DRAFT

Towards Kabul Water Treaty: Managing Shared Water Resources – Policy Issues and Options

Published by: IUCN Pakistan.

Citation:
IUCN, 2010. Towards Kabul Water Treaty: Managing Shared Water Resources – Policy Issues and Options.
IUCN Pakistan, Karachi. 11 pp.

Prepared by:
Dr. Shahid Ahmad

Resource person:
Hamid Sarfraz

TOWARDS KABUL WATER TREATY: MANAGING SHARED WATER RESOURCES – POLICY ISSUES AND OPTIONS

1. THE CONTEXT

1.1. Afghanistan – Physio-graphy and Ethno-geography

Islamic Republic of Afghanistan is a country of rough and rugged terrain enveloped by the Hindu-Kush ranges. The highest peak "Nowshak" is situated at 7,485 m. The country is an inland arid area with no coastline. It is located in Central Asia bordered by Turkmenistan, Uzbekistan and Tajikistan in the north, Pakistan in the south and east, Iran in the west and the China in the far north-east.

Country's geographical area is 0.648 million km^2. The north-western, western, and southern border areas are primarily desert plains and rocky ranges, while the south-east and north-east borders rise progressively higher into the major, glacier-covered peaks of the Hindu Kush, an extension of the western Himalayas. Only the northern border is formed by the river Amu Darya.

Country is divided into 9 ethnic groups: Pashtun; Balochi; Tajik; Kyrgyz; Hazara; Nuristani; Turkmen; Uzbek and Ismaili (**Figure 1**). It is among the poorest and under-developed countries in the world. A greater part of the population survives on less than US$ 2 per day.

Figure 1. Physiographic and ethnographic regions of Afghanistan

1.1. Water Resources and Agriculture Development in Afghanistan

Hydro-graphically, Afghanistan is divided into four basins[1]: a) northern basin; b) western basin; c) south-western basin; and d) eastern Kabul basin. The e**astern Kabul basin** covers 12% of country's area and is the only river system having an outlet to sea, joining the Indus at Attock in Pakistan. One-third of irrigation systems were directly affected by war and this does not take into account the indirect effects of abandonment. Agriculture is entirely dependent on irrigation, except small-scale rainfed farming in the north. The most reliable data for irrigated areas date back to 1967, giving a total of 2.39 million ha. Irrigated land can be divided into 4 classes: a) river flows 84.6%; b) springs 7.9%; c) Kareze 7.0%; and d) Persian wheels 0.5%. Around **85% irrigated area is under river-based irrigation,** whereas **15% area is under groundwater irrigation. If this trend continued there are chances that future development of agriculture would be largely on river flow diversions.**

Kunar River (named Kabul river in Afghanistan), which originates in Pakistan, crosses the border with an average annual flow of 10 km^3 and joins the Kabul River at Jalalabad about 180 km further downstream. The Kabul River flows again into Pakistan 80 km further downstream. Internal renewable water resources of Afghanistan are 55 km^3/year. Total water withdrawal was 26.11 km^3 in 1987 largely

1 AQUASTAT FAO Water database for water and agriculture for Afghanistan

for agriculture. In 1986, there were two dams higher than 15 m with installed capacity of 281 MW in 1992, representing 70% of total installed capacity in the country. There is considerable potential for the generation of hydropower in the country.

1.2. Shared Water Resources of Kabul River

Issues of shared water resources among upper and lower riparian basin states (i.e. Afghanistan and Pakistan) are becoming complex due to the impacts of extreme climatic variability and change, rising water demand and environmental concerns. The Government of Afghanistan with the support of the international donors has developed comprehensive plans for the development of new hydro-power projects, irrigation schemes and rehabilitation of old schemes on various rivers including the Kabul River, which will affect the historic rights of lower riparian of the Kabul River.

Trans-boundary water conflicts on the Kabul River are going to be severe in future. How the two basin states are going to resolve these conflicts is a real challenge. This Policy Briefings highlighted the trans-boundary water issues on the Kabul River based on the analysis of historic flows and indicated the need to have dialogues between the basin states to resolve the issues.

Currently, there is no Water Treaty between Afghanistan and Pakistan. Any new water developments in Afghanistan are going to have severe impacts on the historic rights of Pakistan on water of the Kabul River.

Currently, Afghanistan is having adequate financial resources from the donors, which would be used for the development of water and agriculture in Afghanistan and it would adversely affect Pakistan's historic rights on the Kabul River. The obvious question is that what can be done? What options are available to address the trans-boundary water issues with Afghanistan?

"Kunar" River originates in Pakistan and then it joins the Kabul River closer to Jalalabad. It again enters to Pakistan and joins the Indus River at Attock. Pakistan has a unique right on the Kabul River both as an upstream and a downstream water user. It is in the benefit of the basin states to enter into a Water Treaty on Kabul River for managing the shared water resources.

1.3. Interest of International Community in Water Development in Afghanistan

Because of Afghanistan's innate land locked setting, virtually all of Afghanistan's major rivers drain off into riparian neighbouring states. Trans-boundary concerns are intensifying along all of Afghanistan's borders, and with the added impetus of climate change and diminishing glaciers, can no longer be avoided. . . . Afghanistan requires solid support from the donor/financing community to study and add dimensions to both its current and future water requirements[2].

As part of an effort to help shape more effective international cooperation toward stabilization of Afghanistan and South-west Asia, the East West Institute organized in 2009 a series of policy dialogues, a large-scale consultations to explore new policy options for management of shared water resources. Bringing together more than a hundred policy makers and experts from the region and

2 Shojaudin Ziaie, Islamic Republic of Afghanistan, Ministry of Energy and Water, "Water Sector Strategy for Afghanistan National Development Strategy," March 15, 2007, p. 9, http://www.ands.gov.af/ands/final_ands/src/final/ministry_strategies/English/Ministry of Energy and Water-Water Resources English.pdf. The quote from the Afghan Ministry of Energy and Water's Draft Water Sector Strategy of 2007 is on p. 9.

beyond, the meetings, held in Kabul, Islamabad, Brussels, and Paris, addressed deficits in regional cooperation on water and laid foundations for new cooperative frameworks. Throughout the meetings, participants reiterated the challenges: a) technical and knowledge deficits in water sector; b) restrict efficient management of national water resources; and c) limit prospects for development of a coherent policy on trans-boundary river basins. Information deficit is greatest in Afghanistan.

Most of the international experts are of the opinion that there are few spaces in which to discuss trans-boundary water issues or manage conflicts to achieve win-win outcomes. The lack of bilateral or multilateral treaties, memoranda of understanding, or dialogue forums between the region's countries has limited opportunities to build trust and cooperation between the basin

In the opinion of Government of Afghanistan, water infrastructure projects across Afghanistan are in advanced planning stages. Aimed at exploiting irrigation and energy potential on national rivers, these projects are a potential source of tension between upstream and downstream states who feel they will either receive less water and/or be held hostage to upstream control of trans-boundary resources. To date, upstream states have claimed a right to benefit from their natural resources. Meanwhile, downstream states claim a right to benefit from water that has flowed through their territory for hundreds of years – **the historical water rights**.

There is no doubt that freshwater is crucial to the sustainable development of Afghanistan and the safety of its population (**Figure 2**). It is indispensable for irrigation in rural areas, where more than 75% of Afghan population lives. The agricultural sector contributes about half of the GDP[3]. Agriculture accounts for 95% of Afghanistan's water consumption. Water is also deemed necessary for power generation and industrial uses. Afghanistan has many water resources and its geography provides significant opportunities for their exploitation[4].

Figure 2. Water reservoir in Afghanistan

Insufficient infrastructure and a lack of capacity, however, limit Afghanistan's ability to store, properly manage, and develop its water resources. Ninety percent of Afghanistan's irrigation today is managed through traditional, community-based schemes, which are independent of broader national or regional arrangements and limited in their efficiency.

3 Figures from the public website of the World Bank, http://web.worldbank. org/WBSITE/EXTERNAL/COUNTRIES/ SOUTHASIAEXT/ EXTSAREGTOPA GRI/0,,contentMDK:20273762~menuPK:548212~pagePK:34004173~piPK: 34003707~theSitePK:452766,00.html.

4, Ziaie "Water Sector Strategy." As stated in the Afghanistan National Development Strategy, average annual precipitation yields an annual surface runoff water volume of 2,300 m³/year per capita. According to the 2007 data of the Food and Agriculture Organization of the United Nations (FAO), Afghanistan's total actual renewable water resources are estimated at approximately 2,500 m³/year per capita, compared to approximately 1.850 m³/year per capita in Germany (figures of the FAO Aquastat Water Resources and MDG Indicator of March 2009).

All future water developments in Afghanistan are going to affect the availability of water of Kabul River to Pakistan. Pakistan would certainly like to maintain the historical rights on the Kabul River.

Thirty years of war and unrest have dramatically diminished Afghanistan's water infrastructure and decimated its human capacity in hydrology. Only 1.5 mha of agricultural lands were irrigated in 2002 (an additional 0.3 mha have been rehabilitated since), less than half the area irrigated in 1979. Irrigation schemes are less reliable than in the past. Heavily dependent on seasonal rain and snowfall, Afghanistan's water resources have become unstable. Glacial retreat and early snowmelt have severe effects on seasonal water availability. The country needs new dams to increase storage capacity and improve irrigation efficiency to balance these seasonal shifts. Currently, Afghanistan has the lowest storage capacity per capita in the region. Additionally, Afghanistan's water resources are unequally distributed. The Amu Darya basin, including the Harirud and Murghab basin and non-drainage areas, covers about 37% of Afghanistan's territory but contains about 60% of the water flow. The Helmand basin covers about 49% of the territory and holds only 11% of water flow. The Kabul–Eastern River basin, with area coverage of about 12%, holds around 26% of the water flow[5].

Without substantial improvements in the development and management of Afghanistan's water resources, Afghanistan will not reach its energy, agriculture, or rural and urban development goals. These goals are crucial elements of the Afghanistan National Development Strategy 2008–2013 (ANDS), the cornerstone of Afghanistan's development policy[6]. Therefore, under the umbrella of economic and social development, water and irrigation feature prominently as a separate area of focus in the ANDS.

2. KABUL RIVER BASIN AND CURRENT STATE OF SHARED WATER RESOURCES

2.1. River Basins of Afghanistan

The ANDS states that its strategic vision on water sector is "to manage and develop water resources so as to reduce poverty, increase sustainable economic and social development, and improve quality of life for all Afghans and ensure an adequate supply of water for future generations[7]." The main surface water resources of Afghanistan are the Amu Darya, the Helmand River, the Kabul River, and the Harirud and Murghab rivers. Afghanistan shares these rivers with Iran, Pakistan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The importance of water-intensive cotton industry in Central Asia increases the likelihood of cross-border tensions. Regional cooperation on shared water resources appears increasingly necessary to ensure sustainable development in Afghanistan and its neighbouring countries and to maintain regional stability and security.

Afghanistan has formulated plans for significant water infrastructure development on each river to mitigate floods and droughts and to fully exploit its irrigation and energy potential. While crucial to Afghanistan's social and economic development, these plans will also affect trans-boundary water flow and, as a result, relations with its neighbours including Pakistan.

5 4R. Favre and G. M. Kamal, "Watershed Atlas of Afghanistan," 2004, pp. 63–66.
6 Ziaie, "Water Sector Strategy"; Afghanistan National Development Strategy (2008), p. 60.
7 Ziaie, "Water Sector Strategy"; Afghanistan National Development Strategy (2008), p. 82.

2.2. Kabul River Basin

Kabul River flows in eastern Afghanistan and north-western Pakistan. It is about 700 kms long, of which 560 kms flow through Afghanistan. Rising in the Sangl kh Range 72 kms west of Kabul city, it flows east past Kabul and Jalalabad, north of the Khyber Pass into Pakistan, and past Peshawar. It joins the Indus River northwest of Islamabad at Attock. Kabul River Basin, including the important tributary Kunar River, represents around 12% of available water resources in Afghanistan. It is crucial to the livelihoods of millions of people sharing its water resources for drinking, sanitation, agriculture, power generation, and industry (**Figures 3 and 4**).

Figure 3. River basins of Afghanistan

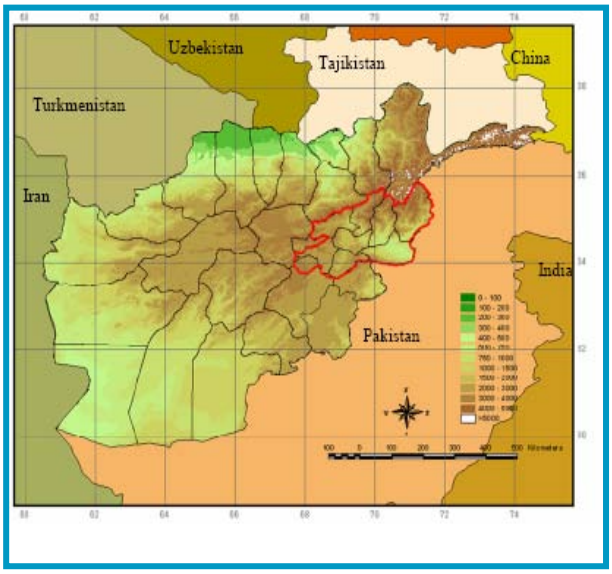

Figure 4. Kabul River basin

(source: Afghan Energy Information Centre)

A major tributary of the Indus River, the Kabul River traverses Kabul and crosses the eastern border into Pakistan. It is the main source of freshwater for the Kabul city's growing population of more than 3 million, though it has frequently run dry in the last ten years.

The Kabul River basin is divided into five regions covering both Afghanistan and Pakistan – the two basin states of Kabul River (**Figure 5**). **The Kabul River originates from the Konar hydrologic region of the Kabul River on the Pakistan side.** The Konar River drains into the Afghanistan part of the Konar hydrologic region and then enters into Pakistan at Attock. This means that Pakistan lies both at the upstream and downstream of the River Kabul starting from the upstream of the Konar tributary of the Kabul River. Thus water rights of Pakistan on the Kabul River are unique.

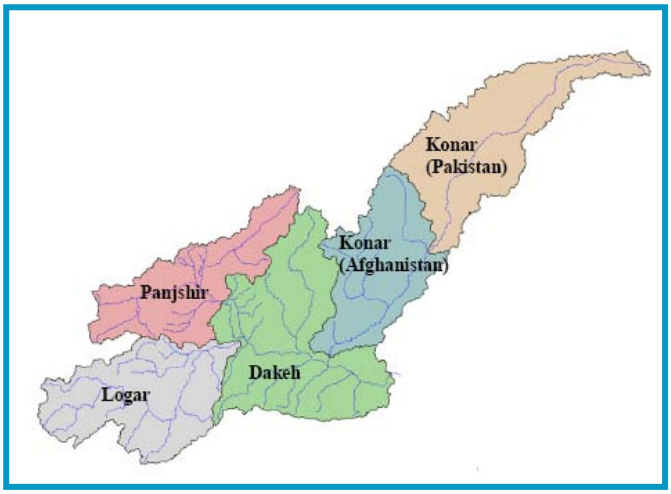

Figure 5. Hydrologic regions of Kabul River basin

2.3. Current State of Dialogues between Afghanistan and Pakistan

Water resources of Kabul River are essentially shared between Afghanistan and Pakistan. Despite repeated attempts on both sides to reach an agreement but not materialized. On the Pakistani side, policy makers like to recall the formation in 2003 of a nine-member technical committee, led by Pakistan's then Chairman of the Federal Flood Commission, to begin drafting a Water Treaty with Afghanistan. The committee maintained that its efforts failed because it did not receive sufficient river flow data from Afghan authorities.

In 2006, in an effort to provide new impetus to a drafting process for a bilateral treaty, the World Bank offered support for a consultation process between Afghanistan and Pakistan. The bank's mediating role was considered appropriate, as it was recognized for its engagement in formulating the Indus Waters Treaty and mediating Indian-Pakistani water disputes in Kashmir, among others. Nevertheless, the World Bank's offer did not result in renewed dialogue. No institutionalized framework of cooperation on the Kabul River basin currently exists. Factors that have hampered bilateral cooperation efforts are complex and include the power asymmetry between Afghanistan and Pakistan, the decades-old dispute over the Durand Line[8], and the recent dispute between Pakistan and India over the Indus River, in particular the interpretation of the Indus Water Treaty with regard to dams construction in India. The Digital Elevation Model (DEM) was used with the help of the remotely sensed satellite data, the topographic map of the hydrologic regions of the Kabul river basin was developed (**Figure 6**). The DEM indicated that the Pakistan part of the Konar River is topographically characterized as highlands with extreme slopes.

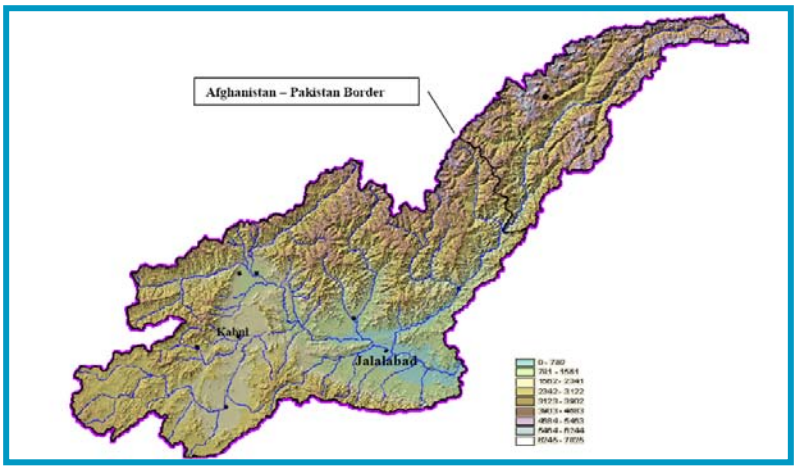

Figure 6. DEM of Kabul River basin

In March 2009, meeting of Economic Cooperation Organization, Afghan, Iranian and Tajik leaders agreed to speed up implementation of projects on the water-energy nexus. Joint commitments of a similar nature were not made between Afghanistan and Pakistan. The most ambitious joint statement by the two countries was the Islamabad Declaration, adopted after the third Regional Economic Cooperation Conference on Afghanistan (RECCA) in May 2009.

The declaration recognized Afghanistan's centrality for peace, prosperity, and stability in Central and South Asia and endorsed the need for a comprehensive approach and participation of the international community in economic development. It noted the importance of regional organizations in ensuring Afghanistan's economic development and extending regional cooperation. Among the areas the declaration targets for greater regional cooperation are transport, trade, energy, agriculture, capacity building, education, border management, counter-narcotics, and refugee return and re-integration. To date, however, the Islamabad Declaration has not led to improved cooperation on water.

8 A. Khalid, "Need for a Pak-Afghan treaty on management of joint watercourses" (2007), pp.15–16

3. ANALYSIS OF FLOWS OF KABUL RIVER AT ATTOCK

Analysis of annual and seasonal (Rabi and Kharif) flows of Kabul River was made to evaluate the temporal variability. The probability analysis of annual river flows was also performed to evaluate historical trends of Kabul River flows. The findings of analysis of flows of the Kabul River are:

- Sharp decline in annual flows of Kabul River from 34.6 to 23.5 km^3 (28 to 19 MAF; **Figure 7**), which might be due to climatic variability or change, and/or persistent drought;
- Lowest and highest annual flows were 13.82 km^3 (11.2 MAF) and 42.94 km^3 (34.8 MAF). The ratio between lowest and highest annual river flows is 1:3 (**Figure 8**). This high ratio of 1:3 raises few questions: Is it due to: a) climatic variability and/or change; b) more frequent and severe droughts; and/or c) diversion of more waters for multiple uses in Afghanistan.
- Decline in seasonal river flows during Kharif was more severe than Rabi season due to changes in the monsoon rainfall in the last 70 years (**Figures 9 and 10**). The issue is of serious concern and deserves detailed study by hydrologists and water management experts with an objective to build scenarios for future predictions regarding water availability to Pakistan and expanded use of water in Afghanistan. It is also the right time for Pakistan to raise the issue of rights of the lower riparian and the option of entering into negotiations with Afghanistan with an ultimate aim of signing a treaty with Afghanistan – Kabul River Treaty.

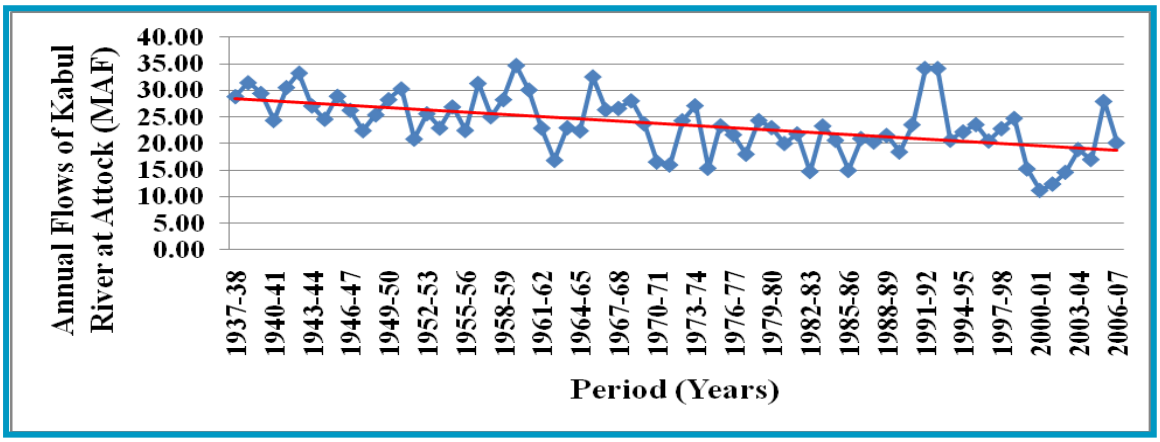

Figure 7. Trends of annual flows of Kabul River

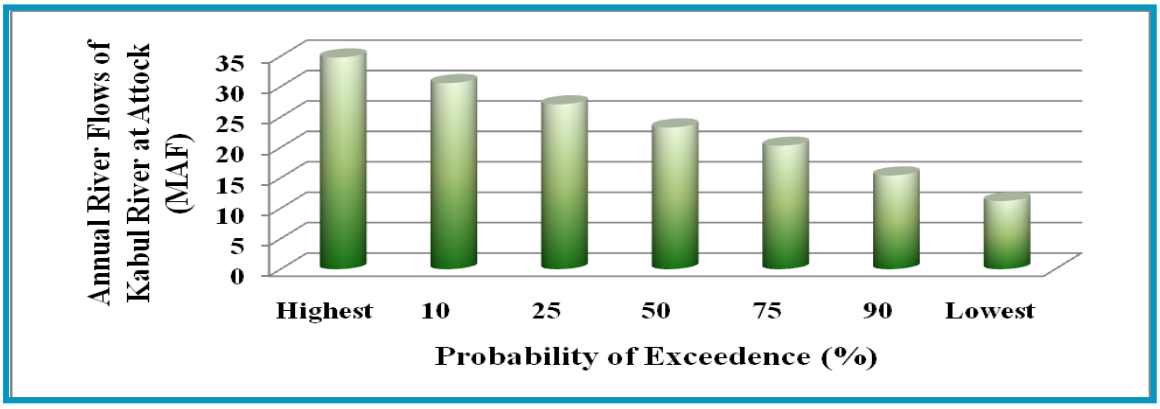

Figure 8. Probability analysis of annual flows of Kabul River

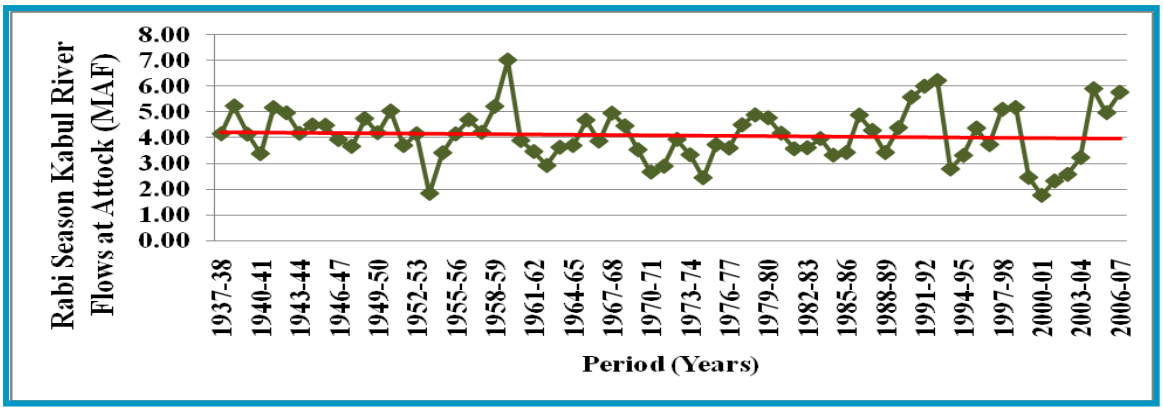

Figure 9. Trend of Rabi Season flows of the Kabul River

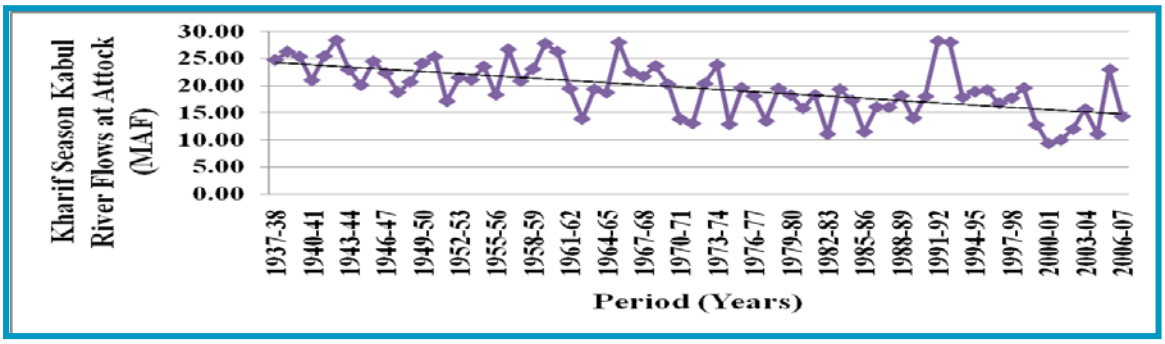

Figure 10. Trend of Kharif Season flows of the Kabul River

Reduced flows of Kabul River at the rim station of Attock are an indication that it is the right time to start "Negotiations in Good Faith" with Afghanistan to enter into "Kabul Water Treaty" as Afghanistan is going to have new water developments which will certainly affect the historical rights of Pakistan on Kabul waters.

Pakistan being the lower riparian has to protect the country's right using the principle of "Maintaining the Historical Rights" through negotiations based on the principles of "No Harm" and "Ensuring Equitable Utilization of Waters" for the basin states. The situation of No Treaty between Afghanistan and Pakistan is not going to help anyone because river basins and water has to be used for the benefits of the basin states.

4. KEY ISSUES

There is rapid decline in the flows of Kabul River at Attock in Pakistan. The reasons for the rapid decline of flows need to be studied jointly by the basin states. Currently, there is no Treaty between Afghanistan and Pakistan. With new water developments in Afghanistan, Pakistan as a lower riparian will be affected adversely. It is the time to analyse the issues so that Pakistan's historical rights are maintained and at the same time Afghanistan also gets the benefit from the waters of the Kabul River. The key issues were identified for the Kabul River, which might cause conflicts in future between the basin states regarding the new development of hydro-power projects in Afghanistan.

4.1. Trans-boundary Waters

Afghanistan is planning to initiate development of hydro-power projects on the Kabul River, which will affect historic rights of lower riparian – Pakistan. The critical issue is that there is no Water Treaty between the basin states. Therefore, any new water development in Afghanistan is going to have serious impacts on the historic rights of Pakistan. The international community is taking interest in water development in Afghanistan and financial resources are also available to Afghanistan for such developments.

The situation of **No Treaty between Afghanistan and Pakistan** is not going to help Pakistan because upper riparian always enjoy the upper hand in sharing waters of joint basins in a situation of conflict. Pakistan has a unique position on the Kabul River as one of the major tributary named as "Kunar River" is originated in Pakistan. Thus, Pakistan is having status of both upper and lower riparian of the Kabul River. Afghanistan is the middle riparian.

There are **no regional mechanisms for cooperation on water in south-west Asia** that involve Afghanistan, Pakistan and Iran. With the exception of 1973 bilateral treaty between Afghanistan and Iran on the Helmand River, no bilateral legal frameworks on shared water resources exist with any other basin state. Regional cooperation requires political will, which, to date, has not been forthcoming. Instead, mistrust and political considerations focusing on what is perceived as national interest have hampered the potential for forward looking cooperation between the basin states.

4.2. Trends of Flows of Kabul River

Sharp decline in annual flows of Kabul River at Attock in Pakistan based on historical data is observed from 34.6 to 23.5 km^3 due to climatic variability or change; or due to persistent drought; or enhanced use of water by Afghanistan.

Probability analysis of annual flows of Kabul River at Attock indicated that lowest and highest annual flows were 13.82 km^3 and 42.94 km^3, respectively based on historical data of 1937-07. The ratio between lowest and highest annual river flows is 1:3, which is highest compared to any river of the Indus-Pakistan. Why this ratio is higher than all other rivers. The decline in river flows during the Kharif season was more severe than the Rabi season due changes in monsoon rainfall in last 70 years.

5. POTENTIAL OPTIONS

5.1. Resolving Conflicts on Shared Water Resources

Basin states may reframe precisely the narrowly defined perceptions of national water security, reversing stereotypes surrounding water, creating political will, and increasing people's participation to address the issues of trans-boundary waters between the basin states.

Encourage the involvement of recent agreements in the framework of ECO, SARC and other forums to serve as a fertile ground for regional and bilateral water diplomacy.

Initiate dialogues and support Kabul Water Treaty between Afghanistan and Pakistan, as situation of No Treaty between two basin states is not going to help anyone. The Treaty would provide framework for the basin states to get benefit from waters of the Kabul River.

Initiate negotiations with Afghanistan to have Kabul Water Treaty between the basin states using the principles of International Water Law of "Negotiations in Good Faith", "Maintaining the Historical Rights", "No Harm to Anyone" and "Ensuring Equitable Utilization of Waters" for the basin states.

5.2. Regional Cooperation on Water[9]

Create transparent and shared repository of hydrological data on Kabul trans-boundary river basin between the basin states to improve predictability of water flows and establish transparency of available water resources at the regional level. Mutual trust in such a data repository will be both a crucial condition for and a result of its existence. Policy makers should therefore consider establishing the repository under the aegis of a third party – the support of developed country and having comparative advantages of managing river basins i.e. Royal Government of Netherlands, etc.

Establish a Regional River Basin Management Commission with offices in each of the basin states (Afghanistan, Iran and Pakistan) to build mutually beneficial cooperation on scientific and technical matters to ultimately build trust in the region and alleviate concerns of upstream and downstream states through fostering support of the international community for regional cooperation rather than dealing with national issues.

Launch a multilateral dialogue process to build confidence and establish an agenda for trans-boundary river basin management mechanism and inter-governmental river-basin based water security watchdogs to build confidence and a common understanding for the most pressing water issues in the region. This could be done by optimizing existing frameworks of regional cooperation, but also by extending beyond such frameworks.

Encourage informal gathering of scientists from Pakistan and its neighbours to conduct a comprehensive joint scientific and technical assessment on the value of establishing river-basin-based hydrological mechanisms to improve management of trans-boundary river basins. Support from international community for developing such forums will be of high value.

6. WAY FORWARD

Current situation is very uncertain politically between the basin states of Kabul River basin – Afghanistan and Pakistan. The upper riparian is now in the process of rehabilitating the schemes damaged through the long war in Afghanistan and developing new irrigation and hydro-power infrastructure for the benefits of future generations. Afghanistan is currently supported by the international community and has relatively the upper edge in resolving the conflicts. Pakistan being more developed country from that of Afghanistan therefore the change must start in Pakistan to develop a mindset to assist the neighbour in building the infrastructure. The things need to be done leading towards Kabul Water Treaty are: a) there must be some courageous and open-minded Pakistanis and Afghanis – who will stand up and explain to the respective public of the basin states why it is an existential issue both for Afghanistan and Pakistan; b) there must be leadership from the Government of Pakistan, who should show the generosity of spirit which is an integral part of being truly a good neighbour after resolving the pending issues of mistrust; c) extends an invitation to Afghanistan to explore ways in which the principles of the International Water Laws could be respected, while providing a win-win situation for both the basin states. With good will there are multiple ways in which the Treaty could be negotiated so that both the basin states could win; and d) discussions on the Kabul waters should be de-linked from both historic grievances and from the other

9 Making the Most of Afghanistan's River Basins Opportunities for Regional Cooperation By Matthew King and Benjamin Sturtewagen

Durand Line-related issues. Again, it is a sign of statesmanship, not weakness, to acknowledge the past and then move beyond it.

Who will be the Champions of building a consensus to have Kabul Water Treaty and ensure secured future for the indigent population of the basin states and make it happen for the benefit of Afghanis and Pakistanis – on the Kabul River?

INTERNATIONAL UNION FOR
CONSERVATION OF NATURE

Balochistan Programme Office

Marker Cottage
Zarghoon Road, Quetta
Pakistan

Tel +92 (81) 2840450/51/52
Fax +92 (81) 2820706
cro.pk@iucn.org

www.iucn.org/pakistan