going to be three-fold as compared to the existing level of spending. The revenue receipts may not expand to the extent compatible to provide total operational costs through Government Budget. To supplement the revenue expenditure, users' charges will have to be enforced in a graduated manner, as proposed in the Plan.

115. The details of financial allocations and physical targets are given in Annexures I and II respectively.

## HEALTH

*Financial Allocations 1983-88*

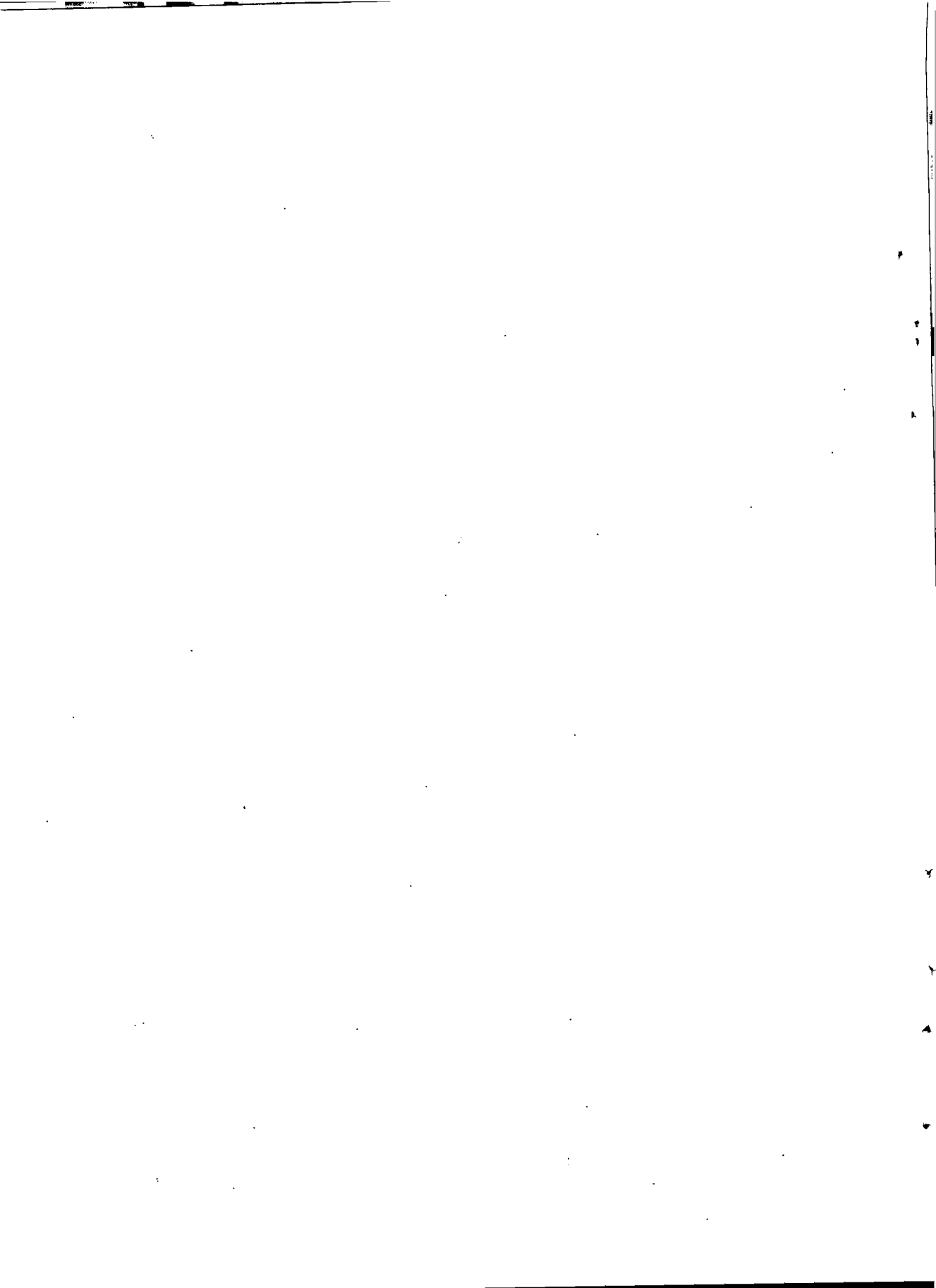
(Million Rupees)

S. No.	Sub-Sector	Federal	Pro- vincial	Punjab	Sind	NWFP	Balu- chistan	Total (Col. 3+4)
1	2	3	4	5	6	7	8	9
1.	Rural Health Programme ..	822	4,838	2,715	854	883	386	5,660
2.	Preventive Programmes ..	1,231	259	155	42	25	37	1,490
3.	Hospital beds including Teaching Hospitals ..	1,457	1,838	601	578	310	349	3,295
4.	Health, Manpower Development ..	53	922	598	247	57	20	975
5.	Medical Research ..	85	-	-	-	-	-	85
6.	Miscellaneous Programmes ..	44	76	44	18	14	-	120
7.	Nutrition Programme ..	250	-	-	-	-	-	250
8.	Dental Care ..	20	230	115	60	40	15	250
9.	Traditional Medicine ..	223	152	88	35	21	8	375
10.	Programmes for Disabled (Block allocation) ..	500	-	-	-	-	-	500
	Total ..	4,685	8,315	4,316	1,834	1,350	815	13,000

## HEALTH

*Physical Targets*

S. No.	Major Programmes	Unit	Federal	Provincial	Punjab	Sind	NWFP	Baluchistan	Total (Col. 4+5)
1	2	3	4	5	6	7	8	9	10
I. Physical Facilities :									
1.	BHU/Sub-Centres, Dispensaries/MCH Centres	Nos.	114	2,486	1,556	627	271	32	2,600
2.	Rural Health centres	"	59	296	141	36	92	27	355
3.	Hospital Beds	"	1,520	10,250	4,555	1,835	2,080	1,780	11,770
II. Health Manpower :									
1.	Doctors and Dentists	"	495	20,505	9,035	9,290	1,620	560	21,000
2.	Nurses	"	320	4,680	2,000	1,450	730	500	5,000
3.	Paramedics/Auxiliaries	"	1,950	36,050	17,300	8,590	8,020	2,140	38,000



*"To men  
Is allotted what they earn,  
And to women what they earn:"*  
*An-Nisa*  
*(VI-32).*

## CHAPTER 20

### WOMEN'S DEVELOPMENT: EQUALITY OF OPPORTUNITY

In all societies women's development is a pre-requisite for overall national development. Indeed, no society can ever develop half-liberated and half-shackled.

2. In Pakistan, today, the profile of women is simply shocking. The following cold statistics are a sad commentary on the legacy of neglect—compelling a special and separate emphasis for this sector. Female literacy is only 14 per cent (34 per cent in the urban and only 6 per cent in the rural areas). In the primary schools, girls' participation is 32 per cent of the relevant age group, with only 20 per cent in rural areas. At the secondary level, girls' enrolment is 12 per cent of age group, with only 3 per cent in the rural areas. Infant mortality is high at 100 per thousand live births; and according to a recent survey, 60 per cent of the young mothers face the trauma of seeing at least one of their young children die before the age of one. Similarly, about 6–8 women out of a thousand die during child-birth; and yet, we have only 10,000 dias for 45,000 of our vaillages. The women face, therefore, the crippling handicaps—of illiteracy, constant motherhood and poor health. These are the handicaps from which they must be liberated if they are to participate fully and equally in the economic life of the nation.

3. As a cumulative impact of illiteracy, ill-health, and lack of adequate nutrition, 90 per cent of the mothers suffer from anaemia and about 30 per cent of the children are born under-weight, imposing a burden on the mothers to nurse sickly children throughout their lives. Consequently, the participation rate of women in the compensated labour force is only 5 per cent. Women hold less than 3 per cent of civil service jobs and less than 1 per cent of top executive positions either in government service, banking, business or in any other field. In addition, there are unequal wages for equal work. The state of affairs would appear even more depressing if all the facts and figures were at our disposal. And yet the fact remains that most women work—and work awfully hard. Their contribution remains invisible in national accounts—unrecognised and uncompensated.

4. Notwithstanding this dismal state of affairs, the experience of the last 20 years shows (contrary to the popular belief), that women have made significant advances and are beginning to catch up in some fields, though gaps still remain very large. Female primary enrolment has increased six times between 1960 and 1982, compared to a three-times increase in male enrolment. Also, participation rates of females in primary education have increased from 13 per cent in 1960 to 32 per cent today; whereas it increased from 45 per cent to 63 per cent for males. In other words, the ratio of females to males in primary schools has been increasing over time. Similarly, female literacy has doubled from 7 per cent in 1960 to 14 per cent in 1983. Further, in higher education, the ratio of women is increasing and 30 per cent of the enrolment in colleges and universities today is that of girls. Infant mortality, too, has been cut down to almost half over the last 20 years. In brief, a quiet revolution has been taking place over time and it is this quiet revolution which will form the basis for the formulation of strategy for women's development through the Sixth Plan.

#### **Sixth Plan Priorities and Objectives**

5. The Plan adopts an integrated approach towards ameliorating the deprived state of women. It rejects the notion of "separate but equal" development. Most of the programmes for women are integrated into each sector, not segregated. Specific governmental intervention would essentially aim at elimination of three crippling handicaps: illiteracy, constant motherhood and the primitive organization of work. The following areas have thus been identified for this selective concentration :

6. *Literacy.*—At the primary level, enrolment of girls will be increased from the present level of 32 per cent to 60 per cent by the end of the Plan period. For the rural areas, the target is 50 per cent compared with



the prevailing 20 per cent; while in the urban areas, it will be increased from 68 per cent now to over 93 per cent in the last year of the Plan. In so far as overall literacy is concerned, a massive programme is being launched for dissemination of literacy to 15 million adults (5 million males and 10 million females). The proportion is in keeping with the realization that most of the adult males are engaged in the struggle for livelihood.

7. Overall female literacy is projected to increase from the current level of 13.9 per cent to at least 47 per cent by the end of the Plan period. A vital consideration in fixing this target is a much faster increase in female *vis-a-vis* male literacy at various levels—primary, secondary, and adult. This is the only way for women to catch up.

8. In this endeavour, government efforts would have to be supplemented by self-help and community support for the provision of facilities—in every *mohalla*, under every shed, and in every village. If we could mobilize only 100,000 women each year with each one teaching 10 women, it would result in producing a million literate girls or women every year. Voluntary and non-government organizations would thus provide enormous assistance through eliciting community participation and mobilizing collective effort. Such efforts will receive all possible financial support from the Government.

9. *Health and Nutrition.*—In health care, the target is the provision of at least one trained *dai* to every village. Until 1981-82, only 1,000 *dais* were being trained annually. At that rate, it would have taken 35 years to cover the total number of villages. In 1982-83, the target was increased to training 8,000 *dais* in one year; and according to the latest indications, 63 per cent of the targetted increase did take place (the number exceeding five times the level in the preceding year). The immunization programme also has been considerably speeded up since 1982-83; and at the proposed rate of immunization of 5.6 million children annually, it would be possible to extend coverage to the 15 million children who have not been immunized so far as also to the newly borns every year. Consequently, at this pace, infant mortality is likely to be cut down to around 60 per thousand live-births by the end of Plan period—making a major dent in the statics of tragedy and trauma in the lives of young mothers.

10. Specific nutritional programmes are being devised for vulnerable groups—the 7 per cent of our children suffering from stunted growth and for those pregnant mothers, who for want of enough nutrition, give birth to underweight babies. Also, there are programmes for an Institute of Mother and Child—focusing on the relationship between the mother and the

child in the spheres of nutrition and literacy. Efforts of All Pakistan Womens' Association, Women's Division and non-governmental organizations will be solicited towards setting up similar institutions.

11. *Employment.*—The annual capacity of nursing schools will increase from the present number of 1,200 to 2,000 by the end of the Plan; and 33 per cent of the seats in medical colleges are being reserved for lady doctors. In addition, 10,000 lady visitors and 30,000 mother-child care workers (*dais*) will be trained during the Sixth Plan compared to 3,000 lady health visitors and 9,000 dais trained during the Fifth Plan. Trade schools and polytechnics will cater to the imparting of necessary skills for remunerative jobs—whether in industrial designing, banking, financial and business management, agro-business and secretariat services. Further, opportunities will be opened up for women to seek gainful employment in small-scale industries, in both the rural and the urban areas, through necessary training acquired in these industries.

12. *Equality in Jobs.*—Today, in government service, less than 3 per cent of the employment goes to women. The Plan aims at a target of 10 to 15 per cent of the seats to be reserved for the recruitment of women—mainly by setting up of quotas. The same principle should also apply to the recruitment of positions in the industrial establishments.

13. *Rural Uplift.*—Ambitious programmes have been designed in the Plan for the transformation of the rural scene. It is in this context that voluntary agencies, local bodies and non-governmental organizations will be encouraged to set up centres in every village for the spread of the message of literacy, population welfare and other health services.

14. The role of Women's Division is essentially that of a catalyst—that probes and prods on various government agencies and departments into examining the content of the programmes from the perspective of their impact on women and formulates the framework of a National Policy for Women's Development. The Women's Division must also monitor the state of women's development in annual reports, where all development programmes should be analysed from this point of view. Further, through analysis and comprehensive research, libraries be built up to obtain and update a complete file on the progress of Pakistani women.

## Financial Allocation

15. A financial allocation of Rs. 800 million is earmarked for specific programmes of Women's Division. This allocation is merely promotional in nature. The real programmes for supporting and accelerating women's development are much larger and are integrated with the thinking and operational policies of each sector in the Sixth Plan. In particular, there are sizable programmes included in education, health, population welfare planning and other related sectors to focus on removing crippling handicaps from which women suffer at present far more seriously than men. A rough order of magnitude for these programmes directly or indirectly benefiting the women would be Rs. 20 billion. If additional resources and policies are required to support women's development in the Sixth Plan and to exercise more leverage both directly and through the voluntary organisations, constant adjustments will be made through annual reviews to ensure that these programmes do not suffer for lack of financial resources or Government resolve.

16. Some programmes specifically designed to promote training and welfare of women undertaken by Women's Division during the past four years. The size of these programmes was rather small and the coverage restricted. In the Sixth Plan the programmes under Women's Division will cover a variety of areas related to the requirements and interests of women. Some of the programmes will be such as are not being implemented by any other agency while other will supplement programmes being undertaken by the concerned departments such as those of education and skill training, health and social welfare etc. These programmes include: establishment of poly-technics for Women, technical training and skill development centres for Women, Working Women's hostels, improvement and expansion of existing vocational institutes for women, training of para-medical female staff, establishment of pilot women's centres in Integrated Rural Development Programme (IRDP) Marakiz, day-care centres, darulamans/darul-fallahs and establishment of community halls for women. the programme also includes the establishment of a large number of adult education centres to be opened by the Women's Division which will form an integral part of the over-all literacy programme to be launched through Literacy and Mass Education Commission. Details of these programmes are being worked out in consultation with concerned Federal and provincial agencies.

## Non-Government Institutional Framework

17. With the induction of the elected local government system, a crops of women community leaders is now available, with well over four thousand women councillors at the grassroot level in urban as well as rural

councils. In the two-tier rural councils, both at the union and the district levels, the role of women representatives would be strengthened in order to adequately promote the rights of women within the fora of their councils. When involved in the monitoring and supervision of women's programmes, the role of women councillors would not only be strengthened *vis-a-vis* their own councils, but they would also begin to serve as agents of change for the development of the community of women whom they seek to represent. Similarly, in the three-tier urban councils, the town committees, municipal committees and municipal corporations, monitoring and supervision of programmes would be greatly facilitated by the involvement of women representatives. Women councillors would also serve as resource persons with regard to the designing and structuring of programmes at the community level, and at the same time ensuring that local committees for evaluation and monitoring purposes are firmly rooted in the community.

18. Accelerated development of about one-half of our population constitutes a formidable challenge in the Sixth Plan period. The Plan faces this issue candidly and realistically. But this is an endeavour in which the whole nation must participate—voluntary agencies, media, local councils, men and women alike—if we are to see any visible progress.

*"We have indeed created man  
In the best of moulds."*

*Al-Teen  
(XCV-4)*

## CHAPTER 21

### POPULATION WELFARE: CORRECTING THE MISDIRECTED INVESTMENT

POPULATION sector plans were initiated over two decades ago. But despite large sums of money and considerable efforts, their execution remained far from satisfactory. Among the causes of this failure were focusing on a family planning service alone, deficient organization, frequent changes of programmes and above all, insufficient attention to socio-economic development of target groups. The fact that socio-economic development itself is highly conducive to a smooth demographic transition to low population growth was not paid due attention.

2. While planning development programme, one must keep in view the basic requirements of the people, their quality of life, their needs and aspirations. The Population Welfare Programme is a realistic endeavour to reconcile family size with individual needs and national resources. It seeks to ensure a harmonious blend between people's aspirations and the nation's needs.

3. Enrichment of human lives through satisfaction of their basic needs represents a real measure of development. Investment in population welfare is concentrated on the illiterate, the ignorant and deprived. And

what is aimed at is not quick results, but enduring norms. Investment in this sector seeks to improve the quality of life of 73 per cent of Pakistan's most neglected population—women and children.

4. Whilst the economic benefits of declining fertility are difficult to establish from available research, the present value of a birth averted in developing countries is twice as much as *per capita* income. This in Pakistan would come to approximately \$ 600. During the Plan period, it is hoped to avert 2 million births, thereby bringing about a national saving of about Rs. 15 billion.

5. This is a saving which cannot be overlooked; and the investment of Rs. 2.3 billion in this programme appears modest when compared with their expected quantifiable and qualitative returns.

### Current Demographic Situation

6. The Population of Pakistan is estimated at about 87 million (in mid-1982), which makes the country the ninth most populous in the world. Its annual rate of population growth which was approximately 1.7 per cent around 1951 increased to about 3 per cent during 1961 to 1981.

7. The demographic changes which have occurred in Pakistan since the turn of the century are common in most low-income countries. The level of mortality has declined by more than half while fertility has remained relatively unchanged at high levels. As a result, the rate of population increase, as of March, 1981, of 2.97 per cent per year, if maintained would lead to a doubling of Pakistan's population in less than 25 years.

8. Pakistan, with nearly 45 per cent of its population under the age of 15, has an uncommon age distribution. The factor of such a large number of persons moving into the reproductive age group is compounded by the fact that one in five persons of the present population is a female in the reproductive age group. Therefore, an active population programme to bring about lowered fertility becomes a crucial development need.

9. The Crude Birth Rate (CBR) for 1981 is estimated at 41 per thousand population and the estimate for the Crude Death Rate (CDR) for 1981 is placed at about 12 per thousand. Although available data show some decline in the fertility rate, its impact on the population growth rate is nullified by a reduction in the level of mortality. The universal and stable marriages at relatively young ages (around 20 years or below) thus a long

fertile life, are expected to keep the level of fertility high unless effective counter measures are taken. The mortality level still has considerable scope for further decline, particularly in terms of a reduction in (a) infant mortality, estimated at around 95 per thousand live births, and (b) the incidence and prevalence of morbidity. The Sixth Five Year Plan health programme is designed to lower infant mortality and to reduce morbidity.

10. Emigration, particularly of male workers to Gulf countries, is a temporary phenomenon which does not seem to have significant impact on the level of fertility or the rate of population growth. In addition, there is an influx of approximately 3 million Afghan refugees. They are not reflected in the census of 1981.

11. The CBR trend during the last 20 years conceals variations in the fertility levels of different population groups according to education, income, female labour force participation and rural-urban residence. Education and labour force participation are factors likely to stimulate major changes in norms and values leading to reductions in fertility. However, the great majority of women in Pakistan never attend school, only 11 per cent are literate and only 5 per cent participate in the labour force. Given this situation, women's social esteem derives, to a large extent, from having a large number of children, particularly sons. Such statistics suggest that care of pregnancy and delivery of children, as well as fertility management, must rate highly as a development need of Pakistan.

#### POPULATION PROGRAMME IN RETROSPECT

12. Fertility control efforts commencing in 1950 marked the beginning of the population welfare programme in the country. In financial terms a sum of Rs. 5 million was provided for the population activities during the First Plan (1955-60). These activities, however, were incorporated for the first time as the public sector development effort during the Second Five Year Plan (1960-65), with an allocation of Rs. 30.5 million within the overall health allocation of Rs. 350 million. With the commencement of the Third Five Year Plan (1965-70), the Family Planning Programme was allocated an amount of Rs. 285 million; it however, utilized Rs. 148.2 million only. During the period 1970-75 an allocation of Rs. 1017 million was made through the annual plans but the programme utilized only Rs. 990.417 million.

13. The programme during 1960-80 was referred under various titles and followed five different strategies with a view to improving the acceptance and continuance of fertility control practices, arresting the high

development process. Briefly, these were; (i) target oriented approach (1965-69); (ii) the continuous motivation system (1970-73); (iii) contraceptive inundation (1974-77); and (v) the multi-sectoral approach (1980-83).

14. The first approach was marked with elaborate administrative infrastructure at the federal, provincial and the district levels including indigenous midwives as basic field functionaries. The evaluation, however, indicated that while the programme succeeded in disseminating information, family planning practice was only 6 per cent. The second approach covered the various operational units of the country with male-female motivator teams. The central feature of the Continuous Motivation System (CMS) included quarterly visits of the teams to the eligible couples for door-step delivery of supplies as well as for motivational purposes. The teams also kept house-hold records for recruiting potential acceptors and making referrals to clinics for IUDS and sterilization. The evaluation of this approach indicated that field activities did not live upto earlier expectations due to casual selection of personnel; inadequate training-cum-ineffective supervision and non-credibility of young and unmarried personnel. The third approach provided contraceptive inundation whereby oral pills and conventional devices were distributed through the net-work of shopkeepers and local agents as well as hospitals, clinics and field-workers for ensuring availability to the population. The Pakistan Fertility Survey, however, reported that only 22 per cent of eligible women know the sources of information and services. During the fourth phase the family planning was integrated with national public health programme. This arrangement was conceptually sound and hence, supported in principle. In fact a Task Force appointed for this purpose, made specific recommendations, nevertheless, the complexities of integrating two large programmes presented various difficulties and administrative problems. The real understanding of the importance of health and population planning remained lacking among both health and population staff. Population planning continued to be viewed primarily as a means to reduce the average family size and the population growth rate, with little or no emphasis on the interventions to reduce infant and maternal morbidity and mortality, still births, and abortions while the Health Programme continued to emphasise preventive and curative health service.

15. In 1980, realising the need for a coordinated approach, the population planning programme was placed under the umbrella of the Ministry of Planning and Development and multi-sectoral approach commenced through health outlets of a number of governmental and non-governmental agencies as well as family welfare centres of the population



welfare programme. Local community participation particularly that of women began to be enlisted for motivation, education and service delivery.

16. A review of the past programme efforts of the family planning programme indicate that following factors are crucial to the success of the future population programme; (i) firm political commitment for creating receptive environment; (ii) improvement in organizational and administrative capability; (iii) sensitive handling of the clients; (iv) involvement of the family and the community; (v) genuine multi-sectoral approach; and (vi) more effective communication strategy.

#### FIFTH PLAN REVIEW

17. The Sixth Five Year Plan carries through a number of programme inputs started during the Fifth Plan period, of which the following are the most significant :

- (i) Pakistan's first ever twenty-year perspective plan and policy statement for the population sector was approved by the Cabinet in November, 1980;
- (ii) The Population Welfare Plan, 1981--84, was derived from the perspective plan and in 1981-82 incorporated in the Three Year Public Sector Development Programme. During this period, the Plan was for the first time processed to conform to the procedures of government's planning requirements;
- (iii) The programme, moving into the implementation phase during 1982-83, has achieved a semblance of public acceptability, and its operational dimensions have begun to unfold satisfactorily;
- (iv) During 1980, a reorganization of the programme was initiated. This was a difficult but necessary exercise in that it rationalized the management structure. It is expected that this exercise will be completed in the first year of the Sixth Five Year Plan;
- (v) A national survey of existing Family Welfare Clinics was conducted in 1981. The findings highlighted the need for (a) relocation of FWCs; (b) adequate space, equipment, medicines, contraceptives and maintenance; (c) appropriate programme personnel training; and (d) check on absenteeism. The survey brought out priority tasks, which are presently receiving attention and their completion will continue through into the Sixth Plan;

- (vi) The training of programme personnel to built their morale and revive their skills commenced in 1981, and is a continuing process. All officials are being given training in financial management, government rules and procedures, alongwith the development and training of skills;
- (vii) The Midwifery training for FWC's was commenced to make it possible to introduce the mother and child care functions at the Centres; and
- (viii) Male and female community leaders and volunteers were identified for enrolment in Advisory Management Committees and as non-salaried outreach workers. The training modules for these grass-root volunteer cadres are under preparation and retraining/orientation/education has commenced. In view of the reliance on community mobilization, this will need, careful and concentrated attention in the Sixth Plan.

18. The Programme activities concentrated on popularization and service delivery of clinical, semi-clinical and conventional contraceptive methods. The performance during the Fifth Plan indicates a favourable position in respect of Contraceptive Surgery, IUDs and Injectables. Low performance rate of the utilization of oral pills and condoms may be attributed to the reorganization of the programme, the pricing of oral pills and the revision of prices for condoms. (Though a part of the reduction may be due to greater care and scrutiny in reporting and recording). Overall performance during the Plan period is shown in Table 1.

TABLE 1  
*Contraceptive Performance for the Fifth Plan*

Year	(Figures in Million)				
	Contraceptive Surgery (Cases)	IUD (Cases)	Oral Pill (Cycles)	Conventional Contraceptive (Units)	Injectable (Vails)
1978-79	0.013	0.078	1.882	66.960	0.001
1979-80	0.025	0.099	1.485	85.180	0.014
1980-81	0.025	0.092	1.211	26.210	0.024
1981-82	0.026	0.078	0.233	7.890	0.025
1982-83	0.044	0.096	0.571	43.200	0.061

## (ii) Utilization of Funds

19. During the Fifth Plan a total of Rs. 836 million were allocated as development funds. The absorption capacity being low, a total of Rs. 617 million (74.0%) was utilized. Details are given in the following table :

TABLE 2

*Financial Allocations and Utilization during the Fifth Five-Year Plan  
(1978-83)*

Year	(Million Rs.)			
	Total Allocation	Foreign Assistance	Utilization	Percentage Utilization
1978-79	174.180	9.560	114.273	66
1979-80	169.000	23.810	126.638	75
1980-81	159.500	42.583	130.697	82
1981-82	143.369	4.810	108.274	76
1982-83	190.000	34.705	137.218	72
Total ..	836.049	115.468	617.100	74

**Multi-sectoral Approach**

20. Reviewing the multi-sectoral aspects, the Fifth Plan explicitly mentioned linkages between socio-economic programmes and population particularly those relating to fertility reduction. The Plan adopted a strategy to induce greater desire to limit family size through faster economic growth, particularly by improving the socio-economic conditions of the lower strata of society: increasing opportunities for family employment, providing amenities in the rural areas; expansion in health coverage; and making relatively higher inputs in the education sector. The above measures were expected to yield results not only by motivating the population towards family planning and inculcating the small family norm but also by raising the age at marriage. Some of the pronounced elements of this strategy included programmes such as: adult literacy; female education; skill training for women; basic health services; and community participation. The review of such programmes has been provided in the respective chapters of this document.

## SIXTH PLAN

**Policy**

21. The population policy provides for the interaction of fertility management with other development programmes. This policy states that Population Welfare Planning :

- (i) Is a national responsibility;
- (ii) Aims at behavioural change favouring the small family norm within an acceptable socio-cultural framework;
- (iii) Constructs a programme based on local needs by enlisting community participation and devolving responsibility and authority;
- (iv) Solicits involvement of a range of target groups and NGOs for expanded coverage;
- (v) Seeks integration of activities with the programme of other departments for diversification;
- (vi) Makes women participants and beneficiaries of the programme; and
- (vii) Devises a communication strategy to remove public misgivings, create demand and promote the above approaches.

**Primary Objectives**

- (i) To raise the level of current population planning practice from an estimated 9.5 per cent in 1982-83 to 18.6 per cent by the end of the Plan period;
- (ii) To raise the level of continuous population planning practice from an estimated 6.8 per cent in 1982-83 to 13.0 per cent by the end of the Plan period; and
- (iii) To provide reproductive care services to mothers and also to provide child health services to children under 5 years of age.

## Demographic Objectives

- (i) To reduce the CBR from 40.3 per 1000 population (July 1983) to 36.2 per 1000 population by the end of the Plan period;
- (ii) To prevent 2 million births during the Plan period, 1983–88, so as to attain the above-mentioned decline in fertility;
- (iii) Consequentially, to reduce the rate of population growth from an estimated 2.87 per cent (July 1983) to 2.6 per cent by the end of the Plan period; and
- (iv) To reduce that fertility rate from 5.9 (July 1983) to 5.4 per woman by the end of the Plan period.

22. The targets for reduction in CBR and the rate of growth of population for each year of the Plan period are shown in Table 3.

TABLE 3

*Targets for Crude Birth and Death Rates and Growth Rates during the Sixth Five-Year Plan Period, 1983–88*

	1982-83 (Bench- mark)	1983-84	1984-85	1985-86	1986-87	1987-88
Estimated level of Crude Birth Rate.	40.3	39.8	38.5	38.1	37.3	36.2
Estimated level of Crude Death Rate.	11.6	11.3	10.8	10.6	10.4	10.2
Estimated level of rate of growth.	2.87 (2.87%)	2.85 (2.85%)	2.77 (2.77%)	2.75 (2.75%)	2.69 (2.69%)	2.60 (2.60%)

*Note.*—These figures are very tentative and are likely to be revised in the light of the final figures of the 1981 Population census and other demographic surveys already underway.

23. The estimated number of acceptors required to achieve the desired decline in CBR and the number of births to be prevented during each year of the Plan are shown in Table 4.

TABLE 4

*Targets for Acceptors during the Sixth Plan Period*

	(in 000's)					
	1982-83 (Bench- mark)	1983-84	1984-85	1985-86	1986-87	1987-88
Projected Population (Mid year)	88,269*	90,802	93,390	95,977	98,616	101,269
Number of women of 15-44	17,643	18,143	18,633	19,136	19,614	20,071
Number of Married women of 15-44.	23,240	13,607	13,974	14,352	14,710	15,053
Number of Acceptors.	749**	1,895	2,121	2,329	2,556	2,797
Acceptors as per cent of married couples with wife age 15-44.	5.6	13.9	15.2	16.2	17.4	18.6
Number of Births averted.	134	280	332	385	472	515

\*The yearly population projections have been prepared on the basis of the 1981 Census.

\*\*Includes old cases.

24. For achieving the above primary and demographic objectives, the programme will pursue the following supportive objectives :

**Supportive Objectives**

- (i) To develop and strengthen multi-sectoral linkages;
- (ii) To involve and encourage local participation at various levels;
- (iii) To provide a suitable infrastructure for training programme personnel and those of related institutions and agencies, in such fields as population planning—clinical/semi-clinical, maternal and child health (MCH), expanded programme of immunization (EPI) and traditional birth attendants (TBA).
- (iv) To train and motivate the masses, community leaders, media people, programme personnel and staff of related agencies in general population related skills;
- (v) To undertake bio-medical research for better understanding of clinical aspects and improved methods of planned parenthood; and
- (vi) To undertake activities in the domain of social and demographic research for developing a better understanding of various correlates of fertility decline.

25. The important assumptions for the achievement of these objectives are; (a) political, economic and social stability that will permit uninterrupted programme operations, since in the past, a lack of this has proved to be a severe constraint; (b) continued priority and visible government commitment to the preferences while simultaneously also responding to the existing and growing demand can wholly sustain the programme.

## SIXTH PLAN PROGRAMME

26. The Population Welfare Plan, which has been prepared after considerable deliberation and careful investigation, is innovative, yet based on realism.

27. The highlights of the Plan are given below :

### Approach

28. The multi-disciplinary approach is designed to modify family size preferences while simultaneously also responding to the existing and growing demand for services through the delivery system.

### Thrust

29. The Sixth Five-Year Population Sector Plan is constructed with a framework which takes cognisance of the interrelation between population, resources, the environment and development strategies. This has produced a broadening of the concepts of population will beyond the classic variables of fertility, mortality and migration. It has also brought about the realization that these essential linkages remain scarcely explored. Research and study of these phenomena, therefore, is viewed as an essential ingredient for the Sixth Plan.

30. Efforts have been directed at improvement in the diffusion of contraceptive methods, wider availability of the contraceptive surgery outpatient procedure, and accessibility of services by strengthening public and private sector supply outlets. But it is recognized that, by itself, the realization of these improved conditions is not sufficient. Very perceptible in Pakistan is the need for a change in the social and cultural environment which influences motivation and generates demand for services in the population field.

31. The Population Welfare Plan recognizes the link between high fertility and high infant mortality. Core activities are, therefore, identified as mother care, child health, responsible parenthood, and social education for women. The assumption is that reduced mortality and morbidity produces a more favourable climate for fertility management. Programme strategies evolve links between the selected core activities and extend into organized development activities identified by the community.

32. In Pakistan, urban concentrations border on being intolerable. The situation is one of rapid deterioration, and the needs of marginal populations and issues of migration are phenomena which can neither be ignored nor neglected. This is reflected as a priority in the programme's research agenda.

33. Experience of running this programme so far shows that the message has often not found its way towards acceptance and the service remained underutilized. This probably happened because people's needs were not being adequately met, nor their sensitivities sufficiently respected. The population programme, however, now relies on a community-centred approach along with systematic consultation and involvement of the intended beneficiary.

### **Strategy**

34. The strategy for the Sixth Plan will include active participation of all relevant government departments, public institutions, and the private sector in providing services and promotional programmes to inform and change attitudes towards small family size among various groups, audiences and clientele.

35. Another part of this strategy will be involvement of local leadership to make the programme more responsive to local needs and to enhance its acceptability. The promotion of community self-reliance and individual self-esteem will be pursued in the context of broad community participation and involvement.

36. The shift from the unipurpose family planning approach to the functional integration of social services is expected to maximize impact and be cost-effective.

37. The danger of an open-ended programme leading to dissipation of resources and energy has been taken into account. Therefore, the strategy identifies certain core projects, including an efficient delivery service to



effectively answer needs, and supporting projects in a number of areas designed to promote small family norms. Further, the programme has been tied to specific projects to avoid waste, and the projects have been so prepared as to merge into an integrated overall plan.

38. The organizational structure is being strengthened with a view to establishing a viable system that is equipped to handle incremental programme activities through such inputs as the preparation of operational work plans from national to district levels, the improvement of in-service training by making it relevant to job requirements, the introduction of management training of midlevel programmes, management audits and operational evaluative research.

39. The strategy also recognizes that the effectiveness of the population programme will depend, in large measure, on improvements in such areas as education, particularly girls' school enrolment and women's functional literacy, and other programmes geared to improving the condition of women and their participation in productive labour. Therefore, it aims at promoting support for these activities as part of broader government development policies.

### **Intermediate Benefits**

40. The expected intermediate benefits are : (1) a strengthened programme structure; (b) an increase in PF/MCH outlets from 1,000 now to 1,500 by the end of the Plan period; (c) improved quality of services through job-oriented training, closer supervision and integration of PF into MCH or *vice-versa*; and (d) enhanced communication with the public concerning family welfare. Expected ultimate benefits are : (a) more women breast-feeding through better MCH and IEC; (b) longer birth intervals resulting from encouragement of breast feeding and use of contraceptives; (c) decrease in infant morbidity and mortality through improved child care, and healthier mothers, as a consequence of birth spacing; and (d) closing the gap between awareness about contraceptive methods and actual use of contraception.

### **Activities**

41. The Population Welfare Plan 1983-88, is essentially a rolling plan being a derivative of the Fifth Five-Year Plan, which was constructed within a twenty-year frame. Population Welfare Planning objectives reflect intergenerational shifts in a national demographic construct, so that efforts made have to be viewed in a long-term perspective.

42. The Plan consists of Core Projects, Complementary Projects and support Projects. Each of the constellation of projects is interrelated with the others, and all projects play a role in ensuring the successful implementation of the Core Projects.

### Core Projects

43. *Family Welfare Centres Project.*—The key institution for providing family welfare services in urban, rural and peri-urban areas are the Family Welfare Centres. The Centres provide mother care, child health, responsible parenthood services and social education for women. It is proposed to organize 1,500 of these Centres during the Plan period each to cover a population ranging from 15,000 to 50,000.

44. All family Welfare Centres will be contributing participants in the accelerated TBA Training, the ORS Scheme and the EPI.

45. Regional variations in Family Welfare Centre operations have, in the light of experience and assessment, been incorporated in the Plan.

46. In quantifiable terms, 44.6 per cent of currently married women, *i.e.* 6.7 million, will be covered by Family Welfare Centres. Of these, 2.8 million are expected to have current user status, which represent 37.1 per cent of the programme's required current users. It is expected that of about 1.9 million pregnant women, 50 per cent will be given mother care; and 65 per cent of about 7.8 million children aged 0–5 years will receive health care.

47. *Reproductive Health Services Project.*—The Reproductive Health Services Project will operate with and through the medical college teaching hospitals, but will also associate non-governmental organizations and public sector service outlets with this efforts. It will train doctors and manage static clinical extension service outlets. It is designed to have salutary effect on the reduction of maternal morbidity and mortality rates through improved maternal care leading to a decline in infant mortality and a large acceptance of responsible parenthood concepts and practices.

48. The need and demand for strengthening Reproductive Health Extension Services had been identified and finds a place of focal attention under the Reproductive Health Services Project, as also does the need to register a range of public and private sector hospitals in the programme.

This is proposed subject to the laid down criteria for enrolment being met. Where deficiencies are found, training will be provided.

49. Approximately 0.3 million, *i.e.* 2 per cent of the currently married women of reproductive age, will obtain contraceptive services from Reproductive Health Service Centres, which will avert approximately 0.2 million births, amounting to 10 per cent of the programme's total requirement of 2 million averted births.

50. *Family Health Manpower Development Project.*—Through 12 Regional Training Institutes and their extension programmes, this project will train and provide in-service training to all cadres of clinical, paramedical and auxiliary personnel needed for the core programme and the complementary projects. In addition, it will also provide cross-over training to paramedical cadres of the Health Department.

51. The Plan visualizes the creation of a model Family Welfare Clinic in six RTIs, combined with the attachment of a defined number of Family Welfare Centres that will serve as the teaching base of the Training Institutes.

52. *Training of Non-Clinical Personnel.*—The Population Welfare Training Institutes (PWTIs) are designed to train motivators and communication personnel involved in the programme. The PWTIs will organize training and orientation of field functionaries, officials and members of nation-building departments, non-governmental organizations, local bodies, leaders and volunteers.

53. *Information, Education and Communication.*—The Communication and Publications Directorate, through the IEC staff down into the field, will deploy target audience interpersonal and group communication channels supported by the *mass media*. The gap between awareness and practice needs to be bridged and continuous demand for planned parenthood services created. The six prioritized themes for this purpose are all associated with the small family norm and birth spacing, breast-feeding, maternal and child health care, nutrition of the growing child, responsibility of the father, late marriage and status of women.

### Complementary Projects

54. *Population Education.*—This is a critical input of the programme. The project takes cognizance of both formal and non-formal

education system, and seeks incorporation of population content in these systems at all levels in a socially and culturally acceptable manner. An important thrust in the Sixth Plan is towards the unstructured functional education programme, identified as a core activity of Family Welfare Centres and designated as social education for women.

55. *Population Study Centres.*—At present none of the tertiary, institutions in Pakistan offers systematic courses in the field of population studies. To bridge this gap in the academic programmes offered by the universities, it is proposed to establish Population Studies Centres at two selected universities. One of these Centres which will focus mainly on urban population issues, will be located in Karachi; the second will have a predominantly rural orientation and it is proposed to establish it at the University of Agriculture, Faisalabad. Each Centre will offer both certificate and diploma courses, in addition to its courses being available for audit by students enrolled in the university in other related subjects.

56. *Provincial Population Welfare Plans.*—Each of the four Provincial Governments has developed its own plan for the implementation of various promotional, motivational and service activities under the multi-sectoral approach through the existing infrastructure and staff of line departments.

57. Approximately 4 per cent of the currently married women of reproductive age (about 627,000) will be attended to through these outlets and they will constitute 20 per cent of the programme's required current contraceptive users.

58. *Azad Jammu and Kashmir and Northern Areas Population Welfare Projects.*—Population Welfare is being taken to the remote areas of Azad Jammu and Kashmir and Northern Areas. Population education and services will be introduced into these areas through (a) hospitals, dispensaries and MCH outlets and (b) the training and utilization of extension workers, such as health guards, traditional birth attendants and community leaders.

59. *Institutional Projects.*—Efforts of non-governmental organizations (NGOs) have a strong and recognized role and they will complement and supplement the Government programme. These organizations may be professional, institutional or service agencies. It is expected that this sector will make a significant contribution as a catalyst advocate and partner in the successful implementation of the programme. The participation of NGO's will be institutionalized through and NGO Co-ordinating Council to be formed by the Population Welfare Division.

60. Likewise, infrastructure institutions comprising professional organizations and unstructured professionals, with a nationwide spread, who are also major employer and enjoy local acceptance, have also been involved. Projects developed for Target Groups (e.g. Pakistan Railways, PIA, WAPDA etc.) and Infrastructure Institutions (Hakeems, TBAs etc.) are an integral part of the programme. For the Sixth Plan, in this component, an additional input of population education for workers has been identified as a programme need.

61. Approximately 40 per cent of the reproductive age group of the active male population will be reached through the Institutional Projects, i.e. Infrastructure Institutions, NGOs and District Distribution Points. These services will provide nearly 88 per cent of the current users at the end of the Plan period.

### Support Projects

62. *Monitoring, Research and Evaluation.*—Population Welfare Planning is a field in which several areas still remain unexplored and many questions remain unanswered. Evaluation and research, therefore, are imperative for effecting improvement in the programme, as well as to measure the impact of the programme in relation to its primary and secondary objectives. In accordance with this consideration, each project and component of the programme has a built-in evaluation system. Projects in the following fields are thus priority support activities : biomedical, socio-medical and social policy measures; beyond population planning; research and evaluation, especially those designed as a follow up of the 1981 census, the Pakistan Fertility Survey—1975, the Method use Prevalence Survey, and that related to the reporting, recording and feedback system.

63. *Population Development Centre.*—Population Development Centre will serve as the technical arm of the Population Welfare Division. The Centre will function as semi-autonomous organization for programme performance evaluation, interdisciplinary research, impact studies of the programme, and interlinking the monitoring of development strategies with the changing demographic situation: The Population Development Centre will devise and execute the Management Information System (MIS) which will, through the recording, reporting and feedback system, range from data on contraceptive service availability, programme personnel position, contraceptive supplies, logistics, training and births averted to attitudinal and behavioural research directed at bridging the gap between knowledge and

practice. In addition, it will, on a regular basis, also analyse the interrelationship and interaction of population and the national plan's development strategies. It will work in collaboration with and through other appropriate agencies/organizations in the public and private sectors.

64. *Logistics, Supply and Distribution.*—Timely, continuous and uninterrupted flow of clinical equipment, commodities, medicines, and conventional contraceptives to all distribution points in the country is being ensured through advance planning, procurement of supplies, their proper storage, and appropriate transport and distribution arrangements.

65. *Targeted Approach/Innovative Action.*—It is proposed to undertake innovative projects during the Sixth Plan which might encourage adoption of the responsible parenthood concept and practice. These activities will be undertaken in several directions and areas to study and explore possibilities of more effective strategies for the programme.

66. within the framework of innovative action, a *disaggregated/segmented approach* will be used to identify the most viable inputs or approaches for accelerating behavioural change leading to the adoption of small family norm. Under this approach various segments of the population will be selected to deploy different inputs and/or combination of inputs/approaches. The approaches will be tried out for such population groups as:

- (a) Residents of areas showing evidence of rapid social and economic change, acceptance of innovation and a beneficial impact of special development inputs;
- (b) Communities of recent migrants from rural to urban areas;
- (c) Communities from which there has been significant migration abroad for gainful employment;
- (d) Areas of high maternal and infant mortality; and
- (e) Women participating in the paid labour force.

67. Demonstration programmes will also be established in at least one district in each of the four Provinces, where all programme inputs in terms of personnel, training and services will be provided and maintained throughout the Plan period, so as to determine the adequacy of various programme inputs and the efficacy of the administrative structure and staffing pattern.

68. *Institutional Framework.*—The organizational structure and management is the Population Welfare Planning Programme have been

designed to accord with the fundamental aim of enlisting co-operation and support from all levels of government and the widest involvement of all responsible organizations and target groups in the public and private sectors. The Population Welfare Programme will be implemented under a three tier structure—Federal, Provincial and local level *i.e.* districts and below. At the Federal level, the Population Welfare Division and its allied units under the Ministry of Planning and Development would be mainly responsible for national policy, planning and coordination, information, training, supplies, statistics, monitoring and evaluation, research, foreign assistance, NGOs infrastructure projects and target groups training, and few other functions more suited to be performed at the federal level.

69. The field activities, which and directly related to providing services and some of the support activities, include Family Welfare Centres Project, Reproductive Health Services Project, Population Welfare Programme through other Departments and Training of Traditional Birth Attendants. These would become the Provincial responsibility with the transfer of field activities to them from September, 1983. In financial terms, they account for two-third of the expenditure. These activities would be carried out by the Directors-General in each Province through the District Offices as well as the Projects Staff. The offices of the Directors-General, District Officers, Family Welfare Centres and individual projects are at present under the Federal Government and would be transferred to the Provinces thereby ensuring continuity. It is anticipated that transfer of field activities to the Provinces would draw better community participation and support through local government institutions and ensure effective integration at the field level. It would also meet the requirements of a multi-sectoral approach more readily as the related departments *viz.* Health, Labour, Local Government, Social Welfare, Education, etc., with which coordination is essential, would be under the same government at the provincial level along with the Population Welfare Departments.

70. Selected physical targets of the Sixth Plan are shown in Tables 5 and 6.

TABLE 5

*Selected Physical Targets (1983–88)*

Description	Unit Nos.)	
	Bench mark 1982-83	Targets 1983-88
A. Services Outlets:		
(i) Family Welfare Centres	1,081	1,500
(ii) Model Clinics	—	6
(iii) Reproductive Health Centres A & B Centres	75	300

Description	Unit Nos.)	
	Bench mark 1982-83	Targets 1983-88
(iv) Hakim's Matabs	500	1,800
(v) Programme through other Departments	500	5,000
(vi) Azad Jammu and Kashmir and Northern Areas	30	150
(vii) Target Groups	150	1,000
(viii) Non Government Organization (NGO) Services Outlets	250	2,500
(ix) Contraceptive Distribution Points	10,000	30,000
<b>B. Training/Orientation : (Clinical Training):</b>		
(i) Programme Personnel :		
Refresher Training through FHMD.	3,000	15,000
(ii) Paramedics :		
(a) Family Welfare Councillors	306	750
(b) Family Welfare Workers	1,200	2,250
(c) Traditional Birth Attendants	1,000	8,000
(iii) Non-Clinical Training/Orientation through PWTIs::		
(a) Programme Personnel	2,419	7,000
(b) Personnel of Nation Building Departments	—	8,300
(c) Community Based Groups	2,506	45,000
(iv) Training of Teachers through AIOU	—	30,000
(v) Training of Teachers through Workshops	2,600	14,000
(vi) Hakeems	561	2,000
(vii) Training of Adult Education Teachers	—	10,000
(viii) Social Education for Women	—	1,000,000

TABLE 6

*Physical Targets during Sixth Plan 1982-83 to 1987-88*

(Figures in Million)

Method	1982-83 (Actual Performance)	1983-84	1984-85	1985-86	1986-87	1987-88	Total (1983-84 to 1987-88)
IUDs (Cases)	0.096	0.188	0.232	0.260	0.290	0.320	1.290
Oral Pills (Cycles)	0.571	4.225	4.979	5.300	5.600	6.000	26.104
Condoms (Units)	43.200	128.700	136.100	150.000	165.000	180.000	759.800
Contraceptive Surgery (cases)	0.044	0.076	0.117	0.130	0.150	0.175	0.648
Injectables (Vials)	0.061	0.095	0.138	0.153	0.173	0.200	0.759

*Note.*—This contraceptive mix will be monitored, assessed and reviewed, through the recording, reporting and feedback system, with the aim of achieving a contraceptive mix which provides improved demographic returns, reaches lower parity couples and achieves an increase in the contraceptive continuation rates for spacing births amongst, younger women.



## Constraints

71. The Population Welfare Plan has from past experience within Pakistan and elsewhere, pieced together interventions which represent the most feasible cost-effective design within the given political and socio-cultural environment. However, the programme is exposed to risks of continued resistance, changes in administration and in strategy. It is expected these problems will be avoided by evolving well-developed projects and implementing them efficiently with due regard to flexibility of approach.

72. The Population Programme aims at administrative strengthening through training, a new management approach, and close monitoring of all operations. However, given the time-consuming process of effecting these organizational and functional developments, a significant demographic impact can realistically be expected not before the mid-Plan.

73. The problem of resistance (and sometimes opposition) towards the programme will be dealt with by targetting services initially to those who want them most. The programme "perceived need" for women and children; involvement of leaders and obtaining participation of the influential persons of the community will be expedited.

## Financial Allocation

74. During the Sixth Plan period, the programme will continue to be funded through the federal development funds. An amount of Rs. 2,300 million has been provided as plan allocation for this sector.

75. The annual phasing of the proposed development outlay is given in Table 7 and the overall project-wise breakdown is shown in the Table 8 below :

TABLE 7

*Annual Development Outlay during the Sixth Plan (1983-88)*

(Million Rs.)

Year	Annual Phasing
1983-84	273.0
1984-85	320.0
1985-86	475.0
1986-87	530.0
1987-88	702.0
Total	2,300.0

TABLE 8

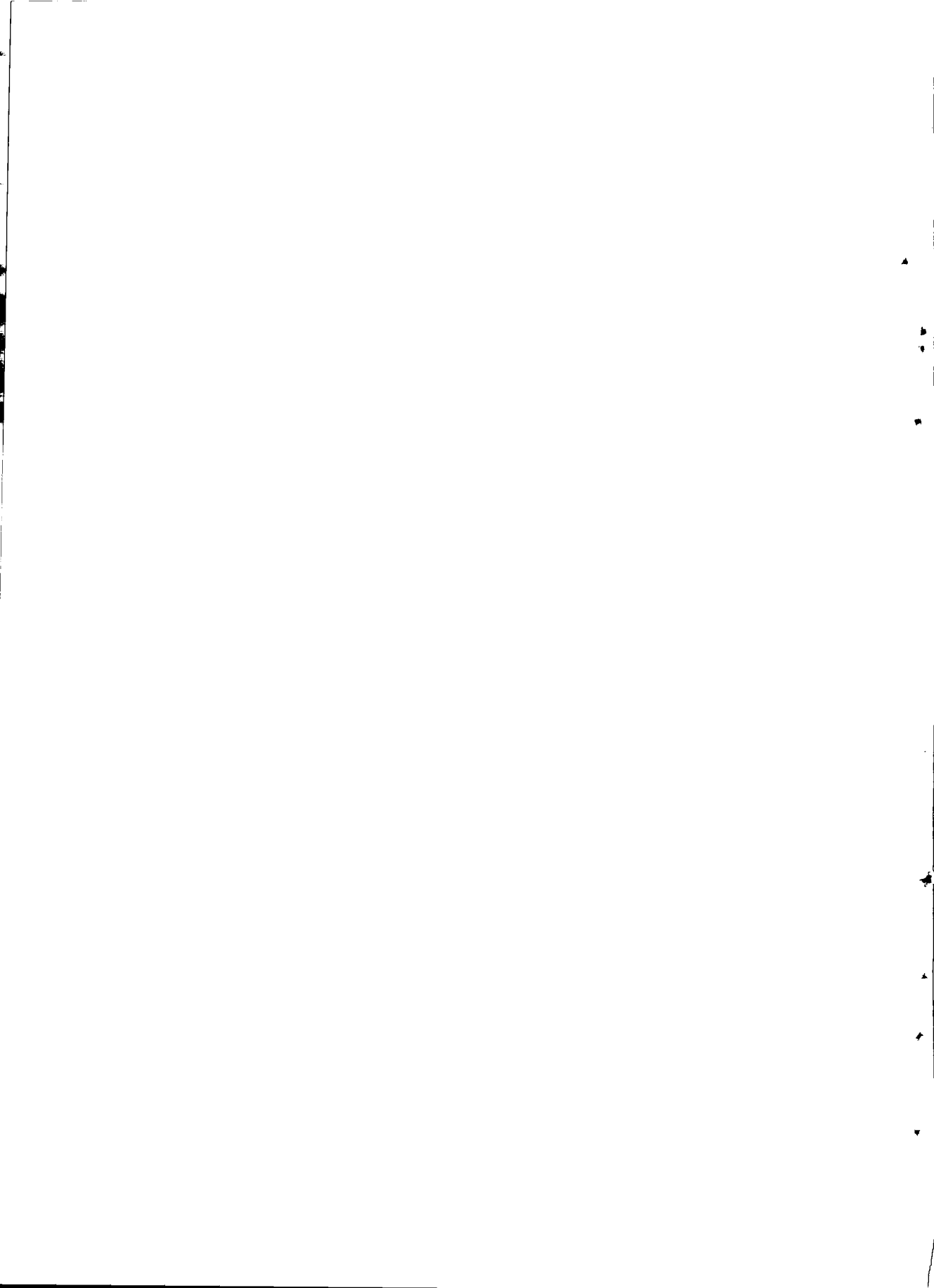
*Project-wise Development Outlay during the Sixth Plan (1983-88)*

(Million Rs.)

S. No.	Name of the Project/Programme	Allocation
A.	Administration :	
1.	Administrative Organization Federal & Provinces	350.00
B.	Core Programme :	
2.	Family Welfare Centres	682.00
3.	Reproductive Health Services	475.00
4.	Communication Strategy	109.00
5.	Family Health Manpower Development Project	175.00
6.	Orientation/Training (Non-clinical)	35.00
C.	Complementary Projects :	
7.	Provincial Line Department Population Welfare Programme	40.00
8.	National Population Education	30.00
9.	University Population/Demography Project Population Study Centres	20.00
10.	Involvement of Hakeems in the Population Welfare Programme	11.00

(Million Rs.)

S. No.	Name of the Project/Programme	Allocation
11.	Training of Traditional Birth Attendants	30.00
12.	Population Welfare Programme through Azad Jammu and Kashmir and MCH Population Welfare Programme through Northern Areas	2.00
13.	Target Group Institutions	4.00
14.	Family Health Care Project	2.00
15.	Grant in Aid to NGOs	50.00
D. Support Projects :		
(i) Research :		
16.	Bio-Medical Research and Support Activities and Collaborative Centre for Clinical Research (CCCR)	10.00
17.	Contraceptive Use Prevalence Survey	4.00
18.	Population Development Centre	55.00
19.	Targetted Approach/New Projects/Innovatives	45.00
(ii) Logistics and Supplies :		
20.	Contraceptive Requirement and Distribution	230.00
21.	Transport	25.00
(iii) Construction :		
22.	Building of National Research Institute of Fertility Control, Karachi	7.00
23.	Building of Central Warehouse, Karachi	9.00
24.	Building (PWTIs and RTIs)	50.00
	Marketing	100.00
		-----
	Total ..	2,300.00

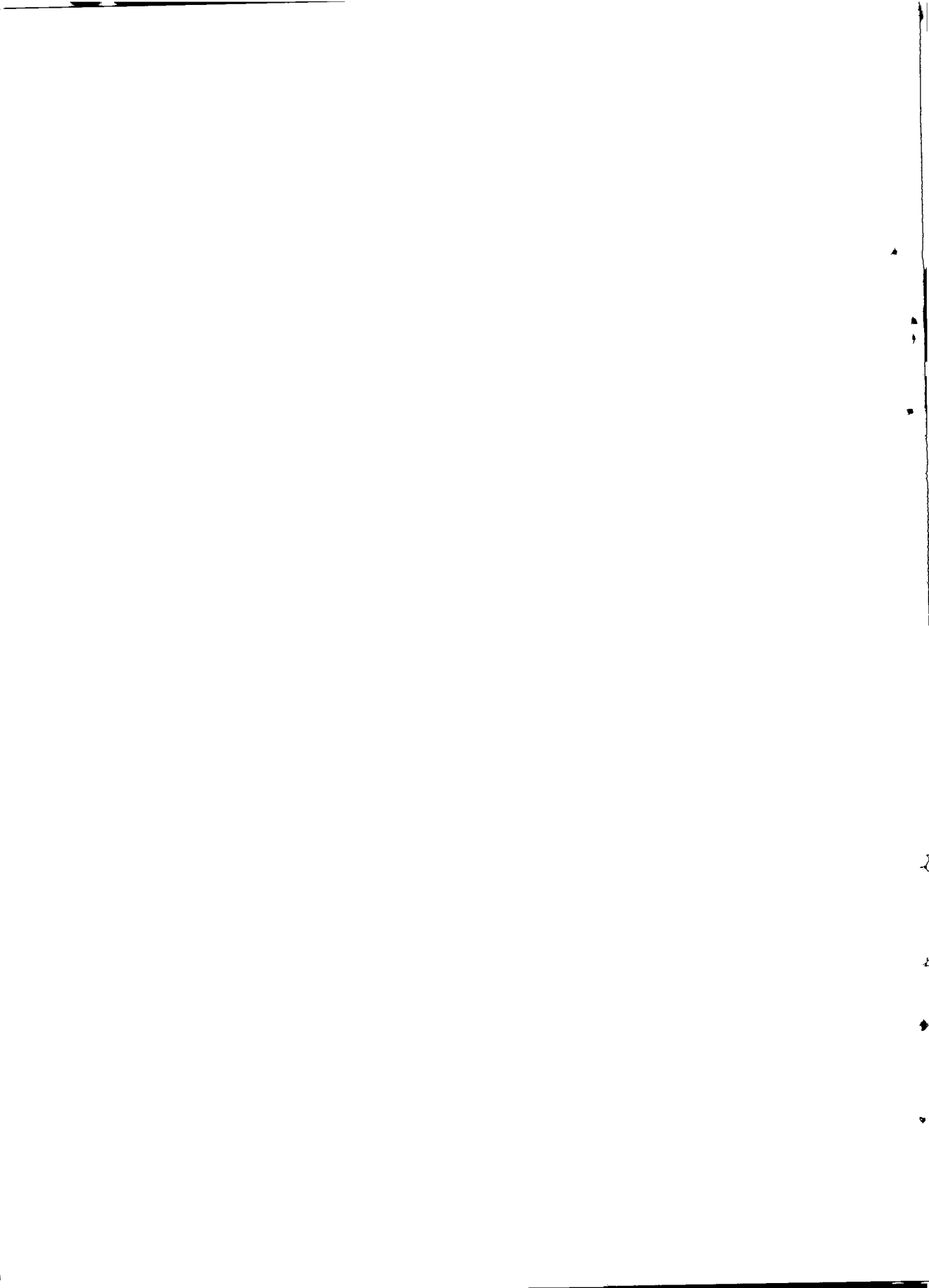


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PART V

**OUR CULTURAL  
HERITAGE**

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*AND (know that) all mankind were  
once but one single community, and  
only later did they begin to hold divergent  
views. And had it not been for a decree  
that had already gone forth from thy  
Sustainer, all their differences would  
indeed have been settled  
(from the outset).*

*Yunus  
(X-19)*

CHAPTER 22

## CULTURAL DEVELOPMENT, SPORTS AND TOURISM

### Elements of National Integration

**A**RCHAEOLOGICAL sites, historical monuments, museums and art galleries are some of the important expressions of the educational, cultural and economic development of a nation and it is through them that the heritage of the nation is passed on to the younger generations. These historical and cultural centres, if developed as living, organic institutions and run efficiently, can be an effective source of education for the coming generations and can help the youth in gaining insights into the past which is often not possible to get through the printed word. Pakistan is an ideological state and it is necessary that all Pakistanis particularly the youth are made fully acquainted with the Islamic values, important discoveries of Muslim scientists, Islamic art, architecture, museums, paintings etc. It is unfortunate that in the past 36 years, very little attempt has been made in this direction nor the youth have been enabled to draw inspiration from the high ideals of Islam and Islamic virtues or to develop a sense of pride in the achievement of the Muslims.

2. The country is equally rich in the archaeological remains of some of the most ancient civilizations such as the Indus Valley Civilization and the Gandhara Art. We owe it to posterity to preserve these civilizations as a valuable cultural heritage of the human race. Pakistan, in fact, is in an enviable

position as it provides a rare blend of ancient and medieval traditions and culture which provide the country with a potential for development as a unique area for applying information and material for scholars and researchers, as well as serve as a centre of attraction for the tourists from all over the world.

3. In the past there has been inadequate recognition of the important role that cultural centres can play in the building up of an inspiring national image and in infusing a sense of national pride. The recent few years, however, have witnessed a sense of greater awareness of the importance and significance of historical and cultural centres and to focus attention on the maintenance and development of the various institutions/organizations concerned with cultural activities. A separate Ministry of Culture and Sports has been created in the Federal Government which is responsible for the development of cultural activities according to the priorities dictated by national interests and for the dissemination of knowledge and information about the national heritage specially reflecting Islamic history and culture which contribute to its promotion and growth.

4. Promotion of sports plays a pivotal role in developing character qualities and a robust physique as well as in providing a healthy pastime to the masses. The contest in games, inculcates team-spirit, application to task and a balanced judgement under duress and producing a positive and purposeful out-look on life. Achievement in sports projects the national image abroad and promotes national integration within.

5. Pakistan as a small country, has over the years, displayed commendable performance and reached the pinnacle of glory in games like Hockey and Squash, while claiming numerous top positions in Regional and Asian Games. *e.g.* in Athletics, Boxing, Wrestling and Yatching. The national produced, at times, the fastest man in Asia, and in cricket, some top-class bowlers and batsmen in the world. However, constant effort and improvement is essential to keep a nation abreast of the latest developments in the field. The Sixth Plan programmes for the promotion of sports are an effort to fulfil these objectives.

#### **Evaluation of the Fifth Plan**

6. The Fifth Plan sought to develop those art forms which needed assistance to promote arts, crafts and other cultural activities in remote areas and to encourage growth of healthy indigenous recreational and cultural



activities for the people. An amount of Rs. 575 million was allocated for these programmes which included the preservation of Moenjodaro and other historical monuments; the construction of the sports complex at Islamabad for the National Institute of Sports, and Culture, the development of Sports Training and Coaching Centres at Karachi and Lahore besides development of sports facilities in the country in general; programmes of the National Council of the Arts, National Institute of Folk and Traditional Heritage and the research programmes of the National Commission on—Historical and Cultural Research.

7. During the Fifth Plan, and expenditure of Rs. 630 million is estimated to have been incurred by the Government on the development of culture and sports. The implementation of the Master Plan for the Preservation of Moenjodaro was started in collaboration with UNESCO. For lowering the ground water table, tubewells have been sunk and collector drains have been dug to pump out the water into the Dadu Canal. The on-going work of preservation of other historical monuments was also continued. The construction of the building of the National Archives made considerable progress and some equipment has also been acquired. The Quaid-e-Azam Academy, established at Karachi to carry on research and publish authentic books on the life, thought and work of Quaid-e-Azam, has started functioning.

8. The sports complex of the National Institute of Sports and Culture, consisting of the sportsmen hostel, the gymnasium, the stadium, the practising hall, and the field tracks has reached the completion stage. The National Sports Training and Coaching Centres at Karachi and Lahore have been completed. A sports stadium has been constructed at Quetta under programmes of the Quetta Development Authority and work has started on the Sports Training and Coaching Centre at Quetta.

9. The physical facilities for staging cultural performances have been improved at the Liaquat Memorial Hall, Rawalpindi, and the detailed architectural drawings of the proposed National Arts Gallery are being prepared. The physical infrastructural of the National Institute of Folk and Traditional Heritage has been completed and the Institute is developing into a major source for the collection, preservation and dissemination of folklore and traditional heritage.

## SIXTH PLAN

### Objectives and Strategy

10. The Sixth Plan seeks to reorientate the cultural programmes with a view to reflecting the rich heritage, tradition and contribution of Islam in the field of education, science, arts, architecture and other forms of

culture. The projection of Islamic art and culture shall help in developing a clearer understanding of the role of Islam in the furtherance of art and culture both nationally and internationally. Another important objective is to improve the international standing of Pakistan in the field of games and sports. In this context efforts shall be made to reach the masses with a view to enriching their cultural lives and providing them greater opportunity for healthy recreational activities through encouragement of indigenous games and cultural activities. In addition, for the first time projects for the growth of infrastructure facilities and institutional framework for launching a programme of youth affairs have been included in the development plan. These are designed to help in character development of the youth and to bring about their involvement and participation in community development.

11. The strategy of the Sixth Plan would be to develop a few centres for projection of Islamic heritage, for the preservation of our historical relics and to establish sports complexes for the holding of international meets and training of national sports teams. These centres will act as motivators for activities at the local level. For accelerating the pace of development of physical facilities for sports and cultural activities, efforts will be made to mobilize funds from commercial sources and to encourage the local communities to play a greater role by pooling their resources.

### **Programmes**

#### *(a) The National Cultural Complex*

12. During the Sixth Plan, it is proposed to define the concept and dimensions of the National Cultural Complex, and to initiate the development of physical facilities for its various components. The Complex will be established in Islamabad. It shall be developed as an integrated institution in looks and character reflecting both the contribution of Islam to the development of literature, art, architecture, science, technology and the human thought, and the historical and cultural heritage of Pakistan. A high level committee is currently drawing up the conceptual plan of the cultural complex and defining its broad dimensions, salient features and major components. An international design competition shall be held to give a physical shape to this conceptual plan. The Complex shall have the following components which may be integrated in a few buildings.

- (i) *Museum of Islamic Heritage.*—The museum shall reflect the contribution of Islam to the intellectual, social, cultural, moral, economic and political development of the human

race in general and Pakistan in particular. The museum shall acquire exhibits from around the world particularly the Muslim World to highlight the contribution of Islam to the development of human culture. The museum shall also preserve the relics of the Islamic era in Pakistan and project the multi-dimensional contribution of Islam to its development.

- (ii) *National Museum of Pakistan.*—The National Museum of Pakistan shall reflect the evolution of Pakistani culture, art and literature through the ages; the relics to be displayed will highlight the rich cultural heritage of Pakistan from the times of the Indus Valley civilization to the modern age. The contribution of this rich heritage to the evolution of culture in other regions of the world and the cross cultural influences on the Pakistani culture would be brought home through the exhibits.
- (iii) *Hall of Heroes.*—A hall of heroes shall be constructed to pay tribute to the memory of those national heroes whose foresight, courage and sacrifices made possible the emergence of Pakistan as an independent state. A separate enclosure shall be earmarked for each national hero in which his life, work and contribution to the growth of Muslim nationalism shall be depicted with the help of write-ups, pictures, transparencies, movies and documentaries. Besides being a tribute of the nation to these heroes, the exhibits would help in acquainting the younger generation with the history of our freedom movement.
- (iv) *National Arts Gallery.*—The Sixth Plan proposes to establish a National Art Gallery as a symbol of the creative genius of the people of the country. The Arts Gallery shall act as a treasure house for the preservation of notable pieces of arts and shall inspire, train and groom future artists.
- (v) *National Library of Pakistan.*—The National Library has been conceived as an intellectual centre and has been planned on a scale which besides meeting the growing needs of posterity, shall make the present and future generations proud of their intellectual and cultural heritage. The National Library shall have all modern and sophisticated equipment required for providing the most efficient service comparable to that being

provided elsewhere in the world. The National Library shall collect books, manuscripts and pictures relating to Islam, Pakistan and the Quaid-e-Azam produced anywhere in the world. The National Library shall play a catalytic role in the development of the national system of public libraries in the country.

(b) **Archaeology and Archives**

13. *Archaeology*.—The on-going programme of the Master Plan for the Preservation of Moenjodaro, under execution with the assistance of UNESCO, shall be accelerated to ensure that the remains of the Indus Valley civilization are preserved for posterity against the ravages of the time, the River Indus, and the salinity and the water logging in the area. Works on the archaeological sites at Mansura, Bhanbhore and Taxila shall be continued and the archaeological museums at these places shall be further developed. The Sixth Plan also proposes to initiate work on the establishment of museums at Quetta and Gilgit.

14. *Archives*.—Important pieces of knowledge, official record of national significance and other archival materials being valuable source of reference provide data for research scholars. The proper maintenance, cataloguing and preservation of the documents and records is extremely important. For this purpose, a specially designed building for the National Archives of Pakistan is already under construction. During the Sixth Plan period, the building will be completed and it will be provided equipment and facilities required to make it fully operational.

15. *Other Programmes*.—The Quaid-e-Azam Academy, which has been established at Karachi for the promotion of studies and research on Quaid-e-Azam's life and achievements, shall be provided with a building designed to meet its functional requirements. These facilities would enable the Academy to carry out research, publish books and periodicals, and organize popular as well as scholarly lectures, discourses and conferences on the life, the work and the message of the Founder of the Nation. During the Sixth Plan, the birth place of the Quaid-e-Azam and the Flag Staff House, where he stayed after independence in his capacity as the first Head of the State, shall be developed and preserved as national monuments.

16. An Aiwan-e-Iqbal shall be established at Lahore which would be a befitting structure in the memory of the great poet, philosopher and thinker Allama Mohammad Iqbal. It shall provide facilities to the Iqbal

Academy to promote the study and understanding of the works of Iqbal; to publish books, pamphlets and periodicals, to propagate and popularise his message, and to organize lectures and discourses on his life and work. Besides the construction of the Aiwan-e-Iqbal, the Sixth Plan proposes to develop the birth place of Allama Iqbal and his residence at Lahore (Jawaid Manzil) and convert them into national monuments.

### (c) Sports

17. Provision of facilities of sports both for the students and the general public is necessary. Sports and games are essential for proper development of body, mind and for creating a correct attitude among people of all ages. Games and sports facilities are provided in schools and colleges wherever space is available. Universities, specially older ones, which are relatively in a better situation regarding the availability of the grounds, generally provide arrangements for games and sports for their students.

18. The Sports Federation operating the Pakistan Sports Board have so far depended for expansion/consolidation of physical facilities on Government finances. during the Sixth Plan a beginning will be made towards greater self-reliance through initiation of self-financed development projects. To begin with, the hockey and cricket stadia and the Squash Complex at Karachi shall be developed, consolidated and renovated partly through government grants and partly through loans from commercial banks. The loans shall be utilized to develop commercial complexes and shall be repaid out of the income from the rent of the shops and other income of the stadia such as sale of tickets. The successful implementation of self-financing projects at Karachi shall serve as a model for other sports organizations in the country.

19. The programmes of training and coaching, and the development of physical facilities required for it shall be both consolidated and expanded. Specific programmes to be implemented during the Sixth Plan shall include expansion of the facilities at the National Sports Training and Coaching Centres at Lahore and Karachi and provision of squash and tennis courts and swimming pool at Lahore squash court and swimming pool at Karachi. For bringing sports facilities in NWFP and Baluchistan at par with other provinces and for identification and grooming of talent from these areas, National Sports Training and Coaching Centres shall also be established at Peshawar and Quetta. The facilities for training in tennis shall be added to those which are under construction at the Peshawar Centre.

20. Other major programmes include completion of the on-going projects for the complex of the National Institute of Sports and Culture at Islamabad, Hockey Stadia at Karachi and Lahore and improvement and expansion of the National Stadium at Karachi.

**(d) Culture**

21. With Pakistan playing an important role in the Islamic World and taking an active interest in the affairs of the World in general and that of South and South East Asia in particular, the need for an International Conference Hall is being greatly felt. During the Sixth Plan, it is proposed to start work on the construction of an International Conference Hall with most modern facilities for delegates as well as for the communication media. The Hall shall be constructed at the campus of National Institute of Sports and Culture.

22. For promotion of cultural activities and encouragement of local talent in dramatics, the plan proposes to start work on the establishment of an Academy of Performing Arts. It also proposes to establish auditoria at Islamabad, Quetta and Peshawar for presentation of cultural programmes both by national and foreign cultural troupe.

**(e) Programmes of Youth Affairs**

23. The 14 million youth of the country are potentially one of the most vital resources for social development and change. This youthful and energetic section of the population can be harnessed for national development through a national youth affairs policy designed to bring them in the mainstream of national development effort. During the Sixth Plan, a National Youth Affairs Policy shall be formulated and implemented.

24. For the social development of the youth and their mobilization in the national development effort, the national youth organizations shall be encouraged, activated and supported. Those of the existing 32 youth organizations which are non-political in nature and are actually functioning, shall be encouraged to contribute to community development through implementation of development programmes of social significance. These include programmes for removal of illiteracy, participation in youth/community welfare activities such as tree plantation, supply of books to the needy, participation in health and sanitation drives, tourist guidance, organizing meets on national/religious days etc. The youth organizations shall also be mobilized to undertake special activities or rescue/rehabilitation in areas

affected by such calamities as floods, earthquakes, landslides etc. proposal is under consideration to draft all fresh Matriculates (High School Graduates) for a period of one year to constitute the hard core of a Literacy Corps to serve as teachers in the mass literacy programme included in the Plan.

25. The youth hostels play a significant role in creating a better awareness among the youth about the country and its development as well as in fostering national cohesion through broadening of vision and appreciation of the problems of different regions. There are twelve youth hostels in the country which are owned and run by "The Pakistan Youth Hostels"—a non-political and non-profit organization, dedicated to planning and developing youth hostels in the country on voluntary basis. It runs youth hostels with a view to promoting outdoor activities for the youth by creating mobility amongst them. These hostels provide inexpensive lodging facilities to the travelling youth. To encourage the effort of "The Pakistan Youth Hostels", it is proposed to provide grant-in-aid for the construction of one good youth hostel in every Province at a historically important site that would attract young tourists.

26. The youth exchange programme with friendly foreign countries shall be accelerated and a larger number of youth delegation shall be sent abroad particularly to the Muslim and the Third World countries.

27. The Provincial Governments shall be encouraged to organize programmes for Inter-Provincial exchange of youth.

### Policy Issues

28. *Archaeology and Archives.*—The concept of development has to be clearly defined specially in the context of the excavation, preservation and maintenance of archaeological sites and historical monuments. Presently, major proportion of the development funds is being utilized on minor day-to-day repairs and maintenance. For future, it is necessary that a distinction is made between expenditure which can and cannot be termed as developmental so that clear earmarking can be done of the expenditure out of ADP and the revenue budget. Keeping in view the nature of these programmes, the expenditure on the excavation of archaeological sites and measures designed to bring them to a presentable level should appropriately be considered developmental whereas expenditure on the maintenance of archaeological sites and historical monuments, and on the day-to-day repairs should be met from the normal revenue budget. Due consideration is being given to formalize these deliberations on a permanent basis.

29. The Master Plan for the Preservation of Moenjodaro was approved by the Government on a clear understanding that the expenditure will be shared by UNESCO and the Government of Pakistan in the ratio of 2 : 1. The response to UNESCO's appeal for contributions has been rather poor and implementation of the programme is suffering due to severe shortage of funds. There is need to undertake a review of the whole project, and of the work completed so far and those which should be carried out on priority basis for which a revised formula of funding should be agreed upon. A clear decision will be taken on this issue so that this programme could progress at a satisfactory pace.

30. *Sports.*—The existing sport facilities have two characteristic features. First, facilities which have been provided through public sector programmes are available mostly in big cities. The limited facilities which are available in the smaller towns and mofussil areas are, privately financed by the players themselves. Second, there is too much dependence on the Government for providing facilities for sports. In the country, one rarely finds any private agency or institution extending any worthwhile assistance to sports, except of course, the encouragement and the support given to sports by the Banks, PIA, Railways, Customs, WAPDA and some other institutions which too are either Government departments or semi-autonomous agencies receiving Government grants. This situation is being appraised and reviewed so that:

- (i) the benefits of the public funds spent on sports activities also reach the less developed parts in the Provinces; and
- (ii) private resources are mobilized in an organized manner in order to provide sports facilities at a much larger scale and their cost shared by the Government as well as the people.

31. The role of Federal and Provincial Governments, public organizations and local bodies need to be redefined. The Federal Government could take up the responsibility of training sportsmen for national and international games/sports. The Provincial Governments could devise a system of grants-in-aid to encourage private organizations/local bodies to undertake development of facilities at the grass root level. The rates of grants-in-aid could vary depending upon the economic level of the locality/agency concerned and, in extremely hard cases, the grant could even be extended on a 100 per cent basis. These issues are being studied and steps would be taken to resolve them in the Annual Plans.



32. To provide for a larger participation of people in cultural, sports and recreational activities, the infrastructure facilities and programmes need to be expanded manifold. The scope and need is unlimited while the Government resources are extremely limited. Without a national involvement these needs will remain unmet despite the implementation of the programmes in this Sector. Steps will be taken so that these needs are met by local bodies, commercial organizations and NGOs which should supplement Governmental effort.

### **Financial Allocations**

33. An allocation of Rs. 1,550 million is proposed for the programmes of archaeology, sports, culture and youth affairs during the Sixth Plan period. The allocations for some of the major programmes are: Rs. 450 million for the National Cultural Complex at Islamabad, including Museum of Islamic Heritage, National Museum of Pakistan, Hall of Heroes and National Arts Gallery; Rs. 250 million for the International Conference Hall; Rs. 144 million for the Master Plan for the Preservation of Moenjodaro; Rs. 67 million for the completion of the building of the National Archives, Rs. 106 million for the completion of the National Institute of Sports and Culture. Rupees 50 million for the programmes of youth affairs has been provided as a part of the overall plan for culture, sports and youth affairs which will supplement the projects for youth welfare and development under the Education; Social Welfare and Women's sectors bringing the total allocations directly or indirectly benefitting the youth to about Rs. 630 million during the Sixth Five Year Plan.

## **TOURISM**

### **Tourism**

34. Tourism has been recognised as an important industry both from the point of view of its more diffused development spillover and as a major foreign exchange earner. Domestically, in a highly significant manner, it becomes an effective tool for achieving national integration and cohesion. It need not be emphasised that the strength of modern integrated states owes a great deal to high mobility of their population. In addition, as a labour intensive activity, it helps to create employment and benefits backward areas.

### **Fifth Plan (1978–83)**

35. The Fifth Five Year Plan (1978–83) was formulated within the framework of a Master Plan for Tourism drawn up by UN Consultants with the following strategy.

#### **Strategy :**

- A substantial expansion of tourist accommodation in major cities and development of resort areas and beaches.
- Development of tourism in Northern Regions by construction of accommodation units, promotion of mountaineering, trekking and improvement of transport and communications facilities.
- Preservation of archaeological sites and historical monuments.
- Development of religious, cultural, social and youth tourism, with particular emphasis on domestic tourism.
- Development of suitable facilities in national parks.
- Promotion and publicity in tourist generating markets (North America, Western Europe, Gulf States and Japan).
- Training of hotel and travel trade personnel and tourist guides.

#### **Performance (1978–83)**

36. Keeping in view the above strategy, it was envisaged to increase the tourist arrivals by 91 per cent from 2,20,000 in 1977-78 to 4,21,000 in 1982-83 and the earnings from tourists by 375 per cent from US \$ 60.41 million in 1977-78 to US \$ 278 million in 1982-83 at an annual growth rate of 36.5 per cent.

37. International Tourists arrivals increased from 0.220 million in 1977 to 0.314 million in 1982, while foreign exchange earnings grew from US \$ 60.4 million in 1977 to US \$ 187.0 million in 1982. However, there was a downward trend in the number of tourists arrivals in 1980 and 1981 due to the prevailing geo-political situation on the borders.

38. The Fifth Plan allocated Rs. 520 million in the public/semi-public sectors which was to be spent mainly on the development of tourist resorts in Sind, Northern Regions, Swat and Kaghan. The programmes envisaged were the provision of accommodation facilities for mountaineering and trekking and improvement of infrastructure facilities *i.e.* improved transportation and communication. The other programmes related to development of camping sites around cities mostly visited by tourists. In the private sector an investment of Rs. 2500 million was envisaged for the construction of hotels, restaurants etc.

39. Out of the Federal allocation of Rs. 500 million, an amount of Rs. 413 million was allocated to PTDC and the remaining Rs. 87 million to Tourism Division against which expenditure incurred was Rs. 30.196 million and Rs. 18.581 million respectively. The utilisation of funds during the Fifth Plan was substantially less than planned as the projects could not be implemented because of curtailment in the scope of work of various projects as they were considered to be over-extended and needed re-consolidation.

40. However, during the same period, the private sector invested over Rs. 3000 million in hotels against the planned investment of Rs. 2500 million. But this investment was primarily directed towards the construction of "posh" hotels which had to charge heavy rentals in order to recover their costs, thus taking them out of the reach of the domestic tourists and making them expensive for the foreign tourists, compared with other countries having tourist facilities of a much higher order.

41. In 1977-78 only 914 hotels were operative in the country while in 1982 1121 hotels were in operation thereby reflecting an increase of 22.6 per cent in a period of 4 years. Rooms in hotels increased by 30.5 per cent from 14,042 to 18,326 and number of restaurants during this period increased from 3,123 to 4,326 recording a growth of over 38 per cent. The travel trade grew up sharply and number of travel agencies jumped up by more than 100 per cent from under 200 in 1977-78 to over 400 in 1981-82.

42. Hotels and restaurants established by the private sector in areas such as Swat, Gilgit, Kaghan, Skardu reflected the interest of the private sector in tourism in spite of the fact that the investment in tourism sector not being given the same facilities and concessions which were available to other sectors particularly to the export oriented industries.

43. Tourist transport facilities did not develop properly in the private sector in the Plan Period (1978-83) because such transport was not given acceptable incentive like exemptions/reductions in custom duties and

loan financing etc. However, international transport companies such as Avis and Hert showed interest in establishing their offices in Pakistan (M/s Avis is already in operation while M/s Hertz case is being processed).

#### **Sixth Plan 1983—88**

44. Pakistan has a wealth of tourist attractions—towering mountains, beautiful valleys, sparkling lakes, sunny beaches, attractive fauna and flora, hospitable people, historical and archaeological sites and cultural heritage—which can attract tourists through proper promotional efforts and development of infrastructure facilities.

45. Domestic tourism is not only a means of recreation, but also of increase in knowledge and national integration. Similarly, international tourism is not only a means of foreign earnings but it also promotes peace and harmony between nations through a better understanding of social, cultural, religious and economic conditions of various countries. Promotion of tourism in Pakistan has to be carried out without avoidable adverse effects to our social fabric, culture, religious beliefs and environment.

46. The major reasons for the lower rate of tourist arrivals in Pakistan are:

- (i) Inadequate publicity abroad of the country's tourist attractions.
- (ii) High rates of air transport and lack of charter flights.
- (iii) Cumbersome procedures of entry and exit.
- (iv) Inadequate number of tour operators with competitive prices for tourist products of Pakistan.
- (v) Lack of infrastructure facilities like availability of modest and clean accommodation, transport and communications facilities in tourist resorts.
- (vi) High rates of hotel accommodation.
- (vii) Under-developed souvenir industry.

47. In order to encourage and accelerate the rate of tourist arrivals and increase the foreign exchange earnings, it would be necessary to remove

the above mentioned obstacles in the development of tourism and make prices for holidays in Pakistan economically competitive with those of the countries of this region.

### Policy Issues

48. The following constitute the corner-stone of the Government policy:

- (a) Development of domestic tourism.
- (b) Encouragement of international tourism.
- (c) Provision of incentives (*e.g.* tax reliefs, loan financing etc.) to the private sector in establishment of tourist class hotels, motels, restaurants and transport, amusement and recreation facilities etc. in accordance with a proper plan.
- (d) Public investment in development of infrastructure and super-structure for tourism in sectors and areas where private sector is shy.
- (e) Disinvestment by the public sector in projects which can be taken over by the private sector.
- (f) Preservation of environment.

### Strategy

49. The strategy for the development of Tourism during the Sixth Plan would be:

- (i) Develop at least one major area for tourism.
- (ii) Make travel/stay within Pakistan less expensive through :
  - (a) Provision of tourist class accommodation, including rest houses and camping sites in major cities and resort areas and along the national and major high-ways.
  - (b) Establishment of tourist restaurants in resort areas.
  - (c) Encouragement of standard but cheaper transportation by tour operators, through adequate incentives.

- (d) Concessional rates for package tours in air and rail travel.
- (e) Encouragement of chartered flights of tourists.
- (iii) Removal of avoidable restrictions at the points of entry as well as movement of tourists to resort areas.
- (iv) Providing adequate facilities (*e.g.* exchange facilities, purchase of souvenirs at standard rates etc.) for tourists at appropriate points.
- (v) Provision of proper training to those engaged in tourism industry including porters, hoteliers guides etc.
- (vi) Vigorous publicity campaigns.
- (vii) Preservation of archaeological and historical monuments.
- (viii) Adequate steps to preserve the environment.

To above strategy/programme will be undertaken within the overall framework of an Integrated National Plan for tourism.

### **Role of Private Sector**

50. The private sector would have to play an active part in the provision of hotel accommodation, transport and guides for tourists. The emphasis has therefore to be on the construction of decent, clean accommodation (which should be within the reach of the average tourist) provision of comfortable buses, and properly trained and knowledgeable guides. In this regard grant of concession on import duties on items of tourists installation and transport and availability of loan facilities at concessional interest rates would be considered.

### **Development Programme**

51. A provision of Rs. 750 million has been made for tourism in the Sixth Plan. Of this, Rs. 350 million will be spent through the ADP and an additional Rs. 400 million should be mobilised through self-financing operations and commercial loans to PTDC. From the ADP provision of

Rs. 350 million, Rs. 200 million has been allocated to the Tourism Division of the Federal Government for training, basic infrastructure development and related activities and Rs. 150 million to PTDC to be used for area development and seed money for promoting private investment.

52. The bulk of the allocation for tourism will be earmarked to develop one major selected area for promotion of tourism with all the complementary facilities. In addition, there will also be development of certain other areas. An integrated programme is currently being developed.

53. It is expected that the private sector will also make significant investment in setting up hotels, motels, restaurants, transport, souvenir manufacturing, publicity and promotion and other tourist related activities. The private sector will need adequate finance from the banking system for this purpose.

54. The details of financial allocations and physical targets are given in Annexure I and II respectively.

## CULTURE, SPORTS AND TOURISM

*Financial Allocations 1983-88*

(Million Rupees)

S. No.	Sub-sector	ADP	Public Corporations	Total
1	2	3	4	5
A. Culture and Sports :				
1.	Archaeological and Archives.	361	—	361
2.	Sports.	289	—	289
3.	Culture.	761	—	761
4.	Youth Affairs.	50	—	50
5.	Miscellaneous.	89	—	89
Sub-total (A)		1,550	—	1,550
B. Tourism.				
		350	400	750
Total (A and B)		1,900	400	2,300

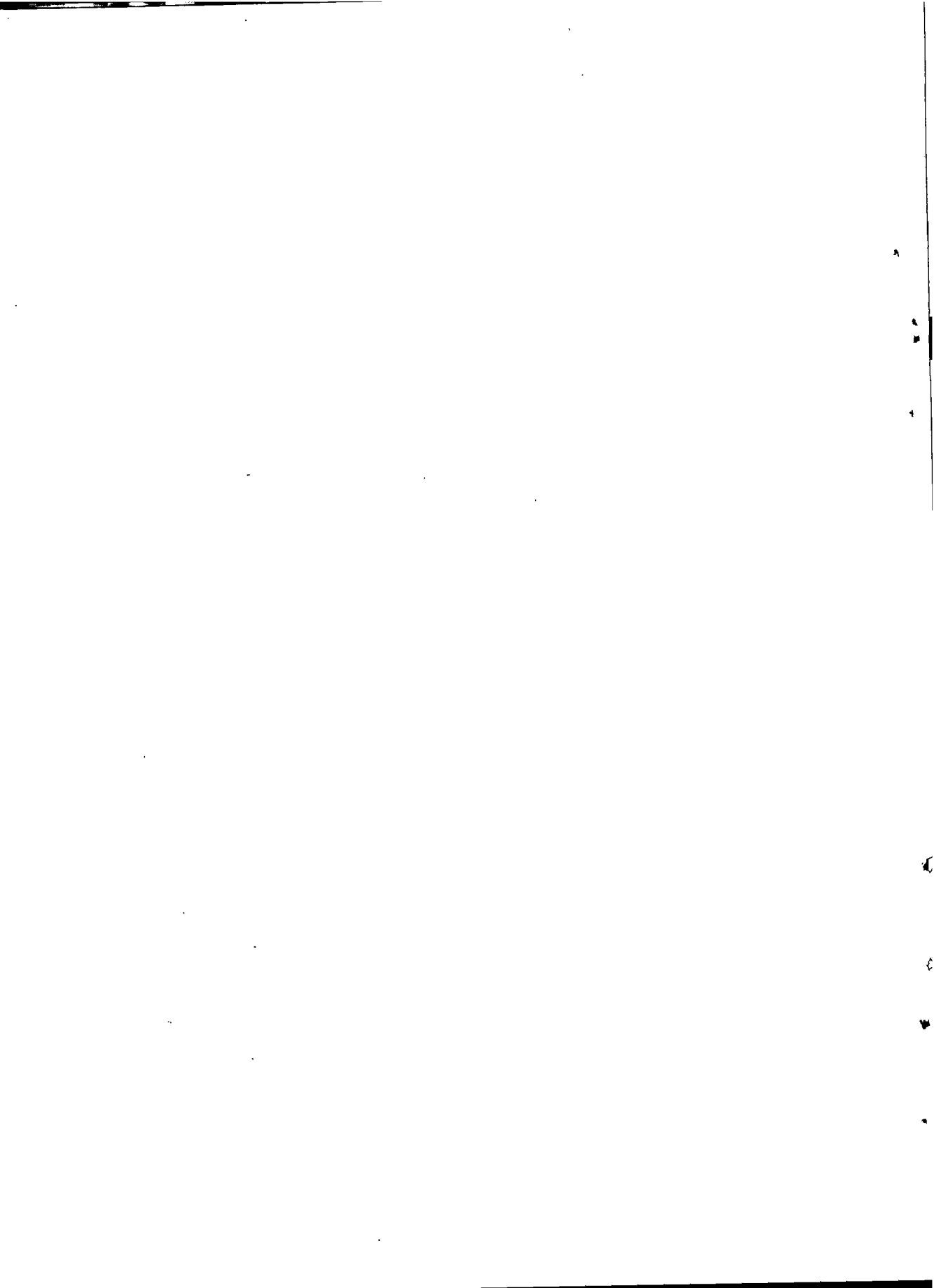
\*In addition, an amount of Rs. 250 million has been provided for National Library of Pakistan under the Education and Manpower Sector.



## CULTURE, SPORTS AND TOURISM

*Physical Targets*

Major Programmes	Unit	(1983-88)
National Cultural Complex.	(% achievement at the end of Plan period)	35
National Archives of Pakistan.	Do.	100
Master Plan for the Preservation of Moenjodaro.	Do.	75
Quaid-e-Azam Academy.	Do.	60
Aiwan-e-Iqbal.	Do.	60
Sports Complex of the National Institute of Sports and Culture.	Do.	100
National Sports Training and Coaching Centre, Quetta.	Do.	100
National Sports Training and Coaching Centre, Peshawar.	Do.	100
International Conference Hall.	Do.	50
Academy of Performing Arts.	Do.	75



*He has created man :  
He has imparted upto him  
Articulate thought and speech,  
Ar-Rahman  
(LV-3 to 4)*

## CHAPTER 23

### MASS MEDIA : INSTRUMENT FOR NATIONAL INTEGRATION

**T**HE role of mass media in most modern societies is a crucial one in so far as it influences and moulds public opinion and public policies. It plays an equally important role in influencing social attitudes in developing countries which suffer from mass illiteracy. In Pakistan, the newspapers, periodicals and journals, popularly known as print-media, are by and large private sector activity. The role of the Government is an indirect one. The Radio and TV are managed and run by the public sector corporations, mainly as a public service. Their commercialization does not change their public character but provide to them substantial financial support, thereby reducing Government liability to a considerable extent.

2. A stage has been reached where adequate basic facilities have been created. For instance, Radio reaches 95 per cent of the country's population while TV programmes can be seen by almost 80 per cent of the population. The policy of the Government has been directed towards a coverage of the entire population by Radio so that the message of Radio Pakistan can reach every one in the country. This will be of great value in

accelerating development efforts especially those depending upon the creation of environment conducive to development like modern agricultural practices, health, nutrition, family welfare and tourism.

3. In the case of the TV, a national network has been built with full-fledged facilities of television stations located at the Federal Capital and Provincial Metropols together with booster stations at important points, connected by microwave link. The major emphasis in future will be on filling the gaps in the less developed areas of the country, particularly NWFP and Baluchistan, and to improve the quality of the programmes. An endeavour will also be made to create a second channel to enable PTV to play a significant role in spreading mass literacy and for general uplift of rural population.

4. A new concept of "narrow-casting" where the community is served with local radio stations has become popular recently because such a service projects local culture and channelises creative urges of the people at the grass root level. It also serves as a link between the community and the local administration and ensures full involvement of the local population in self-help and integration of society. Five small village broadcasting units have already been established at Gilgit, Skardu, Turbat, Khuzdar and Faisalabad. Apart from other advantages, the former four stations will be instrumental in promoting tourism through the creation of a receptive environment for standard tourist facilities. This activity needs to be improved and expanded wherever necessary.

### **Review of Fifth Plan**

5. Radio and TV played an important role in promoting development during the Fifth Plan.

6. The radio broadcasting facilities were to be expanded by setting up 4 broadcasting stations and 5 mediumwave transmitters during the Fifth Plan. The actual achievement has been 7 and 8 units in each category. These included 5 small power village broadcasting units with total radiating power of 1.2 KW MW and 10 KW MW transmitters at Skardu and D.I. Khan, 100 KW and 150 KW transmitters at Khairpur and Muzaffarabad. However, this has added only 271 KW MW transmitting power compared to 520 KW MW power planned during 1978-83. The shortfall is due to non-commissioning of 300 KW MW transmitter at Khuzdar which will be operational by December, 1984. The additional population covered in terms of basic mediumwave radio facilities was 5.8 million during the Fifth Plan, compared to the Plan target of 6.6. million. By the end of the Fifth Plan the total

population covered stood at 95 per cent. A sum of Rs. 163 million was released during the Plan period against an allocation of Rs. 283 million, indicating a shortfall of 43 per cent.

7. Radio programmes were planned to cater to instructional and educational needs of the community particularly in the agriculture and education sectors. A recent survey revealed that farmers' dependence on Radio for information and instruction about farming exceeds 60 per cent as compared to other sources. The second channel transmission facilities created during the Plan period at the main Radio Stations continued broadcasting educational and rural development programmes produced by Radio, Provincial agencies and Allama Iqbal Open University.

8. In the case of the television broadcasting, the Fifth Plan indicated establishment of 3 full-fledged colour television stations at Islamabad, Peshawar and Quetta, one rebroadcast centre at Rojhan, 3 booster stations at Faisalabad, Sibbi and Norowal and TV link of Quetta-Chaman-Khojak. During the Plan period, one rebroadcast centre at Rojhan/Jamaldin Wali, 5 booster stations at Sibbi, Razmak, Faisalabad, Pasroor and Mangla and TV link of Quetta-Chaman were completed. The permanent television station at Peshawar has been completed, while the Quetta centre will come on the air later during 1983-84. By June, 1983 TV coverage had increased to 80 per cent of the population, compared to 74 per cent in 1978. The TV broadcasting facilities reached an additional 6 million people during the Fifth Plan period, as compared to the target of 7 million, due to delay in completion of some of the TV projects like Islamabad TV Complex and Quetta TV Station.

9. A sum of Rs. 390 million has been spent on the expansion of television during the Fifth Plan against the allocation of Rs. 407 million, indicating a utilisation rate of 96 per cent.

10. The instructional role of television in rural development mainly came through the establishment of 470 Community Viewing Centres in the selected urban/rural areas. The television network continued to transmit educational programmes produced by the Allama Iqbal Open University and PTVC.

#### SIXTH PLAN STRATEGY AND OBJECTIVES

11. A major development effort is envisaged, particularly in rural development, infrastructure facilities and improvement of social services. To

strengthen the "non-physical factors" of development, specially the promotion of *attitudes* favourable to development, people's participation in the development process at the local level, strengthening of media programme and capability to project the development policies is essential.

12. The main objectives of the mass media development during the Sixth Plan will be :

- (a) To bring in large areas and population of less developed regions within reach of the TV and the Radio broadcasting network, thereby integrating these regions into the socio-economic mainstream. The additional population to be benefitted from these facilities will be 18 million during the Sixth Plan.
- (b) To reach village audiences with messages specially designed to increase productivity, better health and improvement in the quality of life through various development programmes.
- (c) To assist the Federal and Provincial agencies concerned in motivating rural audiences to adopt modern technical practices in various fields through radio and television programmes.
- (d) To use radio and T.V. more often and more effectively in service of education in general and of adult education in particular.
- (e) To strengthen and improve the newly introduced concept of local broadcasting stations in order to involve and motivate the local community to work for better life.
- (f) To provide communication support to developmental activities.
- (g) To improve external coverage of Radio.
- (h) To provide for replacement and modernisation of the existing obsolete equipment wherever needed.

#### **Television Broadcasting**

13. The objectives set forth for the general purpose television include the extension of TV signals to the economically backward areas of NWFP, Baluchistan and Sind to promote national integrity and solidarity,

rapid socio-economic uplift and religious and socio-economic education, to create awareness of our culture, traditions and history and develop consciousness of national objectives with a sense of participation of the people in the shared national destiny. By the end of the Sixth Plan period, television broadcasts would be covering about 90 per cent of the population and 76 per cent of the area as against 80 per cent and 56 per cent respectively in July, 1983. The TV set count is projected to increase at an average of 100,000 sets per annum, and by the end of Sixth Five Year Plan, it will go up from the present level of 1.5 million to 2 million sets.

14. *Second Channel.*—The Educational Television Project envisages setting up of a separate channel because the existing channel can barely cater for the limited package of programmes and renders the maintenance of equipment difficult within the present programme timing. This pressure on the existing channel would further increase in the Sixth Plan. The objectives for the establishment of second channel include the provision of television facilities for adult literacy, school and college education broadcasting in collaboration with the Allama Iqbal Open University and/other developmental agencies. While the production and broadcast facilities of educational programmes will be handled by PTVC at the transmitting end, the facilities at the receiving end, comprising establishment of 10,000 community viewing centres equipped with TV sets, instructors and course material would be the responsibility of the Ministry of Education and other developmental agencies. The Second Channel would help in accelerating the pace of literacy, making about 2 million adults literate during the Sixth Plan period and to provide school and college education broadcasts to a large number of men and women all over the country.

15. The total outlay on the projects to be implemented during the Sixth Plan period by PTVC is estimated at Rs. 1167 million. Of this, the on-going projects claim Rs. 473 million, and include the completion of Television Centres at Islamabad and Quetta, PTVC Training Academy and augmentation of production facilities at Television Centres at Karachi, Lahore and Peshawar. The new projects, costing Rs. 304 million, to be completed during the Plan period, include setting up of 4 rebroadcast centres at Malakand, Tando Allah Yar, Bahawalnagar and Leiah, 3 Super High Frequency links at (Quetta-Kalat, Quetta-Loralai, Cherat-Sakesar-Razmak and 4 booster stations at Kohlu, Miawand, Swat and Parachinar and second channel of microwave link to facilitate feeding of the programmes. The second channel for television envisages 2 production studios, one each at Karachi and Lahore and 18 Transmitters, linked with the microwave system in the project areas.

The cost of the project is estimated at Rs. 523 million, against which Rs. 390 million are provided by phasing out the facilities to the next Plan.

16. The PTVC has emerged as a profit-earning organisation (presently PTVC is earning an annual profit of Rs. 150 million from its commercial operations). These earnings are utilised in the payment of income tax at an average rate of 50 per cent of its profit, payment of dividend on Government Equity, repayment of government loans, while small amount is spent on modernisation/modification of the old equipment which inhibits its capacity for self-financing development programmes. The Corporation should be made more autonomous and empowered to raise resources for development like other public sector Corporations. Necessary institutional arrangements would be made in consultation with the Ministry of Finance during the Plan period. It is estimated that Rs. 668 million would be provided as self-financing from their own resources or from banking sources domestically and from foreign loans/grants.

### **Radio Broadcasting**

17. The current gap in the Radio facilities lies mostly in Baluchistan province and Northern Areas. The strategy to be followed during the Sixth Plan would be to provide coverage not only in these areas with a view to integrating these regions with the national network, but also to strengthen the new concept of local broadcasting station. It is proposed to provide four 10 KW MW transmitters at Loralai, Zhob, Faisalabad and Gilgit. The existing local broadcasting stations at Faisalabad and Gilgit will be upgraded to 10 KW power. In addition, two shortwave transmitters of 250 KW will be installed to strengthen the external broadcasting services for the Middle East Muslim countries.

18. In the renovation programme, a new broadcasting house will be constructed at Karachi in place of the 32-year old broadcasting house. Two 100 KW Mediumwave transmitters will be installed at Peshawar and Karachi to replace the out-dated small powered transmitters which are also more than 32 years old.

19. In view of the usefulness of local Radio Stations, it is proposed to provide six village broadcasting units one each at Sibbi, Rahim Yar Khan, Abbottabad, Mirpur Khas (Sind), D. G. Khan and Sargodha.

20. The creation of these facilities would mean that additional 5 million people will be able to get improved mediumwave coverage. The



programme facilities for the benefit of rural audiences will be augmented by enlisting the support of the existing institutional framework at the Federal and the Provincial levels.

21. An allocation of Rs. 370 million has been made for the development of Radio broadcasting during the Sixth Plan period.

### Films

22. The film sector of *mass media* has suffered a serious set-back with production levels falling by 40 per cent mainly due to the onslaught of VCR in the local market and financing problems of the private sector industry. This area pays about Rs. 400 million per annum in taxes to the state and has great potential for projection of national policies.

23. A policy package will be worked out with a view to bailing out this industry. For instance, production of film cassettes of selected Pakistani films may be encouraged in the private sector where great potential for local and foreign markets exists. Considerable stress must also be laid on quality improvement.

24. The film media can be utilized for popularising national values within a framework which retains entertainment value, and without becoming dull propaganda. It is proposed to produce about 10 films during the five year period at a cost of Rs. 12 million with financing arrangements to be made with the banking system under the supervision of Ministry of Culture. These films with dubbing in Arabic language, could find attractive market in the Middle East and would earn foreign exchange.

25. Film documentary has a vast potential as a medium of information, education and instruction. The Department of Films and Publications of the Federal Government has been producing documentaries on various cultured and topical subjects. The physical facilities for production of films will be modernised at a cost of Rs. 80 million in view of expanding needs of information and education.

### Press

26. Though the bulk of print media is owned and operated by the private sector, this sector needs indirect assistance from the Government. The cost of printing and production of material related to this industry is one of the highest in the world. Printing industry should be given incentives

by way of reducing import duty on printing machinery, printing films, inks and equipment. Appropriate measures would also be studied to set up a newsprint plant in the country.

### **Press Information Department**

27. The Press Information Department of the Ministry of Information and Broadcasting is the principal public relations and press liaison agency and serves as a basic communications link between the people and the Government. With its Headquarters in Islamabad and regional offices at Lahaore, Karachi, Quetta, Peshawar, Hyderabad and Gilgit, this agency will be strengthened so that it provides better service to the national media agencies. A sum of Rs. 5 million will be spent on adding physical facilities for pictorial coverage and to increase professional mobility.

### **Associated Press of Pakistan (APP)**

28. Besides, the news agencies are an essential component of the mass media. The APP which is the national news agency of Pakistan is the main channel of dissemination of national and international news to the various media agencies. In order to provide better service to the public as well as private sector agencies, the physical facilities available with this national news agency will be augmented during the Sixth Plan at a cost of Rs. 45 million. The main projects include replacement of 250 old teleprinters with new ones, installed at the premises of the national newspapers, Radio telex transmitters to link the agency with the international news dissemination system and construction of essential office accommodation.

### **Institutional Arrangements for Improvement of Media Output**

29. The Ministry of Information and Broadcasting has well-developed institutions for the Radio, the Television and the Press. They played very important role in the projection of socio-economic policies and in fostering national integration. However, their effectiveness in the projection of economic development issues in particular needs further improvement. During the Sixth Plan period, the training facilities will be given proper institutional support within the existing resources for improved flow of information in line with the Media's role of information and education.

### **Training**

30. The Ministry of Information and Broadcasting is presently maintaining two institutions for training of information personnel and radio programmers and engineers. A third academy will be established during the

Sixth Plan period for the training of Television Corporation staff. It is further planned to set up an Institute of Mass Communication for high level research in the latest technology of communication. A token allocation of Rs. 1 million has been made for this project to be developed by the end of the Plan period.

### **Financial Allocations**

31. The development programme envisages an investment of Rs. 1,680 million during the Sixth Plan period. Of this, the public sector will contribute Rs. 1,000 million, while Rs. 680 million will be met from outside the ADP or through self-financing, bank credits and foreign loans and grants.

## MASS MEDIA

*Financial Allocations 1983-88*

(Million Rupees)

S.No.	Agency/Sub-sector	A.D.P.	Outside A.D.P.	Total (Col. 3+4)
1	2	3	4	5
1.	Pakistan Television Corporation.	479	668 @	1,147
2.	Pakistan Broadcasting Corporation.	370	-	370
3.	Ministry of Information and Broadcasting.	151	-	151
	(a) A.P.P.	(45)	-	(45)
	(b) Press Information Department.	(5)	-	(5)
	(c) Films and Publications Department.	(80)	-	(80)
	(d) Publicity of Sixth Plan.	(50)*	-	(50)*
	(e) Training and Research.	(21)	-	(21)**
4.	Ministry of Culture.	-	12	12
	Total ..	1,000	680	1,680

@This amount will be raised from own resources of the Corporation and from domestic and foreign loans/grants.

\*This amount is not counted in the total and will be provided through readjustment.

\*\*Includes Rs. 20 million for T.V. training academy.

## MASS MEDIA

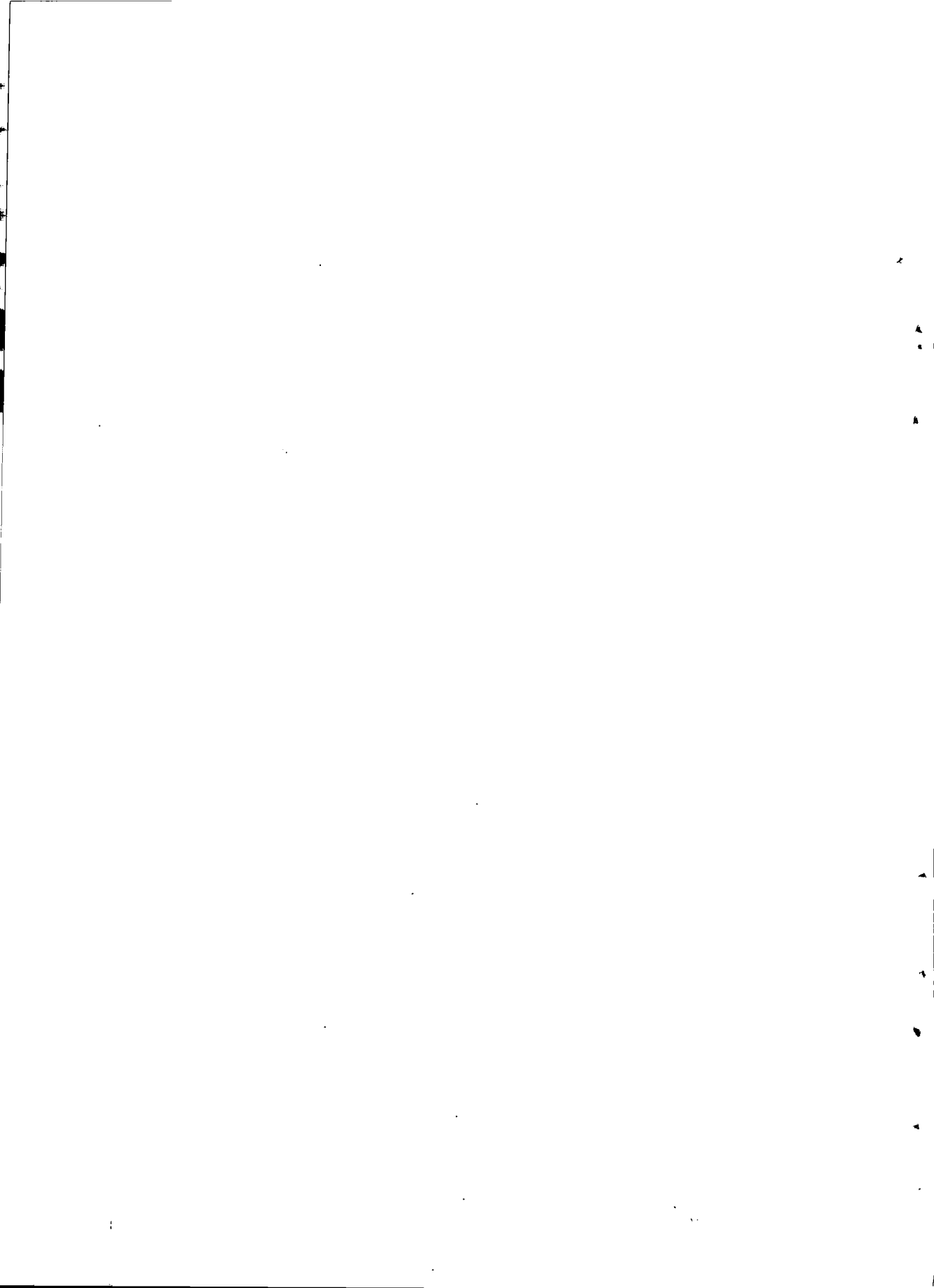
*Physical Targets 1983-88*

S. No.	Agency/Sub-sector.	Unit	Position as on 30-6-1883	Targets for 1983-88	Position as on 30-6-1988
1	2	3	4	5	6
<b>A. Pakistan Broadcasting Corporation</b>					
1.	Population coverage.	%	95	3	98
2.	Area coverage.	%	75	20	95
3.	M. W. transmitters.	No.	23	14@	37
4.	S.W. transmitters.	No.	16	2	18
5.	Broadcasting Houses.	No.	16	8**	24
<b>B. Pakistan Television Corporation</b>					
1.	General Purpose TV				
(a)	Population coverage.	%	80	10	90
(b)	Area coverage.	%	56	20	76
(c)	Main TV centres.	No.	3	2	5
(d)	Production studios.	No.	6	7	13
(e)	Rebroadcast centres/boosters.	No.	14	8	22
(f)	Super High Frequency Links.	No.	4	3	7
(g)	T.V. Receivers.	(million)	1.50	0.50	2.0
2.	Second Channel of TV				
(a)	Studios.	No.	—	2	2
(b)	Transmitters.	No.	—	18	18
(c)	Community Viewing Centres.	No.	470	10,000	10,470
(d)	Educational facilities provided.	(Million Adults)	0.10	2	2.10

@Included six-10 KW MW transmitters, Two-100 KW MW transmitters and 6 village broadcasting transmitters.

\*\*Included six village broadcasting units and 2 radio stations at Loralai and Zhob.

†Rebroadcast centres at Tando Allahyar, Malakand, Bahawalnagar and Liah; Boosters at Miawnad, Kohlu, Swat and Parachinar.

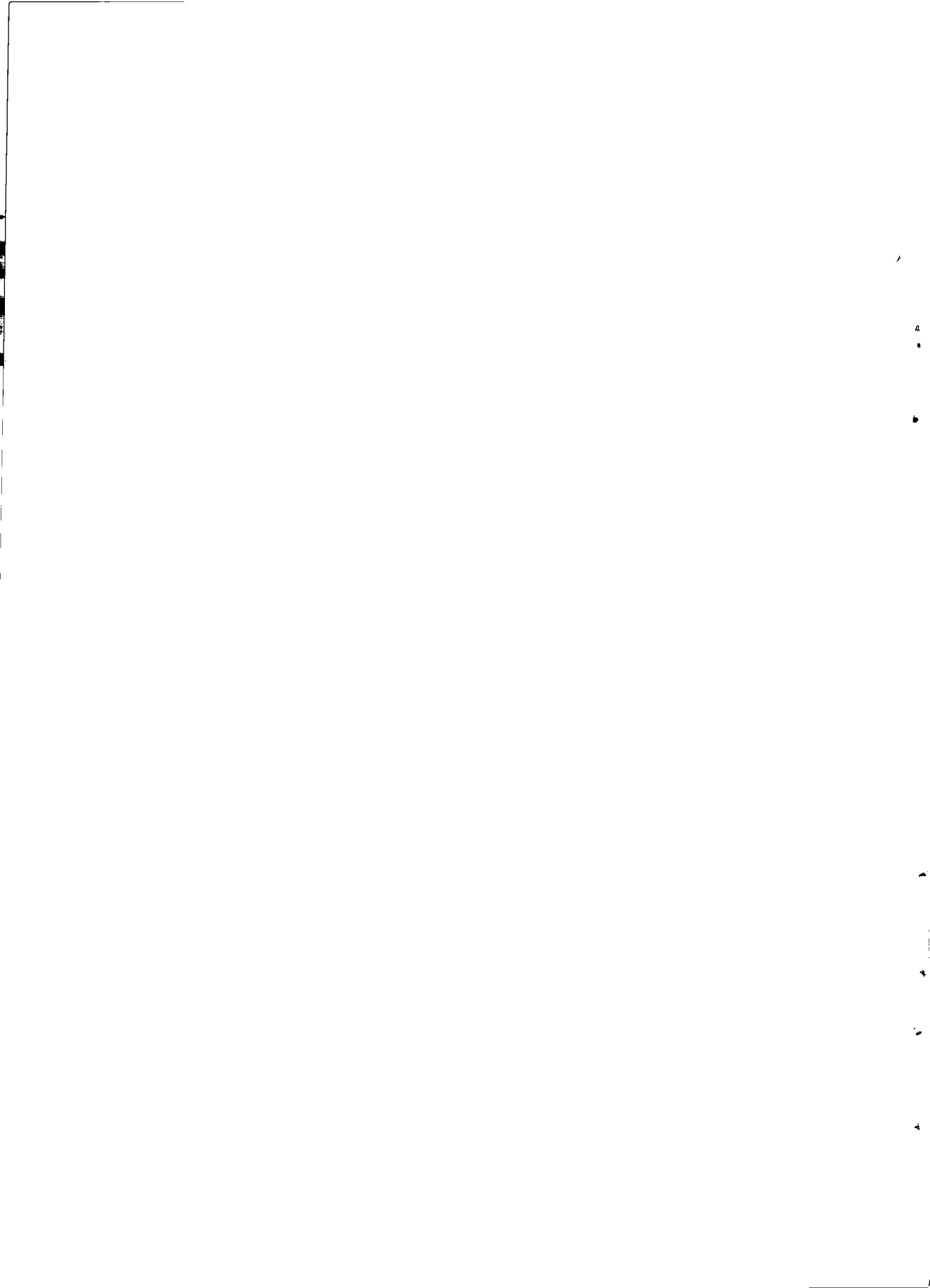


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PART VI

**PLAN AND  
THE  
PEOPLE**

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*He it is who has made you inherit the earth.*

*Al-Fatir  
(XXXV-39)*

## CHAPTER 24

### PHYSICAL PLANNING AND HOUSING

THE Physical Planning and Housing Sector has three major components e.g. housing for low income groups, water supply and sanitation and government servants housing, office accommodation, development of Federal Capital and other Special Areas Programmes. In view of the high priority assigned to housing for low income groups and water supply and sanitation, this sector has been split into three separate chapters. In this chapter the discussion has been confined to programmes for government servants housing, office accommodation, development of Federal Capital and other Special Areas Programmes only while programmes of housing for low income groups and water supply and sanitation have been discussed separately in the subsequent chapters.

#### I. Government Servants Housing

2. There is acute shortage of housing in the country for Government employees. It is estimated that only about 45 per cent of the Federal Government officials have been provided with government owned/hired residential accommodation; in the provinces, the situation is even worse as the corresponding figure is just around 30 per cent. Under the existing rules,

government servants not provided with housing accommodation are paid housing allowance at the rate of 45 per cent of the minimum basic salary of their grade. Since most of the employees without government accommodation belong to the low salary groups their housing allowance entitlement falls far below the level required to match the very high rentals prevailing in the open market for residential accommodation of minimum acceptable standards. This is a cause of great hardship to a large number of affected employees and urgent measures are needed to available the situation.

3. It is proposed to construct about 15,000 housing units, including government hostel accommodation, during the Sixth Plan period; out of this, about 6,000 units will be for Federal Government employees and the the remainder for employees of the Provincial Governments. Approximately 70 per cent of the total housing units built would be for lower income groups, 25 per cent for middle level officials and the remaining 5 per cent for senior officers. This would help ease to some extent the difficulties currently experienced by government employees in various basic pay scales though the overall problem would still be far from solved.

4. In addition to construction of new housing units mentioned above, the policy for hiring houses from the private sector will be continued as heretofore. To relieve pressure on the difficult housing situation, it is proposed that a ban be imposed on allotment of independent houses to unmarried officials; such officials may be allotted only hostel accommodation.

5. The Plan provision made for government servants housing amounts to Rs. 2040 million.

## II. Government Offices and Buildings

6. The actual requirement of office accommodation for the Federal and Provincial Governments is very large but in view of limited resources, only modest allocations could be made in the past for construction of new office buildings. The shortage of office accommodation has now reached a critical stage necessitating immediate remedial action. Hired accommodation is not only extremely expensive but also often not suitable for government offices. Moreover, dispersal of offices belonging to a single Ministry or Department over a number of different locations in a city adversely affects efficiency and also causes great inconvenience to the public.

7. In the case of Federal Government, office accommodation presently available is hardly sufficient to meet 40 per cent of actual demand; at the provincial level, the shortage is even more acute. However, since resources do not permit inclusion of a large programme of office construction in the Sixth Plan, an allocation of only Rs. 1050 million has been provided for the purpose. This would enable provision of an additional 4.0 million sq. ft. (1.5 million sft. for the Federal Government and 2.5 million sft. for the provinces) of government office accommodation in the country. A separate allocation of Rs. 100 million has been provided under the Federal Programme for office buildings needed to meet the requirements of Cabinet, Commerce and Planning Divisions.

8. In addition to construction of office buildings within the above allocations the practice of hiring office accommodation from the private sector would be continued. Possibilities of government agencies undertaking real estate projects on commercial basis—letting out some floors for commercial activities and the remaining floors for use as office space—would also be explored.

### III. Capital at Islamabad

9. Ever-since the Federal Capital was established at Islamabad about 20 years ago, a large number of Federal offices have shifted from Karachi and other cities. The present situation in regard to office accommodation at Islamabad is very unsatisfactory. A number of Federal Government offices are still accommodated in either commercial buildings or residential houses hired from the private sector. Similar is the situation in respect of residential accommodation for government employees, particularly the lower income groups.

10. The population of Islamabad, presently estimated at 250,000 is likely to grow rapidly as result of shifting of more government offices and increase of related activities. Furthermore, there is a proposal for providing residential plots for Overseas Pakistanis. This will create additional demand for housing as well as water supply and sanitation facilities. In order to meet these demands, the C.D.A. will undertake new area development schemes for making available about 10,000 plots for construction of houses on self-financing basis. The programme of improvement of the existing water supply, sewerage and drainage system, major and minor roads etc. will also be continued.

11. A total allocation of Rs. 1,650 million has been provided in the Sixth Plan for development works at Islamabad to be implemented by the Capital Development Authority. Major share of this allocation will be for the projects of Presidential Estate Complex, Parliament Building, office and residential buildings for the AGPR, Cabinet Office Block, major roads within the Federal Capital Area, schemes for improving the existing water supply, sewerage and drainage system including water supply from Simly Dam (additional works). A separate allocation of Rs. 250 million has been provided to meet the requirement of office space for newly created Islamabad Administration.

#### **IV. Civil Armed Forces**

12. The programme includes provision of residential and non-residential accommodation for the Frontier and Baluchistan Corps, Pakistan Rangers, Coast Guards, Constabularies/Levies and Thanas at interior and border locations, Federal Investigation Agency and National Policy Academy. A total allocation of Rs. 400 million has been provided in the Sixth Plan, out of which Rs. 300 million will be for the programme under the Interior Division and the remaining Rs. 100 million for programme the States and F. R. Division.

#### **Special Areas**

13. The areas comprise Azad Kashmir, Northern Regions and FATA. These regions are faced with a vast range of problems including poor housing, shortage of drinking water and lack of office and residential accommodation for public servants. In the past, only nucleus programmes of water supply and construction of office/residential accommodation were executed in these three areas. The subsequent opening up of these areas and increased tempo of development activities has generated greater demand for housing, water supply and other infrastructural facilities. To meet these demands increased allocations have been provided in the Sixth Plan. The total size of the sector allocation made for these areas is Rs. 900 million (Azad Kashmir—Rs. 350 million, Northern Regions—Rs. 300 million and FATA—Rs. 250 million), 60 to 65 per cent of which will be for water/supply/sanitation facilities. Details of the development programmes for the three regions are discussed in a separate chapter on Special Areas.

#### **Financing of the Sixth Plan Programme**

14. In order to attain the physical targets stipulated for various sub-sectors, a total allocation of Rs. 14.5 billion has been provided through the normal ADP. This allocation would be considerably augmented by increased

generation of own resources by the local bodies and substantial sector allocations from the Special Development Programmes for Karachi and Baluchistan.

15. Break-down of the ADP allocation and physical targets by various executing agencies and sub-sectors is given in Annexures I and II respectively.

## PHYSICAL PLANNING AND HOUSING

## Financial Allocations 1983-88

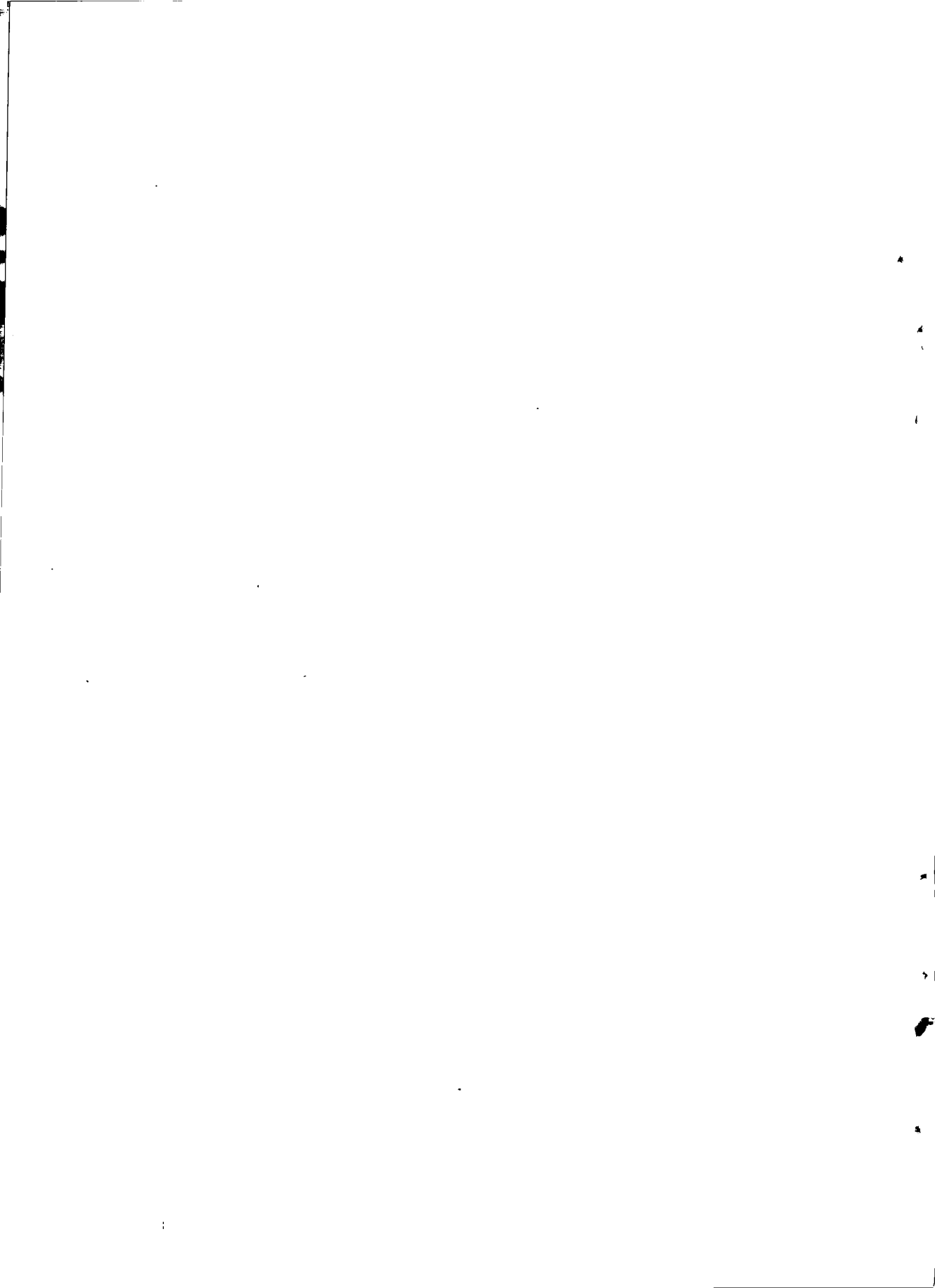
(Million Rupees)						
Sub-sector	Federal	Punjab	Sind	NWFP	Balu-chistan	Total
1	2	3	4	5	6	7
I. Institutional	70	25	21	14	10	140
(i) National Building Research Institute	50	—	—	—	—	50
(ii) Provincial Building Research Stations	—	15	15	10	10	50
(iii) Public Health Engg. Laboratories	—	2	2	1	—	5
(iv) Metropolitan Dev. Plans and Out-line Plans	—	8	4	3	—	15
(v) Urban and Regional Planning Institute	20	—	—	—	—	20
II. Housing	600	340	250	180	10	1380
(i) Low Income Housing (Public & Semi-Public Sector)	—	100	10	130	10	250
(ii) Environmental Improvement of Katchi Abadis	—	240	240	50	—	530
(iii) House Building advances to Govt. Employees	200	—	—	—	—	200
(iv) Subsidy on Housing	400	—	—	—	—	400
III. Water Supply/Sewerage and Drainage	—	3685	1775	700	240	6,400
(i) Urban Water Supply	—	1350	600	250	60	2260
(ii) Urban Sewerage/Drainage	—	500	300	100	50	950
(iii) Rural Water Supply	—	1535	735	320	100	2690
(iv) Rural Drainage/Sanitation	—	300	140	30	30	50
IV. Urban Development	—	80	54	36	20	190
V. Govt. Servants Housing	900	520	250	220	150	2040
VI. Govt. Offices/Buildings	430	250	150	150	70	1050
VII. Capital at Islamabad	1650	—	—	—	—	1650
VIII. Islamabad Administration	250	—	—	—	—	250
IX. Civil Armed Forces	400	—	—	—	—	400
(i) Interior Division	300	—	—	—	—	300
(ii) S&F.R. Division	100	—	—	—	—	100
X. Special Areas	900	—	—	—	—	900
(i) Azad Kashmir	350	—	—	—	—	350
(ii) Northern Areas	300	—	—	—	—	300
(iii) FATA	250	—	—	—	—	250
XI. Miscellaneous Projects of Cabinet, Commerce Divisions, etc.	100	—	—	—	—	100
XII. Public Corporations	—	—	—	—	—	1000
Total ..	5300	4900	2500	1300	500	15500

## PHYSICAL PLANNING AND HOUSING

## Major Physical Targets

*Major Physical Targets*

Sub-sector	Unit	Federal Govt.	Punjab	Sind	NWFP	Baluchistan	Total
1	2	3	4	5	6	7	8
Urban Water Supply	Addl. Pop. to be served (Million)	0.15	4.50	3.00	1.00	0.35	9.00
Urban Sewerage and Drainage	Do.	0.15	3.20	2.50	0.80	0.35	7.00
Rural Water Supply	Do.	0.20	10.60	3.70	2.20	1.30	18.00
Rural Drainage/Sanitation	Do.	0.10	2.70	1.00	0.40	0.30	4.50
Urban Residential Plots :							
(a) Public Sector	No. in thousand	—	60	20	—	—	80
(b) Semi-public Sector (Dev. Authorities)	Do.	10	105	300	50	5	470
Total ..		10	165	320	50	5	550
Improvement of Katchi Abadis and slums (population to be served)							
	Million	—	0.80	1.00	0.20	—	2.00
Govt. Servants Housing	No. of Residences	6000	4000	2500	1500	1000	15000
Govt. Offices & Buildings	Million Sq. ft.	1.50	1.00	0.75	0.50	0.25	4.00





*And God has given you  
(the ability to build)  
your houses as places of rest  
Al-Nahl  
(XVI-80)*

## CHAPTER 25

### HOUSING : SHELTER FOR THE POOR.

**P**AKISTAN has faced formidable housing problems from its very birth as an independent nation because of the sudden mass influx of refugees in 1947. During the early years, Government efforts in this sector were primarily directed towards providing nucleus housing shelter for the displaced persons and a number of low cost housing projects were executed on emergency basis. Most of these programmes, however, came to an end after a few years while the inflow of refugees continued (though at a slower pace) and the situation, which had been considerably ameliorated earlier, began to deteriorate rapidly once again. The difficulties were compounded by a high national population growth rate and sustained migration from rural to urban areas as well as limited availability of suitable developed land. As always, the worst sufferers were the poor and deprived sections of the population who, in increasing numbers, found recourse to housing themselves in temporary shelters in squatter settlements and slum areas.

2. After the early years of Independence, Government role in the housing sector remained limited, except in the case of housing construction for its own employees, to providing sites and services. The total number of

residential plots developed till 1978 was approximately 550,000, about 90 per cent of which were for lower and middle income groups. Actual construction was, of course, left to house owners and private enterprise.

### FIFTH PLAN

3. The estimated backlog of housing units in the country at the beginning of the Fifth Five Years Plan was about 1.2 million. Recognizing the facts of severe resource constraints and limited potential of the local building industry, no attempt was made in the Fifth Plan sector programme to clear any part of this backlog and the programme was restricted to meeting only about 60 per cent of the additional housing requirements generated due to normal population growth and providing improved basic services to the 'katchi abadi' dwellers.

4. The additional demand of housing units in urban areas over the Plan period was estimated at 581,000 units, assuming an urban population growth rate of 4.4 per cent. The corresponding estimated figure for rural areas was 864,000 units. The requirement of urban residential plots was estimated at 425,000 on the assumption that multi-story residential construction would be undertaken on a substantial scale which would accommodate a number of housing units on each plot. No separate target was, however, laid down for developing residential plots in the rural areas.

### Targets

5. On the basis of the above considerations, sector targets were fixed as follows :

- (i) *Houses.*—Construction of 350,000 houses by the private sector in urban areas. Annual output of houses to be increased progressively from 45,000 in 1978 to about 90,000 by 1982-83.
- (ii) *Residential Plots.*—Development of a total number of 425,000 urban residential plots of various sizes (80 to 600 sq : yds). Out of this total number, 75 per cent were to be for the lower income groups (upto 200 sq : yds), 20 per cent for the middle income groups (200 to 400 sq : yds) and the remaining 5 per cent for higher income groups (400 to 600 sq : yds).

- (iii) *Environmental Improvement.*—Provision of improved basic services to a population of about 1.33 million in slum areas.

### **Achievements**

6. The Plan targets indicated above were, however, not achieved and there was substantial shortfall under each of these three heads. The total number of plots developed was about 285,000 against the target of 425,000 while the coverage of population achieved under the slums/katchi abadi improvement programme was 500,000, against the target of 1.33 million. Similarly, the number of housing units constructed in the private sector was only 225,000 against the target of 350,000.

7. The overall sector performance was thus not very satisfactory. Housing construction lagged behind the envisaged targets partly due to unavailability of serviced plots and partly because of inadequate credit facilities. The main shortfall in respect of residential plot development occurred in the province of Punjab where (government land not being available) private land could not be procured at the unrealistically low ceiling price of Rs. 20,000 per acre, which was less than one fifth of the prevailing market rates, fixed by the Government. Physical progress in slum improvement programme fell behind schedule because of delayed start, the initial years of the Plan having been spent in conducting preliminary surveys etc.

### **Present Situation**

8. The gap between the felt national needs and actual availability of facilities in the housing sector continues to grow with each passing day, particularly for the low income groups which constitute about 70 per cent of the total population. The total housing backlog in the country has now increased to about 1.4 million units and the situation is likely to get progressively worse because of our inability to meet the annual incremental demand.

### **Future Needs**

9. The 1981 population census indicated Pakistan's total population to be about 84 million, registering an annual growth rate of 3 per cent between the period 1972–81. At this inter-census growth rate, the total population of the country is likely to be about 109 million in 1990 and 120 million in the year 2000. The proportion of urban population is expected

to increase from the present 28 per cent to about 33 per cent by 1990 and 40 per cent by the year 2000. The 1972 and 1980 housing census results have also signalled deterioration in housing conditions over the years; the rate of occupancy per housing unit increased from 6 to 7 persons and the average number of persons per room increased from 3 to 3.5 during the period 1972-80. Another manifestation of the rapid worsening of the situation is the increase in the number of slum/'katchi abadi' dwellers in the urban areas during this eight-year period by about one million. It is estimated that presently about 25 per cent of the urban population in the country lives in such katchi abadis. The problem will accentuate further in future due to our high population growth rate and continuing rural-urban migration.

10. Based on the above statistics, the current annual incremental demand for housing is estimated to be 134 and 135 thousand for the urban and rural areas, respectively.

## SIXTH PLAN

11. The major focus of the housing programme in the Sixth Plan will be on low income groups who, though comprising nearly three-fourths of the total population, have benefitted much too little from past progress. The prevailing acute housing shortage in the country, coupled with the prospect of rapid worsening of the situation, calls for imaginative and innovative approaches to the problem as well as bold decisions. Our record in this sector over the last five plans has not been entirely commendable. The traditional approach has been to announce in each Plan high targets for low income housing without backing these with sufficient financial allocations or mobilization of national effort. Quite predictably, the targets set have, Plan after Plan, never been achieved, thereby compromising the credibility of the national planning process in the public mind.

12. There is a basic dilemma in this housing situation: those who need housing are far too poor to afford it—either to build or even to rent it—at the market rates; left at the mercy of the market mechanism, they will always remain deprived of proper shelter. Obviously, therefore, housing for the low income groups has to be subsidized. The other part of the dilemma is that society is reluctant to pay in perpetuity the required subsidy to the poor. This dilemma needs to be resolved before we can achieve significant success in our housing programmes. The obvious answer is government intervention. Since the market cannot cater to the low income groups on

the basis of profit, the government must assume the major share of responsibility for such groups in the Sixth Plan. Based on this approach, the following 5-points strategy has been evolved to tackle the low income housing problem during the next five years:

- (i) Government will assume a major responsibility for low income housing.
- (ii) 500,000 small size residential plots (60-150 sq. yds plots) will be developed in the public sector; this would cost approximately Rs. 10,000 million which will be ultimately recoverable from the beneficiaries. However, the entire amount would not be required for investment at any one time; the Government would need only a revolving fund to start off the programme by purchase of required land and execution of some preliminary works.

In addition to the above, private sector will be inducted for development of 120,000 small size plots for low income housing. For this purpose, suitable undeveloped government land will be allotted to private entrepreneurs at reasonable rates.

- (iii) With a view to reducing costs and ensuring ready availability, Government will provide needed construction material at reasonable rates to intending house builders from low income groups.
- (iv) All nucleus housing units (up to 200 sq. ft. covered area) will be financed entirely through interest free loans of Rs. 20,000 per family to be advanced by the House Building Finance Corporation (HBFC). The programme will start from the year 1983-84 and a separate allocation of Rs. 1 billion per year would be made available to HBFC for the purpose.
- (v) The poor will be allowed to construct houses according to their own design and with their own labour without interference from the concerned regulatory building authorities.

## House Construction

13. As already stated, there is a very severe shortage of housing stock in the country and the existing supply situation meets hardly 50 per cent of the annual incremental growth in demand. The main causes for this serious shortfall in supply include:

- (i) Exorbitant cost of construction.
- (ii) Lack of adequate credit facilities on reasonable terms.
- (iii) Unattractive rates of return on capital investment as compared to other commercial ventures.
- (iv) Limited availability of suitable developed land, and
- (v) Poor level of domestic savings because of prevailing high cost of living.

14. It is necessary that we should be able to satisfy at least the incremental demand for housing so that the problem does not get worse. For this purpose, construction of 670,000 housing units would be required in the urban areas during the Sixth Plan period. To execute an undertaking of this magnitude will require very considerable augmentation of our national capacity, in financial and physical terms, for implementation of large housing projects. It is, of course, possible to achieve this provided construction capacity in the private sector is fully mobilized by offering necessary fiscal incentives and making improved credit facilities available in the country.

## Credit

15. Presently, there is only one institution i.e. (the House Building Finance Corporation) which provided credit for house construction. The financial resources of this organisation will need to be increased considerably so as to provide coverage to a large number of people. Even after enlarging the scope of activities of this Corporation, there would still remain a substantial gap between the supply and demand for credit in the housing sector. Additional resources and new financial institutions would be needed to bridge this gap effectively. For this purpose, the measures proposed are:

- (a) Commercial banks to be authorized to advance loans to builders and developers on concessional terms for bridge financing.

- (b) Possibilities of establishing Savings and Loans Associations and Building Societies to be explored for mobilizing small savings of the common man for housing sector activities.

### Rural Areas

16. In the rural areas, too, housing of satisfactory standards is in very short supply; however, the rural population has generally been able to accommodate itself in substandard houses—with mud walls, thatched roofs and lacking proper ventilation—which are mostly constructed on self-help basis. Technical guidance for improved methods of construction with local materials could prove invaluable to the rural population. A properly planned house constructed with locally available building material can, inspite of being much cheaper, be as comfortable as a house having *pucca* walls and R.C.C. roof. The local councils will, therefore, be required to evolve a suitable mechanism for arranging necessary technical advice on a regular basis.

17. The other major problem faced by the village population is the non-availability of any credit facilities for house construction. Presently, the activities of the House Building Finance Corporation are mostly limited to the urban areas. During the Sixth Plan period, the loaning operations of the HBFC will be extended to the rural areas so that necessary credit facilities become available to the people at large in the villages.

### Improvement of slums/katchi abadis

18. One of the major causes of emergence of slums and katchi abadis in large cities is the sustained migration of people from rural to urban areas in search of employment opportunities and a better quality of life. It is estimated that approximately 25 per cent of the population in large cities lives in substandard conditions. The low income level of such groups tends to perpetuate the misery of thier living conditions and puts housing of acceptable standards beyond their reach. Amelioration of the difficulties faced by such under-privileged groups is a high priority concern of the government. While total elimination of slums is not feasible in the short term, a phased programme for improvement of such areas in major cities like Karachi, Lahore, Hyderabad, Faisalabad, etc. would be undertaken during the Sixth Plan; the important elements of this programme, which would provide coverage to about 2 million slum dwellers, will include provision of basic services such as electric/water supply, drainage and sanitation, development of proper streets with minimum of realignment etc. Technical guidance

will also be provided to the residents for improvement of their substandard houses. For carrying out this programme, during the Plan period, an amount of Rs. 530 million has been provided on matching basis, the balance being provided by the beneficiaries themselves.

19. The haphazard growth of cities and the rapidly increasing number of katchi abadis due to the high growth rate of urban population has made it a matter of urgent necessity that a well defined National Settlement Policy be formulated for regulating the growth of large and medium sized urban centres. Such a policy is already being finalized and the recommendations contained therein will be considered for implementation during the course of the Sixth Plan. Also, metropolitan development plans for Lahore, Faisalabad, Multan, Peshawar and Quetta as well as outline plans for a number of other medium sized town will be prepared during the Plan period. An Institute of Regional and Urban Planning will be set up to develop indigenous expertise in this field.

#### **Need for Research and Development**

20. The present day construction costs with conventional building materials and techniques are, even for modest specifications, beyond the reach of the lower and middle income groups. Special efforts, therefore, need to be made to develop/introduce techniques of low cost design and construction based on locally available materials. Keeping this requirement in view, it was proposed in the Fifth Plan to establish a National Building Research Institute to carry out necessary research. However, establishment of the said institute got delayed due to unavoidable reasons and it is now expected that this Institute would be set up very early in the Sixth Plan period. Similar research institutes, though on a smaller scale, would need to be established at the provincial level also. The existing Universities of Engineering and Technology will also be inducted in Research and Development in this field. A Plan provision of Rs. 105 million for this programme has been made.



*(Easy is it for Him to create  
likeness and variety :) thus, the  
two great bodies of water (on earth)  
are not alike—the one sweet,  
thirst-allaying, pleasant to drink,  
and the other salty and bitter:*

*Al-Fatir  
(XXXV-12)*

## CHAPTER 26

### WATER SUPPLY: FAREWELL TO POLLUTED WATER

**I**N spite of tremendous human progress, over two billion people in the world even today do not have access to safe drinking water and proper sanitation services. Millions die or are incapacitated each year due to diseases caused by polluted drinking water and insanitary conditions. Furthermore, the enormous number of work hours lost due to such poor conditions constitute a significant economic loss. It is estimated that 30 per cent of all reported cases of illness and 40 per cent of all deaths in Pakistan are attributable to water borne diseases, the main sufferers being the unserved or underserved rural and urban fringe populations. The Sixth Plan objective is to extend clean water and sanitation coverage to as large number of people as possible during the next five years.

#### **Background**

2. Ever since independence in 1947, this important sector has somehow not received the attention it deserved. Till the end of the First Five Year Plan in 1960, only a handful of water supply schemes were undertaken in major urban areas while the rural areas remained largely neglected. With the creation of separate Departments of Public Health Engineering at the

provincial level in 1961, an institutional framework was provided to accelerate development effort in the field of water supply and sewerage. This new set-up made it possible to handle with considerable success major new sector projects at Karachi, Lahore, Hyderabad, Multan, Faisalabad, Rawalpindi and Peshawar during the Second and Third Five Year Plans (1960-70). In spite of these developments, however, water supply and sewerage programme remained rather limited during the sixties.

3. From 1970 to 1978, though all development planning proceeded on an annual basis due to unsettled conditions, considerable progress was achieved in this sector through completion of about 200 small water supply schemes and installation of about 50,000 handpumps in the rural areas of the Punjab and Sind Provinces. With the implementation of the above programmes, the overall coverage of facilities was raised to 27 per cent by 1978 (61 per cent in urban and 14 per cent in rural areas) whereas sewerage/sanitation facilities became available to 14 per cent (35 per cent in urban and about 1 per cent in the rural areas) of the country's total population.

#### **Fifth Plan Targets**

4. The Fifth Plan sectoral programme aimed at further acceleration of the pace of extending water supply and sanitation facilities to as large a segment as possible of urban and rural population. The targets set were as under:

##### **(a) *Water Supply***

- |                   |   |
|-------------------|---|
| (i) Urban areas.  | Increase the population coverage from 61 per cent in 1978 to 81.5 per cent in 1982-83 by serving an additional population of 8.25 million.            |
| (ii) Rural areas. | Provided service to an additional population of 14.25 million thereby increasing population coverage from 14 per cent in 1978 to 36 per cent by 1983. |

##### **(b) *Sewerage/Sanitation***

- |                  |   |
|------------------|---|
| (i) Urban areas. | Increase the population coverage from 35 per cent in 1978 to 51 per cent by |
|------------------|---|

1983 by serving an additional population of 5.86 million.

(ii) Rural areas.

Provided facilities to an additional population of about 2.0 million to increase the coverage from almost zero to about 4 per cent by 1983.

5. The above targets were based on the provision of water supply both through house to house connections and standposts in the urban areas and through standposts and handpumps in the rural areas. For sanitation facilities, the systems proposed, were water-borne sewerage/septic tanks in urban areas and simple open drains/pit latrines in rural areas.

### **Fifth Plan Achievements**

6. The Fifth Plan targets of water supply, sewerage and drainage in urban areas were nearly reached: 77 per cent actual coverage of water supply against 81 per cent Plan target in water supply and 48 per cent against 51 per cent sewerage and drainage. In the rural areas, however, the progress was dismal: the provincial governments concentrated more on taking up the relatively costlier water supply schemes based on piped system instead of undertaking a large programme of cheaper schemes based on handpumps.

### **Present Position**

7. It is estimated that potable water supply facilities are presently available to about 38 per cent of the entire population (77 per cent urban and 22 per cent rural population) while drainage/sanitary facilities of acceptable standard are available to only about 16 per cent (48 per cent in urban and 4 per cent in rural areas). Access to piped water supply is limited to only the large urban centres. Approximately 30 per cent of the urban population with access to piped water supply have house connections, the balance being served by standposts or public taps. Sewerage/sanitary systems are limited to parts of a few major cities. The urban population not connected to sewerage system depend for wastes disposal on septic tanks, soakage pits or overflows into storm drains. In rural areas, the water supply coverage provided through public sector agencies is supplemented by a fairly large number of private handpumps installed by relatively prosperous rural folk. The unserved sections of the population in rural areas and the poorer fringes of cities/towns are dependent upon water from rivers, canals, shallow wells and ponds, often of unreliable quality and carried from substantial distances. Rural drainage/sanitation facilities are virtually non-existent throughout the country.

## SIXTH PLAN PROGRAMME

8. The lack of potable water supply and sanitation facilities is a major cause of many serious diseases. Although reliable statistics regarding the incidence of water borne diseases are not available, it is well known that contaminated drinking water is one of the principal agents of disease and health in the country. The provision of potable water suppliers and proper sanitary facilities to the population at large should, therefore, help bring down appreciably the incidence of disease in the country. However, the task of providing necessary coverage to the entire population of the country would, keeping in view the rather low benchmarks we are starting from, be too enormous a task to be completed during the next 5 years. The constraints involved are not only financial but also of availability of required equipment and the physical project implementation capacity of the relevant executing agencies.

9. Keeping in view the above situation, the following targets are envisaged for the Sixth Plan.

**Urban Areas**

10. It is proposed to increase the urban population coverage in regard to piped water supply by 9 million persons, thus raising the percentage of population served from the existing level of 77 to 90. The supply in urban areas will be partly through house connections and partly through sandposts. In case of sewerage, drainage and sanitation, the coverage in urban areas necessary services to an additional population of about 7 million.

11. The present position and Sixth Plan targets in respect of major water supply projects in some of the important cities of the country is given below :

12. *Karachi*.—Against a daily demand of 310 million gallons, the total supply capacity (not taking into account distribution losses) of the existing system is 232 million gallons per day (mgd). Based on an assumed population growth rate of 5 per cent per annum for Karachi Metropolitan area, the daily demand is projected to reach 391 mgd in 1985. In order to meet this increase in demand, two projects (approximate cost Rs. 800 million)—one based on Indus river source and the other on Hum Dam source—will be executed during the Sixth Plan which would augment the existing supply by 139 mgd, still leaving a shortfall of 20 mgd to be met in the Seventh Plan.

13. Only about 20 per cent of the Karachi population presently has access to sewerage facilities. Two new sewerage treatment plants together with necessary sewer lines will be provided during the Sixth Plan to increase the population coverage to 40 per cent.

14. *Lahore.*—In Lahore, the available daily water supply is about 150 mgd which is quite adequate to meet the present needs of most areas of Metropolitan Lahore. However, water supply to some outlying areas of Lahore city is still very deficient. To remedy this situation and to provide for increase in demand due to anticipated population increase, it is proposed to initiate a new scheme towards the later part of the Sixth Plan period augmenting the existing supplies by about 25 per cent.

15. *Faisalabad.*—Faisalabad is presently getting about 18.6 mgd of water whereas sewerage facilities are practically non-existent. A comprehensive project of water supply, sewerage/drainage which has been started recently will be completed during the Sixth Plan to provide an additional 25.6 mgd of water and necessary sewerage facilities for the city. The approximate cost of the project which is being co-financed by the Asian Development Bank, is Rs. 916 million.

16. *Islamabad.*—The capital city of Islamabad is, after recent completion of Simly Dam, getting about 30 mgd. of water which is adequate to meet the present needs of the developed/developing sectors of Islamabad. However, additional water supplies would be needed as and when development of new sector is taken in hand. This additional requirement will be met by the Khanpur Dam project which will be initiated during the Sixth Plan.

17. *Other Cities.*—Similar sector projects will be undertaken in other important urban centres of the country e.g. Hyderabad, Rawalpindi, Quetta, Multan etc.

### Rural Areas

18. In the rural areas, potable water supply will be provided to an additional 18 million people, thereby increasing the percentage of population served from 22 to 45. Supply system in rural areas would consist of storage tanks and handpumps and found appropriate. As regards drainage and sanitation the coverage will be increased from the existing 4 to 10 per cent by serving an additional population of 4.5 million. The programme in rural areas would comprise mostly of surface drains and pit latrines.

### Technical Aspects

19. In view of resource limitations and to meet the envisaged targets modest design standards of *per capita* consumption will be adopted for all projects instead of adhering to rigidly high and sophisticated standards. Both conventional and modern methods will be used in project execution. Water supply coverage will be provided both through house connections and standposts in the urban areas while extensive use of handpumps house connections and standposts in the urban areas while extensive use of hand-pumps will be made, wherever appropriate, in the rural areas. In case of piped systems the supply will be through storage tanks.

20. From the technical view point it is best to have a continuous (24 hours service) water supply system; however, the costs involved are substantially higher than for an intermittent system. This cheaper, (intermittant) system, on which all our city water supplies are based, can pose a number of hazards particularly during periods of negative pressures when impurities are likely to infiltrate into the system. The situation becomes particularly serious where sewerage systems are inadequate or where these do not exist, at the ground water is then likely to be heavily polluted. Experience, however, indicates that wastage of water is much higher in a continuous system which leads to further increase in costs. In view of resource constraints and the prevalent meagre *per capita* supply standards, it will not be feasible to change over to a continuous service during the Sixth Plan period and the present system of intermittent service will be continued.

21. There is enormous waste of water in the water supply systems of all our major cities which causes unnecessary loss to the public exchequer. The proportion of water which is wasted or remains unaccounted for in some of our urban compared to the internationally accepted permissible limit of 10 to 15 per cent. A vigorous leak detection programme would, therefore, be undertaken by the concerned city agencies like Karachi/Lahore Development Authority etc. so as to identify the causes and points of leakage and devise necessary remedial measures, including repair or replacement of affected portions of the

### Allocations

22. In order to accomplish the proposed sectoral targets, an allocation of Rs. 6,400 million has been provided from the ADP sources during the Sixth Plan, which would be about 1.5 times the level of Fifth Plan outlay in this sector. Of this ADP amount the share of urban areas will be

Rs. 3210 million while that of the rural areas Rs. 3,190 million. These allocations will be augmented by the efforts of the local bodies and the implementation of a Special Plan to improve the public services in Karachi.

## Problems/Policies

### *Urban Areas*

The capital, maintenance and operation costs of water supply and sewerage projects are too heavy to be met through the public exchequer without affecting recovery of adequate user charges from the beneficiaries. Sound economic policy would dictate fixation of user charges at a level high enough to defray all expenditures incurred on operation and maintenance of the system as well as permit amortization of the capital cost, including interest on loans, within a reasonable period. The prevailing costs of construction as well as interest rates being very high, user charges calculated even on "no profit no loss" basis work out to rates much above those prevailing at present which were fixed as far back as 20 years ago. In most cases, the revenue realised through user charges is not enough to cover even the operating cost of the system with the result that huge recurring subsidies have to be provided by the public sector agencies concerned.

23. To cite only a few cases, the annual expenditure on operation and maintenance of the water supply system in Karachi is about Rs. 260 million, while user charges presently bring in a revenue of approximately half this amount. This is inspite of a recent increase in user charges from Rs. 1.96 to Rs. 3 per thousand gallons for domestic consumers and from Rs. 3 to Rs. 6 per thousand gallons for industrial/commercial consumers. The increased rates are effective since July 1, 1982 though the authorities concerned have not so far been successful in affecting recoveries at enhanced rates from all consumers. Even with full recovery at enhanced rates, the annual revenue would not exceed Rs. 180 to Rs. 190 million leaving a deficit in the operational expenses of about Rs. 70-80 million per year. If capital costs of the assets were also to be taken into account—as they should—the user charges would have to be further raised by atleast 50 per cent.

24. In Hyderabad, the current rate of water charges is Rs. 2.50 per 1000 gallons which presently yields a revenue of Rs. 10 million per year but is not sufficient to defray the operational and maintenance cost of the

system. Consequently, the provincial government provides an annual subsidy of about Rs. 15 million to the Hyderabad Development Authority. In order to break even, the current rates of user charges will need to be more than doubled. Similar is the position in Lahore where the present rate of water charges (increased only last year) is Rs. 3 per 1000 gallons, which is still about 30 per cent below the level needed to recover full costs.

25. In order to enable the concerned agencies to implement and operate the system efficiently, reduce their burden of repayment of loans as well as to keep the user charges within reasonable limits, the capital cost of the projects need to be minimized. For this purpose the following measures will be considered for adoption :

- (i) Domestic loans for water supply and sewerage projects to be advanced at concessional rates of interest.
- (ii) External loans to be passed on to the executing agencies by the Federal Government at the same rate as actually charged by foreign donor agencies.
- (iii) Machinery/equipment/plant required for the sector projects to be exempted from customs duty.
- (iv) Electrical power for operating water supply/drainage system to be charged at the same concessional rates as applicable in the case of irrigation tubewells.

26. Metering of supplies to be introduced in all cities to discourage wastage and tariffs so regulated as to provide for progressively increasing rates for higher consumption of water.

### *Rural Areas*

Presently, schemes in rural areas are financed entirely by the provincial governments on grant basis. There is a need to revise this policy. The local councils will hereafter be required to contribute at least the operation and maintenance cost of the system.

### **Institutional Arrangements**

27. In the Fifth Plan, it was proposed that the responsibility for co-ordination of the provincial programmes at the federal level should be assigned to a single agency *i.e.* the Environment and Urban Affairs Division,

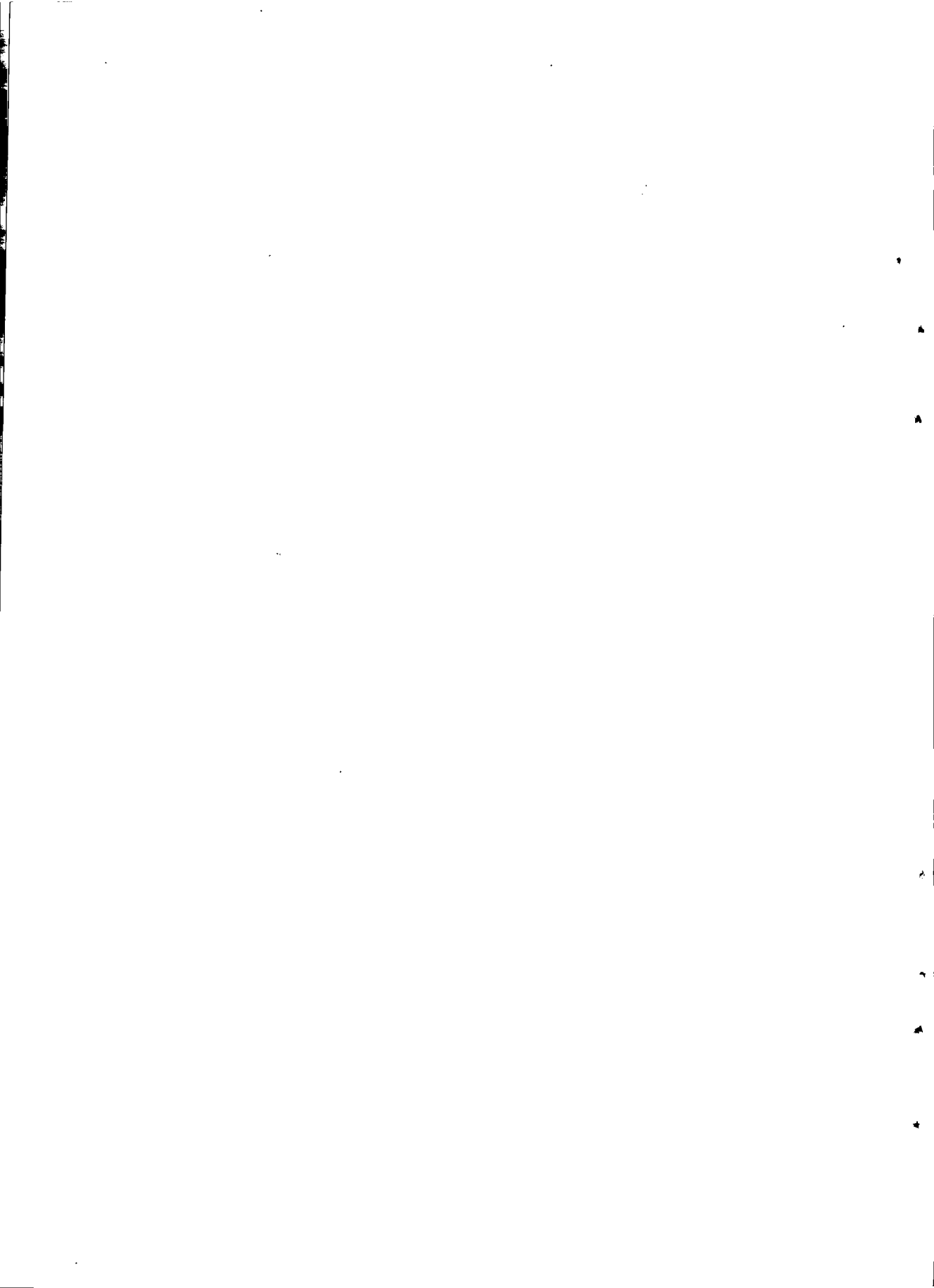


for which purpose it should be adequately strengthened. The proposal did not materialize fully as this Division was entrusted with the responsibility of only programmes in urban areas while the co-ordination of rural programmes was assigned to the Local Government and Rural Development Division. The arrangement has, however, not worked satisfactorily and urgently needs streamlining at inter-ministerial level so that processing and implementation of relevant projects is facilitated.

28. Similarly at the provincial and lower levels the existing concerned agencies (e.g. Public Health Engineering Department, Local Government Department) will need to be strengthened in terms of technical capacity for more efficient handling of sector projects falling within their jurisdiction.

### **Research**

29. The Institute of Public Health Engineering Research (IPHER) established in the University of Engineering and Technology, Lahore, is already imparting post-graduate training to sanitary engineers. It will be further strengthened to enable it to enlarge the scope of its professional activities and increase the intake of trainees in this field. In addition, technical centres will be established in the provinces for the purpose of training people to become artisans in various trades relevant to the operations, maintenance and repairs of water supply and sewerage systems.



*All praise is due to God,  
who has created the heavens  
and the earth, and brought into  
being deep darkness as well as light.*

*Al-An'am  
(VI-1)*

## CHAPTER 27

### VILLAGE ELECTRIFICATION : A NEW GLIMMER OF LIGHT

**T**HE task of transforming the life style and economy of our villages through electrification is a major challenge to the policy makers. Though some efforts have been made in the past to extend to the rural areas the benefits of electricity, much more needs to be done to accelerate this process. Out of about 45,000 villages listed in the census of 1972, only 16,400 villages have been electrified in 35 years, and about half of these were electrified during the last five years. At present, only 8 per cent of Pakistan's rural population, therefore, has access to electricity.

2. Providing electricity to the rural areas is acknowledged to be one of the most important instruments through which the productivity and income of the rural population can be raised. Electricity provides the means for improving the efficiency of the farm, particularly in pumping water for irrigation as also for combating the menace of water logging and salinity. It can also provide stimulus to the growth and development of small scale industries thereby diversifying farm income.

## Present Status

3. The main agency for village electrification is the Water and Power Development Authority. Before WAPDA came into being in 1959, only 609 villages were electrified. WAPDA electrified 295 villages in 1959-60, 954 in the Second Plan period, 531 in Third Plan period, 4,875 during 1970-78 and 7,934 in the Fifth Plan. However, coverage in terms of population and the number of beneficiaries has been limited. Parallel programmes of SCARP and tubewell electrification were also undertaken. The need for greater coordination between village electrification and tubewell electrification has often been felt. At present on an overall basis, about 25 per cent of the rural population of the electrified villages is using electricity. In addition to 16,400 villages, 114,000 tubewells have been electrified. Electricity consumption in agriculture sector comprises 18.4 per cent of all the electrical energy consumed through WAPDA and KESC.

4. WAPDA is carrying out, at present, village electrification programmes under its Distribution of Power and Village Electrification Project. Recently WAPDA has established a Rural Electrification Office (REO) headed by a Chief Engineer and also established a Distribution Design Cell also headed by a Chief Engineer. Evaluation of the existing programme and its future planning is being carried out by REO with the assistance of Pakistani Consultants. Several international aid/loan giving agencies including US-AID, Asian Development Bank and Kuwait Fund, are now actively participating in the rural electrification programme of Pakistan.

5. Electrification of villages is being done by drawing 3-phase 11 KV lines from the grid stations established under the Secondary Transmission and Grid Station Project. In the villages, depending on the load requirements, transformers of 25 to 100 KVA capacities are installed and 3-phase/single phase 400/230 volt lines are drawn. Almost all the materials needed for village electrification such as conductors, transformers, structures for high tension and low tension lines etc. are manufactured in Pakistan.

6. Apart from WAPDA, KESC too has electrified a small number of villages in rural areas adjacent to Karachi and in some parts of Baluchistan. There is also small scale decentralized power generation in remote areas. Small diesel sets are being installed in the remote areas of Baluchistan and small hydel stations in Northern Areas, NWFP and Azad Kashmir. Projects are also in hand to supply electricity to rural areas by using solar energy and bio-gas.

## Major Current Issues

7. An evaluation of the current rural electrification programme brings out a number of issues. The first being that because load in a rural locality comes to an appropriate level only over a long period, investment in areas has a long payback period too. Power utilities, therefore, have a natural reluctance to make long-term investment. On the other hand, there is a strong basis for increasing rural electrification on grounds of social justice, and in consideration of the long run economic benefits which accrue to the nation as a whole. The setting of targets for village electrification therefore, requires striking a balance between the two.

8. Increasing the number of beneficiaries in the villages already electrified is equally important as compared to increasing the number of new villages to be electrified. Because, even when electricity has reached a village usually about 25 per cent population of the village is benefitted by it. It is important, therefore, to enlarge the scope of increasing the population served with electricity in already electrified villages.

9. Increasing the number of beneficiaries has its own problems though. First, the utilities are more inclined to allocate rural electrification funds to increase the number of new villages rather than expand existing systems within villages already electrified. This is because targets are set in terms of new villages and progress is measured with respect to this target. Socio-economic consideration also dictate that for equitable village electrification in different regions, the target be in terms of number of new villages.

10. The criteria of selection of villages has been a subject of debate and discussion. In recent years, the criterion has been to electrify villages which are within a range of half a mile from the existing grid stations. This criterion could not, however, apply to Baluchistan where the villages are dispersed far and wide. Also the half-a-mile distance criterion does not necessarily lead to a choice of villages of large population. The villages or group of villages which exist beyond the distance of half a mile have, therefore, very little hope of getting electricity even though they might offer a more economical use of energy because of their larger population.

11. In order to give weightage to the underdeveloped areas, 90 per cent of the total funds provided in the Annual Development Programme for village electrification are distributed among the Provinces on the basis of population and the remaining 10 per cent equally distributed between NWFP and Baluchistan. Within a Province, the funds are re-allocated to

various districts which propose the villages to be electrified in a given fiscal year. The Working Group of the Sixth Five Year Plan on Development and Conservation of Energy Resources also considered various criteria based on population of villages and distance from transmission lines. The criterion proposed by WAPDA to the Working Group was to select villages in the Punjab and Sind having population of at least 1,000 persons and NWFP and Baluchistan having a population of 300 to 500 persons. The distance from the existing H. T. Lines is proposed to be 1.5 miles in the Punjab, Sind and NWFP and 6 miles in Baluchistan. But it is obvious that practical considerations and local needs will both have to be taken into account in evolving any reasonable formula for the selection of new villages for electrification during the Sixth Plan.

12. The average cost of electrification of a village is currently estimated to be about Rs. 400,000. The requirement of funds for a village is thus much larger than the cost of normal distribution and expansion programme. Measures will, therefore, have to be evolved to reduce the cost of village electrification.

13. Because of constraint in public sector funds other sources will have to be tapped. Besides attracting the international agencies, it would be desirable to give incentives to the private sector for investing in the rural areas. The beneficiaries could also be encouraged to invest their own money in rural electrification.

14. The work of agencies responsible for the implementation of the Rural Electrification Project needs to be carefully reviewed. The respective roles of the Area Electricity Board, Cooperatives and the Rural Electrification Organisation needs to be geared to a judicious use of investment, and proper operation and maintenance of the facilities.

#### **Policy for Rural Electrification**

15. The following constitute the major policy objectives embodied in the Sixth Plan:

- (a) *Target setting for village electrification.*—An acceleration in the momentum of rural electrification;
- (b) *Increase the number of beneficiaries.*—Maximum emphasis to be placed on increasing the number of beneficiaries of electricity in existing villages concurrent with increasing the number of villages to be electrified;

- (c) *Concept of Rural Electrification.*—To change the concept of the programme of village electrification to an integrated rural electrification programme, including tubewell electrification;
- (d) *Criteria for Village Electrification.*—To evolve scientific criteria for selection of villages, striking a balance between the physical parameters of distance from 11KV line and population of villages, keeping in view other socio-economic and financial considerations;
- (e) *Trimming cost of rural electrification.*—To make every effort to reduce the cost of electrification of a village by reviewing specifications and other elements of cost;
- (f) *Setting up of Cooperatives.*—To organise a cooperative system for village electrification by the villagers themselves alongwith the existing approach of village electrification being followed by WAPDA.
- (g) *Education of beneficiaries.*—To educate the rural consumers on the use and benefits of electricity;
- (h) *Load Shedding.*—To develop proper load shedding procedures so that the electrified villages and the agricultural activities are not disturbed unnecessarily;
- (i) *Institutional framework of implementation.*—To streamline the functioning and role of Rural Electrification Organization;
- (j) *Review of tariff structure.*—To review the tariff structure for electricity for villages and tubewells;
- (k) *Evaluation and feed back.*—To institute a regular system of evaluation and feed back of rural electrification programmes.

### Strategy for Village Electrification

16. *Role of Village Electrification.*—It is proposed to augment the existing generation capacity and primary and secondary transmission network. The capability of WAPDA for electrification of villages has already increased from an annual average of 609 villages per annum during 1970–78

to 1,587 villages per annum during the Fifth Plan. This capability will be further increased to about 3400 villages per annum through WAPDA and Provincial ADPs. WAPDA will carry out these programmes of village electrification by using its own construction capacity and that of local contractors. WAPDA is already preparing a Master Plan under the advice of the Government of Pakistan for Rural Electrification. This Master Plan will make it possible to carry out the programme of rural electrification in a phased manner. To supplement the efforts of WAPDA, decentralised generation programme will be carried out by establishing small hydel stations in FATA, Azad Kashmir and Northern Areas. The Directorate General of Energy Resources will supply biogas to a large number of villages for electricity generation in addition to other uses. A small scale effort for electrifying villages through solar energy is also envisaged in the Sixth Plan. Through installation of small hydel diesel and solar etc. 200 villages per annum on the average, will be electrified. Besides, Northern Area Works Organization, FATA and Azad Kashmir will carry out village electrification programmes with funds allocated to them for development of power. Another 400 villages per annum are proposed to be electrified through these resources. The overall annual target of village electrification, including WAPDA and other agencies will, therefore, be 4,000 villages. Thus, during the Sixth Plan 20,000 new villages will be electrified. This will bring the total number of villages electrified in the country to 36,400 thereby increasing the percentage of villages electrified from 36.4 to 81.

17. *Increasing the number of beneficiaries.*—To increase the number of beneficiaries in the villages already electrified and those which have to be electrified in the Sixth Plan period, it is proposed that WAPDA give maximum emphasis to expand distribution facilities in the villages already electrified. To remove the difficulties of the beneficiaries, such as lumpsum payment to be made for getting connection and investment in the internal wiring, it is proposed that either a system of extending soft loans to the beneficiaries be instituted or WAPDA bear these expenditures initially, and recover it from them in suitable instalments. For extending the facilities of loans and advice for internal house electrification, a system of a mobile bank on the pattern of the recent venture of Agricultural Development Bank, will be considered. It might be possible to utilise the services of Agricultural Development Bank for this purpose.

18. It is proposed that through these measures to increase the number of the beneficiaries in the existing villages to about 50 per cent of the total population of the villages during the Sixth Plan. In the new villages to be electrified, the target number of beneficiaries would remain at 25 per cent of the population.



19. *Concept of Rural Electrification.*—The emphasis of rural electrification programme will be on the number of beneficiaries and on the amount of energy sold to these beneficiaries. In this regard, WAPDA will launch a campaign in the villages already electrified to promote the use of electricity and to remove the obstacles in the way of new consumers. Village electrification programme will be properly integrated with tubewell electrification.

20. *Criteria for Village Electrification.*—It will be ensured that the facilities constructed in the villages are not utilized just by those who are either influential or wealthy. However, a number of factors will have to be properly balanced, such as socio-economic considerations, financial constraints, political requirements etc. The maximum possible weightage will, however, be given to those villages where the average cost per prospective consumer is the least. Thus, villages will not be electrified unless it is certain that benefits of electricity will reach a majority of the people living there. For this purpose, it is proposed to introduce a system of signing up of prospective consumers in the prospective villages for electrification and payment of an advance amount by each prospective consumer to ensure consumers' commitment. At the same time, WAPDA will also ensure that once the number of the committed beneficiaries have reached minimum number, the village electrification activity gets immediately started and the construction of transmission lines etc. is completed expeditiously. In this regard, priority will be given to the villages which form cooperatives and mobilise additional funds by securing loans in the names of the cooperatives and advance it to WAPDA for construction of transmission lines etc. A detailed criteria for village electrification giving full consideration to all these factors will be prepared and followed during the Plan.

21. *Training Cost of Rural Electrification.*—The cost of village electrification Rs. 4 lakh per village on the average, is based on prevalent standards and specifications. A critical review of the standards and specifications and items of cost is essential, particularly with a view to reducing expenditure without unduly compromising on standards. In this regard, possibilities exist in improving the speed of construction of a transmission line, electrifying a group of villages in one small sub-project, increasing the length of spans, using lower cost-poles, using poles instead of L. T. structures, removing or reducing the investment on cross arms, changing the specifications of conductors, cross arms and transformers being used for village electrification. Even low tension distribution on insulated cables along the walls of the houses and single wire earth return systems need to

given consideration. The standards and specifications of electrical equipment mechanical devices and methods of installation will be thoroughly studied with a view to effecting improvements. In order to reduce the cost of house wiring, a group wiring plan may be introduced in the villages (to be electrified) so that the overall cost of electrification is reduced. A system of independent inspection of wiring may also be introduced. Recent experience shows that the cost of equipment and transmission lines etc. can be substantially cut down even by keeping the same standard as are prevalent now by removing the protection system of the local manufacturers and introducing an element of international bidding in all the works and supply of equipment tenders. This would introduce an element of competition and the local manufactures will be induced to bid to the minimum possible cost.

22. *Setting up of Cooperatives.*—In order to supplement the efforts made by the Government through WAPDA, it is felt that involvement of the beneficiaries is essential. Experience in other countries has shown that rural electrification can be carried out through rural cooperatives formed by the beneficiaries who secure loans from government funding agencies as well as get funds from the members. Another concept is to form a trilateral cooperation of consumers, the electricity company and the equipment and appliances manufacturers, to generate funds and advance loans. Each component in such a set up has a role. The cooperatives work for repayment of loans; the supply agency to recover revenues, and maintain its assets properly; the appliance and equipment manufacturers promote markets of their products.

23. *Education of Beneficiaries.*—Education of rural population about the benefits and rational use of electricity is essential. For this purpose, WAPDA and other supply and funding agencies and cooperatives could launch a programme aimed at education of the beneficiaries.

24. *Load Shedding.*—Proper load shedding procedures will be developed so that tubewell pumps are disturbed the least and electricity is not disconnected to the villages. This aspect will also be taken care of while designing the electrical system for rural electrification.

25. *Institutional Framework for Implementation.*—Rural electrification is being carried out at present, under a common Project of Distribution of Power and Village Electrification of WAPDA. A handicap in this is that the investment for the village electrification is not separately accounted

for. Proper evaluation of the application of funds therefore, becomes difficult. Besides, the administration of the rural and urban consumers under one project of Distribution of Power and Village Electrification dilutes priorities and keeps mixing up rural electrification with urban electrification. This is because rural electrification is in the hands of eight Area Boards which are responsible for both rural and urban areas. In the Sixth Five Year Plan, it is proposed to separate rural electrification from the combined project of Distribution and Village Electrification. This will facilitate proper cost control, particular attention to the village electrification, proper accountability and proper maintenance of record of the energy sold to the rural areas. Though it is yet to be decided whether it should entirely be an independent federal agency or it should be an independent project under the aegis of WAPDA, it is considered essential that sufficient degree of autonomy and flexibility be ensured.

26. *Review of tariff structure.*—The tariff for electricity will be reviewed in respect of supply to villages and tubewells. Tariff structure will be developed so as to meet the financial covenants required by WAPDA as well as promote efficient use of electricity.

27. *Evaluation and Feedback.*—In order to plan and implement rural electrification programme, it is essential that proper mechanism for evaluation of villages already electrified is developed. The evaluation should be based on factors like the selection of villages, achievements of goals of electrification, the response from the villagers to take electric connections, integration of village electrification with rural electrification, financial return and subsidy involved and so on. The evaluation will particularly focus on the difficulties experienced at the planning and implementation stages and will bring out the corrective measures which were taken and steps which are needed to obviate these difficulties.

### **Programme for Sixth Plan**

28. The concrete programmes for the Sixth Five Year Plan are in the formative stage. A Master Plan is being prepared by WAPDA but since its final report is expected in December, 1983, it is difficult at this stage to lay down in detail the physical elements of the programmes, such as the total length of L. T. and H. T. Lines, the total transformation capacity to be installed, the number of consumers in rural areas with break up of existing and new villages to be electrified, district-wise, province-wise plans etc. However, to expeditiously electrify the remaining villages, taking into

consideration, the generation and transmission being added and also the capabilities of funding organizations during the Sixth Plan, it is proposed to strive to electrify 4,000 villages per annum by supplying electricity through commercial means, non-conventional renewable sources for electricity generation such as mini/micro hydel, solar energy etc. The break-up of the proposed programme is given below :

		(Number of village/annum)		
WAPDA through its own ADP	.. .. .	..	..	3,100
Provinces	.. .. .	..	..	3000
AK, NA, FATA	.. .. .	..	..	400
Non Conventional	.. .. .	..	..	200
				----
Total	.. .. .	..	..	4,000

29. The total number of villages to be electrified for which effort will be made during the Sixth Plan is 20,000 bringing total number of villages electrified to 36,400 which represents 81 per cent of the total (45,000) villages in Pakistan. The success in these efforts depends upon the commitment of the agencies involved, availability of adequate funds, success in reducing/controlling cost of electrification and the contribution by Provinces and beneficiaries. The sensitivity of the overall achievement to these parameters is quite significant and therefore, the real achievement will depend upon the interaction of these parameters. The total power and energy requirements of the villages are estimated to increase from 328 MW to 900 MW and 900 million kWh to 2400 million kWh from 1982-83 to 1987-88. They represent increase in the share of power demand from 9 per cent to 16 per cent and share of village electricity consumption from 6 per cent to 9 per cent in the country. These estimates are based on the prevailing averages.

30. Special emphasis will be given to far flung areas in Baluchistan and NWFP. Besides WAPDA, 400 villages will be annually electrified by A.K. NA and FATA through separate ADP allocations and 200 other villages are also proposed to be electrified annually by renewable energy resources such as mini/micro hydel stations, solar and biogas energies. The overall target for the Sixth Plan, is, therefore, electrification of 4000 villages per annum.

## Research and Development for Rural Electrification

31. Though the methods of electrification of rural areas are more or less conventional, significant improvements can be made in the planning, implementation, specifications and standards for rural electrification to match the local conditions. Moreover, new energy resources, particularly renewable energy resources can also be deployed in more effective manner and at a much larger scale than at present by innovation, adaptation and research and development. For this purpose DGER, ATDO and PCSIR are already engaged in research and development and demonstration projects related to non-commercial renewable energy resources. A continuous research and development programme for rural electrification will also be started by WAPDA, particularly to improve implementation methods, and reduce the cost of village electrification by various measures as already discussed above.

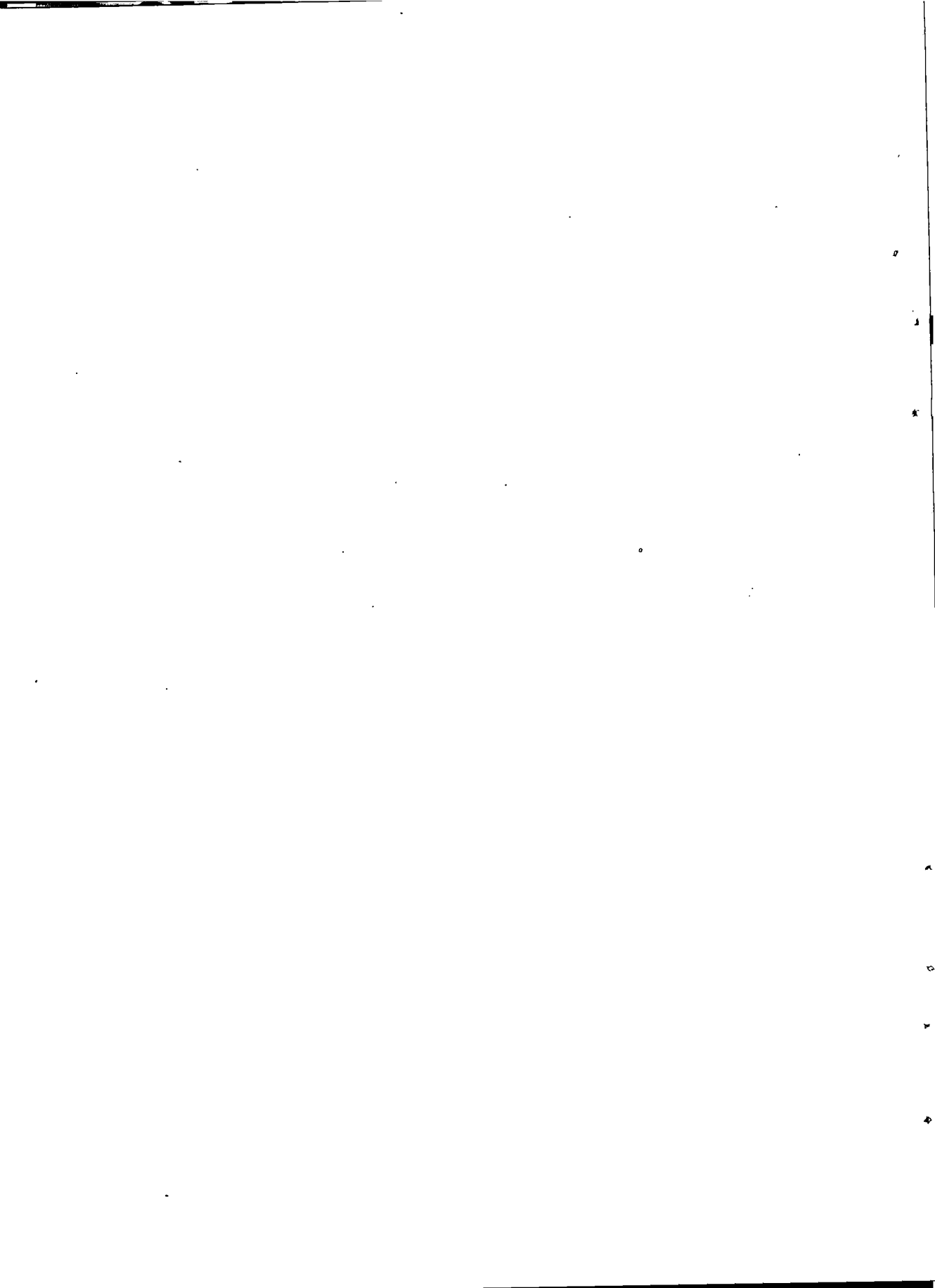
## Investment in Sixth Plan

32. The Sixth Plan assumes that the cost of village electrification will be reduced by various measures below Rs. 400,000 per village in real terms, and that some of the costs will be shared by the local communities. The following table depicts the allocations for rural electrification.

### *Proposed Investment on Village Electrification*

Agency	Cost per Village	No. of Villages to be electrified during Sixth Plan	Allocation included in Sixth Plan (Rs. in Million)
(1) WAPDA's Rural Electrification Programme.	Rs. 4 lakh	15,500	6,200
(2) Provincial Programme.	Rs. 4 lakh*	1,500	400
Sub-total (1 & 2).		17,000	6,600
(3) Special Areas.			
(i) N.A.		250	300
(ii) A.K.		1,000	1,000
(iii) FATA.		750	450
Sub-total (Special Areas).		2,000	1,750
Renewables/Non-conventional, electrification by small diesel, mini/micro hydel solar and biogas etc. sets.		1,000	650
Grand Total ..		20,000	9,000

\*It has been assumed that One-third of the cost will be borne by beneficiaries and 2/3rd by Provinces.



*And in your wealth  
 There is a right acknowledged  
 For the poor and the deprived.  
 Al-Ma'arij  
 (LXX 24 to 25)  
 Ah, what will convey unto thee  
 What the Ascent is!  
 It is to free a slave,  
 And to feed in the day of hunger;  
 An orphan near of kin,  
 Or some poor wretch in misery.  
 Al-Balad  
 (XC 12 to 16)*

## CHAPTER 28

### SOCIAL WELFARE AND SPECIAL EDUCATION: CARE FOR THE NEGLECTED

SOCIAL Welfare is the object of all development programmes. It has to be an integral part of planned development. In the Sixth Plan, the social orientation of the development programme has been strengthened. It is reflected in employment and income policy, in education, health and rural development, in special programmes and approaches for women's development, in special area development programmes as well as in housing and transport sector programmes. The problems which a social welfare programme must tackle are so basic and all-pervasive in a low-income country like Pakistan that only a comprehensive approach can begin to alleviate the misery. The Sixth Plan seeks to improve the productivity of small producers, broaden employment opportunities and provide basic amenities of life to equip the bulk of the population to participate in economic and social progress. This approach provides increased opportunities to the less privileged members of the society to improve their welfare by removing their handicaps—illiteracy, ill health and lack of employment opportunities—and to help them emerge as healthier and more productive member of the society.

2. The need however, remains in any society to organize special programmes for small vulnerable groups of people who are not in a position to adequately participate in normal social and economic life on equal footing with the larger groups of population. Vulnerability may take one of the many forms such as various kinds of physical, emotional or social handicaps which require special services for their understanding support training and rehabilitation in the normal society for playing a worth while and constructive role as well as making a contribution towards national development. Special Social Welfare Programmes are required for catering to special needs of these groups. In our ideological state there is a special significance of cultivating the understanding of the responsibilities of the individuals both towards God and the fellow human beings. Such an additional effort over and above the formal educational system is particularly required through social welfare programmes in view of low literacy rates.

3. In Islam, support of social welfare in cash and kind is exalted as a virtue, ranking only next to the prayer. There is a long tradition of social welfare work carried out on a voluntary basis and institutions for such objectives set up by the support of state machinery. During the period of the decline, this tradition deteriorated into personal charity introducing the institution of beggary. Its promotional, preventive, rehabilitative and self-help aspects were neglected.

4. The Muslim Independence Movement organized the national consciousness for the eradication of social evils and a powerful attack was organized against illiteracy and lack of education, particularly for female education. Mutual help efforts were organized within small community groups. However, personal charity continued to characterise the overall social scene.

5. In Pakistan, the Government has assumed a positive role in the promotion of social welfare activities. This is largely of a promotional nature and in support of voluntary effort with specific direct involvement in certain high priorities. With the institution of the system of Zakat and Ushr, the Government has acquired both the ability to mount substantial social welfare programmes and the responsibility to ensure that the zakat system produces positive results by eradicating social weaknesses for which Allah has enjoined this system on the Muslim Ummah.



## Review of Fifth Plan

6. The major objective of the Social Welfare Sector during the Fifth Plan was to concentrate on strengthening responsive organizations through government and non-government support. These agencies, in turn, adopted the mechanism of flexible programmes for promotion of social welfare services and implementation of projects for meeting the needs of individuals, families, special groups and communities through the support of government and non-government agencies. As a result, the major thrust of the sector centered around development of a broad-based programme of welfare services through mobilization of community resources, philanthropic assistance and involvement of non-government organizations. The main service areas concentrated upon rendering of special services to the needy women, children and the less fortunate groups of the society. The overall general institutional framework and organizational structure for social welfare management has remained inadequate for organization of the service delivery. Consequently; the services have operated under constraint.

7. The mobilization of local resources under-went a change in the strategy with promulgation of Zakat and Ushr Ordinance 1980. As a result, the private contribution to voluntary social welfare agencies was formalized, the contribution enhanced and the distribution system was institutionalized.

8. During the Fifth Plan a sum of Rs. 223.0 million was allocated for Social Welfare Sectoral programmes, including Rs. 23 million for special education. The utilization was Rs. 210.9 million. The shortfall was largely in Sind. The overall progress in terms of physical achievements of the provincial level programmes has been satisfactory with the exception of Sind. Major physical achievements include establishment of 17 child welfare institutions, 1839 women welfare centres including those with financial support from Women's Division and rural development programme, 82 community welfare centres, 19 special education and rehabilitation centres for the handicapped, 36 medical social services units, construction of 23 buildings to house social service centres and disbursement of Rs. 14 million to 1,100 specific and 1081 voluntary welfare agencies for promotion and standardization of voluntary welfare services.

9. In addition, a sum of Rs. 2500 million was collected through zakat and distributed among 1.5 million families all over the country for meeting their basic needs. The system thus provided relief to more than 10 per cent of the deserving families (mustahqueen). A total number of 250,000

volunteers have provided services for the management of the zakat system. Translated in monetary terms, it would amount to substantial inputs for the welfare services.

### **Social Welfare Policy**

10. Social welfare policy is based on the consideration of adequate provision of opportunity and provision of social services as a major responsibility of the government in collaboration with the private sector, the non-government organizations (NGOs) and the local communities. Besides, the government accepts the responsibility of providing a suitable legal framework and coordination of the statutory voluntary social welfare programmes.

11. In the formulation of the Sixth Plan, a close coordination of functioning between various government agencies and the voluntary sector has been envisaged. This will involve a big qualitative change over the Fifth Plan programmes. Various agencies involved with social welfare functions will carry out this work as a shared responsibility of different sectors and agencies. This will lead to effective use of welfare funds on the one hand and the improved programme implementation, on the other, by overcoming organizational deficiencies. In view of many social needs, limited resources and inter-sectoral welfare activities, the programmes of social welfare sector will concentrate on the provision of services to special groups such as the handicapped children, the youth, the women, the patients and the aged. The financial allocations in the public sector, though small, will be only one arrangement for facilitating the provision of services. The other efforts in this direction will include the mobilization of the national voluntary services, the involvement of the international NGOs, raising local resources and encouraging the local initiative for providing institutional framework and service delivery.

12. Broadly, the government's basic policy will be as under :

- Promote social awareness for enabling people to assume social responsibilities for fulfilling welfare needs.
- Motivate people for pooling resources and organising social welfare agencies for providing suitable social welfare services.
- Provide suitable governmental inputs to encourage and enable its responsible agencies to undertake promotional and motivational tasks for welfare and national development work.

- Encourage social welfare governmental and non-governmental agencies to fill the gaps left by other social and community service departments and agencies so as to cater to the needs of the out-of-school children; the illiterate adults; the uncared; the diseased and the aged persons; the economically poor and indigent; the urban slum-dwellers; the rural deprived and the special cases who do not fit into categories; to harmonise the forces of social change and to prevent congestion, delinquency, breakdown of value system and consequent moral degradation, corruption and greed, which usually follow in the event of rapid material progress.
- To encourage local government institutions to develop feasible social welfare development projects.
- To establish suitable infrastructure from provincial through local level for promotion, coordination and implementation of such welfare services and programmes as would support the overall national development activity.
- To encourage the skill development among professional and voluntary social workers and support personnel through appropriate training programmes.
- To promote and arrange evaluative research on all aspects of social problems, issues and needs.
- To review, monitor and evaluate the on-going programmes.
- To review the existing legislation pertaining to the social welfare sector and propose action in areas hitherto uncovered.

### **Sixth Plan Strategy**

13. Under the balanced approach of national development, the scope and content of social welfare programme will be reflected in various development programmes, particularly those pertaining to social sectors. At the same time it will recognise the comprehensive nature of the social welfare sector. Due recognition will be given to the multi-sectoral strategy and a coordinated approach, both in planning as well as project implementation. Inter-linkages of the various programmes in health, education, women and labour welfare will be developed and consolidated during the Plan period.

The emphasis will shift from palliative service delivery to development package approach relying on the grass root involvement of various target groups through institutional programmes. Efforts will be directed towards awakening and encouraging a sense of involvement among the individual, groups and communities.

14. The programmes will, therefore, be decentralized to ensure community participation in welfare activities, thus encouraging assumption of responsibility and authority by the local leadership and establishing a mechanism of authentic participation by the people themselves. This approach will direct efforts within the existing local ethos, create awareness of local problems and establish channels of communication between the people and the administrative infrastructure. The Plan aims at widening the service coverage in a cost effective manner, catering to the training needs of the programme and establishing the credibility of the project, thus encouraging comprehensive integrated programming for better client response and community involvement rather than isolated, lateral, exclusive and single purpose projects. The overall focus, of course, will be on the welfare needs of the various target groups such as women, youth, children, the handicapped, the senior citizens and the aged. Main focus would be on a programme for the special education and training of handicapped children for which a comprehensive plan has been prepared. Institutional framework has been carefully designed to implement this special education plan both at the Federal and the Provincial levels.

### **Plan Objectives**

15. Considering the need for social justice, and recognizing the importance of the involvement of the people and their participation at community level the underlying objectives of the social welfare programmes during the Sixth Plan will be:

- (i) To strengthen the existing institutional linkages at different organizational levels for developing, consolidating, and streamlining the social welfare programmes through inter-sectoral activities;
- (ii) To mobilize the available community resources to meet social welfare needs at the local level through community organization, voluntary social work, grants-in-aid, supply of requisite equipment to voluntary institutions, and aided self-help projects, etc;

- (iii) To reorganize, rationalize and streamline Government Social Welfare Organizations at the federal, provincial and local levels to re-adjust with the new demands and tasks for the adequate utilisation of zakat and ushr funds;
- (iv) To develop programmes for furthering the participation of youth and women in the development work;
- (v) To initiate and strengthen programmes for care, welfare, vocational training, education, and rehabilitation of special groups viz. (a) the disabled (b) the orphans (c) the widows (d) the destitutes and (e) the senior citizens.
- (vi) To support women welfare programmes aiming at continuation of support and achievement of economic self-sufficiency, income generation, prevention of dependency, and exploitation and promotion of family welfare through higher literacy, nutrition and health care;
- (vii) To promote day care service for children of the working women, and general children welfare services for children under five, including recovery of lost and kidnapped children and the institutional care service for new born babies and children requiring special care.
- (viii) To initiate and implement programmes for job assessment and placement of the disabled as their legal right under provisions of the Disabled Persons (Employment and Rehabilitation) Ordinance, 1981;
- (ix) To establish in-service Training Institute at Federal level for (a) retraining of Front Line Workers, (b) representatives of the NGOs, (c) professional social workers, and (d) professionals from related fields. The training will include orientation and refresher courses on (i) contemporary techniques, (ii) methods, and skills in welfare and rehabilitation work, (iii) collaborative service delivery and (iv) local leadership skills and techniques, (v) development administration and (vi) personnel management.

16. The programmes and projects in the social welfare sector will focus on preventive, promotional and rehabilitative services, in the following major areas:

- (a) Child care programme and service.
- (b) Youth welfare programme and services.
- (c) Programmes and services for special education, training and rehabilitation of the handicapped, particularly children.
- (d) Medical social welfare services.
- (e) Training and skill development programme for women.
- (f) Strengthening and developing the NGO sector.
- (g) Self-help community development programmes.

#### **Major Policy Shifts and Measures**

17. In pursuance of the overall sectoral policy, following policy measures will be undertaken:

- (i) Consolidation of on-going schemes will be made by supporting the provincial projects by integrating multi-sectoral activities, and integrated orientation and training of the personnel of social welfare departments and the personnel in related nation building departments for effective implementation.
- (ii) Involvement of the NGOs in welfare activities will be enhanced and streamlined through assessment and evaluation; financial technical support; determination of the areas of activity; standardization and up-gradation of services; establishment of coordinating council community chest.
- (iii) Policy evolved for training and rehabilitation of the handicapped will be specially applied to the promotion of specialized schools, integrated teaching facilities, teacher's/therapists training.
- (iv) Policy for use of media will be developed for creating awareness of social needs, responsibilities, participation and resources sharing thereby utilizing the potential of the local communities, the NGOs, the private sector, and the Zakat Foundation.

- (v) Policy formulation for the youth development services and projects will be streamlined in collaboration with the Ministry of Education, the Sports Board Local Government institutions and Special Education and Social Welfare Division.
- (vi) Policy decisions will emerge for women welfare service and projects through coordinating the efforts of the Women's Division, the Ministry of Health and Social Welfare, the provincial governments. Population Welfare Division and the NGO's.

### **Plan Programmes and Services**

18. In line with these policy measures the following specific programme areas and services will be covered during the Plan period.

19. *Children Welfare Services.*—Currently, children under 14 years constitute 44.4 per cent of the population. In order to encourage healthy psycho-social development among such a large segment of population, social services and programmes for children are proposed to be undertaken in the form of (i) day-care centres, (ii) social welfare centres for lost and kidnapped children; (iii) baby homes, (iv) model orphanages and (v) school social work services. Day-care centres will be established for looking after the children of working women. This facility is envisaged to be beneficial both for children as well as working mothers. This service, it is hoped, will facilitate female participation in labour force by making it possible for them to accept work outside their homes and thus add to family incomes without jeopardising the rights of children which would have been affected due to emergence of the nuclear family system.

20. The social welfare services for the lost and the kidnapped children will continue to operate in collaboration with law enforcing authorities and will provide institutional care facilities for the recovered children till their reclamation and return to the families and their adjustment into normal life.

21. Institutional care for the new born babies and children under one year will continue to be provided through baby homes. Those uncared children whose number is rather small will be looked after till their proper placement and adoption with suitable families take place.

22. The government-operated model orphanage programme provides supportive arrangement and assistance to a large number of orphanages managed by the NGO sector. This service will continue to provide technical personnel for skill training, equipment and educational facilities.

23. School social work is a supplementary service to the educational system. It will enable to retain children in schools and thereby substantially reduce the high rate of wastage and leakage currently prevalent in the educational system. This service will serve as a bridge between the educational system, the community and the family for more effective utilization of the school services.

24. *Special Education for the Handicapped Children.*—It has been decided to give the highest priority in the Sixth Plan to special education for the handicapped children. In 1983, the number of children suffering from disabilities has been estimated as 3.74 million. This included 740 thousand children with severe disabilities and 3.0 million with varying nature and intensity of handicaps. Four major disabilities identified are blindness, deafness, physical disability and mental retardation. Some also suffer from multiple disabilities.

25. There are a total number of 129 institutions on the grounds both in the public and the voluntary sectors but these are inadequate. It is felt that with timely care, treatment and training, the impairments can be prevented from becoming a permanent disability or life long handicaps. During the Plan period a five-pronged approach to the problem would involve:

- streamlining, up-dating and developing existing educational and training facilities;
- consolidating and expanding skill development facilities;
- establishment of counselling and guidance services;
- exploring and developing rehabilitation services preferably through community motivation;
- establishment of diagnostic, assessment, treatment, prognostic, training and rehabilitation services;



26. This approach will require the following inputs:

- research into the nature and extent of the problem;
- evaluation of the on-going services;
- assessment and strengthening of equipment manufacturing capabilities;
- provision of employment opportunities for the trained handicapped;
- categorization of disabilities within each major category;
- assessment and costing facilities for categorization of disabilities.

27. The target groups for the special education for the handicapped are:

- parents, specially mothers, for precaution and preventive measures;
- pre-school children through parental counselling, financial/technical assistance and referral services;
- children between ages 5-12 years for special education through integrated assistance and referral services;
- adolescents (13-17 years) to remain in special schools or enter skill development programmes.

28. The training facilities will be developed for the following categories of personnel:

- (a) administration and management services;
- (b) teachers for special schools;
- (c) special teachers for integrated schools;
- (d) aids to the teachers; therapists;
- (e) limbs, equipment and aids, manufacturers and technicians;  
and
- (f) community/family counsellors.

29. Through a special development project for the education and training of the handicapped children, the services would be required to match the special needs of this group as assessed through impairment, disability and handicap stages. In addition to the federal pilot project, special schools will be established at provincial headquarters and selected districts. Various performance and IQ tests will be standardized and administered for proper evaluation and prognosis, research studies undertaken and the communities will be mobilized through sensitization for using the services effectively as well as providing infrastructure for establishing new services. About 280 special schools and 32 infrastructure institutions will be provided during the Plan through governmental machinery as well as the NGOs. The NGOs will receive enhanced financial and technical assistance for managing various services for the disabled according to their absorptive capacity. Technical skills such as teaching physiotherapy, music-therapy, and occupational therapy will be developed during the Plan period. For treatment purposes, facilities of the health system will be used extensively. It is hoped that such services would allow the utilization (through training) of the disabled people for useful work and gainful employment.

30. *Rehabilitation Services.*—During the Sixth Plan serious and earnest attention will be given to rehabilitate the disabled persons by early detection and, in the long run by catering to their educational training needs. Provincial support may play a decisive role in their ability to adjust to various jobs and life situations.

31. *National Trust for the Handicapped.*—An autonomous National Trust for the Handicapped will be created to initiate, steer and execute all the federal programmes and projects for welfare and rehabilitation of the handicapped. The Trust will ensure easy, speedy and effective implementation of programmes for the disabled viz. the blind, the mentally retarded, the deaf and mute and other physically disabled. The Trust will conduct its activities under the leadership of the President of Pakistan.

32. *The Youth Welfare Services.*—The youth who form a large segment of the population and who will soon shoulder responsibilities of adulthood must receive due attention for developing their potential as useful citizens, contribute to national development goals. The youth work will involve improving their social, economic and participatory levels. Efforts will be made to formulate important programmes for development of full human an economic potentials of the various youth groups within the communities and necessary steps will be taken to draw these groups into the mainstream of society. They are in the most vulnerable age and, if neglected, are liable to pose serious social problems.

33. The main activities will take the form of the youth workers' training in management of youth programmes, involvement of the youth in development programmes, and human resources as the basis for social development. The main emphasis of the youth programmes will be on building good health, good character and better knowledge for guiding, conserving and developing this national endowment. These activities will be closely co-ordinated with other governmental and non-governmental agencies.

34. The overall objectives of the youth programme will be as follows:

- (a) The analysis of national needs, aspirations and conditions of the youth;
- (b) Education of the youth for peace;
- (c) The establishment of channels of communication among youth with other groups;
- (d) The mobilization of the youth for participation in development activities;
- (e) The provision of services for the youth.

35. Broadly, the plan of action will include :

- (a) Taking stock of the current situation of youth in the employment market, specifically arising from the magnitude of unemployment and the need for reliable, comprehensive and up-to-date vocational information.
- (b) The need for emphasis on self-development and self-reliance of youth within the context of the community.
- (c) The increased participation and involvement of the youth in development, including participation in local decision-making processes.
- (d) Recognition of the existing activities and efforts of youth in socio-economic development efforts.
- (e) The need for national policies on the youth and the appropriate administrative and organizational structure and mechanism for its implementation.
- (f) Drawing attention to and increasing public and community awareness of the existing and potential contribution of the youth in community and national life.

36. *The Youth Programmes.*—These will include on-going services by various government agencies and the NGOs like the youth development model project, girl guides, boy scouts, farm guides etc. These agencies will continue to receive financial and technical support. More such projects will

be taken up in labour colonies and low income housing project colonies, housing colonies of autonomous bodies and government servants and in the rural communities through local institutions.

37. *Women Welfare.*—According to 1981 census of population, the female population constitutes 48.3 per cent of the total population.—Of these 22.4 per cent are in the active age group. This being a very important yet deprived segment of the society whose main limitations are due to pre-occupation with repeated pregnancies, physical work load, lack of education both formal and non-formal and host of social prejudices alongwith lack of independent income generation activities. Recognizing this situation, the basic approach will rest upon the overall objective of acceptance of family as a unit of development.

38. The on-going programmes will continue to be re-inforced and more projects aiming at preventive, promotional, developmental, and rehabilitative services will be launched, thus shifting the emphasis from the hitherto institutional services. Training and skill development, income generation and expenditure saving will be encouraged among women in a manner as would positively affect the consumption pattern and improve nutrition in-take of children, women and families.

39. For a better understanding of the women's situation and analysis of the causes of their under-developed position a disaggregated view of the problem according to groups, communities and local areas will be necessary. Research studies will be undertaken through the resources reflected in Women Division's Programmes for formulation of both macro and micro levels. Generally, the programmes of this sector will emphasise economic emancipation of families focusing especially upon women education and literacy of families through women education, better health and family education. The social sectors collaborating through complementary services are education, health, local government, population welfare, adult literacy and the NGOs. The programmes aiming at the achievement of a wholesome life for women under these agencies will be strengthened.

40. *Medical Social Work Services.*—A total of 97 units will be established at workers will be launched by the Ministry of Health, Special Education and Social Welfare in collaboration with the workers' education project for providing welfare services to the workers and their families on aided self-help basis. The provincial Social Welfare Departments will, likewise, take up suitable projects in collaboration with the labour Departments and industrial concerns.

41. *Medical Social Work Services.*—A total of 97 units will be established at the District and Tehsil Headquarters Hospitals for enabling the patients to accept and continue treatment, to look after social needs arising from illness and hospitalization, rehabilitation in the community after discharge from hospitals, follow up for avoiding recurrences of the disease, and treatment of the psychosomatic ailments. The medical professional workers and the medical social workers will be provided orientation and training for effective implementation of the project. The service will be duly monitored and case studies will be prepared to support training needs and project implementation.

42. *Community Development Projects.*—On-going projects, both in urban and rural community development services, will continue to be undertaken with a view to ascertaining potential of the local communities, encouraging resource mobilization, cost sharing and aiming at self-sufficiency at least in smaller projects. Such services will effectively assist in planning process by involvement of local population, need assessment, resource mobilization and allocation, education, and finally local communities accepting responsibility of implementation. In short, the services will be finally directed towards building-up the local communities for undertaking civic and social responsibilities thus providing opportunities of training in local leadership process.

43. *Strengthening and Development of NGOs.*—The practice of providing social welfare services by the NGO is a time old practice in Pakistan. In fact the NGOs have played a pioneering role. The government recognizing the value and importance of the NGOs has provided financial and technical assistance to social welfare councils and boards on a continuous basis for encouragement of expanded activity. With the ever-increasing inflationary tendencies the rapidly changing social structure, leading to widespread problematic situation the work load of the voluntary agencies and financial requirements are increasing.

44. The government recognizes the need for continued involvement of the NGOs as these provide a mechanism for activity involving social participation in welfare programmes and generate self-help process. They have autonomous and flexible structure, are cost effective in providing services, fill the gaps left by government service agencies and are capable of undertaking innovative projects. During the Sixth Plan period, the government will provide enhanced financial and technical support to about 2,400 agencies in the light of their demand and usefulness of the their services.

The Government will use the assistance to guide and direct the activities of NGO's for priority objectives, as well as for coordination and evaluation of their programmes. Government will support the NGOs through the following measures :

- (i) evolving and adopting a policy for the NGO involvement with national development work;
- (ii) provision of financial and technical assistance to the NGOs;
- (iii) strengthening the infrastructure and functioning of the national and provincial councils,
- (iv) rating the existing NGOs in service and performance categories for suitable assistance.
- (v) revising of the existing Voluntary Social Welfare (Registration and Council) Ordinance 1961, to ensure a minimum uniform standard of voluntary social services throughout the country.
- (vi) establishing workable interlinkages between the Zakat Foundation and the Social Welfare Councils both at the federal and the provincial levels.

45. *Staff Welfare Services.*—The Staff Welfare Programmes of the Government seek to : (i) provide training and income-earning opportunities for the families of the low paid government servants; (ii) provide such facilities as can be helpful for their women to participate in employment under public agencies, (iii) undertake such measures as can provide recreation, rest and leisure time activities at appropriate places.

### **Financial Outlays**

46. Financial expenditure in the social welfare sector from the government budgetary resources is only a partial criteria for judgement of the size of the effort. A great deal depends upon the capacity of the implementing agencies, the quality of motivation of the welfare workers in the field and the mobilization of the welfare workers in the field and the voluntary effort and their proper channelisation to focus upon well identified problems. The government funds should largely act as a catalyst in the process of mobilizing a much larger national effort. With the improvement in the organizational and administrative structure outlined above, it is expected that a substantially larger programme can be carried out during the Sixth Plan. It is proposed to provide Rs. 550 million for social welfare sector during the Plan period, increasing allocation by two and half times from that of the Fifth Plan. In this overall programme as explained earlier, the target

component would relate to the training and education of the handicapped children. A sum of Rs. 115 million has been provided initially from the development budget for this programme. The programme is, however, much larger and has been estimated at a much higher level. A national effort would be made to mobilize resources of the non-governmental organizations focusing on this issue within the country. The Plan has provided additional funds specifically to augment the resources of the organizations. Involvement of the international non-governmental organizations for various activities in this field in Pakistan would also be explored. The proposed National Trust will mobilize resources for the task envisaged during the Sixth Plan. If necessary, the public sector's direct expenditure for these special projects could be further enhanced.

47. A National Zakat Foundation has been created by the government which would be supporting projects and activities in the social welfare field through financial assistance to various suitable welfare agencies and organizations.

48. No precise estimate can be made of the social welfare expenditure in the private sector. Out of the total public sector allocation, Rs. 100 million have been earmarked to be channelled through the non-governmental organizations. The estimates show that on the whole during the Fifth Plan period every rupee provided by way of support to the NGOs brought forward Rs. 8 through the mobilization effort of such organizations. It is expected that with the streamlining of the selection system of the NGOs and proper identification of their programmes and active assistance of Local Bodies, larger amounts of funds could be channelled in future through this important segment of social welfare and the community.

49. The details of financial allocations and physical targets are given in Annexure I and II respectively.

## SOCIAL WELFARE

*Financial Allocations 1983-88*

(Million Rupees)

Sl. No.	Sub-sector	Federal	Provin- cial	Punjab	Sind	NWFP	Balu- chistan	Total (col. 3+4)
1	2	3	4	5	6	7	8	9
1.	Rehabilitation Services	115.00	105.00	45.00	35.00	15.00	10.00	220.00
2.	Women and Child Welfare Services	-	69.00	45.00	7.00	10.00	7.00	69.00
3.	Multi-purpose Community Develop- ment Services.	40.00	50.00	30.00	5.00	10.00	5.00	90.00
4.	Promotion of Voluntary Social Welfare Services.	70.00	-	-	-	-	-	70.00
5.	Miscellaneous Social Services Pro- grammes including Staff Welfare.	75.00	26.00	15.00	3.00	5.00	3.00	101.00
	Total ..	300.00	250.00	135.00	50.00	40.00	25.00	550.00

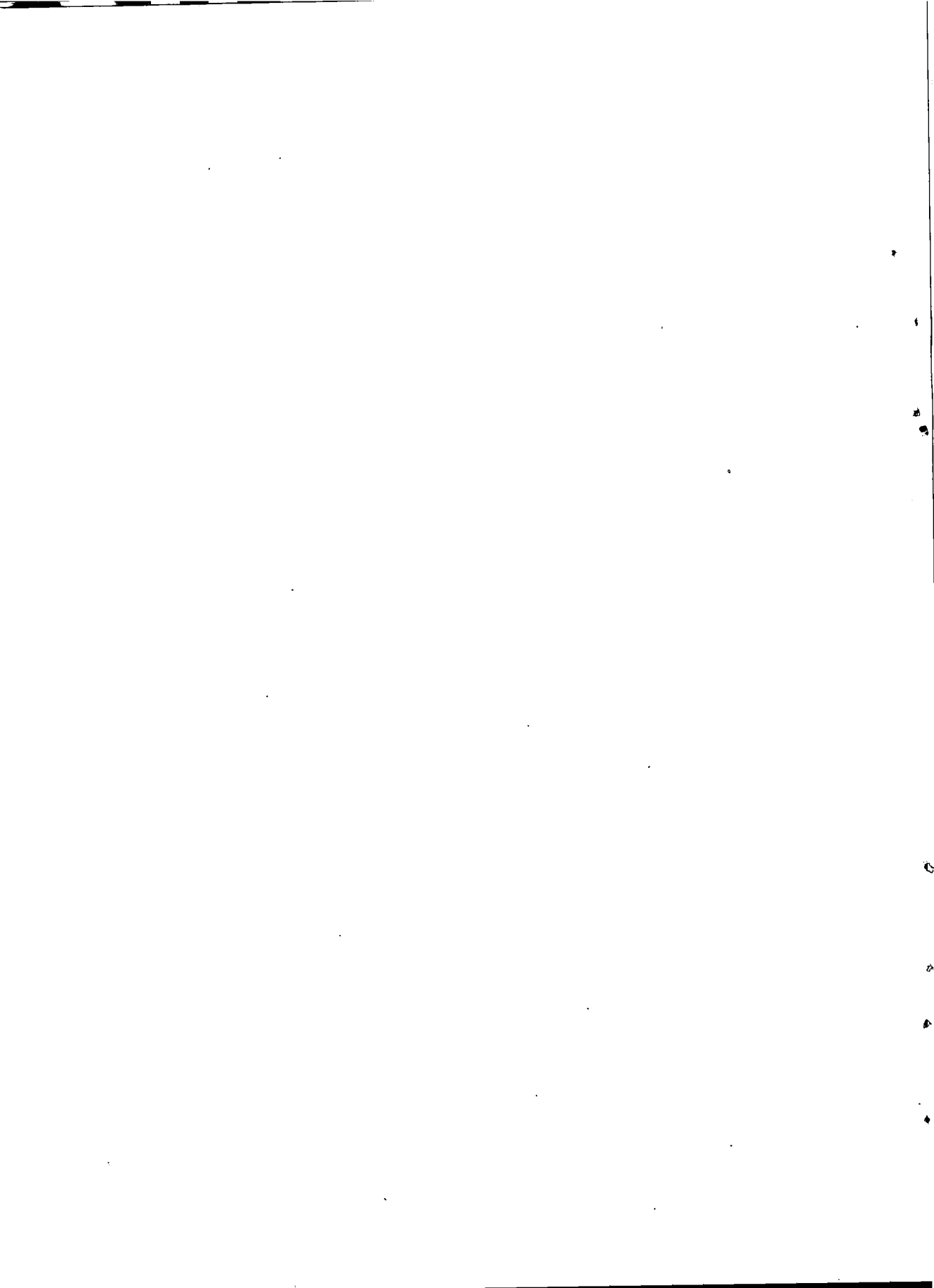


## SOCIAL WELFARE

*Physical Targets 1983-88*

Sl. No.	Major Programmes	Unit	Federal	Provin- cial	Punjab	Sind	NWFP	Balu- chistan	Total (col.4+5)
1	2	3	4	5	6	7	8	9	10
1.	Rehabilitation Services	Service Centres.	10	11	5	3	2	1	21
2.	Women and Child Welfare Services.	Do.	-	157	77	40	25	15	157
3.	Multi-purpose Community Development Service Centres.	Do.	-	120	50	30	25	15	125
4.	Promotion of Voluntary Social Welfare Services	aided agencies	1000	-	-	-	-	-	1000
5.	Miscellaneous Social Services Programme including Staff Welfare.	Service Centres	60	100	50	25	15	10	160
	Total		75	388	182	98	67	41	463*

(\*) The total does not include the No. of aided agencies shown against item 4.



*That man can have nothing  
But what he strives for;  
That (the fruit of) his striving  
Will soon come in sight;  
Then will he be rewarded  
With a reward complete;*

*Al-Najm  
(LIII-39-41)*

## CHAPTER 29

### INCOME AND EMPLOYMENT POLICY : JUST REWARD FOR WORK

THE gains of economic growth do not always reach down to those most in need. This is one of the important lessons learnt from three and a half decades of the development experience not only in Pakistan but in most developing countries. An important reason for this is that while sustained economic growth is necessary condition for making a significant improvement in economic conditions it is not a sufficient one. Unless and until an allocative mechanism exists to ensure a just and widespread distribution, powerful dynamic forces tend to perpetuate the low standards of living of a significant proportion of the population. As distinct from earlier plans, the Sixth Plan makes a radical departure from the past in that it faces up to this important shortcoming of the economic system and, to overcome it, lays out specified policy measures for alleviating poverty, generating productive employment, reducing income imbalances and diffusing the opportunities for people living in different regions and income groups. This is to be primarily achieved through the implementation of an employment and income policy, special care for small producers, social sector programmes and various other special interventions. While the problem is one which can only be solved in the long run and would require, amongst others far reaching structural and institutional reforms, the policy measures adopted during the Sixth Plan will bring about some significant improvements in the levels of living of the poorest population.

2. In tackling the problem of low incomes, Pakistan starts from a more favourable position as compared to a large number of other developing countries in that it has been able to solve to a significant extent the problem of extreme malnutrition and destitution. A number of factors have helped bring about such a situation. Prominent among these, especially in more recent years, have been the high rates of growth of foodgrain production, the spread effects of overseas remittances and the introduction of the Zakat and Ushr system in social and welfare programmes besides employment generation. However, a number of other factors have counteracted these forces and reduced their impact. The most important of these is the high growth rate of population, significantly higher than other South Asian countries, an inequitable distribution of ownership patterns, especially as regards land ownership, and the high capital intensity of investment especially in the organised manufacturing sector.

### **Employment Pressures during Sixth Plan**

3. During the Sixth Plan period, a number of factors may further accentuate the employment problem and the resulting economic hardships unless steps are undertaken to remedy the situation. First, as compared to the more recent past, the expected net migration will be significantly less as a percentage of the total expected increase in the labour force, even though its exact magnitude is difficult to predict with any degree of confidence. Secondly, mainly as a result of the spread of education, female participation in the labour force has and will continue to increase significantly. This pressure is already being reflected in the high level of female unemployment, i.e. those desiring to work but not finding jobs, as shown in the latest Labour Force Survey results for 1978-79. Thirdly, there are the pressures of urbanisation, growing already at an annual rate of almost 4.3 per cent. With subsistence agriculture being transformed into commercial agriculture and reduced overseas migration, more people will move from the rural to the urban areas. Fourthly, the expected structural changes in the production pattern of the economy over the Sixth Plan period *a priori*, could be more capital intensive as compared to the past. With the expected shift from primary consumer goods industrialisation in the private sector to engineering goods, the period of commercial agriculture especially for exports, the promotion and introduction of modern technology could all generate pressures which would displace labour unless deliberate policy measures are undertaken to the country. Fifthly, the government sector which had become, especially in more recent years, a large absorber of the increase in labour force will have to sharply reduce its intake. This is both because of

the shift towards more reliance on the private sector as well as the fact that wage costs of this sector will increase when the recommendations of the Pay Committee are implemented. Finally, mainly as a result of the large increases in overseas migration which have created temporary shortages of certain skills both in the rural and urban areas and progressive labour legislation in the seventies which strengthened the bargaining position of organised labour, Pakistan is no longer a low-wage economy, especially when compared to its South Asian neighbours. To justify and maintain this level of wages will require significant increases in labour productivity if it is not to affect adversely labour absorption in the economy.

4. The above factors clearly indicate that the employment problem which the country will face especially during the Sixth Plan period is both real and serious to merit immediate attention. It is important to emphasise this as certain recent developments in the labour market may have helped create a feeling that the intensity of the problem has been significantly reduced, especially in more recent years. Substantial increases in overseas migration estimated at about 2 million till 1981, which was concentrated mainly in the years between 1975 and 1979, and which absorbed nearly one-third of the increase in labour force during the Fifth Plan period, have led to shortages of certain skills, especially in urban areas. In rural areas, large farmers are known to complain of 'shortages' of hired labour during the peak sowing and harvesting seasons. For certain skills, like construction workers in urban areas, and for rural hired labour (during the peak seasons), real wages have risen despite the high levels of inflation in the seventies.

5. While all this is true, this situation can change dramatically during the Sixth Plan. Moreover, lack of open unemployment should not be confused with the existence of full employment. Much of the current employment is at low incomes, thereby disguising unemployment. The clearest manifestation of the lack of effective employment or the existence of under-employment is a level of income which is inadequate to provide an acceptable standard of living to the employee and his dependents. Such a situation can result from either an inadequate number of days worked or low levels of labour productivity or low wages which do not reflect productivity or a combination of all three.

#### **Employment Projections for Sixth Plan**

6. The dimensions of the employment during the Sixth Plan are illustrated by examining supply and demand projections of the labour force over the Plan period. These, of course, are only rough orders of magnitude.

7. The table below gives estimates of domestic labour force in July, 1983 and July, 1988 respectively. It is based on a projected growth rate of population of 2.64 per cent and of urban population of 4.3 per cent.

Estimates of labour force participation are based on the latest available Labour Force Survey for 1978-79. The present projections assume that overall labour force participation rates remain unchanged over the Plan period. While some decline in labour force participation rates in the age group 10-14 years is expected, especially for males in rural areas with the spread of secondary education, this will be compensated by an overall increase in female participation rates which have already increased significantly in the seventies from about 5 per cent of the female population in 1969-70 to 7.91 per cent in 1978-79.

TABLE 1  
*Estimates of Labour Force, 1983-88*

	(Million)					
	July 1983			July 1988		
	Total	Rural	Urban	Total	Rural	Urban
Total	27.64	20.56	7.08	31.35	22.60	8.75
Male	24.30	17.67	6.63	27.61	19.42	9.19
Female	3.34	2.89	0.45	3.74	3.18	0.56

Note.—Based on labour force participation rates as given in the Labour Force Survey, 1978-79, (Federal Bureau of Statistics, Karachi, 1982) adjusted for sex breakdowns as given in 1981 Census.

8. The expected increase in domestic labour force during the Sixth Plan period will also critically depend on the expected net migration. Given the generally uncertain economic conditions in the Middle East and lack of data on returnees, it is exceedingly difficult to come up with any precise estimates. A net migration of 550,000 has been projected during the Plan period, but to the extent that this target is not met, it will further increase pressure on the domestic employment situation.

TABLE 2  
*Estimates of Domestic Employed Labour Force, 1983 and 1988*

	(Million)	
	July 1983	July 1988
Total Labour Force	27.64	31.35
Less : Net Migration	0.18a	0.55b
Unemployed	0.98	1.00
	26.48	29.80

(a) Between March 1981 and July 1983.

(b) Between July 1982 and July 1988.

Note.—Level of unemployment in July, 1982 based on Labour Force Survey 1978-79.

9. The projected sectoral level of employment to absorb only the expected increase in the domestic labour force of 3.32 million is shown in the following table. The agricultural sector will continue to account for more than half of the labour force and will have to productively absorb almost half of the increase if under-employment is not to increase significantly during this period. With increasing mechanisation, it might well be difficult to maintain this level of labour absorption in the agricultural sector unless concrete measures are initiated to counteract its impact. A similar problem may arise as regards the manufacturing sector unless emphasis is shifted in favour of the more labour intensive small scale sector.

TABLE 3

*Projection of Employment by Major Sectors 1983-88*

	Internal Employ- ment Level, July 1983	Annual Sectoral Growth Rate %	Elasticity of Employ- ment	Projected Internal Employ- ment Level, July 1988	Projected Increase in Internal Employ- ment 1983-88
Agriculture	13.75	4.9	0.420	15.20	1.47
Mining & Quarrying	0.03	7.5	0.340	0.03	-
Manufacturing	3.92	9.3	0.392	4.69	0.77
Electricity, Gas & Water	0.19	8.0	0.227	0.21	0.02
Construction	1.51	8.5	0.400	1.80	0.29
Wholesale & Retail Trade	3.08	7.5	0.408	3.61	0.53
Transport, Storage & Communi- cations	1.25	6.8	0.408	1.44	0.19
Financial Institutions	0.21	5.8	0.153	0.22	0.01
Services	2.48	4.5	0.205	2.60	0.12
Unallocated	0.08	-	-	-	(-0.08)
Total	26.48	6.5	0.357	29.80	3.32

Note :- Sectoral breakdown of employment in July 1983 based on the Labour Force Survey, 1978-79, projected on same elasticities of employment shown above except for agriculture (0.51) manufacturing (0.32) and construction (0.684).

**Employment and Income Strategy**

10. The continuing existence of a potentially significant employment problem has dictated specific policy measures and programmes to be adopted during the Sixth Plan period. Indeed an employment policy cannot

be divorced from a fundamental policy to eradicate poverty and an adoption of an income policy. It is the vital link between the generation of productive employment and increasing productivity of those already employed with the improvement in living standards which this will bring about from the basis on which the employment and income strategy has been formulated. The major thrust of increasing incomes can only come from increasing employment and productivity.

11. The employment strategy to be pursued will be based on an active wage and income policy linked to productivity and indexed to price increases during the Sixth Plan which will provide protection to the fixed income groups from a fall in their real incomes and, hence, help reduce the pressures and tensions to which they have so far been subjected. They will be supplemented by social welfare programmes which could act as a safety net to protect with the poorest income groups, the handicapped and the disabled. In this regard, *Zakat* and *Ushr* have already been introduced. They will be further consolidated and strengthened during the Plan period.

12. A number of specific policy measures and programmes adopted at the sectoral level to increase employment have been incorporated in the Plan. While details are provided in the sectoral chapters, the important features of these are outlined below :

- (1) The success or failure of the employment strategy for the Sixth Plan will depend critically on whether it is possible or not to increase the labour absorptive capacity of the agricultural sector. At the start of the Sixth Plan it is estimated that 13.73 million persons will be employed in the agricultural sector, i.e. nearly 52 per cent of the domestic employed labour force. Although a precise figure is nearly impossible, estimates from different sources would suggest that between 10 to 15 per cent of this labour force could be under-employed. To absorb only the expected increase in the labour force, about 1.47 million man-years of employment will have to be created within the agricultural sector. This will imply, with increasing mechanisation, still a significantly high labour absorptive capacity of this sector if we do not wish to add to those already under-employed. Specific policies and programmes adopted during the Sixth Plan to help achieve this objective are as follows :

- (a) Considerable importance is given to measures which will bring about increases in cropping intensity, changes in cropping patterns towards crops which are



more labour intensive, increased use of inputs, especially fertilizer and pesticides, all of which will lead to increased labour demand.

- (b) Relatively increasing stress will be laid on strengthening the position of the small farmers with the aim of bringing about significant increases in their output and productivity. A larger share of the total credit available to the agricultural sector will be specifically reserved for the small farmers so that they have access to vital inputs such as fertilizer and pesticides. Increase in demand for family labour on the small farms will play a significant role in reducing under-employment in the agricultural sector.
- (c) The development of intermediate or fractional technology more suited for the country's factor endowments will be actively encouraged. If farm mechanisation is seen becoming increasingly inevitable, measures will be taken to ensure that the technology adopted is not necessarily labour displacing. The government will take action for the popularisation of small tractors and other technology which is appropriate to medium sized and small farms. With this end in view, efficient types of small technology will be imported and tested before being manufactured within the country. The government will also ensure that adequate service facilities are provided to make the experiment a success.
- (d) Considerable stress is being laid on building up a rural infrastructure with special emphasis on farm to market roads, provision of electricity and social services in rural areas. Not only will this increase labour demand in rural areas but, equally important, will help reduce the population drift to the urban areas.
- (e) Active encouragement will be provided for setting up small agro-industries specially of fruits, vegetables and poultry in the rural areas which will help generate increased employment.

(2) As regards the manufacturing sector, policies have been designed keeping in view both large and small industries.

(a) While the overall absorptive capacity of the large scale manufacturing sector will continue to be limited, mainly because of its dependence on imported technology, a number of measures have been adopted to ensure that its performance is improved. The most important of these will be a continuation of the present realistic exchange rate policies and suitable adjustments to the tariff structure such that export industries are not discriminated against and highly inefficient capital intensive industries are discouraged from being set up.

(b) It is, however, within the small scale sector that real possibilities of increasing employment exist and the Sixth Plan lays special emphasis on measures to encourage the growth of this sector. The small scale sector is extremely labour intensive as compared to the large scale and its employment elasticity in respect to value added is almost three times that of the large scale sector (0.8 to 1.0 as compared to 0.28 to 0.32). Small scale industry mainly uses domestically produced machinery and, therefore, its growth on the one hand will generate feedback effects and further strengthen the country's capital goods manufacturing capability and, on the other, relax an important constraint on the country's economic development. The small scale urban sector is expected to generate an additional 0.35 to 0.45 million jobs during the Plan period. Specific measures adopted for the growth of the small scale sector during the Sixth Plan include :

(i) Small scale industries will be treated for the purpose of policy making as an integral part of the industrial sector and not a relatively unimportant adjunct.

(ii) Credit facilities which have so far been limited to the large scale or to the upper end of the small scale will be extended to the bulk of the small scale producers.

- (iii) The linkage between large and small scale will be strengthened. While the government has given permission for the setting of industries such as scooters, motorcycles, pick-ups, refrigerators, air-conditioners the deletion programmes will be strictly adhered to. This will greatly encourage the growth of the small scale sector as most of the components for these products will be made in the small scale sector on a sub-contracting basis.
  - (iv) In the changes in the tariff structure which the government is contemplating, especially with the coming into production of the steel mill, the interest of small scale sector and especially that of the engineering industry will be protected. Indeed specific measures to further encourage the growth of the engineering industry in the small sector will be taken which will have a favourable impact on employment generation.
  - (v) The small scale sector will be made free of excessive government controls and regulations regarding both investment and prices so that it can operate more easily and efficiently in a more open environment.
  - (vi) Active government support will be provided for increasing the productive capacity of the small scale sector by the introduction of up to date designs, maintenance of regular standards and the setting up of efficient marketing outlets.
- (3) The government will take positive steps to encourage overseas migration and initiate measures to specially train the labour force in skills in demand in the labour importing countries. This will both help reduce the pressure on domestic employment as well as have a favourable overall impact on the economy, especially in the long term, on growth and income distribution. At the same time, the government will adopt a realistic set of policies to make it attractive for highly skilled professionals to serve the domestic economy. Where export demand impinges on domestic needs, measures will be undertaken to increase production so as to minimise any

adverse impact on the domestic economy. The government will also adopt specific policy measures to help the absorption of returnees and help divert overseas remittances into productive investments, especially in the small scale manufacturing sector which will have a favourable impact on employment generation.

- (4) The need for self-reliance through the development of appropriate technology will be given special emphasis. A comprehensive programme for the development of science and technology has been drawn up for the Sixth Plan period. The existing institutes for the development of appropriate technology will be strengthened and new ones set up for developing indigenous labour intensive techniques in sectors such as construction and highways and areas of special concern such as waterlogging and salinity.
- (5) Special emphasis will be given during the Sixth Plan to encourage female employment and increased female participation in the labour force. While this will increase pressures for generating domestic employment, the large planned increases in investments in social services (especially education and health) during the Sixth Plan should help absorb their numbers.
- (6) To generate additional employment in other sectors, prominent will be the consideration for a Works Programme initiated in the rural sector with the help of the country's own foodgrain reserves. Similarly, the ambitious low income housing programme to be launched during the Sixth Plan will generate considerable additional employment. Indeed, the larger overall level of investment to be undertaken during the Plan, which is substantially larger than the Fifth Plan, should help create a higher level of employment, especially with the adoption of measures outlined above which should encourage relatively more labour intensive techniques being adopted.

13. The employment policy outlined above will be further strengthened through the adoption of an incomes and wages policy which will aim at providing modern benefits to labour so as to make the rewards of labour just and commensurate with effort. It will be strengthened by social welfare measures for those who are handicapped, those whose incomes are extremely

low and those whose incomes have been considerably reduced through inflationary pressures. The steps taken will go a long way in helping to reduce the intensity of suffering of those with extremely low incomes and making it more bearable for those with fixed incomes. Specific policies and programmes for the implementation of the Income Policy will include the following :

- (1) To adopt a labour policy which provides just reward for labour and includes benefits of social security, workers pension, medical care, children's education and other modern benefits for labour provided in developed countries.
- (2) To ensure that wages and incomes are protected both from inflationary pressures and exploitation at the hands of the employer, wages and salaries in the public sector will be protected both through the progressive movement of the minimum real wage in line with the increase of labour productivity and partial indexing with price movements. Since the government continues to be the largest single employer in the country, these measures will provide protection to a significant proportion of the labour force. In the private sector, wages will be left to the interplay of the market system with the Government playing the role of a helpful intermediary with the framework of the national labour policy.
- (3) The introduction of social welfare measures to ameliorate absolute poverty and provide relief to the handicapped, disabled and the destitutes. As a major step in this direction the adoption of *Zakat* in the middle of the Fifth Plan and of *Ushr* last year has already made a significant impact in reducing the levels of extreme poverty and malnutrition in the economy. *Zakat* at present is distributed amongst almost 1.5 million households each of whom receives an additional income of Rs. 50 per month. At the margin, this will reduce the extreme forms of poverty prevailing in the country by between one-fourth to one-third.

14. It should be clearly recognized that it would only be inflationary if wage increases take place in the economy without real gains in productivity. This will also have an unfavourable impact on the country's export competitiveness which already suffers from high wage costs as

compared to some of our competitors. A deliberate attempt will be made to ensure that the measures outlined above to protect and increase incomes of the lowest groups do not outstrip increases in real productivity.

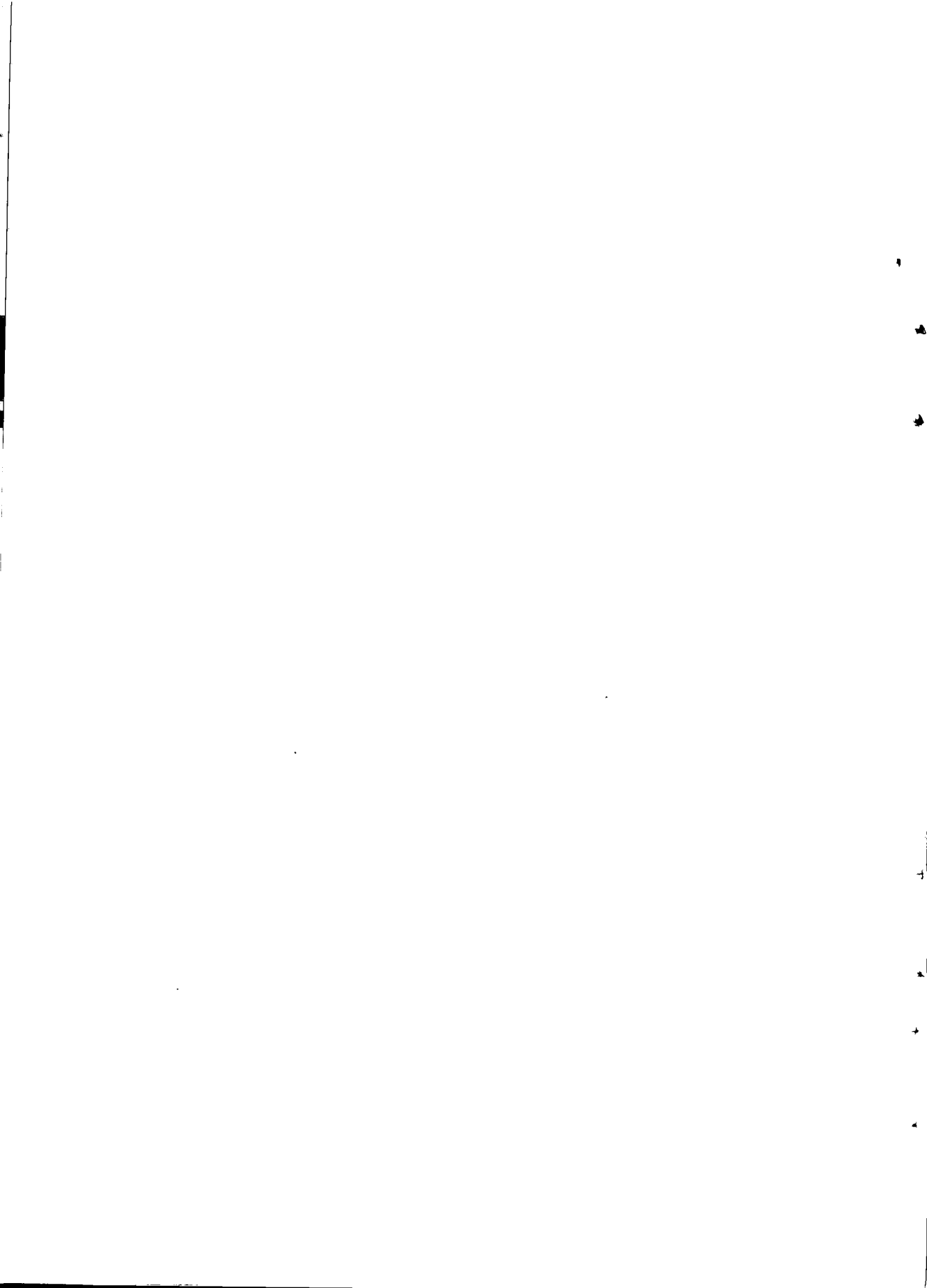
15. In conclusion, while the task of bringing about far reaching improvements in the living standards of the vast majority of the population will remain perhaps the greatest challenge to the Sixth Plan, a major effort will have been initiated to respond to the task and to lay the framework and foundation on which further progress can be built. The Plan incorporates an explicit employment and incomes policy. This will have to be translated into practice by monitoring progress in each sector and by facing some overall policy decisions throughout the Plan period.

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**PART VII**

**STATISTICAL PROFILE  
OF THE  
PLANNED DEVELOPMENT**

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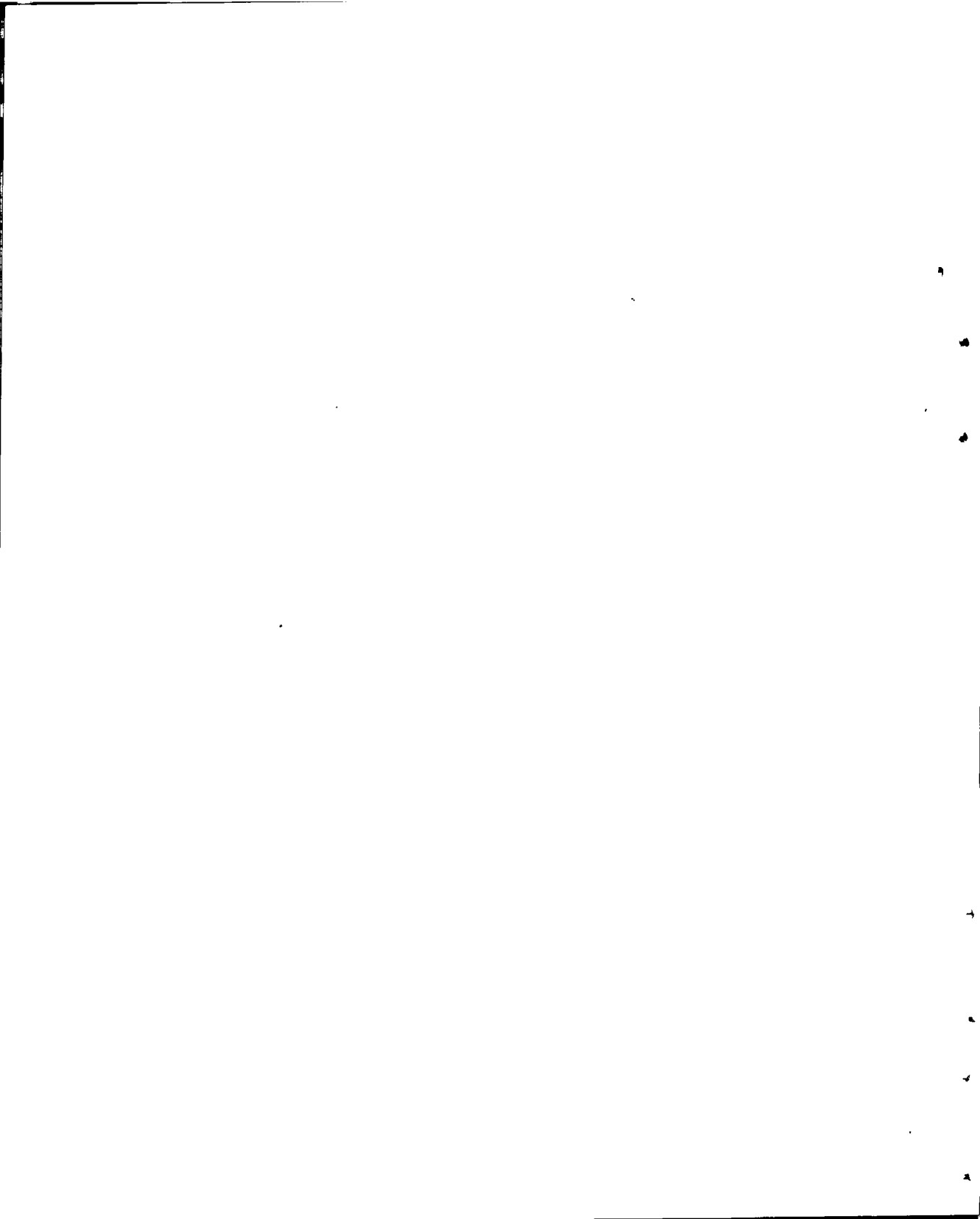


TABLE A. 1

*GDP and GNP Growth*

	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
Annual Growth Rate						
Agriculture	2.1	3.8	6.3	1.7	4.4	4.9
Major Crops	2.3	4.7	9.1	0.9	4.8	3.6
Minor Crops	0.8	4.8	3.8	4.7	3.1	7.0
Others	2.2	2.1	2.3	2.0	4.3	6.0
Manufacturing	5.2	11.7	8.1	3.5	9.0	9.3
Large Scale	7.6	16.8	9.9	2.2	9.7	10.0
Other Sectors	3.6	8.3	6.6	6.2	6.0	6.4
DGP (FC)	3.1	6.8	6.7	4.2	6.0	6.5
GNP (FC)	3.0	6.8	6.8	4.9	6.3	6.3

TABLE A. 2  
*Macro-Economic Framework*  
 (At Current Rupees Billion)

	Sixth Plan			Total			Annual Growth Rates			
	1977-78	1982-83	1987-88	Sixth Plan	Fifth Plan	Total	Sixth Plan		Fifth Plan	
							Real	Nominal	Real	Nominal
GDP (FC)	157.2	329.8	619.1	2442.9	1263.3		6.5	13.4	6.0	16.0
Indirect Taxes Less Subsidies	16.5	38.2	72.9	286.2	142.8		6.8	13.8	9.0	18.3
GDP (MP)	173.7	368.0	692.0	2729.1	1406.1		6.5	13.5	6.3	16.2
Net Factor Income	10.3	33.0	55.9	228.8	102.6		4.3	11.1	9.9	26.2
GNP (MP)	184.0	401.0	747.9	2957.9	1508.7		6.4	13.3	6.5	16.9
Net Foreign Savings	5.9	11.5*	19.3	81.0	53.4		4.1	10.9	(6.0)	14.3
Total Resources ..	189.9	412.5	767.2	3038.9	1562.1		6.3	13.2	6.2	16.8
Total Consumption	159.8	350.4	623.2	2511.9	1325.6		5.4	12.2	6.0	17.0
Private	141.8	311.2	546.0	2207.8	1184.4		5.1	11.9	6.0	17.0
Public	18.0	39.2	77.2	304.1	141.2		7.5	14.5	6.0	16.8
Total Investment	30.1	62.1	144.0	527.0	236.5		11.1	18.3	7.0	15.6
(i) Fixed	29.1	53.6	130.1	469.4	211.7		12.1	19.4	4.6	13.0
Public	20.3	34.1	70.5	269.4	138.8		8.6	15.7	2.7	10.9
Private	8.8	19.5	59.6	200.0	72.9		17.4	25.0	8.5	17.2
(ii) Changes in Stocks	1.0	8.5	13.9	57.6	24.8		3.6	10.3	42.6	53.4
Total (Uses) ..	189.9	412.5	767.2	3038.9	1562.1		6.3	1.23	6.2	16.8

**Assumptions (Sixth Plan)**

1. Inflation rate = 6.5 per cent.
2. Exchange rate = \$ 1.00 = Rs. 13.50.

\*This is a normalized benchmark as there was an abnormal decline in net foreign savings during 1982-83. The average inflow during the Fifth Plan period was 3.5 per cent of GNP.

TABLE A. 3.1

*Savings and Investment*

(At Current Billion Rupees)

	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
Gross Investment	134.2	236.5	527.0
Fixed Investment	126.5	211.7	469.4
National Savings	83.8	183.1	446.0
Net Foreign Savings	50.4	53.4	81.0
Marginal Rate of Savings	3.4	10.5	20.3
<u>As a percentage of GNP :</u>			
Gross Investment	15.8	15.7	17.8
Fixed Investment	14.9	14.0	15.8
National Savings	59.9	12.2	15.1
Net Foreign Savings	5.9	3.5	2.7

TABLE A. 3.2

*Savings and Investment*

(At Current Billion Rupees)

	1977-78	1982-83	1987-88	Annual Increase	
				1978-83	1983-88
Gross Investment	30.1	62.1	144.0	15.6	18.3
Fixed Investment	29.1	53.6	130.1	13.0	19.4
National Savings	24.2	50.6	124.7	15.9	19.8
Net Foreign Savings	5.9	11.5	19.3	14.3	10.9
Marginal Rate of Savings	22.7	23.7	20.3		
As a percentage of GNP :					
Gross Investment	16.4	15.5	19.2		
Fixed Investment	15.8	13.4	17.4		
National Savings	13.2	12.6	16.6		
Net Foreign Savings	3.2	2.9	2.6		

TABLE A. 4.1

## Public Sector Outlays

(Million Rupees)

Sector	First Plan	Second Plan	Third Plan	Non-Plan Period	Fifth Plan	Sixth Plan Allocations
	(1955-60)	(1960-65)	(1965-70)	(1970-78)	(1978-83)	(1983-88)
1. Agriculture.	461	902	1377	6492	14860	15350
(a) Agriculture.	461	695	822	4141	6060	12350
(b) Fertilizer Subsidy.	-	207	555	2351	8800	3000
2. Water.	969	4597	4513	12810	15770	32100
3. Energy.	607	1293	1760	13841	38830	116500
(a) Power.	575	1165	1571	10880	28119	87400
(b) Fuels.	32	128	189	2961	10597	27500
(c) Renewables Energy.	-	-	-	-	114	1600
4. Industry.	742	478	786	11294	25400	20500
5. Minerals.	124	94	271	492	400	5750
6. Transport and Communications.	1080	1595	2521	15653	35210	57520
7. Physical Planning and Housing.	505	957	698	5687	9000	15500
8. Education and Manpower.	232	463	563	3442	5640	19850
9. Health.	76	174	281	2381	4580	13000
10. Population Welfare Programme.	-	9	145	820	600	2300
11. Others/Misc. Programmes.	67	44	289	2632	2320	6630
Total ..	4863	10606	13204	75544	152610	305000
<i>Plus</i> : Special Development Programmes	-	-	-	-	600	15000
<i>Less</i> : Operational shortfall.	-	-	-	-	-	30000
Total (Net).	4863	10606	13204	75544	153210	290000

TABLE A. 4.2

*Private Investment*

(Billion Rupees)

Sl. No.	Sector	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
1.	Agriculture.	8.09	14.22	45.47
2.	Manufacturing.	11.99	20.19	61.91
	Large Scale.	(9.01)	(15.12)	(49.87)
	Small Scale.	(2.98)	(5.07)	(12.04)
3.	Minerals.	0.22	0.26	1.10
4.	Transport and Communications.	7.57	9.15	26.00
5.	Ownership of Dwellings.	8.38	19.00	43.65
6.	Service/Others.	5.58	10.59	21.87
	Total ..	42.83	73.41	200.00



TABLE A. 5.1

*Sectoral Shifts*

(Overall Development Outlays)

(Percentage Share)

Sl. No.	Sector	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
1.	Agriculture and Water.	21.1	16.0	17.9
2.	Energy.	11.7	17.2	23.1
3.	Industry.	19.7	20.1	16.3
4.	Minerals.	0.6	0.3	1.4
5.	Transport and Communications.	19.6	19.6	16.5
6.	Physical Planning and Housing.	11.9	12.4	11.7
7.	Others.	15.4	14.4	13.1
	Total ..	100.0	100.0	100.0



TABLE A. 5.3

*Private Investment Shifts*

Sl. No.	Sector	(Percentage Share)		
		Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
1.	Agriculture.	18.9	19.4	22.7
2.	Manufacturing.	28.0	27.5	31.0
	(a) Large Scale.	(21.0)	(20.6)	(25.0)
	(b) Small Scale.	(7.0)	(6.9)	(6.0)
3.	Minerals.	0.5	0.3	0.6
4.	Ownership of Dwellings.	19.5	25.9	21.8
5.	Transport.	17.7	12.4	13.0
6.	Service and Others.	15.4	14.5	10.9
	Total ..	100.0	100.0	100.0

## I. AGRICULTURE

TABLE B. 1.1

*Financial Outlays*

(Million Rupees)

	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan Period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan Allocations (1983- 88)
<b>A. Agriculture:</b>						
Government Storages.	-	25	44	500	1445	3650
Agricultural Education	-	75	75	100	239	330
Agricultural Extension.	25	50	30	100	421	1019
Agricultural Research.	6	30	22	250	707	1560
Agricultural Marketing, Cooperatives and other supporting programmes.	70	100	28	130	100	108
Agricultural Economics and Statistics.	Neg.	2	2	25	40	51
Improved Seeds.	25	30	28	160	424	497
Soils and fertilizers.	-	6	10	50	99	172
Plant Protection.	25	15	118	1600	382	126
Mechanization	40	80	126	450	236	581
Soil Conservation and Land Development	200	140	160	110	342	405
Livestock and Poultry Development	20	40	42	314	573	1215
Forestry, Watershed Manage- ment and Wildlife.	30	60	80	200	440	1571
Range Management.	5	12	12	12	41	52
Fisheries.	5	15	20	80	129	763
Miscellaneous.	10	15	25	60	259	-
Public Corporations.	-	-	-	-	190	250
Total ..	461	695	822	4141	6067	12350
<b>B. Fertilizer Subsidy.</b>						
	-	207	555	2351	8800	3000

TABLE B.1.2

*Actual and Projected Financial Acceleration*

	(Million Rupees)				
	1977-78	1982-83	1987-88 (Targets)	% Annual increase in 1978-83	% Annual increase in 1983-88
<b>A. Agriculture:</b>					
Improved Seeds	60	74	157	4.3	16.2
Plant Protection.	329	17	21	(-)44.7	4.3
Soils and Fertilizers.	3	23	14	50.3	(-)9.5
Mechanization.	52	51	56	(-)0.4	1.9
Soil Conservation and Land Develop- ment.	2	45	88	86.4	1.43
Agricultural Marketing, Coopera- tives and other Supporting pro- grammes.	28	95	35	27.7	(-)18.1
Govt. Foodgrain Storages.	58	243	1010	33.2	33.0
Research on Crop Production.	53	201	260	30.6	5.3
Agricultural Education.	14	57	80	32.4	7.0
Agricultural Extension.	27	136	118	38.2	(-)2.8
Agricultural Economics and Statistics.	2	9	9	35.1	-
Animal Husbandry.	98	170	239	11.6	7.0
Range Management.	2	6	10	24.6	10.8
Forestry, Watershed and Wildlife.	55	143	421	21.1	24.1
Fisheries.	12	58	262	37.0	35.2
Miscellaneous.	-	1	26	-	91.9
Total . .	795	1329	2806	10.8	16.1
<b>B. Fertilizer Subsidy.</b>					
	626	1948	-	25.5	-

TABLE B. 1.3

*Physical Achievements: Crop Production*

Major Programmes	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan 1978-83	Sixth Plan Target (1983-88)
<b>Grains</b>	000 tonnes	<b>6090</b>	<b>7325</b>	<b>11050</b>	<b>12861</b>	<b>17390</b>	<b>21795</b>
Wheat.	„ „	3908	4590	7293	8367	12340	15500
Rice.	„ „	995	1350	2401	2950	3440	4200
Maize.	„ „	486	528	667	821	1010	1380
Others.	„ „	701	857	689	723	600	715
<b>Cash Crops</b>	„ „	<b>11013</b>	<b>19126</b>	<b>27017</b>	<b>30728</b>	<b>33419</b>	<b>42068</b>
Cotton (lint).	„ „	291	378	536	575	821	1033
Sugarcane.	„ „	10661	18665	26365	30077	32530	40935
Tobacco.	„ „	61	83	116	76	68	100
<b>Oil Seeds</b>	„ „	<b>835</b>	<b>999</b>	<b>1397</b>	<b>1471</b>	<b>2081</b>	<b>2853</b>
Cotton seed	„ „	582	756	1072	1150	1642	2066
Traditional.	„ „	253	243	325	321	415	437
Non-Traditional.	„ „	-	-	-	1	24	350
<b>Pulses</b>	„ „	<b>837</b>	<b>875</b>	<b>679</b>	<b>813</b>	<b>712</b>	<b>795</b>
Gram.	„ „	608	671	506	620	500	582
Others.	„ „	229	204	173	193	212	213
<b>Vegetable &amp; Spices</b>	„ „	<b>902</b>	<b>1111</b>	<b>1738</b>	<b>2207</b>	<b>2721</b>	<b>5105</b>
Onion.	„ „	106	183	244	325	475	800
Potatoes.	„ „	90	173	178	294	516	850
Others.	„ „	706	755	1316	1588	1730	3455
<b>Fruits.</b>	„ „	<b>622</b>	<b>1278</b>	<b>1381</b>	<b>2090</b>	<b>2680</b>	<b>3585</b>

*Note.*—The production figures in each Plan period relate to the terminal year.

TABLE B.1.3 (a)

*Physical Achievements: Other than Crop Production*

Major Programmes/Items	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (target) (1983-88)
1	2	3	4	5	6	7	8
1. Fertilizer-Off-take	'000' N/tonnes	19	87	312	720	1244	1,828
2. Improved Seed Distributed.	'000' tonnes	27	31	28	69	115	186
3. Plant Protection.	'000' Hectares	546	1,307	656	1,679	1,618	3,253
4. Mechanisation (Operational Tractors).	Nos.	124	114	163	55,000	137,417	33,7000
5. Agricultural Credit	Million Rupees	N.A.	173	210	1,925	6,312	18,000
6. Government Storages availability.	000 tonnes.	712	872	1,421	2,409	4,240	7,300
7. Animal Husbandry: (Production).							
(i) Meat.	000 tonnes.	504	545	578	742	940	1305
(ii) Milk.	Million tonnes.	7.1	7.4	7.7	8.7	9.7	12.9
(iii) Eggs.	Million No.	409	478	564	1557	3200	5900
(iv) Hides.	Million No.	4.1	4.17	4.26	4.65	5.15	5.66
(v) Skins.	Million No.	12.4	14.37	16.02	26.89	28.81	34.03
(vi) Wool.	'000' tonnes.	19.9	20.8	21.9	36.19	40.00	55.00
8. Forestry.	'000' Cubic meter.	638	792	864	589	680	1690
Timber.	Do.	(143)	(197)	(351)	(130)	(200)	(497)
Firewood.	Do.	(495)	(595)	(513)	(459)	(480)	(1193)
9. Fisheries:	'000' tonnes	80.7	111.8	168.0	267.0	332.0	427.0
Inland.	Do.	(18.5)	(22.0)	(28.0)	(33.0)	(60.0)	(66.0)
Marine.	Do.	(62.2)	(89.8)	(140.0)	(234.0)	(272.0)	(361.0)

Note.—All figures show achievement in the last year of the Plan except items 4 and 6 which show the total availability by end of the Plan period.

TABLE B.14

*Actual and Projected Acceleration: Crop Production*

Crops/Items	Unit	1977-78	1982-83	Benchmark (Sixth Plan)	1987-88 Pro- jected	% Annual increase in 1978- 83	% Annual increase in 1987-88 over Bench- mark
<b>Grains</b>	000 tonnes	<b>12861</b>	<b>17390</b>	<b>16712</b>	<b>21795</b>	<b>6.2</b>	<b>5.5</b>
Wheat.	" "	8367	12340	11800	15500	8.1	5.6
Rice.	" "	2950	3440	3307	4200	3.1	4.9
Maize.	" "	821	1010	969	1380	4.2	7.3
Others.	" "	723	600	636	715	(-)3.7	2.4
<b>Cash Crops</b>	" "	<b>30726</b>	<b>33419</b>	<b>35889</b>	<b>42068</b>	<b>1.7</b>	<b>3.2</b>
Cotton (lint).	" "	575	821	821	1033	7.4	4.7
Sugarcane.	" "	30077	32530	35000	40935	1.6	3.2
Tobacco.	" "	74	68	68	100	(-)1.7	8.0
<b>Oil Seeds</b>	" "	<b>1481</b>	<b>2081</b>	<b>2005</b>	<b>2853</b>	<b>7.0</b>	<b>7.3</b>
Cotton seed.	" "	1160	1642	1642	2066	7.2	4.7
Traditional.	" "	320	415	332	437	5.3	5.6
Non-Traditional.	" "	1	24	31	350	88.8	64.4
<b>Pulses</b>	" "	<b>807</b>	<b>712</b>	<b>694</b>	<b>795</b>	<b>(-)2.5</b>	<b>2.8</b>
Gram.	" "	614	500	495	582	(-)4.0	3.3
Others.	" "	193	212	199	213	1.9	1.4
<b>Vegetables &amp; Spices</b>	" "	<b>2207</b>	<b>2721</b>	<b>2609</b>	<b>5105</b>	<b>4.3</b>	<b>14.4</b>
Onion.	" "	325	475	452	800	7.9	12.1
Potatoes.	" "	294	516	459	850	11.9	13.1
Others.	" "	1588	1730	1698	3455	1.7	15.3
<b>Fruits.</b>	" "	<b>2090</b>	<b>2680</b>	<b>2200</b>	<b>3585</b>	<b>5.1</b>	<b>10.2</b>



TABLE B. 1.4 (a)

*Actual and Projected Physical Acceleration : Other than Crop Sector*

S. No.	Major Programmes	Unit	1977-78	1982-83	1987-88	%Annual increase in 1978-83	%Annual increase in 1983-88
1.	Fertilizer	000 N/tonnes	720	1244	1828	11.6	8.0
2.	Improved Seed	000 tonnes	69	115	186	10.8	10.9
3.	Plant Protection	000 Spray Hectares	3931	3161	7231	(-4.3)	18.0
4.	Mechanization Operational (Tractors)	Nons (Cumulative)	55.000	137,417	337.000	20.1	19.7
5.	Agricultural credit	Million Rupees	1,925	6,312	18,000	26.8	23.3
6.	Govt. storages availability	000 tonnes	2,409	4,240	7,300	12.0	11.5
7.	Animal Husbandry :						
	(i) Meat Production	000 tonnes	742	940	1305	4.8	6.8
	(ii) Milk Production	Million tonnes	8.7	9.7	12.9	2.2	5.9
	(iii) Egg Production	Million No.	1557	3200	5900	15.5	13.0
	(iv) Hide Production	"	4.65	5.13	5.66	1.19	1.90
	(v) Skin Production	"	26.89	28.81	34.03	1.39	3.39
	(vi) Wool Production	000 tonnes	36.19	40.00	55.00	2.0	6.6
8.	Forestry		0.589	0.680	1.690	2.9	20.0
	(i) Timber	Million Cubic Meters	(0.130)	(0.200)	(0.497)	(9.0)	(20.0)
	(ii) Firewood	"	(0.459)	(0.480)	(1.193)	(0.9)	(20.0)
9.	Fisheries	000 tonnes	267	332	427	4.5	5.1
	Inland	"	(33)	(60)	(66)	(12.7)	(2.0)
	Marine	"	(234)	(272)	(361)	(3.1)	(5.7)

## 2. WATER

TABLE B. 2.1

*Financial Outlays*

(Million Rupees)

	Fifth Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Allocations (1983-88)
IBP/Tarbela	-	2910	3000	6022	5552	2690
Irrigation	455	860	277	2142	3697	10919
Drainage & Reclamation	97	422	832	3122	4003	13815
Flood Protection	68	118	21	2214	1209	1867
Water Management	-	-	-	88	555	1060
Survey, Investigation, Re- search and miscellaneous	349	287	383	824	751	1749
Total ..	969	4597	4513	12810	15767	32100

TABLE B. 2.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

	1977-78	1982-83	1987-88	%Annual increase in 1978-83	%Annual increase in 1983-88
Irrigation	351	1580	4186	35.0	25.1
Drainage & Reclamation	727	1208	2953	10.7	19.6
Flood Protection/Control	248	274	300	2.0	1.8
Water Management	17	220	252	66.9	2.8
Survey, Investigation, Research & Misc.	213	245	219	(-9.1)	(-2.2)
Tarbela/IBP	683	853	290	9.7	(-19.0)
Total ..	2239	4380	8200	10.5	13.4

TABLE B. 2.3

*Physical Achievements*

Major Programme	Unit	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan Period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan (Target) (1983-88)
Water Availability at Farmgate	MAF	50.25	63.87	75.5	87.39	101.49	112.77
New Area cropped	M.A.	N.A.	N.A.	N.A.	N.A.	4.77	3.24
Area Protected	M.A.	N.A.	N.A.	N.A.	10.5 (cumulative)	2.5	5.3
Flood protection	E/WM cf.	N.A.	N.A.	N.A.	N.A.	3400	1600
O.F.W.M.	W/C (No.)						
a. Regular	"	-	-	-	53	2930	9700
b. Crash	"	-	-	-	-	58,000	20,000

TABLE B. 2.4

*Physical Achievements*

Major Programme	Unit	1977-78	1982-83 (cumulative)	1987-88	%Annual increase in 1978-83	%Annual increase in 1983-88
Water Availability at Farmgate	MAF	87.39	101.49	112.77	3.0	2.1
New cropped area	M.A.	1.0	2.85	3.28	23.3	2.9
Area protected	M.A.	0.85	2.1	5.3	19.8	20.3
Flood protection	E/W Mcf	N.A.	1719	1600	-	(-)1.4
O.F.W.M.	No. of W/C					
a. Regular	"	54	2877	9700	121.5	27.5
b. Crash	"	-	60346	20000	-	(-)19.8

## ENERGY

TABLE B. 3.1

*Summary*

	(Million Rupees)					
	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (Allocations) (1983-88)
<b>A. ADP :</b>						
(i) Power	575	1,165	1,571	10,880	20,151	68,900
(ii) Fuels	32	128	154	2,940	5,540	16,000
(iii) Research, Planning, Conservation and Renewables	-	-	-	21	114	1,600
Total (A) ..	607	1,293	1,725	13,841	25,805	86,500
<b>B. Public Corporations :</b>						
KESC	-	-	-	-	7,790	14,000
WAPDA and Misc. Power	-	-	-	-	-	4,500
OGDC	-	-	-	-	-	3,000
Gas Transmission and Distribution	-	-	-	-	-	2,700
Oil Refining Dist. and Storage	-	-	-	-	5,240	4,800
Miscellaneous (Fuels)	-	-	-	-	-	1,000
Total (B) ..	-	-	-	-	13,030	30,000
Total (A & B)	607	1,293	1,725	13,841	38,835	116,500

TABLE B. 3.2

## Financial Outlay (Power)

(Million Rupees)

	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (Allocations) (1983-88)
Power (WAPDA)	575	1,165	1,571	9,714	17,163	61,330
1. Generation	-	-	-	(2,808)	(6,025)	(36,699*)
2. Transmission	-	-	-	(3,368)	(2,932)	(7,631)
3. Secondary Transmission and Grid Station	-	-	-	(1,270)	(4,181)	(7,500)
4. Distribution and Village Electrification	-	-	-	(2,268)	(4,025)	(9,500)
PAFC :	-	-	-	949	2,387	9,000
1. Generation	-	-	-	-	-	(8,000)
2. Others	-	-	-	-	-	(1,000)
A.K.	-	-	-	46	243	1,000
N.A.	-	-	-	46	92	300
FATA	-	-	-	52	128	450
Misc. Projects	-	-	-	73	138	800**
Total ..	575	1,165	1,571	10,880	20,151	72,880
KESC (Outside ADP) :	-	-	-	-	7,790	14,000
1. Generation	-	-	-	-	-	(7,873)
2. Transmission	-	-	-	-	-	(3,527)
3. Distribution	-	-	-	-	-	(2,600)
Provinces	-	-	-	-	180	520
Total Power ..	-	-	-	-	28,119	87,400

\*includes Rs. 4,000 million outside ADP.

\*\*Includes Rs. 500 million outside ADP.

TABLE B. 3.3

*Actual Projected Financial Acceleration*

(Million Rupees)

	1877-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
1. WAPDA :					
Generation	661	1184	7400	12.4	44.3
Transmission	828	568	750	(-) 7.3	5.7
Secondary Transmission and Grid Station	520	1466	1300	23.0	(-)2.4
Distribution	639	1285	2000	15.0	9.3
Total (WAPDA)	2648	4503	11450	11.2	20.5
2. PAEC					
	557	516	4000	(-) 1.5	50.6
3. A.K.					
	18	90	250	38.0	22.7
4. N.A.					
	6	44	78	49.0	12.1
5. FATA					
	24	31	97	5.2	25.6
6. Small Hydels					
	40	-	160	-	-
Total (Power)	3293	5194	16035	9.5	25.3
Public Corporations					
7. KESC					
	863	1880	2500	16.9	5.9
Total (Power)	4156	7064	18535	11.2	21.3



TABLE B. 3.4

*Physical Achievements*

Major Programmes	Unit	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan Period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan (1983- 88)
<b>WAPDA :</b>							
Energy Generation*	Million k Wh	781	2465	5162	10089	16663	26,323
Installed Capacity <sup>@</sup>	MW	366	270	687	1312	1290	2895
No. of consumers <sup>@</sup>	No	311596	376270	486759	1105816	1619801	2900000
Village Electrification <sup>@</sup>	No.	904	954	531	5220	8791	20000
<b>KESC :</b>							
Energy Generation**	Million kWh	290	667	1295	2355	3333	5400
Installed Capacity <sup>@</sup>	MW	69	132	191	238	225	900
No. of consumers <sup>@</sup>	No.	98056	64691	62739	209918	165000	252550

\*The generation data relates to the terminal year of Plan period.

\*\*WAPDA and other agencies.

<sup>@</sup>This represents additions during the period.

TABLE B. 3.5

*Physical Achievements*

Major Programmes	Unit	1977-78	1982-83	1987-88 (Target)	% Annual increase in 1978-83	% Annual increase in 1983-88
<b>1. Energy Gen :</b>						
WAPDA System	Million kWh	10089	16663	26,323	10.6	9.6
KFSC System (including Purchase)	"	2257	3333	5,400	8.1	10.1
Total (WAPDA/KFSC)		12346	19996	31,723	10.1	9.7
<b>2. Installed Capacity :</b>						
<b>WAPDA :</b>						
Hydel	MW	1567	2547	3177	10.2	4.5
Steam	MW	715	943	2483	5.7	21.4
G.T.	MW	353	464	1189	5.6	20.7
Sub-Total		2635	3954	6849	8.5	11.6
<b>KFSC :</b>						
Steam	MW	493	493	1393	-	23.1
Gas Turbine	MW	-	225	225	-	-
Nuclear	MW	137	137	137	-	-
Sub-Total		630	855	1755	6.3	15.5
Grand Total		3265	4809	8604	8.1	12.3
<b>No. of Consumers (Annual) :</b>						
<b>WAPDA :</b>						
Domestic	Nos.	171466	300000	480000	11.8	9.9
Commercial	Nos.	46617	-	84000	-	-
Industrial	Nos.	3671	6000	8000	10.3	5.9
Agricultural	Nos.	8528	6000	8000	(-) 6.8	5.9
Total ...		230282	212000	580000	6.3	13.2
Village Electrification Average per annum for Plan period WAPDA and other)	Nos.	-	1767	4000	-	17.8

TABLE B. 3.6

*Financial Outlays (Fuels)*

(Million Rupees)

	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan Period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan Alloca- tion 1983-88)
<b>A. ADP :</b>						
1. ODGC			135	1593 (Plus 3000 in Pub. Corporation)	3982	12000
(i) Development of Gas Fields						(3200)
(ii) Development Oil and Con- densate fields						(3400)
(iii) Strengthening OGDC						(1900)
(iv) New Exploration Programme						(6500)
II. Petroleum Concessions (Public Sector Participation in Private Sector exploration)	32	128	35	322	1075	1,900
III. Gas Transmission & Distribution			19	394	518	1,200
IV. Oil Refining Distribution and Storage				631	-	900
Total (A) . .	32	128	189	2940	5575	16,000
<b>B. Public Corporations :</b>						
(i) OGDC					5240	11,500 (3000)
(ii) Gas Transmission and Distribution						(2700)
(iii) Oil Refining, Distribution and Storage						(4800)
(iv) Misc. Projects	-	-	-	-	-	(1000)
Total (Fuels) . .	-	-	-	-	10815	27500
<b>C. Energy Planning, Research, Conservation and Renewables</b>						
(i) DGER				21	114	1600 (348)
(ii) HDIP				20	94	(100)
(iii) Energy Plantation				1	18	(612)
(iv) Energy Planning Conservation (USAID)						(350)
(v) Energy R&D and Instt.						(150)
(vi) National Institute of Power					2	(40)
Total (A+B+C) . .	32	128	189	2961	10929	29100

TABLE B. 5.7

*Actual and Projected Financial Acceleration*

	(Million Rupees)				
	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
<b>Fuels :</b>					
OGDC	450	1176	3200	21.1	22.1
Petroleum Concessions	49	397	500	52.0	4.7
Gas Operations	-	227	880	-	31.1
Oil Operations	0.5	-	1800	-	-
Total (Fuels)	499.5	1800	6380	29.2	28.8
<b>Research, Energy Planning, Conservation and Renewables</b>					
	1	56	485	123	53.9
(i) DGER	1	54	75	122	6.8
(ii) HDIP	-	2	20	-	58.4
(iii) Energy Plantation	-	-	225	-	-
(iv) Energy Planning Conservation (USAID)	-	-	100	-	-
(v) Energy R&D Instt.	-	-	55	-	-
(vi) National Institution of Power	-	-	10	-	-

TABLE B. 3.8

*Physical Achievements*

Major Programmes	Unit	1977-78	1982-83	1987-88 (Target)	% Annual Increase in 1978-83	% Annual increase in 1983-88
Crude oil Production (Yearly average)	Barrels/day.	9,697	13,000	21,000	6.0	10.1
Drilling of Wells (Yearly average)						
OGDC :						
Exploratory and App.	Nos.	-	1	7.6	-	50.0
Development	Nos.	-	3	11.6	-	31.1
Joint Ventures	Nos.	-	-	5	-	-
Private :						
Exploratory and App.	Nos.	3	4	5.8	5.9	7.7
Development	Nos.	-	8.4	20	-	18.9
Total	Nos.					
Exp. & Appr.	Nos.	3	5	18.4	10.8	26.8
Development	Nos.	-	11.4	31.6	-	22.6
Total		3	16.4	50.0	40.5	25.0
LPG Production	Tons.	29,539	65,010	200970	17.1	15.9
Refining Capacity	Million/Tons annum	4.7	6.0	8	5.0	5.9
Gas Consumption Power	MMCFD	60,328	73,471	120,287	4.0	10.4
Fertilizer	"	31,873	90,056	101,886	23.1	2.5
Cement	"	24,236	27,521	38,618	2.6	7.0
Genl. Industries	"	47,941	68,438	99,024	7.4	7.7
Commercial	"	5,303	8,797	15,330	10.7	11.7
Domestic	"	9,813	30,368	49,348	25.3	10.2
Other	"	-	12,045	14,965		4.4
Total	"	1,79,494	310,696	439,460	11.6	7.2
Gas Consumers (New)	Nos.	-	55,449	110,000	-	14.7

## 4. INDUSTRY

TABLE B. 4.1

*Financial Outlays*

	(Million Rupees)					
	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan period 1970- 78)	Fifth Plan (1978- 83)	Sixth Plan (Alloca- tions) 1983-88)
Food, Beverages, Tobacco	16	-	-	275	394	582
Textiles	5	-	-	592	633	5
Paper and Pulp	11	-	15	2	-	1840
Wood Products	-	-	16	98	252	-
Leather & Footwear	-	-	-	21	-	59
Rubber Products	-	-	-	1	-	-
Chemicals	61	166	236	-	403	1399
Fertilizer	406	-	-	3166	1158	1440
Petrochemicals	-	16	-	158	205	60
Non-Metallic Minerals Products	147	17	55	702	2914	2108
Basic Metals	80	128	8	4636		6754
Metal Products	-	3	45	344	17329	261
Machinery other than Electrical	5	4	149	192		596
Electrical Machinery	-	-	98	10	1092	877
Electronics	-	-	-	-		126
Transport Equipment	-	-	37	52	265	446
Miscellaneous Industries	11	144	127	1045	965	3947
Total ..	742	478	786	11294	25,610	20,500

TABLE B. 4.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

	1977-78	1982-83	1987-88	%Annual increase in 1978-83	%Annual increase in 1983-88
Food, Beverages, Tobacco	241	18	40	(-)40.5	17.3
Textiles	360	28	20	(-)40.0	(-)6.5
Paper & Pulp	-	-	100	-	-
Wood Products	52	16	70	(-)22.4	34.3
Leather and Footwear	15	-	-	-	-
Rubber Products	-	-	-	-	-
Chemicals	1458*	88	300	(-)43.0	28.0
Fertilizers	-	122	300	-	20.0
Petrochemicals	140	152	300	1.7	14.5
Non-Metallic Minerals Products	494	418	300	(-)3.3	(-)6.4
Basic Metals	2982	3604	-	2.7	-
Metal Products	78	-	220	-	-
Machinery other than Electrical	50	394	600	60.0	8.8
Electrical Machinery	1	70	250	-	29.0
Electronics	-	10	50	-	38.0
Transport Equipment	61	111	300	12.7	22.0
Miscellaneous Industries	769	228	650	(-)21.6	25.0
Total ..	6691	5259	3500	(-)5.0	(-)7.8

\*Includes Fertilizers.

TABLE B. 4.3

*Physical Achievements and Targets*

Item	Unit	First Plan (1955 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan Targets (1983-88)
White Sugar	000 M. Tons	84	159	610	860	1300	2000
Vegetable Ghee	"	29	92	273	360	523	735
Cigarettes	Billion Nos.	8.2	14.3	22.4	31.3	39.0	44.0
Cotton Yarn	Million Kgs.	160	206	273	298	430	645
Cotton Cloth (Mill Sector)	Million Sq. Metr.	455	598	607	391	350	440
Paper	000 M. Tons	-	-	-	23	40	90
Boards	"	14	25	38	22	62	100
Newsprint	"	-	-	-	-	-	53
Soda Ash	"	27	34	68	67	125	145
Caustic Soda	"	4.4	9	28.4	35	50	90
Nitrogenous Fertilizer	000 N. Tonnes	8.5	46	320	325	932	1274
Phosphatic Fertilizer	"	0.3	1.6	6.3	20	97	432
Cement	000 M. Tonnes	982	1655	2656	3224	4160	7200
Polyester	"	-	-	-	-	20	65
M.S. Products	"	-	230	180	315	630	850
Iron and Steel	"	-	-	-	-	(*)	1100
(i) Billets	"	-	-	-	-	-	(400/260)
(ii) Hot rolled sheets	"	-	-	-	-	-	(305/445)
(iii) Cold rolled	"	-	-	-	-	-	(90)
(iv) Galvanised sheets	"	-	-	-	-	-	(100)
(v) Structural/Formed Section	"	-	-	-	-	-	(120)

(\*) Some of the units of Steel Complex have gone into productions.



TABLE B. 4.4

*Physical Achievements*

Item	Unit	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual Increase in 1983-88
White Sugar.	000 M. Tons.	860	1300	2000	8.6	9.0
Veg. Ghee including refined Oil.	..	360	523	735	7.8	7.0
Cotton Yarn.	Million. Kgs.	298	430	645	7.6	8.4
Cotton Cloth (Mill Sector only).	Mill. Sq. Metr.	391	350	440	12.2	4.7
Soda Ash.	000 M. Tons.	67	125	145	13.3	3.6
Caustic Soda	..	35	50	90	7.4	12.5
<b>Fertilizer:</b>						
(a) Nitrogenous.	..	325	932	1274	23.4	5.6
(b) Phosphatics.	..	20	97	432	37.1	35.5
Polyester	..		20	65		26.6
Cement.	..	3224	4160	7200	5.7	11.6
<b>Iron and Steel</b>						
(a) Billets.	000 Tons.	-	-	400/260	-	-
(b) R.R. Sheets.	..	-	-	305/445	-	-
(c) C.R. Sheets.	..	-	-	90	-	-
(d) Galvanised.	..	-	-	100	-	-
(e) Formed Sections.	..	-	-	120	-	-

## 5. MINERALS

TABLE B. 5.1

*Financial Outlays*

(Million Rupees)

Sub-Sector	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
1	2	3	4	5	6	7
1. Geological Surveys and Mineral Investigations.	-	31	-	-	39	177
2. Exploration and Evaluation.	-	-	-	-	-	1173
3. Development.	124	-	-	-	-	3970
4. Training, research and development.	-	63	271	492	361	170
5. Infrastructure.	-	-	-	-	-	210
6. Equity Share-Mining Bank.	-	-	-	-	-	50
	124	94	271	492	400	5750

TABLE B. 5.2

*Actual and Projected Financial Accelerations*

(Million Rupees)

	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Exploration and Development of minerals (excluding oil and gas).	164	173	800	1	36

TABLE B. 5.3

*Physical Achievements*

Item	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Target (1983-88)
<b>Production of Major Minerals:</b>							
Coal.	000 tons	723	1,229	1300	1200	1800	5400
Rock Salt.	"	157	220	356	363	600	1000
Gypsum	"	85	172	250	356	502	2000
Limestone.	"	925	1,648	5,000	4029	3000	11,000
Marble.	"	N.A.	10.4	15.0	59	81	110
Rock Phosphate.	"	-	-	-	-	1	270
Iron Ore	"	-	-	-	-	-	544
Chromite	"	16	8	60	10	3	60
Gemstone.	Million Rs.	-	-	-	-	N.A.	400
Regional geological mapping on 1 is to 50 thousand scale.	'000' Sq. Kms	N.A.	N.A.	N.A.	N.A.	45	89.0*

\*Punjab 13.4, Sind 2.6, NWFP 25.6, Baluchistan 32.0 and Azad Kashmir and Northern Areas 16.0.

TABLE B. 5.4  
Physical Achievements

Items	Unit	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase 1983-88
<b>Production of Major Minerals:</b>						
Coal.	'000' tons	1200	1800	5400	8.4	24.6
Rock Salt.	..	363	600	1000	10.6	10.8
Gypsum.	..	356	502	2000	7.1	31.8
Limestone.	..	4029	3000	11000	(-)5.7	29.7
Marble.	..	57	81	110	6.5	6.3
Rock Phosphate.	..	-	1	270	-	-
Iron Ore.	..	-	-	544	-	-
Chromite.	..	10	3	60	(-)21.4	82.4
Gemstones.	Million Rs.	N.A.	N.A.	400	-	-

## 6 TRANSPORT AND COMMUNICATIONS

TABLE B. 6.1

*Financial Outlays*

(Million Rupees)

	First Plan 1955 60	Second Plan 1960- 65	Third Plan 1965- 70	Non-Plan Period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan (Alloca- tions) 1983-88
<b>I. Public Sector:</b>						
1. Pakistan Railways.	478	1138	1150	2923	5566	10,000
2. Civil Aviation.	90	47	170	407	1014	1000
3. D.G. Ports & Shipping.	-	-	3	1230	4382	1884
4. National Highways:						
(a) Highways and Bridges (including traffic programme).	-	-	-	375	1237	4921
(b) Major Bridges.	-	-	-	-	871	757
(c) Third Highway Programme.	-	-	-	-	365	281
5. N.L.C.	-	-	-	-	1168	-
6. F.W.O.	-	-	-	-	770	170
7. Other Roads.	-	-	59	1549	-	500
8. Roads in Special Areas:						
(a) Azad Kashmir.	-	-	-	295	355	1000
(b) Northern Areas.	7	53	55	43	159	250
(c) F.A.T.A.	-	-	-	202	427	680
9. Road Transport:						
(a) Urban Transport.	14	4	-	35	1316	-
(b) Inter-city Road Transport.	-	-	-	-	31	-
10. Research:						
(a) N.T.R.C.	-	-	-	3	4	30
(b) National Highway Research Institute.	-	-	-	-	-	30
(c) Other.	-	-	3 (Transport Survey)	-	1	10
11. Communications:						
(a) T & T.	152	309	433	1945	3804	10100
(b) S.C.O.	-	-	-	15	109	200
(c) Post Office.	-	7	-	62	138	650

(Million Rupees)

	First Plan 1955- 60	Second Plan 1960- 65	Third Plan 1965 70	Non-Plan Period (1970 78)	Fifth Plan (1978- 83)	Sixth Plan (Alloca- tions) 1983-88
12. Provincial Roads and Road Transport.				1782	1340	2300
(a) Punjab Roads.			616	1084	1162	1720
(b) Sind Roads.	206	261		472	717	1065
(c) N.W.F.F. Roads.				428	265	456
(d) Baluchistan Roads.						
13. Rural Roads.					1333	2100
Sub-Total (Public Sector)	947	1819	2489	12850	26534	40104
II. Public Corporations:						
1. Roads.						5000
2. Road Transport:						
(a) Urban Transport.	-	-	-	6	-	1000
(b) Inter-city Transport.	-	-	-	-	295	1150
3. K.P.T.	133	-	-	558	993	1553
4. P.N.S.C.	-	3	4	207	1740	3000
5. Civil Aviation Authority.	-	-	-	-	-	3000
6. Airlines.	-	-	-	2032	5645	2720
Sub-total (Semi-Public).	133	3	4	2803	8673	17423
Total ..	1080	1822	2493	15653	35207	57527

TABLE B. 6.2  
Financial Outlays

	(Million Rupees)				
	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
<b>I. Federal:</b>					
1. Pakistan Railways.	660	1207	2560	12.8	11.9
2. Civil Aviation.	117	239	100	15.4	(-)16.0
3. D.G. Ports and Shipping.	636	599	300	(-)1.2	(-)13.0
4. National Highways :					
(a) Highways Bridges (Including Traffic count pro- gramme)	107	548	1800	38.6	26.8
(b) Major Bridges.					
(c) Third Highway Projects.					
5. N.L.C.	-	58	-	-	-
6. F.W.O.	361	100	-	(-)22.6	-
7. Other Roads.		15	150		58.5
Roads in Special Areas :					
(a) Azad Kashmir.	41	109	280	21.6	20.8
(b) Northern Areas.	13	42	50	26.4	3.5
(c) FATA.	67	88	160	5.6	12.7
8. Road Transport :					
(a) Urban Transport.	26	-	-	-	-
(b) Inter-city transport.	-	-	-	-	-
9. Research :					
(a) NTRC.	1	1	10	-	58.5
(b) Road Research Institute.	-	-	9	-	-
(c) Other Research Studies.	-	15	8	-	(-)11.8
10. Communication :					
(a) T & T.	415	1450	2908	28.4	14.9
(b) S.C.O.	15	25	50	10.8	14.9
(c) Post Offices.	15	60	190	32.0	25.9
Sub-Total (Federal).	2474	4556	8575	13.0	13.5
<b>II. Provincial Roads and Road Transport.</b>					
Grand Total ...	768	797	1320	0.7	10.6
Grand Total ...	3242	5353	9895	10.5	13.1

TABLE B. 6.3

*Physical Achievements*

Major Programmes	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
<b>A. TRAFFIC:</b>							
<b>I. Rail:</b>							
(a) Passenger.	MP Km.	8608	10083	10578	13471	16502	21000
(b) Goods.	MTKm.	6050	7879	8005	9332	7500	11100
<b>II. Airlines</b>							
(a) Passenger.	MRP Km.	307	954	-	4414	5941	8437
(b) Goods.	MRT Km.	43	127	225	197	249.3 (MPKm) (MTKm)	404.8 (MPKm) (MTKm)
<b>III. Roads:</b>							
(a) Passenger.	MPKm.	120 (million passenger)	169 (million passenger)	296 (million passenger)	63260	79513	106885
(b) Goods.	MTKm.	-	-	-	13280	21200	29294
<b>IV. Ports:</b>							
(a) Liquid Cargo.	Million tons	4.58	7.99	9.10	5.2	8.40	11.449
(b) Dry Cargo.					5.8	8.958	12.915
<b>V. T &amp; T:</b>							
(a) Trunk Traffic.	Million Call)	3.14	5.75	13.00	75.0	145	279
(b) Telex traffic.	(Annual paid minutes in million).	-	-	-	1.89	13	22.42
<b>B. PHYSICAL TARGETS</b>							
<b>I. Railways:</b>							
<b>A. Track Rehabilitation:</b>							
(i) Rail Renewals.	(Kms).	922	1467	973	856	148	100
(ii) Sleeper Renewals.	(Kms).	1365	2320	1189	1373	303	200
(iii) Complete Track Renewals.	(Kms).	-	-	-	340	327	470
<b>B. Rolling Stock:</b>							
(i) Locomotive acquisition.	(Nos)	89	129	78	137	68	135
(ii) Rehabilitation of Locomotives.		-	-	-	-	-	116
(iii) Passenger Carriages and other Coaching Vehicles.	(Nos)	482	405	563	415	720	440
(iv) Wagons (Replacement work)	(Nos)	6959	8312	5551	1866	-	300
<b>II. T&amp;T.</b>							
Telephone lines.	(Nos)	62500	105000	150000	292000	414000	934000
<b>III. Post Offices.</b>							
	(Nos)	5700	6600	7900	9940	11528	13028

Note.—The physical achievements of traffic relate to terminal years in each Plan period.

Continued:—

Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
<b>AVIATION</b>						
(i) Extension of terminals & terminal Bldgs. Constructive/extension.	(Nos) KAR, LHR	Boeing 720 operational at LHR	Faisalabad, Sukkur, Jiwani & Rahim Yar Khan (Terminal/bldg) Rwp/IBD Chitral, Turbat, Skardu.	Islamabad for DC. 10 operation	Peshawar, Quetta	Const. of three major terminals at Karachi, Lahore and Islamabad improvement of 7 airports, augmentation of navigation and communication system and necessary infra-structure.
(ii) Strengthening of Runways.		Hyd. Panjgur & Mohenjodaro	Pasni Gawadar & D.I. Khan.		Peshawar, Quetta & Multan.	
(iii) Construction of Basic Aerodromes facilities.					Saidu Sharif Pasni & Turbat.	Hazara Division and Chilas.
<b>PIA</b>						
(i) Fokker F. 27	(Nos) 2.	Super constellations 5	4+3 Tridents	4	1	One DC-10-30, One Airbus
(ii) Boeing 720	2. Convairs.	4	3	9	1	A-300 B4 and 6 twin
(iii) Boeing 707	5. Viscounts			(4 on loan)	1	Engine Jet Aircraft.
(iv) Boeing 747				3	2	
(v) D.C. 10					4	
(vi) Air Bus A. 300 B4						
<b>ROAD</b>						
(i) New construction	(Kms) 1850	3426	2108	8620	5250	5800
(ii) Improvement	(KMs) 2253	285	1778	11055	5245	7860
<b>Road Transport</b>						
Buses (Procured/replaced)	(Nos) 1276	1640	3040	4899	22000	47330



TABLE B. 6.4  
Physical Achievements

Major Programmes	Unit	1977-78	1982-83	1987-88 (Projected)	% Annual increase in 1978-83	% Annual increase in 1983-88
<b>A. Tariffic:</b>						
<b>I. Rail:</b>						
(a) Passenger	M.P. Km	13471	16502	21000	4.1	4.9
(b) Goods.	M.P. Km	9332	7500	11100	(- )4.3	8.2
<b>II. Air</b>						
(a) Passenger.	MP Km	4505	5941	8437	5.7	7.3
(b) Goods.	MP Km	185	249.3	404.8	6.1	10.2
<b>III. Roads</b>						
(a) Passenger.	MP Km	63260	79513	106885	4.7	6.1
(b) Goods.	MT Km	13280	21200	29294	9.8	6.7
<b>IV. Ports</b>						
(a) Liquid Cargo.	M. Tons.	5.20	8.40	11.449	10.1	6.4
(b) Dry Cargo	M. Tons.	5.80	8.958	12.915	9.1	7.6
<b>V. T&amp;T</b>						
(a) Trunk Traffic.	Million Calls	75.00	145.0	279.0	14.1	14.0
(b) Telex Traffic.	Annual Paid Minu- tes in Million	1.89	13.00	22.42	47.0	11.52
<b>B. Physical Targets:</b>						
<b>I. Railways</b>						
<b>A. Track Rehabilitation</b>						
(i) Rail Renewal.	(Kms)	-	-	100	-	-
(ii) Sleeper Renewal.	(Kms)	-	-	200	-	-
(iii) Complete Track Renewal.	(Kms)	-	-	470	-	-
<b>B. Rolling Stock</b>						
(i) Procurement of Locomotives.	(Nos.)	-	-	135	-	-
(ii) Rehabilitation.	(Nos)	-	-	116	-	-
(iii) Manufacturer of Passenger Coaches and other coaching vehicles.	(Nos)	-	-	440	-	-
(iv) Replacement of Wagons	(Nos)	-	-	300	-	-
<b>II. T&amp;T</b>						
(i) Telephone Lines.	(Nos)	292000	414000	934000	7.2	17.7
<b>III. Post Offices</b>						
Post Offices.	(Nos)	9940	11528	13028	3.0	2.5
<b>IV. Highways.</b>						
	(Kms)	103,100	113,350	159,150	1.9	7.6
<b>V. Road Transport</b>						
(a) Buses.	(Nos)	36633	22000	47330	(- )9.7	16.6
(b) Trucks.	(Nos)	23262	32000	63120	6.6	14.6

## 7. PHYSICAL PLANNING AND HOUSING

TABLE B. 7.1

*Financial Outlay*

(Million Rupees)

	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan Period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan Alloca- tions (1983-88)
Institutional	13	8	7	95	21	140
Housing (plot dev., subsidy and advances)	217	187	71	1114	970	1380
Urban Water Supply/Sewerage.	230	177	-	1190	2379	3210
Rural W.S./Sanitation.	9	20	118	706	1201	3190
Government Offices/Buildings.	6	111	109	472	803	1050
Government Servants Housing.	30	40	-	470	1144	2040
Civil Armed Forces.	-	-	5	158	285	400
Special Areas.	-	17	9	212	394	900
CDA including Islamabad Admn.	-	340	251	659	1265	1900
Others.	-	51	118	436	537	290
<b>Total ..</b>	<b>505</b>	<b>951</b>	<b>688</b>	<b>5512</b>	<b>8999</b>	<b>14500</b>
Public Corporations.	-	-	-	-	310	1000
<b>Total ..</b>	<b>505</b>	<b>951</b>	<b>688</b>	<b>5512</b>	<b>9309</b>	<b>15500</b>

TABLE B.7.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

Sub-sector	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Institutional.	12	3	20	(-)24.2	46.1
Urban W.S. Sewerage.	340	650	425	13.8	(-)8.1
Rural W.S./Sanitation.	179	298	700	10.7	18.6
Housing.	332	117	350	(-)18.8	24.5
Govt. Offices/Buildings.	113	171	200	8.6	3.2
Civil Servants Housing.	109	330	550	24.8	10.8
Civil Armed Forces.	48	95	100	14.6	1.0
Special Areas.	55	90	279	10.3	25.4
C.D.A.	147	223	500	8.7	17.5
Islamabad Admn.	Nil	15			
Miscellaneous.	161	105	60	(-)8.2	(-)10.6
Total ..	1496	2097	3184	7.0	8.7

TABLE B.7.3

*Physical Achievement/Targets*

Major Programmes	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (Target) (1983-88)
Dev. of Residential Plots.	Nos.	-	150,000	80,000	165,000	285,000	550,000
Urban Water Supply.	Addl. Pop served (Million)	N.A.	0.80	1,600	10.25	7.50	9.00
Urban Sewerage/ Drainage.	"	N.A.	0.40	0.800	6.00	5.60	7.00
Rural Water Supply.	"	N.A.	0.40	1.65	5.60	6.50	18.00
Rural Sanitation.	"	N.A.	-	-	0.2	1.90	4.50
Government offices/ Buildings.	Million sft.	N.A.	0.5	1.50	4.0	6.0	4.0
Govt. Servants Housing.	Nos.	N.A.	1,700	4,500	8,000	12,650	15,000

TABLE B.7.4

*Physical Achievements*

Major Programmes	Unit	1977-78	1982-83	1987-88 Projected	%Annual increase in 1978-83	%Annual increase in 1983-88
Dev. of Plots in Urban Areas	Nos.	54,149	57,000	140,000	1.0	19.7
Urban W.S./Sewerage and Drainage.	Addl. Pop served Million	2.462	2.562	3.7	0.8	7.6
Rural W.S./Sewerage and Drainage.	"	2.186	1.485	9.0	(-)7.4	43.4
Govt. Offices/Buildings.	Million sft.	0.71	1.555	0.5	17.0	(-)20.3
Govt. Servants Housing.	No.	1600	2875	2000	12.4	(-)7.0

## 8. EDUCATION AND MANPOWER

TABLE B. 8.1

*Financial Outlays*

(Million Rupees)

	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Alloca- tions) 1983-88
Primary.	23	19	25	444	1413	7000
Secondary.	46	95	129	542	1090	4125
Teacher.	5	18	15	114	990	305
Technical:						
(i) Programmes under Edu- cation.	7	79	105	314	465	1315
(ii) Programmes under Man- power & Labour.	4	7	26	166	286	1020
Colleges.	31	68	64	374	537	1300
Universities.	40	59	59	399	687	2100*
Scholarships.	2	49	77	299	350	660
Mass Literacy.					50	750
Social and Cultural Activities.	18	14	11	365	**	**
Miscellaneous.	54	55	52	425	476	1275
Total . .	232	463	563	3442	5644	19850

\*Includes Rs. 400 million of Engineering Universities which was shown under Technical Education in the past.

\*\*A new sector called "Culture and Sports" has been created and the expenditure shown under that sector.

TABLE B. 8.2.

*Actual and Projected Financial Acceleration*

	Million Rupees)				
	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Primary.	206	531	862	20.8	10.2
Secondary.	89	531	1427	30.0	33.9
Teacher.	40	57	95	7.8	10.8
Technical:					
(i) Programme under Education.	61	132	337	16.7	20.6
(ii) Programme under Manpower and Labour.	20	186	120	56.2	(- )8.4
Colleges.	57	118	373	15.7	25.9
Universities.	84	211	503	20.2	19.0
Scholarships.	59	79	183	6.0	18.3
Miscellaneous.	66	130	600	14.5	35.8
Total . .	682	1775	4500	21.1	20.4

TABLE B. 8.3

*Physical Achievements*

Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Targets (1983-88)	
<b>A. Primary Education :</b>							
No. of primary School in the last year of Plan.	Number	17900	32589	40600	55502	73782 (including 8200 mosque schools)	1,14,173 (including 40,000 mosque schools)
During the Plan period primary schools opened.	Number	2442	18000	5000	15212	18106 (including 8200 mosque schools)	44198 (including 40,000 mosque schools)
During the Plan period primary schools improved.	Number	-	1600	7750	19060	10682	24850
Enrolment in class I-V in the last year of the Plan.	T (in 000)	1950	3100	3820	5455	6754	12354
	M	1600	2400	2800	3766	4608	7712
	F	350	700	1020	1689	2146	4642
Additional enrolment classes I-V by the end of Plan period.	Number (in 000)	285	1250	720	1655	1299	5600
Participation rate in the last year of the Plan.	T	26	28	40	54	48	75
	M	42	44	60	73	63	90
	F	9	11	19	33	32	60
<b>B. Secondary Education :</b>							
No. of middle schools in the last year of the Plan.	Number	1974	2701	3560	5379	6402	10209
No. of High School in the last year of the Plan.	Number	1069	1622	1995	3537	4221	5530
During the plan period up-gradation of :							
(i) Primary Schools	Number	635	1160	535	2051	1123	4880
(ii) Middle Schools	Number	-	-	83	450	669	1073
(iii) Opening of new High Schools.	Number	-	272	86	39	49	236
During the Plan Period improvement of :							
(i) Middle Schools	Number		600	675	264	1373	2000

	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Targets (1983-88)
(ii) High Schools		Number					1000
Enrolment in last year of the Plan :							
I. (a) Classes VI-VIII	T (in 000)	388	624	906	1358	1713	2508
	M "	334	496	732	1030	1954	1807
	F "	54	128	174	328	459	701
(b) Participation rate	T (Percent)	13	14	19	24	26	31
	M "	22	23	30	34	35	41
	F "	4	6	8	12	14	19
II. (a) Classes IX-X	T (in 000)	149	222	341	534	683	919
	M "	126	176	275	407	500	651
	F "	23	46	66	128	183	268
(b) Participation rate	T (percent)	8	8	12	15	16	18
	M "	13	13	18	22	21	24
	F "	2	3	5	8	9	12
III. (a) Classes VI-X	T (in 000)	537	846	1247	1892	2396	3427
	M "	460	672	1007	1437	1761	2458
	F "	77	174	240	455	635	969
(b) Participation rate	T (Percent)	11	12	17	20	21	26
	M "	19	20	26	30	29	35
	F "	3	5	7	10	12	16
Additional enrolment during the Plan period :							
(i) Classes VI-VIII	Nos. (in 000)	90	236	282	452	355	795
(ii) Classes IX-X	"	40	73	119	193	149	236
(iii) Classes VI-X	"	130	309	401	645	504	1031
C. Teacher Education :							
No. of primary teacher training institutions.	No.	44	59	63	69	71	71
Training capacity of primary teacher training institutions.	Nos.	4466	10400	1000	20000	21000	21000
No. of Institutions for training of secondary school teachers.	Nos.	9	16	12	14	17	17 (Including Department of Education at University)
Training capacity of secondary school teacher training institutions.	Nos.	1150	2000	3100	4500	4500	4500
D. Technical Education :							
Engg. Universities	No.	-	1	1	3	4	4



	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Targets (1983-88)
Engg. Colleges	No.	3	3	5	3	1	3
Poly/Mono-Technic	No.	4	10	14	28	34*	63**
Trade Schools	No.	-	-	-	-	-	200
In-take capacity of :							
(a) B.Sc. Engg. courses	No.	-	603	1500	2621	3650	5000
(b) Poly-technic/Mono technic.	No.	-	2100	3500	5271	5950	7425
(c) Trade Schools	No.	-	-	-	-	-	4,000
Enrolment of :							
(i) Engineering graduates.	Nos.	1251	1632	3800	9500	12800	15500
(ii) Diploma classes in :							
(i) Engg. colleges	Nos.	773	-	-	-	-	-
(ii) Poly-technic/Mono technic.	Nos.	722	5846	7800	13100	17320	20950
(iii) Trade Schools	Nos.	-	-	-	-	-	4,000
Annual out-put of :							
(i) Engg. graduate	Nos.	304	453	1254	1700	2360	3550
(ii) Diploma holders	Nos.	430	2100	2500	3550	397	4996
(iii) Certificate holders	Nos.	-	-	-	-	-	4,000
Opening of :							
Engg. Colleges	Nos.	-	7	-	-	-	2
Poly/Mono technic	Nos.	1	4	4	14	6	29
E. College Education :							
(i) Intermediate	Nos.	40	87	115	179	256	324
(ii) Degrees	Nos.	79	103	176	261	278	278
Enrolment in classes :							
(i) XI-XII	(000's)	39	84	140	190	251	335
(ii) XIII-XIV	"	12	31	60	65	80	90
No. of General Universities	Nos.	3	4	6	10	15	15
Enrolment in general universities.	No.	1662	8319	15475	-	17000	18500

\*Including 5 poly technics for women and 16 mono technics.

\*\*Including 12 poly technics for women and 16 mono technics.

TABLE B. 8.4

*Actual and Projected Physical Achievements*

	Unit	1977-78	1982-83	1987-88 Projected	%Annual increase in 1978-83	%Annual increase in 1983-88
<b>A. Primary Education :</b>						
Number of primary schools.	Number	55,502	73,782 (including 8,200 mosque schools)	1,14,173 (including 40,000 mosque schools)	5.9	9.1
Opening of new schools.	"	1,209	9,976 (6,900 mosque schools)	2,500	52.5	(-)24.2
Consolidation and improvement of Primary schools.	"	3,347	11,923	2,500	29	(-)26.8
Construction of building of primary schools.	"	821	1,030	2,000	4.6	14.2
Enrolment in classes I-V	(in 000)	5,455	6,754	12,354	4.4	11.9
Participation rate	(Percent)	54	48	75	-	8.7
<b>B. Secondary Education :</b>						
Number of middle schools	Number	5,379	6,402	10,209	3.5	9.8
Number of high schools	"	3,537	4,221	5,530	3.6	5.6
Upgradation of :						
(i) Primary schools	"	56	321	1,000	4.2	25.5
(ii) Middle schools	"	40	218	500	40.4	18.1
Opening of new high schools	"	-	-	50	-	-
Consolidation and Improvement Middle and high schools.	"	-	423	500	-	3.4
Enrolment in Classes VI-VIII	(in 000)	1,358	1,713	2,508	4.8	7.9
Participation rate	(Percent)	24	26	30	1.6	2.9
Enrolment in classes IX-X	Number	534	683	919	5.0	6.0
Participation rate	(Percent)	1	16	18	1.3	2.4
Enrolment in Classes VI-X	Number	1,892	2,396	13,327	4.8	6.8
Participation rate	(Percent)	20	21	25	0.9	3.5
<b>C. Technical Education :</b>						
No. of Engg. Universities	Number	3	4	4	5.9	-
No. of Engg. Colleges	"	2	1	3	(-)13.0	24.6
No. of Poly-technics/Mono-technics	"	28	34	63	4.0	13.2
Enrolment in B.Sc./M.S. Engg.	"	9,500	12,800	15,500	6.1	4.0
Enrolment in Poly-technics/Mono-technics.	"	13,100	17,320	20,950	5.7	3.9
<b>D. College Education :</b>						
Number of Inter Colleges	Number	179	236	324	5.7	6.6
Number of degree colleges	"	261	277	277	1.2	-
Enrolment in classes XI-XII	(in 000)	190	251	335	5.7	6.0
Enrolment in classes XIII-XIV	"	65	80	90	6.0	2.4

## 9 HEALTH

TABLE B. 9.1

*Financial Outlays*

	(Million Rupees)					
	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan (Alloca- tions) (1983-88)
Rural Health Programme	7	19	12	313	1,250	5,660
Preventive Programmes	13	62	159	952	704	1,370
Hospital beds including teaching hospitals	28	55	58	552	1,256	3,295
Health Manpower Development	22	28	40	418	1,167	975
Medical Research	4	10	12	18	79	85
Misc. Programme	2	-	-	128	128	240
Nutrition Programme	-	-	-	-	-	250
Dental Care	-	-	-	-	-	250
Traditional Medicine	-	-	-	-	-	375
Programme for Disabled	-	-	-	-	-	500
Total ..	76	174	281	2,381	4,584	13,000

TABLE B. 9.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Rural Health Programme	191	253	1,833	5.8	48.6
Preventive Programme	244	246	250	1.8	3.2
Hospital beds including teaching hospitals	115	339	824	24.2	19.4
Health Manpower Development	116	272	205	18.5	(-)5.5
Medical Research	7	28	28	33.0	-
Miscellaneous	11	44	10	31.0	(-)25.6
Dental Care	-	-	71	-	-
Traditional Medicine	-	-	143	-	-
Nutrition	-	-	88	-	-
Total ..	684	1,182	3,452	11.6	23.9

Note : The peak having been passed in 1984-85, maintenance will be continued at the rate of Rs. 250.00 million per annum.

TABLE B. 9.3

*Physical Achievements*

Major Programmes	Unit	First Plan (1955- 60)	Second Plan (1960- 65)	Third Plan (1965- 70)	Non-Plan Period (1970- 78)	Fifth Plan (1978- 83)	Sixth Plan Target (1983-88)
<b>Physical Facilities :</b>							
BHU/Sub centres, Dispensaries MCH Centres.	Nos.	70	340	250	1183	1617	2,600
Rural Health Centres.	"	-	73	14	81	206	355
Hospital Beds	"	2500	3750	4300	14308	5308	11,770
<b>Health Manpower :</b>							
Doctors & Dentists	"	1351	3691	3561	9362	10203	21000
Nurses	"	275	800	1681	4311	4246	5000
Paramedics/Auxillaries	"	3800	4520	4653	9756	13756	38000

TABLE B. 9.4

*Physical Achievements*

Major Programmes	Unit	1977-78	1982-83	1987-88 (Target)	%Annual increase in 1978-83	%Annual increase in 1983-88
BHU/Sub-centres	Nos.	167	360	785	16.6	16.8
RHC's	"	13	32	147	19.7	35.7
Hospital Beds	"	1968	2154	4352	1.8	15.1
Doctors	"	1300	3913	4200	24.7	1.4
Nurses	"	537	1165	1200	16.8	6.0
Paramedics	"	1500	2980	9000	14.7	24.7

## 10. POPULATION WELFARE PROGRAMME

TABLE B. 10.1

*Financial Outlays*

(Million Rupees)

	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
Population Welfare Programme	-	9	145	820	600	2300

TABLE B. 10.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

Sub-Sector	1977-78	1982-83	1987-88	%Annual increase in 1978-83	%Annual increase in 1983-84
Population Welfare Programme	105	137	702	5.5	38.6

TABLE B. 10.3

*Physical Achievements*

(Figures in thousands)

Major Programmes	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan targets (1983-88)
a. IUDs (Cases)	-	-	-	1,732.0	1,164.0	443.0	1,290.0
b. Condoms (Units)	-	-	-	390,300	545,500	229,400.0	759,800.0
c. Oral Pills (cycles)	-	-	-	752.0	1,528.4	5,382.0	26,104.0
d. Steralization (Cases)	-	-	-	87.0	59.5	133.0	648.0
e. Injectables (vials)	-	-	-	-	-	125.0	759.0

TABLE B. 10.4

*Physical Achievements*

(Figures in 000)

Major Programmes	1977-78	1982-83	1987-88	%Annual increase in 1978-83	%Annual increase in 1983-88
1. IUDs (Cases)	70.8	96.0	320.0	6.3	27.2
2. Condoms (Units)	49,500	43,200.0	180,000.0	388.2	33.0
3. Oral Pills (cycles)	1,411.6	571.0	6,000.0	21.1	60.1
4. Steralization (cases)	7.1	44.0	175.0	44.0	31.8
5. Injectables (vials)	-	61.0	200.0	-	26.8

## 11. MASS MEDIA

TABLE B. 11.1

*Financial Outlays*

(Million Rupees)

	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (Allocations) (1983-88)
<b>A. ADP :</b>						
Radio Broadcasting	8	23	59	279	163	370
Television Broadcasting	-	8	17	297	390	499
Ministry of Information and Broadcasting/Ministry of Culture	-	-	-	10	-	131
Publicity of Sixth Plan	-	-	-	-	-	50*
Sub-Total (A)	8	31	76	586	553	1,000
<b>B. Outside ADP :</b>						
Public Corporations	-	-	-	288	-	680
Grand Total (A+B)				874	553	1680

\*This amount is not counted in the total and will be provided by re-adjustment.

TABLE B. 11.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Radio Broadcasting	46	40	78	(-).2.8	14.3
Television Broadcasting	74	113	275	8.8	19.5
Ministry of Information and Broad- casting/Ministry of Culture	2	-	28	-	-
Total . .	122	153	381	4.6	20.0

TABLE B. 11.3

*Physical Achievements*

Major Programmes	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (Targets) (1983-88)
<b>(A) Radio Broadcasting :</b>							
1. Population Coverage.	%	21	55	58	88	95	98
2. Area Coverage.	%	6	25	30	62	75	95
3. M.W. Transmitters.	No.	6	7	7	16	23	37
4. M.W. Transmitting Power.	K.W.	46	155	155	2011	2282	2643
5. S.W. Transmitters.	No.	7	7	11	16	16	18
6. S.W. Transmitting Power.	K.W.	141	150	460	1161	1161	1661
7. Broadcasting Stations.	No.	6	6	6	9	16	24
8. No. of Licenced Receivers.	(000)	324	562	1100	1604	*1400	-
<b>(B) Television Broadcasting :</b>							
<b>(i) General purpose T.V. project :</b>							
9. Population Coverage.	%	-	10	25	74	80	90
10. Area Coverage.	%	-	1	8	50	56	76
11. T.V. stations (excluding Rawalpindi, Peshawar and Quetta Pilot T.V. Stations).	No.	-	1	2	2	3	5
12. Rebroadcast Centres and translators.	No.	-	1	1	8	14	22
13. S.H.F. Links.	No.	-	-	-	3	4	7
14. No. of T.V. Receivers.	No.	-	-	92398	54878	15,00,000	20,00,000
<b>(ii) Second channel Television project :</b>							
15. Studios.	No.	-	-	-	-	-	2
16. Transmitters.	No.	-	-	-	-	-	18
17. Community & Group Centres.	No.	-	-	-	200	470	10,000
18. Educational facilities provided. (Mill Adults)		-	-	-	0.024	0.100	2.000

\*Estimated.



TABLE B. 11.4  
Physical Achievements

Sl. No.	Major Programme	Unit	1977-78	1982-83	1987-88 (Target)	%Annual increase in (1978-83)	%Annual increase in (1983-88)
<b>(A) Radio Broadcasting :</b>							
1.	Population coverage.	%	88	95	98	-	-
2.	Area Coverage.	%	62	75	95	-	-
3.	Broadcasting Stations	No.	9	16	18	12.2	2.4
4.	Medium-wave transmitters.	No.	16	23	37	7.5	-
5.	Medium-wave transmitting power.	KW	2011	2282	2643	2.6	3.0
6.	Short wave transmitters.	No.	16	16	18	-	2.4
7.	Short wave transmitting power.	KW.	1161	1161	1661	-	7.4
<b>(B) Television Broadcasting :</b>							
8.	Television Centres (excluding TV Centres at Rawalpindi, Quetta, and Peshawar).	No.	2	3	5	8.4	10.8
9.	R.B. Centres and Translators.	No.	8	14	22	11.8	9.5
10.	S.H.F. Links.	No.	3	4	7	5.9	11.8
11.	Population coverage.	%	74	80	90	1.6	2.4
12.	Area Coverage.	%	50	56	76	-	6.3

## 12. CULTURE, SPORTS AND TOURISM

TABLE B. 12.1

*Financial Outlays*

(Million Rupees)

Sector	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (Allocation) (1983-88)
Culture, Sports and Tourism	*	*	*	*	674	2300
			Total . .		674	2300

\*Reflected in Education sector.

TABLE B. 12.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

Sector	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Culture, Sports and Tourism	-	110	580	-	39.4



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(ii) Work on the construction of Cricket Stadium at Islamabad/Rawalpindi, National Hockey Stadium Lahore, National Sports Training and Coaching Centre Quetta and Peshawar etc. will be completed. The Hockey Stadium at Karachi will be further developed at work for the improvement and expansion of National Cricket Stadium Karachi will be undertaken.

(iii) During the Plan period work on the construction of Academy of Performing Arts, auditorium at Islamabad, Quetta and Peshawar, and International Conference Hall will be started.

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(ii) Work on the Establishment of National Sports Training and Coaching Centres Karachi and Lahore and Hockey Stadium (laying of Astro Turf) Karachi have been completed.

Work on the extension of PNCA Hostel and National Institute of Folk and Traditional Heritage has been completed.

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1

Culture

TABLE B. 12.4

*Physical Achievements*

Major Programmes	Unit	1977-78	1982-83	1987-88
National Cultural Complex.	%	—	—	35
	(achievement)			
National Archives of Pakistan.	Do.	—	33	100
Master Plan for the Preservation of Moenjodaro.	Do.	5	30	75
Quaid-e-Azam Academy.	Do.	—	5	60
Aiwan-e-Iqbal.	Do.	—	5	60
Sports Complex of the National Institute of Sports and Culture.	Do.	10	90	100
National Sports Training and Coaching Centre, Quetta.	Do.	—	—	100
National Sports Training and Coaching Centre, Peshawar.	Do.	—	—	100
International Conference Hall.	Do.	—	—	50
Academy of Performing Arts.	Do.	—	—	75

## 13. SPECIAL DEVELOPMENT PROGRAMMES FOR WOMEN

TABLE 13.1

*Financial Outlays*

Sector	(Million Rupees)					
	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Allocation (1983-88)
Special Development Programme for Women	—	—	—	—	179	800*

\*The programmes directly and indirectly benefiting women would total Rs. 20,000 million in the Sixth Plan.

TABLE 13.2

*Actual and Projected Financial Acceleration*

Sector	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Special Development Programme for Women	—	57	258	—	34

## 14. SOCIAL WELFARE

TABLE B. 14.1

*Financial Outlays*

(Million Rupees)

Sub-Sector	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan Alloca- tion (1983-88)
Social Welfare	19	56	65	140	210	550

TABLE B. 14.2

*Actual and Projected Financial Acceleration*

(Million Rupees)

	1977-78	1982-83	1987-88	% Annual increase in 1978-83	% Annual increase in 1983-88
Social Welfare	17	50	130	24.0	21.0

TABLE B. 14.3

*Physical Achievements*

Major Programmes	Unit	First Plan (1955-60)	Second Plan (1960-65)	Third Plan (1965-70)	Non-Plan Period (1970-78)	Fifth Plan (1978-83)	Sixth Plan (1983-88)
1. Welfare & Rehabilitation Services/ Centres for the handicapped.	Centres.	-	-	-	-	33	21
2. Child Welfare Services/Centres.	Do.	-	-	9	10	10	57
3. Women Welfare Services/Centres.	Do.	84	100	100	1400	400	100
4. Promotion of Voluntary Social Services Centres/agencies.	No. of aided agencies.	150	300	1000	1200	1550	1000
5. Multi-purpose Community Services/Centres.	Centres.	21	50	50	27	50	125
6. Medical Social Services/units at Govt. hospitals.	Units	15	8	10	-	20	100
7. School Social Services/units at selected schools.	Do.	-	-	2	-	8	10
8. Supportive, infrastructural pro- grammes/courses (training courses, research studies).	Studies courses	1	2	3	1	12	30
9. Staff Welfare Centres.	Centres.	-	-	10	10	23	20

(\*) Includes Women Welfare Centres established under financial support of Women Division and People's Works Programmes.

TABLE 14.4

*Physical Achievements*

Sl. No.	Major Programmes	Unit	1977-78	1982-83	1987-88 (projected)	%Annual increase in 1978-83	%Annual increase in 1983-88
1.	Welfare & Rehabilitation Services/ Centres for the handicapped.	Centres.	—	33	51	—	9.1
2.	Child Welfare Services/Centres.	Do.	19	29	61	8.8	16.0
3.	Women Welfare Service Centres (cumulative figures).	Do.	684	2084	2244	4.3	1.5
4.	Promotion of Voluntary Social Services Centres/agencies.	No. of aided agencies.	1200	1550	3550	5.3	18.2
5.	Multi-purpose Community services/ Centres.	Centres.	148	198	303	6.0	8.9
6.	Medical Social Services unit at Govt. hospitals.	Units	33	53	135	9.9	20.8
7.	School Social Services/units at selected schools.	Do.	12	20	60	10.8	24.8
8.	Supportive infrastructural pro- grammes courses, training courses, research studies.	Studies courses.	7	19	34	22.2	12.2
9.	Staff Welfare Centres.	Centres.	20	43	66	16.5	8.9

\*Includes Women Welfare Centres established under financial support of Women Division and People's Works Programme.



## 15. SCIENCE AND TECHNOLOGY

TABLE B. 15

Summary by Sectors

(Million Rupees)

S. No.	Sector	Fifth Plan	Sixth Plan (1983-88)		Total	Remarks
		(1978-83)	Sectoral Allocations	Under S&T Block Allocation		
<b>A. Federal :</b>						
1.	Agriculture.	597	1,533	175	1,708	(including. Live-stock and Forestry)
2.	Industry.	166	700	130	830	
3.	Health.	42	320	-	320	
4.	Water.	76	320	-	320	
5.	Power.	49	190	-	190	
6.	Fuels.	18	100	-	100	
7.	Minerals.	-	59	-	59	
8.	Transport and Communications.	42	100	50	150	
9.	Physical Planning and Housing.		2	50	- 50	
10.	Education.	224	950	620	1,570	
11.	Population Welfare.	3	10	-	10	
12.	Others.	-	-	25	25	
	Sub-total (Federal) ..	1,219	4,332	1,000	5,332	
<b>B. Provincial :</b>						
1.	Agriculture.	228	317	-	317	
2.	Water.	-	105	-	105	
3.	Physical Planning and Housing.	15	55	-	55	
	Sub-Total (Provincial)	243	477	-	477	
	Total ..	1,462	4,809	1,000	5,809	

TABLE B. 15.1

*S&T/R&D Programme*

(Million Rupees)

S.No.	Sector	Fifth Plan (1978-83)	Sixth Plan Allocation	Remarks
1	2	3	4	5
<b>1. AGRICULTURE</b>				
<b>A. Federal:</b>				
(i) Food and Agriculture Division :				
	(a) Cotton Research Institute—Sakrand.	7	11	
	(b) Pak. Institute of Cotton Research Technology-Karachi.	2	2	
	(c) Pakistan Central Cotton Committee Research Institutes.	—	37	
	(d) Others (Completed Projects).	93	—	
	Sub-Total (i)	102	50	
	(ii) Commerce Division (Tobacco Board).	20	5	
	(iii) Agriculture Research Division :			
	(a) Pakistan Agricultural Research Development Project.	58	338	
	(b) Strengthening of Agricultural Research Capabilities in Pakistan.	227	147	
	(c) Arid Zone Research Institute.	22	58	
	(d) Barani Agricultural Research and Development Project.	16	165	
	(e) Cooperative Programme for Research Productivity Improvement and Market- ing of Potatoes in Pakistan.	—	13	
	(f) Agricultural Machinery Division.	5	27	
	(g) Italian Technical Assistance for Cultiva- tion of Fruits and Vegetables.	—	60	
	(h) Maximization of wheat, rice, maize and Groundnuts in three districts viz, Gujrat, Mardan, and Islamabad.	—	100	
	(i) National Chickpea Improvement Project.	—	4	
	(j) National AGRIS Centre Pakistan (IDRC).	—	4	

1	2	3	4	5
(k)	Establishment of tea Research Station and Development of Tea Production.	-	15	
(l)	Strengthening of Pesticide Research Facilities in Pakistan.	-	19	
(m)	High Altitude Integrated Agro-Range Research Project (Baluchistan).	-	40	
(n)	Development of profitable cropping patterns and crop rotations in different agro-ecological areas/zones of Pakistan.	-	6	
(o)	National Dates and Plan Research Institute.	-	10	
(p)	Research on Soil and Water Resources Management.	-	3	
(q)	Maximization and Strengthening of Research in Oilseed Crops in Pakistan (Phase-II, PL-480).	-	8	
(r)	Establishment of Southern Zone Agriculture Research Institute, Sind (SZARI).	-	25	
(s)	Toxicological Research Centre at Islamabad.	-	15	
(t)	Agricultural Communication Unit.	-	5	
(u)	National Research Programme on Weeds Control.	-	3	
(v)	Operational Range Research and Development Project.	-	20	
(w)	Block Provision for PL-480 Research Projects.	102	123	
(x)	Block Provision for Other Projects.	.11	18	
	Sub-total (iii)	441	1,226	
<b>B. Provincial :</b>				
	Punjab.	94	141	
	Sind.	52	20	
	N.W.F.P.	32	20	
	Baluchistan.	16	10	
	Sub-total (B)	194	191	
	Total (AGRICULTURE)	757	1,472	

1	2	3	4	5
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## 2. LIVESTOCK

### A. Federal :

#### (i) Agriculture Research Division :

(a) Livestock Research under PARC.	7	15	
(b) Coordinated Sheep and Wool Project	—	45	
(c) National Marine and Inland Fisheries Research Project.	—	25	
(d) Coordinated Research Project on Hides and Skins.	—	3	
(e) National Institute of Animal Production, Health and Dairy Science.	—	175	Block Allocation.
<b>Sub-total (A)</b>	<u>7</u>	<u>263</u>	

### B. Provincial :

(a) Punjab.	33	52	
(b) Sind.		— 24	
(c) N.W.F.P.	1	12	
(d) Baluchistan.	—	5	
<b>Sub-total (B)</b>	<u>34</u>	<u>93</u>	
<b>Total (LIVESTOCK)</b>	<u>41</u>	<u>356</u>	

## 3. FORESTRY

### A. Federal :

#### (i) Food and Agriculture Division :

(a) Pakistan Forest Research Institute—Peshawar.	22	146	
(b) NCCW and Zoological Survey Department.	5	18	
<b>Sub-total (A)</b>	<u>27</u>	<u>164</u>	

1	2	3	4	5
<b>B. Provincial :</b>				
(a)	Punjab.	—	18	
(b)	Sind	—	7	
(c)	N.W.F.P.	—	8	
	Sub-total (B)	—	33	
	Total (FORESTRY)	27	197	
<b>4. INDUSTRY</b>				
<b>A. Federal :</b>				
<b>(i) Ministry of Science and Technology :</b>				
(a)	National Institute of Electronics.	—	100	
(b)	Silicon Technology Development Centre.	—	75	
(c)	Appropriate Technology Development Organization.	—	60	
(d)	Pakistan Science Foundation (PASTIC).	166	40	
(e)	P.C.S.I.R.	—	350	
(f)	National Institute of Oceanography.	—	75	
(g)	National Institute of Biotechnology.	—	50	Block Allocation.
	Sub-total (i)	166	750	
<b>(ii) Industries Division :</b>				
	Machinery Design Institute.	—	50	"
<b>(iii) Education Division</b>				
	Institute of Desert Studies.	—	30	"
	Total (INDUSTRY)	166	830	
<b>5. HEALTH</b>				
<b>A. Federal :</b>				
<b>(i) Ministry of Science and Technology :</b>				
(a)	National Clinical Research Institute (PMRC).	—	40	
(b)	Other programmes of PMRC.	25	45	
(c)	Institute for Medicinal Botanic.	—	42	
	Sub-total (i)	25	127	

1	2	3	4	5
(ii) Health Division :				
(a)	Institute of Traditional Medical Research.	-	81	
(b)	Brain Research Institute.	-	50	
(c)	National Institute of Health.	-	10	
(d)	Miscellaneous.	16	-	
	Sub-total (ii)	16	141	
(iii) Planning Division :				
(a)	Nutrition Research.	-	30	
(b)	Miscellaneous.	1	22	
	Sub-total (iii)	1	52	
	Total (HEALTH)	42	20	

## 6. WATER

## A. Federal :

(i) Ministry of Science and Technology :				
(a)	Irrigation, Drainage and Flood Control Research Council.	34	100	
(ii) Ministry of Water and Power :				
(a)	MONA Reclamation Experimental Project.	24	70	
(b)	Lower Indus Water Management and Reclamation Research in Sind.	6	25	
(c)	International Water Logging and Salinity Research Institute.	1	100	
(d)	Prototype Research in Alluvial Channels.	11	7	
(e)	Tubewell Rehabilitation Research.	-	18	
	Sub-total (ii)	42	220	
B. Provincial Research Programme.				
		-	105	
	Total (WATER)	76	425	

1	2	3	4	5
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## 7. POWER

## A. Federal :

(i) Ministry of Science and Technology National Institute of Power.	2	40
(ii) Ministry of Water and Power National Institute of Energy.	—	150
(iii) Others (PINSTECH, etc.).	47	—
Total (POWER)	49	190

## 8. FUELS

## A. Federal :

## (i) Ministry of Petroleum &amp; Natural Resources :

Hydrocarbon Development Institute of Pakistan.	18	100
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## 9. MINERALS

## A. Federal :

## (i) Ministry of Petroleum and Natural Resources :

(a) Geological Survey of Pakistan.	—	8
(b) International Centre for Mineral Resources.	—	20
Sub-total (i)	—	28

## (ii) Ministry of Science and Technology :

PCSIR for Mineral Beneficiation Studies.	—	31
Total (MINERALS)	—	59

## 10. TRANSPORT AND COMMUNICATIONS

## A. Federal :

## (i) Planning Commission :

(a) National Transport Research Centre.	4	30
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(ii) Ministry of Railways :  
Railway Research Centre.

50 Block Allocation.

1	2	3	4	5
(iii)	Ministry of Communications :			
(a)	Telecommunication Research Centre.	38	40	
(b)	Road Research Institute.	—	30	
	Sub-total (iii)	38	70	
	Total (TRANSPORT AND COMMUNICATIONS)	42	150	

## 11. PHYSICAL PLANNING AND HOUSING

### A. Federal :

#### (i) Ministry of Science and Technology :

(a)	National Building Research Institute (CWHR).	2	50
	Sub-total (i)	2	50

### B. Provincial :

(a)	Building Research Institute, Punjab.		15
(b)	Building Research Institute, Sind.	15	15
(c)	Building Research Institute, NWFP.		10
(d)	Building Research Institute, Baluchistan.		10
(e)	Public Health Engineering Laboratories.		5
	Sub-total (B)	15	55

	Total (PHYSICAL PLANNING AND HOUSING)	17	105
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## 12. EDUCATION

### A. Federal :

#### (i) Ministry of Education :

#### (a) Training-Scholarship & Fellowships :

(i)	Central Overseas Training Scholarships.	82	90
(ii)	Merit Scholarships.	22	35
(iii)	Quaid-i-Azam Scholarships.	13	30
(iv)	Scholarship Foundation Programme.	—	345

	Sub-total (a)	117	500
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(b)	Institute of Science and Technology.	—	200
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(c)	Strengthening of S&T facilities at Universities, Colleges, etc.	100	250
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	Sub-total (i)	217	950
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1	2	3	4	5
	(ii) Planning Commission :			
	Research Endowment Fund.	—	300	Block Allocation.
	(iii) Ministry of Science and Technology :			
	(a) Pakistan Science Foundation.	7	200	”
	(b) National Science Council.	—	20	”
	(c) Assistance to N.G.O.S.	—	20	”
	(d) Science Centres, Museums and Libraries, etc.	—	80	”
	Total (iii)	7	320	
	Total (EDUCATION)	224	1,570	
<b>13. POPULATION WELFARE PROGRAMMES</b>				
A. Federal :				
(i) Population Welfare Division :				
	Bio-Medical Research and Support Activities (Collaborative Centre for Council Research).		3 10	
	Total (POPULATION WELFARE PROGRAMMES)	3	10	
<b>14. OTHERS</b>				
A. Federal :				
(i) Ministry of Science and Technology :				
	Promotion of S&T in provinces (setting up of S&T departments institutions and strengthening existing ones).	—	25	Block Allocation.
	GRAND TOTAL	1,462	5,809	

Adil Saeed Saifi  
Official (II)

