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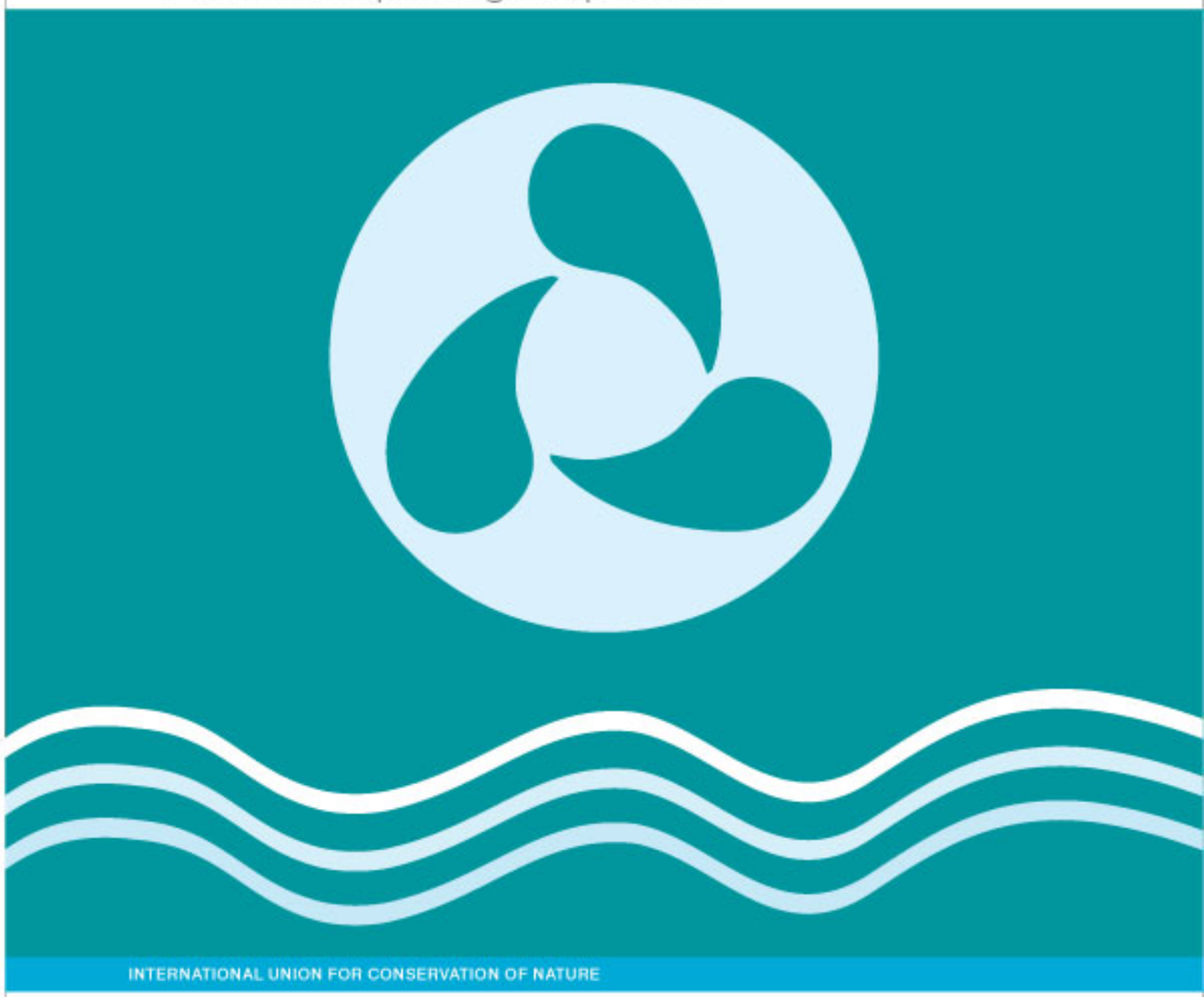
Pakistan Water Programme

2013-2020

From concepts to good practice



INTERNATIONAL UNION FOR CONSERVATION OF NATURE

The context

IThe water issues currently grabbing headlines in Pakistan are mainly focused on the merits and demerits of multi-purpose large dams. The need for additional storage on the Indus is largely supported to ensure water provision during dry spells, flood protection during wet spells and to generate hydro-power at a low-cost to support country's economic development. Other current issues, such as water shortages in the country for the early Kharif and the Rabi seasons, or the current flooding in Sindh and Punjab, are either a direct effect of the current lack of storage, or due to the physical and hydrological constraints associated with the management of highly variable river flow system. The expected climate change is going to further worsen the situation of water scarcity in a supply based system primarily designed to share water shortages. Another major issue which has risen due to inefficient management of the Indus River system, is the continuous deterioration of the basin health as one-third basin area is still affected with waterlogging and salinity. Freshwater systems are also being polluted through disposal of industrial and domestic effluents. Even the sewage has affected the shallow groundwater in the urban and rural areas. On the other hand, the issues of politicisation of the water debate and the rising trans-boundary disputes are also affecting the country's strategy for water development and management.

In Pakistan, the agricultural sector is the largest user of water with over 90% of the total water withdrawals. Only 4% is being used for domestic purposes. Currently, over 65% of the population of Pakistan has access to protected sources of drinking water with 85% of them living in urban towns and cities. Most cities and villages receive water from groundwater resources, except for the cities of Karachi, Hyderabad and Islamabad that primarily use the surface water. In rural areas, only 55% of the population has dedicated water supplies. Limited availability of safe drinking water and its in-equitable distribution and system losses have reached alarming proportions in the urban areas and large rural settlements.

Lack of water has exacerbated health and sanitation issues as well. At the moment, sanitation facilities are only available to about 42% of the total population, out of which 65% live in urban towns and 30% in rural settlements. With the exception of a few large cities, the sewerage service is almost non-existent, causing serious public-health problems. Around 45% households do not have access to a toilet. Only 1% of the total sewage volume is treated and the rest is disposed into freshwater.

Hence, the question remains - what could be our options for developing and managing sustainable water resources? The additional multi-purpose water storages on Indus seem inevitable as Pakistan is now among the few countries having the world's lowest per capita water storage. But such developments would have to be initiated after seeking consensus of all the provinces. The construction of some of the dams has been controversial and requires an in-depth analysis as part of an integrated approach, considering alternate options for acceptable water storages. The current storages are aimed at transferring water of Kharif season to the Rabi season. Presently, Pakistan requires carry-over dams to transfer water from a wet year to a dry year and to manage floods and droughts in the changing context of climate change. In areas outside the Indus basin, Spate, rainfed and runoff farming systems are already under stress and climate change will further affect the availability of water and might increase the frequency and intensity of floods and droughts.

On the policy level, the National Water Vision drafted in 2001 became the foundation for the Draft National Water Policy, which the federal government has formulated for effective regulation, development and management of the water sector, in partnership with the stakeholders. On the provincial level, Balochistan province was a pioneer in developing Water Policy that was approved by the provincial Cabinet in 2006. The uniqueness of this provincial water policy is, that its basis lies in the conceptual framework of Integrated Water Resource Management (IWRM) and also covers reforms for water demand management.

It is important to chalk out some of Pakistan's persistent water issues so that Pakistan Water Programme can be viewed and contextualized under them.

Current Key Issues

- Trans-boundary water disputes arising due to the interpretation of the detailed provision of the Treaty.
- Inter-provincial water disputes regarding the distribution of water amongst the provinces and sharing of shortages during the dry period.
- Scarcity of the available water resources, gaps in the use and demand, including variability and seasonality in river flows. For example, at the moment, lowest annual river flows are half of the highest flows (based on the historical flows of 1937-2007) and Kharif season flows are five times the Rabi season.
- Low agricultural water productivity at the farm, watercourse and canal command levels resulting in non-sustainability of the irrigated agriculture (e.g. waterlogging and salinity in the Indus basin, floods and droughts affecting Spate irrigation and soil erosion in the watersheds).
- Lack of safe water supply for domestic use and inadequate sanitation facilities causing pollution of the freshwater ecosystems.
- Lack of effective service provision and the poor cost recovery of Abiana (water fee charged on one acre basis of the crop grown or fixed rate per acre) in the agriculture sector and poor recovery of water fee from the domestic consumers.
- Lack of good governance in the water sector institutions at various levels

Accomplishments of IUCN Pakistan Water Programme

Strategy development: The initial strategy related work was centered around the background papers on various sectors including, Water, developed during 1988-2005. These papers were part of the National and Provincial Conservation and Sustainable Development Strategies, as well as the Integrated District Development Visions, developed periodically over the past decade.

Policy briefings: Under the initiative of the "Upper and lower riparian issues and options in the Indus River" a background paper and four draft policy briefs were developed in 2010. These briefs were presented to a wide range of stakeholders in a consultative workshop on "Trans-Boundary Water and Inter-Provincial Water Disputes".

Wetlands: IUCN Pakistan has been working on wetlands since a long time. The environmental assessment of the Haleji Lake was conducted in 1997. In 2003, a case study was conducted on "Sea intrusion in the coastal and riverine tracts of the Indus delta". Later in 2005, under the Indus delta demonstration project, studies were conducted on the freshwater assessment and sustainable management of coastal mangroves ecosystems. Another study was conducted to assess the effects of Water Apportionment Accord on the Indus delta. In 2011, IUCN Pakistan was a key member in the development of National Wetlands Policy and Action Plan.

Dams, reservoirs and fractional hydel-power plants: IUCN actively contributed in the site selection and appraisal missions for the Ghazi-Barotha Hydropower project. In 1999, IUCN was also responsible for developing the guidelines for artificial releases from the reservoirs to maintain downstream wetland ecosystem and dependent livelihoods. Later, in 2002-03, it developed a consultative process with the stakeholders, following the Book of World Commission on Dams titled "Dams and development". Lastly, IUCN actively contributed in activities related to water harnessing and mini-hydel projects in the upper and lower Dir districts of Khyber Pakhtunkhwa, under the Environmental rehabilitation projects in the KPK province and Punjab.

Environmental water management: The environmental water management and water for nature has been IUCN's expertise. Some of the initiatives taken by IUCN in the last two decades include:
a) Liquid effluents from Qadirpur gas field and their impact on the Indus Dolphin in 2000
b) Khewra coal mines: water pollution issues
c) Technical report on wastewater situation in Karachi in 1996
d) Water quality monitoring survey of AJK in 2004

Water productivity and sustainability: IUCN has introduced several field level interventions to implement high efficiency irrigation systems in Balochistan, including demonstration of artificial recharge of an aquifer through diverse techniques as well as construction of watercourses and ponds. The most important action undertaken has been the rehabilitation of the centuries-old Karez system in the Ziarat District under the Balochistan Partnerships for Sustainable Development Project. Under this project, some of the activities have included; the revitalization of Karez Systems in Pishin, Qilla Saifullah and Ziarat districts; rainwater harvesting in the districts of Qilla Saifullah, Lasbella and Gwadar; high efficiency irrigation systems in Quetta, Qilla Saifullah and Ziarat; watershed management in Pishin and Qilla Saifullah, and water conservation and elimination of conveyance losses through uPVC pipe distribution network in Pishin, Qilla Saifullah and Ziarat districts.

Watershed management: The work done in this area has been limited to four conservancies of Gilgit-Baltistan and Khyber Pakhtunkhwa. These gaps seems to have come from relating watershed management with livelihoods, especially in the context of changing land use and climate, which has resulted in low funding opportunities in this area.

Framework of future programme 2013-20

Water Programme (PWP) 2013-20 is being implemented jointly by IUCN Pakistan and Oxfam-Novib. For the formulation of the programme, five Programme Components (PCs) have been identified based on the priority action areas. The relationship of five PCs with an overall impact is illustrated in *Figure 1*. These PCs were presented to the participants of the two consultative workshops organized by IUCN in Karachi and Lahore and fine-tuned based on their suggestions and comments.

1. Capacity for water diplomacy and cooperation: Building knowledge and capacity of Pakistani institutions and individuals through water diplomacy for initiating trans-boundary water cooperation between India and Pakistan in relation to IWT, and between Afghanistan and Pakistan on the Kabul River. The same capacities will also be helpful in promoting inter-provincial water cooperation within Pakistan. The beginning will be made within Pakistan and experiences will be shared with India and Afghanistan. Activities in this component will evolve over the programme duration based on the on-ground situation and changing political and climate change contexts.

2. Inter-provincial water cooperation: Building knowledge, access to transparent data and information, and strengthening of Pakistani institutions through inter-provincial trust building and inter-provincial water cooperation to address issues related to water entitlements and sharing of shortages through stakeholders' dialogues. Studies will also be conducted on how sustainable water development projects can be conceived with the framework of integrated river basin management of Indus where benefits of water, energy and economic development can be shared by all provinces.

3. Water knowledge management: In the last five decades a wealth of knowledge has been generated in the Indus Basin after signing of the Indus Water Treaty. Pakistan had launched the world's largest programme of water development in the 60s. Research and development studies have been conducted by the public-sector and international institutions. The reservoir of knowledge already available will be arranged into a knowledge database and mechanisms will be developed to maintain it. This component will provide the knowledge support for the remaining four components. Provision of knowledge backstop support is essential for institutions implementing the real-life interventions related to water productivity, and water and health security. Gaps in knowledge will be identified and efforts will be made to generate that knowledge through the promotion of dedicated research.

4. Water for sustainable livelihoods and healthy ecosystems: Linking water management with productivity enhancement with an objective to improve livelihoods with ultimate objective of maintaining healthy ecosystems of Indus, small dams, Spate irrigation and delta areas. In the process of enhancing productivity, the natural resources are normally depleted or degraded; therefore the Programme aims at enhancing water productivity without compromising sustainability of the ecosystems. IUCN and Oxfam-Novib will provide the knowledge support for planning and designing the programme component and the partner institutions, both from public sector and civil society will implement the field level interventions.

5. Water and health secure villages and towns: Linking water supply and sanitation at the village and town levels to provide safe water supply, adequate sanitation facilities and management of effluents for utilisation in forestry, forage and fruit production systems – addressing the whole gamut of issues for developing water and health secure villages/towns and ensuring gender equity through facilitating women's lives and livelihoods. IUCN and Oxfam-Novib will provide the knowledge support for planning and designing of the programme components and the partner institutions in the public sector and civil society will implement the field level interventions.

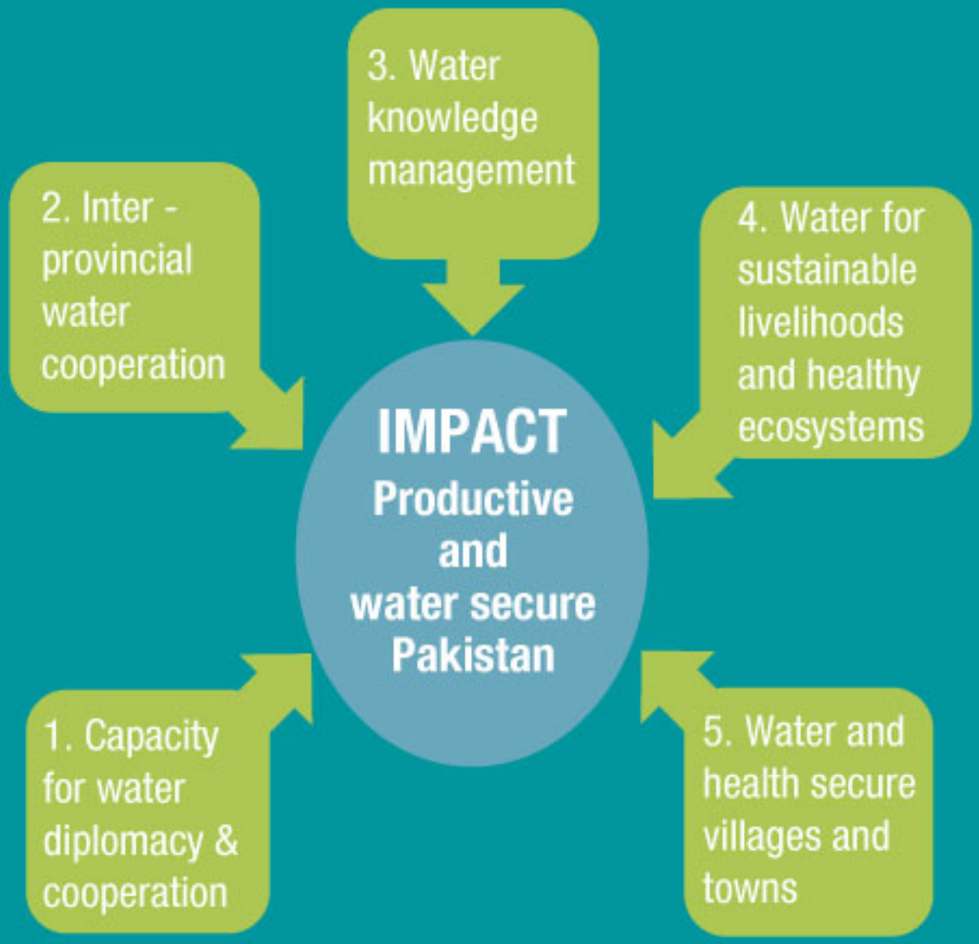


Figure 1: Programme Framework