

CHAPTER 19

WATER

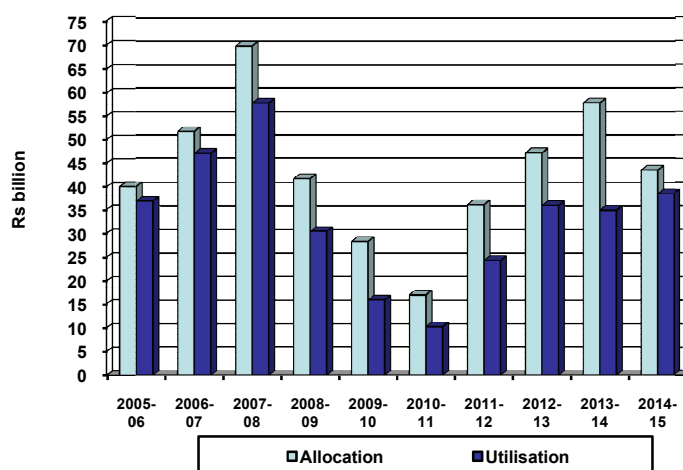
Water is essential to meet the food need for country's growing population. The efficient use of water is an important requirement for sustainable agricultural growth and agriculture oriented activities to tap more benefits from this sector. Increases in agricultural production to meet the needs of a rising population, will require additional water. Based on the population growth projections by 2025, an estimated additional 10 MAF will be needed at the farm gate. The level of agricultural production is directly related to the availability and effective use of water as a major input. The water sector's future strategies are based on the government of the Vision 2025 for the welfare, poverty alleviation and well-being of people. All efforts are being made to overcome the water sector's present challenges through formulation and effective implementation of a comprehensive set of measures for the development and sagacious management of water resources. Following are the areas of strategic investment based on the guiding principles of equity, efficiency, participatory decision making, sustainability and accountability:

- Augmentation of water resources (construction of small and medium dams)
- Conservation measures (lining of irrigation channels, modernisation and rehabilitation of irrigation system, lining of watercourses and micro irrigation system)
- Protection of infrastructure from onslaught of floods and water logging and salinity

Performance review 2014-15

During the fiscal year 2014-15, maximum resources were allocated for timely completion of on-going priority projects to achieve the planned targets for the year 2014-15. Rs43.557 billion were allocated for water sector's development programmes. An amount of Rs38.445 billion is expected to be utilised (about 88 per cent of allocation) by end of the year.

A glance at the previous years' allocation and utilisation



Landmarks achieved

The following were the major achievements made during 2014-15:

- Completion of (more than 83 per cent) Phase-I of Kachhi Canal in Balochistan and Raine Canal (100 per cent) Sindh for irrigating 2.864 million acres
- Operationalisation of the Mangla Dam Raising Project and completion of the Satpara Dam in G-B
- Substantial completion of the Gomal Zam Dam Project Khyber Pakhtunkhwa area for irrigation of 163,100 acres of agriculture land and 17.4 MW power generations
- To overcome water scarcity, utilisation of Rs4,000 million for lining of irrigation channels in the Punjab and Sindh during the FY 2014-15
- For the modernisation of existing irrigation system, an amount of Rs1,929 million is expected to be utilised during 2014-15 on improvement of existing irrigation system in Punjab, Sindh and Khyber Pakhtunkhwa
- Rs5,500 million were allocated and expected to be utilised on construction of new medium dam in all over Pakistan (Mangla, Gomal, Darwat, Nai Gaj, Kurram Tangi and Naulong dams).
- In Balochistan, Sindh, Punjab and KPK about Rs5,490 billion are expected to be utilised on construction of new small, delay action and recharge dams.
 - Balochistan Rs3,700 million
 - Punjab Rs390 million
 - Sindh Rs500 million
 - KPK Rs900 million

In the drainage sector, a sum of Rs3.50 billion has been allocated for fast track implementation of RBOD-I, II and III Projects to protect and reclaim 4.90 million acres of irrigated land remained continue.

Projects completed during 2014-15

- Major physical targets achieved during 2014-15 are as under:-
- Rehabilitation of Flood 2010 Damages (RBOD-III), Jaffarabad, Nasirabad and Bolan
- Rehabilitation of SCARP Tws and Drainage System LBOD Nawabshah Sindh
- Chashma Right Bank Irrigation Project (Additional works)
- Construction of 100 small Dams in Balochistan (Package-I)
- Rehabilitation and reconstruction of Akra Kour Dam, Balochistan
- Earthwork and stone pitching along Chotiari Reservoir, Sindh
- Installation of 100 tubewells of saline water around Chotiari Sindh
- Rehabilitation of Sidhnai Mailsi Link Canal and Bahawal Canal Lower Punjab
- Lining of Irrigation Channels in the KPK

An overview of targets set for FY 2014-15 and achievements is given in table below along with targets set for FY 2015-16.

Key physical targets and achievements of 2014-15 and targets for 2015-16

Item	Unit	Target 2014-15	Achievements 2014-2015		Target 2015-16
			Physical	%age	
Irrigation	MAF	138	138.59 *		139
Water Availability (additional)	Mhm	17.03	17.10		17.03
Earthwork for dams & canals/irrigation System	MCM	20.00	18.00	92	15
Concrete work for dams/canal/ irrigation System	MCM	0.70	0.50	71	0.90
Const. of delay action/check and small dam	Nos.	8	10	125	20
Drainage and reclamation					
a) Surface Drains (Earthwork) (Extension, rehabilitation & remodelling of drain)	MCM	8	4	50	6
Flood Control Programme					
Under Normal Flood Programme (flood scheme)	No	20	10	50	15

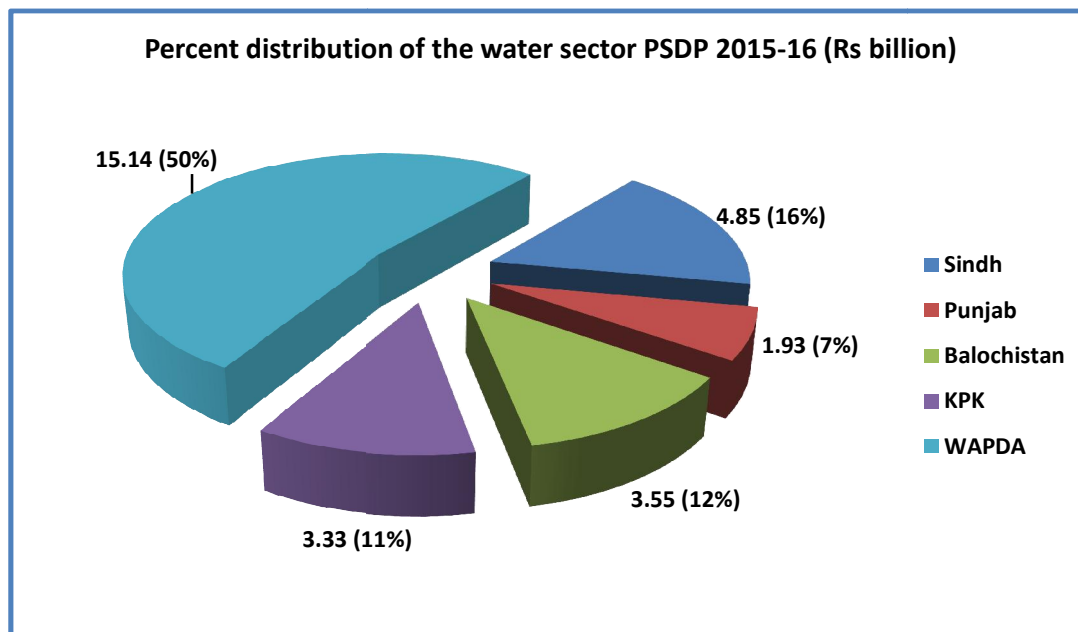
*Increase in achievement is mostly due to large inflow at Rim station and rainfall.

Outlook for 2015-16

Major goals of water sector for the next fiscal year have been planned keeping in view the strategies and policies mentioned in Pakistan Vision 2025 and 11th Five Year Plan (2013-18), which are summarized as under:

- Integrated water resource development approach will be adopted (as per previous years) to overcome water sector's current and future challenges,
- Priority will be given to the augmentation measures (construction of small and medium dams) and Safe disposal of drainage effluent in a safe manner (through construction of RBOD-I, II and III).
- Conservation measures (lining of irrigation channels, rehabilitation of irrigation system, lining of water courses) which are being implemented under federal programme are gradually transferred to the provinces.
- Timely completion of priority development projects in order to lessen the burden of throw-forward
- Protection of infrastructure, agriculture lands and abadies from onslaught of floods under the flood control and management programme
- Knowledge management, institutional strengthening, capacity building and human resources development.
- Trans-boundary water issues, demand management, water governance, resettlement, use of saline water, reuse of waste water, water rights management, recharging ground water, are the emerging realities for the sustainability of land and water resources. Implementation of the plan will be carried out in reconciliation with these facts.

For the next financial year 2015-16, out of total allocation water sector's budget Rs30,622 million, maximum resources have been earmarked for on-going development projects near completion, including construction of small and medium dams, drainage projects, construction of new canals projects and improvement of existing irrigation network.



Expected water availability

It is expected that the overall water availability at farm gate will remain about 17.03 Mhm (139.00) MAF) in 2015-16. This will include surface water supplies through canal withdrawals, canal lining and remodelling, irrigation system rehabilitation and improvement programme, construction of small and medium dams, check dams and retention weirs. About 5.92 Mhm (48 MAF) of water will be included in the system from underground fresh water aquifer mainly by private tube wells. Water losses of the system through seepage will be improved through major emphasis on water conservation measures such as remodelling and rehabilitation of existing irrigation system, lining of irrigation channels and watercourses and completion of ongoing mega projects.

Drainage

In the drainage sub-sector and improvement of irrigation infrastructure, the work on RBOD-I, II and III continue for this about six MCM of earth work for surface drains, concrete and stone work is planned for the next fiscal year 2015-16, more than 15 MCM of earthwork targets have been fixed for rehabilitation of existing channels, small dams, irrigation infrastructure, system improvement and construction of major and minor structures. An amount of Rs908.833 million has been allocated for this sub-sector.

Flood management

Under normal and emergency flood schemes, it is planned to spend an amount of Rs1,000 million to complete about 15 ongoing and new small emergent flood schemes in Pakistan.

Irrigation

An amount of Rs22,529 million (75 per cent of total water sector allocation) has been proposed during 2015-16 for irrigation projects (small and medium dams, check and delay action dams, canals, lining of irrigation channels and improvement of the existing irrigation system). Programme for lining of irrigation channels in saline zones will continue in the Punjab and Sindh to check the seepage and other losses. A sum of Rs400 million has been proposed for this programme for the next fiscal year 2015-16. Sufficient budget has been allocated to the ongoing Gomal Zam Dam, Ghabir, Darwat, Nai Gaj, Kurram Tangi and Naulong dams. Remaining works of Phase-I of Kachhi (Balochistan) and Raine canal (Sindh) will continue in full swing for their timely completion.

Major ongoing projects

The following are important ongoing projects:

- Gomal Zam Dam (Main structure has been completed, while work on irrigation network is 91 per cent complete.)
- Darawat Dam (more than 97 per cent completed physically)
- Naulong Dam (initial works in progress)
- Nai Gaj Dam (41 per cent completed)
- Mohmand (Munda) Dam Project KPK
- Kachhi and Raine Canals (Phase-I of both canals is substantially completed)
- RBOD-I, II and III (Physical works completed 90 per cent, 77 per cent and 83 per cent respectively)
- Construction of 100 small dams (Package-II and III) Balochistan
- Construction of small dams in Sindh, KPK and Punjab
- Construction of the Mohre Shera Dam, Mujahid Dam and Ghabir Dam Punjab
- Revamping and rehabilitation of irrigation and drainage system in Sindh
- Punjab Irrigation System Rehabilitation (Punjab).
- Lining of the irrigation channels in Punjab and Sindh
- Makhi Farash Link Canal and fall structure on Nara Cana (Sindh)
- Construction of Shadi Kour Dam (Toiwar) Bathozai Dam, Balochistan
- Six flood dispersal structures on the Nari River, Balochistan
- Flood protection programme
- Survey, investigation and research

Projects to be completed during 2015-16

The following projects will be completed during 2015-16:

- Drawat dam Project (if fully protected as per demand 2015-16)
- Raine Canal (if fully protected as per demand 2015-16)
- Land and water monitoring and evaluation of the Indus Plains (SMO)
- Rehabilitation of the Flood 2010 Damages (RBOD-I), Larkana, Dadu and Qambar Sindh

- Research studies on drainage, land reclamation, water management and use of drainage water, IWASRI, Mona and Lim
- Construction of six flood dispersal structures on the Nari River, Balochistan
- Construction of the Shadi Kaur Dam Balochistan
- Survey and study design for construction of the rain water Dams (reservoirs along the River Indus in Sindh)
- Construction of J-Head Spur at RD 4000 of Fazil Shah Flood Bund, Tehsil Kabirwala, Khanewal, Punjab
- Construction of diversion Weir for Kabul River Canal, Peshawar and Nowshera Districts.
- Flood Management of Takhta Baig Khawar District Peshawar, KPK
- Bazai Irrigation Scheme 2nd Revised PC-I, KPK
- Indus 21 Water Sector Capacity-building and Advisory Services Project (WCAP)