

Making the Most of Afghanistan's River Basins

Opportunities for Regional Cooperation

By Matthew King and Benjamin Sturtewagen



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Cover photo: An Afghan man washes his face in the river on the eastern edge of Kabul before going to evening prayers Wednesday March 9, 2005. (AP Photo/David Guttenfelder.)

Printed in the United States.

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FOREWORD

In 2009, the EastWest Institute (EWI), in partnership with the Gerda Henkel Stiftung, launched the project "Alternative Futures for Afghanistan and the Stability of Southwest Asia: Improving Regional Cooperation on Water." Supported by EWI's Parliamentarians Network on Conflict Prevention and Human Security, this project has aimed to contribute to more effective international cooperation to help stabilize Afghanistan and neighboring countries with a view to a highly relevant issue indeed: cross-border cooperation on water. A parallel series of off-the-record and private consultations have complemented the process of generating new policy options towards this goal.

Improving the national and cross-border management of water resources of Afghanistan is a necessity to improve the lives of millions of people. Enhanced regional cooperation to avoid tension over the use and management of shared water resources will be crucial to the success of the Afghan government's and the international community's efforts to provide a secure and stable future for the country and its neighbors. Cross-border cooperation on water is not an option; it is the only way forward.

EWI and the Gerda Henkel Stiftung wish to express their appreciation to all participants in the consultations that took place in Kabul, Islamabad, Brussels and Paris and that have helped shape the content of this paper. We are particularly grateful to Mr. Syed A. Husaini, Mr. Sayed Sharif Shobair, Mr. Syed Jamait Ali Shah, Mr. Jabbar Vatanfada and Dr. Kai Wegerich for their critical review, valuable comments and suggestions.

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EXECUTIVE SUMMARY

This paper reflects the discussions at a number of public seminars and private meetings during 2009 on water cooperation in Afghanistan and its region. These meetings, convened by the EastWest Institute (EWI) in Kabul, Islamabad, Brussels, and Paris, collected the thoughts and recommendations of more than one hundred experts and policy makers from Afghanistan, its neighbors, and the international community. The aim was to facilitate discussion that would lead to new ideas and viable policy options on how to improve regional cooperation on water between Afghanistan and its neighbors.

The almost total absence of bilateral or regional cooperation on water between Afghanistan and its neighbors is a serious threat to sustainable development and security in the region. The ever-increasing demand for water, the unpredictable availability of water, and the inefficient management of water resources combine to form a complex but solvable challenge to regional security and development. Currently there are hardly any spaces in which to cooperatively address trans-boundary water issues. There are hardly any forums for dialogue or bilateral or multilateral agreements, and possibilities for data sharing or joint action are limited.

The EWI's consultations made abundantly clear that the regional nature and importance of water cooperation is fully recognized by all stakeholders. However, stark differences in capacity, combined with contextual issues such as historic mistrust and competing regional security priorities (in particular from the international community), have kept stakeholders from engaging in a process of dialogue on water cooperation.

This paper outlines current challenges to effective and sustainable cross-border cooperation on water and makes the following recommendations to overcome them.

- Cross-border data-sharing schemes should be examined to improve the hydro-meteorological knowledge base in Afghanistan and the region. Afghanistan's water sector has suffered immensely from decades of conflict and needs significant improvement. Exchange of hydrological data between Afghanistan and its neighbors would speed up that process and may be done through a shared, transparent repository of scientific hydrological data on each of Afghanistan's trans-boundary river basins. Data sharing would need to be a joint effort of Afghanistan and its neighbors, with assistance from the international community.
- Building on eventual successes of data-sharing schemes, regional stakeholders should regularly exchange their water policies, thus building trust across borders.
- Assistance from the international community to Afghanistan's water sector should adopt a regionally sensitive approach rather than one focused on individual states. Donors have not yet made the regional dimension a priority in their assistance policies.
- Assistance from the international community to Afghanistan's water sector needs to be coordinated. Afghanistan's water sector should be strengthened to bring it in line with the capabilities of its neighbors by coordinating resources and targeting them on building the human, financial, and technical capacity necessary to help Afghanistan take a full part in regional initiatives.
- As a first step toward shared hydrological data and a needs assessment for the sharing of national water policy plans, senior water experts from the region should meet regularly. In light of the geographic and political specifics of each of the river basins, these meetings should be river-basin based.

Introduction

Because of Afghanistan's innate land locked setting, virtually all of Afghanistan's major rivers drain off into riparian neighboring states. Transboundary 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.\frac{1}{2}

As part of an effort to help shape more effective international cooperation toward stabilization of Afghanistan and Southwest Asia, the EastWest Institute organized in 2009 a series of policy dialogues, a large-scale consultation, and private meetings to explore new policy options for shared management of water resources. Bringing together more than a hundred policy makers and experts from the region and 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: technical and knowledge deficits exist in the water sector across the region, restrict efficient management of national water resources, and limit prospects for the development of a coherent policy on transboundary river basins. The knowledge deficit is greatest in Afghanistan.

Additionally, water infrastructure projects across the region were said to be 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.

As many participants in the meetings underscored, 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.

There is no doubt that freshwater is crucial to the sustainable development of Afghanistan and the safety of its population. It is indispensable for irrigation for agricultural development in rural areas, home to more than 75 percent of Afghan people. The agricultural sector contributes about half of the gross domestic product, or GDP (excluding the opium-based economy). Agriculture accounts for 95 percent of Afghanistan's water consumption. Water is also deemed necessary for power generation and industrial use.

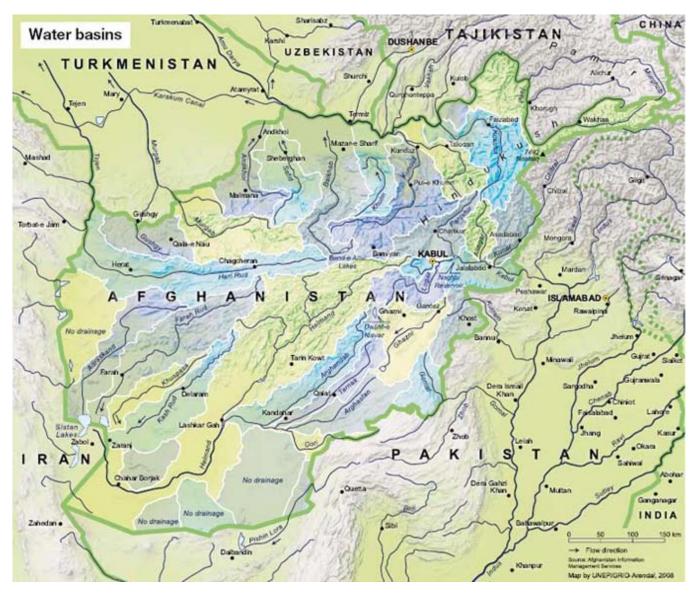
Afghanistan has many water resources and its geography provides significant opportunities for their exploitation.³ Insufficient infrastructure and a lack of capacity, however, limit Afghanistan's ability to store, properly manage, and develop its water resources. Ninety percent of Afghanistan's irrigation today is managed through traditional, community-based mirab schemes, which are independent of broader national or regional arrangements and limited in their efficiency.

Thirty years of war and unrest have dramatically diminished Afghanistan's water infrastructure and decimated its human capacity in hydrology. Only 1.5 million hectares of agricultural land were irrigated in 2002 (an additional 300,000 hectares 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.

¹ 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%20of%20Energy%20 and%20Water-Water%20Resources%20-%20%20English.pdf. The quote from the Afghan Ministry of Energy and Water's Draft Water Sector Strategy of 2007 is on p. 9.

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

³ Ziaie, "Water Sector Strategy." As stated in the Afghanistan National Development Strategy, average annual precipitation yields an annual surface runoff water volume of about 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).



 $River\ basin\ map\ of\ Afghanistan.\ Source:\ Afghan\ Energy\ Information\ Center,\ http://www.afghaneic.org/Maps_on_demand.html.$

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 percent of Afghanistan's territory but contains about 60 percent of the water flow. The Helmand Basin covers about 49 percent of the territory and holds only 11 percent of water flow. The Kabul–Eastern River Basin, with area coverage of about 12 percent, holds around 26 percent of the water flow.

Without substantial improvements in the development and management of Afghanistan's water resources,

The ANDS states that its strategic vision on the water sector is "to manage and develop the water resources in the country so as to reduce poverty, increase sustainable

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.⁵ Therefore, under the umbrella of economic and social development, water and irrigation feature prominently as a separate area of focus in the ANDS.

⁴ R. Favre and G. M. Kamal, "Watershed Atlas of Afghanistan," 2004, pp.

⁵ Ziaie, "Water Sector Strategy"; Afghanistan National Development Strategy (2008), p. 60.

economic and social development, and improve the quality of life for all Afghans and ensure an adequate supply of water for future generations."

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.

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 transboundary water flow and, as a result, relations with its neighbors. The importance of the water-intensive cotton industry in downstream states 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 neighboring countries and to maintain regional stability and security.

Despite this need for regional cooperation, there are no formal dialogue processes or bilateral or multilateral agreements on water in the region (other than the Iran-Afghanistan treaty on the Helmand River). By closing this gap, countries in the region can create measurable improvements in millions of lives and help stabilize the region's economic and political development processes. Failure to address this gap, on the other hand, will contribute to heightened regional instability and limit the prospects for mutually beneficial, sustainable development.

Afghan policy makers recognized the importance of regional cooperation in the Ministry of Energy and Water's (MEW) 2007 draft Water Sector Strategy (WSS), where they noted the potentially negative impact Afghan water development could have on downstream users in neighboring states. In order to engage neighbors on trans-boundary water issues on an equal footing, they proposed the development of a clearly defined national water strategy with significantly improved hydrotechnical capacity and knowledge. Without the ability to measure water resources and their use, Afghanistan might lose out in any regional political process toward maximum benefits of cooperation on shared waterways.

The more recent 2008 WSS highlighted the need for development of irrigation and dam infrastructure, which can affect downstream riparian states, but left out any reference to the importance of the trans-boundary issues at play.

The 2008 WSS details Afghanistan's priorities for the development of its water resources:

- providing access to safe drinking water, household food security, and income generation through sustainable development and management of water resources with user participation; and
- contribution to the growth of the national economy via effective services for efficient water use in all sectors.⁷

The main challenges that the WSS aims to tackle:⁸

- Lack of institutional, human, and financial resources to properly deliver water services to the Afghan population;
- Lack of hydrological, meteorological, geotechnical, and water quality data;
- Lack of rules regulating water use; and
- Lack of integrated governance of the water sector.

On the national level, the development and proper management of Afghanistan's water resources is a balancing act between, on the one hand, increasing national demands for irrigation, hydropower, water supply, and sanitation, and on the other hand, watershed management concerns. Currently less than a third of Afghanistan's households have access to safe drinking water.

Afghanistan has opted for a gradual transformation to integrated water resource management (IWRM) in its April 2009 Water Law. IWRM is a process that promotes the coordinated development and management of water, land, and related resources to maximize economic and social benefits in an equitable manner without compromising the sustainability of vital ecosystems.⁹

The effective implementation of IWRM will require Afghanistan to adopt a decentralized institutional structure, mirroring the natural river basins, by the establishment of River Basin Organizations (RBOs). Throughout this transition only the full participation of all stakeholders as well as capable monitoring and evaluation will ensure the effectiveness of the RBOs. RBOs are generally accepted to be useful in allocating water between users and in mitigating or resolving conflicts. Regardless of the RBOs' geographic limits, their establishment may well impact the daily life of the population in downstream

⁶ Ziaie, "Water Sector Strategy"; Afghanistan National Development Strategy (2008), p. 82.

⁷ Ziaie, "Water Sector Strategy"; MEW Water Sector Strategy (2008), p. 1.

⁸ Ziaie, "Water Sector Strategy"; MEW Water Sector Strategy (2008), pp. 18–19.

⁹ U.N. Water, "Status Report on Integrated Water Resources Management and Water Efficiency Plans," May 2008, pt. 5.

states. However, the RBOs are strictly national in their current setup and therefore have very limited capacity to contribute to cross-border cooperation or to mitigate cross-border tensions over water.

There is an apparent need for regional cooperation on water, not least to help Afghanistan exploit a reasonable and equitable share of water without significant harm to downstream riparian states. However, without due attention to existing cross-border challenges between Afghanistan and its neighbors, a regional approach could complicate already difficult issues. It would appear, therefore, that dialogues specific to river basins should be a constitutive element of a wider regional approach. Local engagement is indispensable in such dialogues, both in the assessment of needs and in the implementation of proposals.

Afghanistan's Four River Basins and the Regional Nexus

As outlined above, in stark contrast to 2007, Afghanistan's 2008 draft WSS omitted the regional element. The strategy addresses all cross-cutting issues identified in the ANDS except regional cooperation. ¹⁰ Similarly, it establishes start dates for all action items except regional water dialogues.

Afghanistan's reluctance to pursue greater regional cooperation has to be attributed, at least in part, to a weak bargaining position compared to its neighbors. Indeed, after three decades of conflict, Afghanistan has a severe lack of technical knowledge relative to its neighbors and very poor hydro-meteorological data. This situation highlights the need for urgent investment in capacity development and data collection in Afghanistan, an area where the international community has much to contribute.

At the same time, it is important to recognize that Afghanistan's neighbors have not undertaken any serious efforts to incorporate Afghanistan into their institutionalized cooperation frameworks on water, either. Existing frameworks for regional cooperation on some of the shared water resources continue to exclude Afghanistan.

The Amu Darya Basin

The Amu Darya is one of the longest rivers in Central Asia and an essential part of the Aral Sea Basin. It flows west-northwest into the Aral Sea. It forms part of Afghanistan's borders with Tajikistan, Uzbekistan, and Turkmenistan and part of Uzbekistan's border with Turkmenistan. The water resources of the Amu Darya Basin are shared between Afghanistan and all the Central Asian states. Iran also shares in the wider Amu Darya Basin if one includes the Harirud, also known as the Tejen River, which Iran shares with Afghanistan and Turkmenistan.

The Amu Darya is crucial to the livelihoods of no fewer than 43 million people in the Aral Sea Basin. Development of agriculture (in all riparian states) and hydroelectric power (in Tajikistan and Afghanistan particularly) depend heavily on the water resources of the Amu Darya. Decades of intense and inefficient use of its water resources, along with changing climate patterns, have dramatically reduced the Amu Darya's flow. As water in the Amu Darya decreases, the claims on groundwater reserves in the basin constitute a growing cross-border challenge.

Since 1873, Afghanistan and its northern neighbors—Russia, the Soviet Union, and the Central Asian states—have concluded agreements relating to the Amu Darya. These agreements focused solely on the river as an international boundary. No water resource sharing schemes were ever stipulated. The most significant agreements:

- The Frontier Agreement between Afghanistan and Russia (1873);
- The Frontier Agreement between Afghanistan and the Union of Soviet Socialist Republics (1946); and
- The treaty between the government of the U.S.S.R. and the Royal Government of Afghanistan concerning the regime of the Soviet-Afghan state frontier (1958).

In 1977, Afghanistan sent a delegation to Tashkent and Uzbekistan to negotiate a water sharing agreement. The Soviet Union could only offer 6,000 cubic meters a year, which was 3,000 cubic meters short of the Afghan demand. An agreement failed to materialize. Following the dissolution of the Soviet Union, the newly independent Central Asian states established a number of institutions for regional cooperation, which were later all inte-

¹¹ David W. Rycroft and Kai Wegerich, "The three blind spots of Afghanistan: Water flow, irrigation development and the impact of climate change" (2009), p. 3.

Population Data by Country in the Aral Sea Basin					
Country Name	Total population living in the basin	Population density within the basin (persons/sq. km)	Area of the basin within country (sq. km)		
Afghanistan	4,580,000	44	105,000		
China	2,600	1	1,900		
Kazakhstan	2,550,000	6	424,000		
Kyrgyzstan	2,450,000	22	112,000		
Pakistan	100	1	200		
Tajikistan	6,040,000	44	136,000		
Turkmenistan	944,000	13	70,100		
Uzbekistan	23,600,000	62	383,000		

Source: Transboundary Freshwater Dispute Database, Asia: Population, http://ocid.nacse.org/tfdd/php/asiaPopulation.php

Population Data in the Aral Sea Basin		
Total population in Aral Sea Basin	Population density (persons/sq. km)	
43,300,000	35	

grated into the International Fund for Saving the Aral Sea, including:

- The Interstate Coordinating Water Commission (ICWC)
- The subordinate Amu Darya and Syr Darya Basin Management Authorities
- The Interstate Council on the Problems of the Aral Sea Basin (ICAS)
- The International Fund for Saving the Aral Sea (IFAS)

The 1997 integration of ICWC and ICAS into IFAS indicated the member states' awareness of the gravity of the Aral Sea environmental crisis and the need to more effectively coordinate their response.¹²

Through their regional water cooperation frameworks, Central Asian states have agreed to adhere to international water law. The inherent commitment to equitable, reasonable, and mutually advantageous water resource use would imply recognition of Afghanistan's interests in the Amu Darya, but to date there have been no credible moves to integrate Afghanistan into IFAS structures.

Any integration efforts are delimited by the fact that Central Asian states compete with each other to realize widely divergent water policy priorities. Each of the five Central Asian states has enacted property laws in which water and land are classified as national assets. Their policies have had an antagonizing effect that has paralyzed existing frameworks of regional cooperation, to which all pay lip service. On the Amu Darya, upstream Tajikistan is focused mainly on the expansion of irrigated land in its territory and on the development of its hydropower potential, whereas downstream Turkmenistan and Uzbekistan are mainly concerned with food security and water-intensive cotton production. Tensions over the Syr Darya River further complicate the Central Asian relations, posing a considerable hurdle to the success of the IFAS process.

Afghanistan is the second-largest contributor of water resources to the Amu Darya after Tajikistan, so there is an obvious need for cooperation between Afghanistan and the Central Asian states. Yet Central Asian states have had limited engagement with Afghanistan, in part because of differences among Central Asian states themselves.

¹² S. Horsman, "Afghanistan and Transboundary Water Management on the Amu Darya: a Political History" (2008), p. 66.

¹³ Jeremy Allouche, "The governance of Central Asian waters: National interests versus regional cooperation" (2007), pp. 49–53.

Population Data by Country in the Murgab Basin					
Total population Country Name living in the basin		Population density within the basin (persons/sq. km)	Area of the basin within country (sq. km)		
Afghanistan	855,000	23	36,500		
Turkmenistan	380,000	16	24,500		
Population Data by Country in the Harirud Basin					
Population Data by	Country in the Harir	rud Basin			
Country Name	Country in the Harir Total population living in the basin	Population density within the basin (persons/sq. km)	Area of the basin within country (sq. km)		
	Total population	Population density within the basin	within country		
Country Name	Total population living in the basin	Population density within the basin (persons/sq. km)	within country (sq. km)		

Source: "Transboundary Freshwater Dispute Database/Asia Population," http://ocid.nacse.org/tfdd/php/asiaPopulation.php.

(Disagreements between Uzbekistan and Tajikistan are the reason why a memorandum of understanding between Afghanistan and Tajikistan on trans-boundary water use has been pending for years.)

Afghanistan's implementation of its 2008 WSS, and in particular its major infrastructure plans, will have significant effects on water supplies in Central Asia. To realize their collective interest in regional stability, water security, and tapping into new markets to the south, the Central Asian states must engage Afghanistan.

The Harirud-Murghab River Basin

The Harirud-Murghab River Basin represents approximately 12 percent of Afghanistan's water resources and is centered on the intensely irrigated area of Herat. It rises in the central Hazarajat and flows west through northeast Iran before exhausting itself in Turkmenistan. The Murghab River rises in the Paropamissus range, which separates it from the Harirud Basin, and flows north into Turkmenistan. The Harirud originates in the Koh-I-Baba Mountains and flows west, forming the border with Iran and later between Iran and Turkmenistan before ending in the Qaraqum Desert in Turkmenistan. The Murghab flows from Afghanistan directly into the Qaraqum desert

Population Data in the Murghab Basin			
Total population in Murghan Basin	Population density (persons/sq. km)		
1,060,000	17		
Population Data in the Harirud Basin			
Total population in Hari/Harirud Basin	Population density (persons/sq. km)		
5,020,000	54		

in Turkmenistan. The Western Harirud and Murghab basins form part of the wider Amu Darya Basin.

No bilateral or multilateral treaties have been signed on the Harirud and Murghab. The Harirud -Murghab Basin does, however, form part of the wider Amu Darya Basin, on which a number of regional frameworks have been established as outlined above. These frameworks do not cover the Harirud–Murghab River Basin directly. Iran has indicated readiness to cooperate bilaterally and trilaterally with Afghanistan and Turkmenistan. However, bilateral and/or trilateral frameworks of cooperation are yet to be developed. Furthermore, Iran and Turkmenistan did not consult Afghanistan when jointly building the Dostluk

Dam on the Harirud, which has increased concerns in Kabul.

The Helmand River Basin

The Helmand River, shared between Afghanistan and Iran, is the only river basin on which Afghanistan has entered into a formal agreement with a neighbor. It presents an interesting case from which to draw lessons for potential cooperation on other trans-boundary water resources across the region.

The Helmand River is the longest of Afghanistan's rivers, at approximately 1,300 kilometers (800 miles). It rises in the Hindu Kush mountain range about forty kilometers west of Kabul, north of the Unai Pass, and has five tributaries. Crossing southwest through the desert of Dashti Margo, it forms the Afghan-Iranian border for fifty-five kilometers before flowing into the Sistan marshes and the Lake Hamun region around Zabol.

The water resources of the Helmand River Basin are used extensively for irrigation, though an increase of mineral salts has decreased its utility for irrigation. The implementation and expansion of various water infrastructure projects is putting the basin under further pressure. ¹⁴ The Helmand River Basin's water is crucial for Afghan and Iranian farmers in Sistan and Baluchistan alike.

Other than the Helmand River itself, Lake Hamun is the only source of irrigation water in Sistan. With an area of more than eight thousand square kilometers of fertile soil, the Sistan district is dependent on Lake Hamun and its only perennial tributary, the Helmand River. However, Lake Hamun's water level has gradually diminished and with it almost the entire water-related local economy. The situation at the Hamun Lake bears similarities to the degradation of the Aral Sea.

Serious degradation occurs when dry periods extend over unusual durations, threatening the ecosystem and limiting the possibilities for human settlements and livelihoods, which is currently the case around Lake Hamun. Inflow was very limited between 2000 and 2004, leading to the disappearance of vegetation cover and a collapse of the ecosystem. With the 2005 flood, some signs of recovery were reported from the field. But it is still unclear

On September 7, 1950, the Afghan and Iranian governments signed an agreement establishing the Helmand River Delta Commission to elaborate technical methods to share the Helmand River's water between Iran and Afghanistan. The commission was to provide an engineering basis for mutual accord regarding the apportionment of the waters of the Helmand. It was composed of three engineers from states with no vested interests in the area and with nonbinding powers of recommendation. Iran and Afghanistan did not agree with the commission's 1951 report.

However, in 1973, Iran and Afghanistan signed a bilateral treaty on the allocation of the Helmand River's water resources. The agreement allocates twenty-six cubic meters per second to downstream Iran. Due to the 1973 Afghan coup, the 1978–79 revolution in Iran, the 1979 Soviet invasion of Afghanistan, and the rise and fall of the Taliban, the treaty was never fully implemented and disputes over the terms of agreement remained. Improved Kabul-Tehran relations following the ouster of the Taliban have not yet yielded a solution. The absolute character of the stipulated allocation, as opposed to a percentage basis, appears to be the key flaw in the agreement as it stands.

However, constructive moves to solve outstanding disagreements have taken place in recent years. Afghanistan and Iran have assigned a common Helmand River Commissioners Delegation in accordance with Protocol 1 of the Helmand River Treaty. The Afghan and Iranian Helmand River commissioners currently meet on a quarterly basis to promote bilateral cooperation and the formation of subcommittees on dredging and flood control in the Helmand.

Additionally, Iran and Afghanistan have made constructive efforts to cooperate on rehabilitation of the Hamun Lake. They have worked in close cooperation since 2003 with the United Nations Environment Programme (UNEP), the United Nations Development Programme, and the Global Environment Facility (GEF) through a process of trilateral sessions between Afghanistan, Iran, and UNEP. It is an integral part of a coordinated set of small-, medium-, and large-scale initiatives addressing water management and sustainable development in the basins of the rivers flowing into the Sistan Basin. The goals:

how successful this recovery will be. Also, this temporary restoration cannot be attributed to changes in policy.¹⁵

¹⁴ A number of hydroelectric projects complicate the coordinated management of the water resources of the Helmand River Basin: the Kajaki Dam and the Kamal Khan Dam on the Helmand River and the Dahla Dam on the Arghandab River.

¹⁵ UNEP Post-Conflict Branch, Geneva, "History of Environmental Change in the Sistan Basin" (2006), p. 28.

Population Data by Country in the Helmand Basin					
Country Name	Total population living in the basin	Population density within the basin (persons/sq. km)	Area of the basin within country (sq. km)		
Afghanistan 5,800,000		20	288,000		
Iran	1,050,000	19	54,900		
Pakistan	142,000	14	10,500		

Source: Transboundary Freshwater Dispute Database, Asia: Population, http://ocid.nacse.org/tfdd/php/asiaPopulation.php

- Establish a coordinated management mechanism that ensures a regular, sufficient flow of water into the basin;
- Facilitate the development of a Strategic Action Program (SAP) jointly endorsed by the two countries, and secure the commitment for implementing the program;
- Design and support specific measures aimed at restoring and protecting the unique wetlands ecosystem and its biodiversity; and
- Develop management capacity able to respond to future natural and man-made variations in precipitation.

GEF-supported interventions include:

- Establishing a bilateral coordination mechanism for oversight and management of the Sistan Basin hydrological resources and associated ecosystems;
- Holding consultations with key stakeholders, including relevant sectoral authorities, regional and local governments, local communities, and resource users, to determine their concerns, roles, and contributions;
- Preparing a Trans-boundary Diagnostic Analysis (TDA) of the present hydrological and natural resources of the entire Sistan Basin catchment area, and the threats affecting the basin, based on a thorough scientific understanding of the situation and processes;
- Developing a Strategic Action Programme (SAP) for the management of the Sistan Basin and its associated ecosystems, owned and agreed upon by national, regional, and local authorities and representatives of local people in the two countries.

As a downstream user of the water resources of the Helmand River, Iran has an obvious interest in cooperating with Afghanistan. It has indicated readiness to transfer

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Total population in Helmand Basin	Population density (persons/sq. km)
7,800,000	22

its experiences in several fields of water and agriculture to its neighbor, an opportunity that should be developed. Current Iranian technical assistance to the construction of a research institute in the Afghan Ministry of Energy and Water can serve as an example for the enhancement of regional data and information sharing.¹⁶

Nevertheless, stabilization and reconstruction efforts in Afghanistan are met with mixed feelings in Tehran. Whereas stabilizing Afghanistan is to the benefit of Iran, its reconstruction, in particular in western Afghanistan, may threaten water security in eastern Iran. Iran, it seems, has adopted competing policies on Afghanistan—one of cooperation in certain cases and one that contributes to destabilizing in others. Iran perceives agricultural development—a crucial element in the Obama strategy to increase economic activity in Afghanistan—and dam rehabilitation and construction as major security threats. Negative effects of these development efforts will be felt most severely in the Sistan and Baluchistan province, Iran's poorest and most unstable province. Tehran cannot afford to risk water scarcity that can further disenfranchise Sistan and Baluchistan from the capital.

Population Data by the Kabul River Basin				
	Total population living in the basin	Population density within the basin (persons/sq. km)	Area of the basin within country (sq. km)	
Kabul River Basin	7,184,974	93	76,908	

Source: R. Favre, "Watershed Atlas of Afghanistan" (2004), http://www.krbp.net/eng_reports/Watershed%20Atlas_Part%20I_II.pdf.

The Kabul-Eastern Basin

The Kabul River flows in eastern Afghanistan and northwestern Pakistan. It is approximately 700 kilometers (435 miles) long, of which 560 kilometers (350 miles) flow through Afghanistan. Rising in the Sangl kh Range 72 kilometers (45 miles) 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.

The Kabul River Basin, including the important tributary Kunar River, represents approximately 12 percent of the available water resources in Afghanistan. It is crucial to the livelihoods of the millions of people sharing its water resources for drinking water, sanitation, agriculture, power generation, and industry. 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 city's growing population of more than 3 million inhabitants, though it has frequently run dry in the last ten years.

The water resources of the Kabul River are essentially shared between Afghanistan and Pakistan. Despite repeated attempts on both sides to reach an agreement on the Kabul River, such an agreement has 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 oth-

ers. 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, ¹⁷ and the recent dispute between Pakistan and India over the Indus River, in particular the interpretation of the Indus River treaty with regard to dam construction in India.

At the sidelines of the March 2009 meeting of the 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 of Afghanistan. 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 reintegration. To date, however, the Islamabad Declaration has not led to improved cooperation on water.

¹⁷ A. Khalid, "Need for a Pak-Afghan treaty on management of joint water courses" (2007), pp.15–16.

Conclusion

There are no regional mechanisms for cooperation on water in Southwest Asia that involve Afghanistan. With the exception of the 1973 bilateral treaty between Afghanistan and Iran on the Helmand River, no bilateral legal frameworks on shared water resources exist, let alone regional frameworks. 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 (albeit very narrowly defined) have hampered the potential for forwardlooking cooperation in the region. Reframing the narrowly defined perceptions of national water security, reversing stereotypes surrounding water, creating political will, and increasing people's participation in water issues is urgent.

Several existing processes have shown the potential for bilateral—if not regional—cooperation on water. The Iran-Afghanistan dialogue on the Helmand River is the most developed. Additionally, recent agreements in the framework of ECO, RECCA, and other forums could start to serve as a fertile ground for bilateral and regional water diplomacy.

Recognizing the Benefits of Regional Cooperation

Many of Afghanistan's security challenges are cross-border and regional in nature and require a regional approach that is supported by international actors. The Afghan government has fully recognized that the integration of regional cooperation into security policies will be crucial to providing a safe and stable environment to its population. Bilateral and multilateral agreements to establish regional cooperation frameworks are considered key instruments toward the enhancement of economic development in Afghanistan. They would constitute in principle a logical follow-up of the 2002 Kabul Declaration on Good Neighbourly Relations between Afghanistan and its neighbors.

With a relative abundance of water, significant mineral resources, and large agricultural capacity, Afghanistan is well placed to maximize its potential for sustainable development. In addition, its strategic geographic position as a natural crossroads for the region positions the country well to provide trade links between Central Asia, the Middle East, South Asia, China, and others, provided a number of economic challenges are overcome. Among these challenges:

- Hard infrastructure, including roads and reliable and sufficient supplies of water and power, is inadequate to support rapid and sustained economic growth;
- Human and institutional capacity, including the ability to collect and analyze scientific data related to water sector, is lacking, restricting Afghanistan's ability to negotiate on an equal footing with its neighbors;
- Economic governance, including the legal system, is still insufficient;
- Commercial connections to regional and global economies were severely disrupted and must be redeveloped;
- Critical markets for land and finance are largely undeveloped, restricting local and foreign investment;
- Rapid population growth is substantially increasing the need for investments that can lead to poverty reduction.

Under the rubric of cross-cutting issues, the Afghanistan National Development Strategy pinpoints regional cooperation as a condition for regional stability and prosperity and for Afghanistan to resume its central role as a bridge between Central Asia and South Asia. Enhanced regional cooperation can produce many beneficial strategic outcomes, including:

- Increased revenue and economic activity from the transport of energy resources from Central Asia to warm-water ports in South Asia;
- Lowering or complete removal of trade barriers of all kinds, facilitating international trade in and out of Afghanistan;
- Customs cooperation at regional levels to increase security and more efficiently combat drugs and arms trafficking.

Many of Afghanistan's challenges are regional in nature, and the inclusion of neighboring states is desirable in order to enhance stabilization and development efforts in Afghanistan and the region, including those in the water sector. Existing regional cooperation in the framework of ECO, RECCA, and others, even if limited, could provide a useful platform for future efforts.

¹⁸ Ziaie, "Water Sector Strategy"; Afghanistan National Development Strategy (2008), p. 60.

Benefiting from the International Community's Attention

Afghanistan is currently highly dependent on foreign aid to reach its national development goals. Since 2001, Afghanistan has received more than \$15 billion in official development assistance, not including an estimated \$50 billion in off-budget security expenditures. The international community's role in regionalizing the approach to stabilization and development in Afghanistan is therefore immense. Many donors are giving considerable attention to the development of Afghanistan's water sector.

Increasingly, key donors for the water sector are regional governments such as Iran, China, and India, as well as remote countries such as Canada, Denmark, Germany, Japan, Norway, Sweden, the United Kingdom, and the United States, and multilateral organizations such as the World Bank, Asian Development Bank, European Commission, Islamic Development Bank, and United Nations. International nongovernmental organizations are also playing an important role. However, since the main focus of most donors is on water sector rehabilitation at a national level, none have yet made regional dimensions a priority in their assistance policies.

At the July 2009 National Conference on Water Resources Development, held in Kabul, Ambassador Kai Eide, head of the U.N. Assistance Mission in Afghanistan (UNAMA), called on the donor community to shift its attention to the management of Afghanistan's water resources. Eide said, "Whether we look at poverty, food security, health, or economic development, there is no issue more important for this country at this time than the development of Afghanistan's water resources."

In the Afghanistan Compact of 2006 and the Paris Declaration on Aid Effectiveness, international donors made several commitments to better coordinate their assistance. Still, the lack of advances in these areas is a major obstacle to progress in Afghanistan, including the water sector.

For collective development efforts to become more efficient and effective, the donor community will have to follow through, funnel more of its development aid toward water resource development, and do so in a coordinated It remains unclear who is to take the lead in these longoverdue coordination efforts. According to U.N. Security Council Resolution 1838 of March 23, 2009, UNAMA has to play a central coordinating role to facilitate the delivery of humanitarian aid and should support regional cooperation in working for a more stable and prosperous Afghanistan. However, controversy over UNAMA's leadership's role in the aftermath of the first round of the 2009 presidential elections seems to have weakened UNAMA's appeal as a leader in coordinating aid efforts.

There are few examples of attempts to better coordinate donor aid in the water sector. Meetings of the so-called Water Sector Group, which includes UNAMA, the Canadian International Development Agency, the U.S. Army Corps of Engineers, the European Commission, the Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ), USAID, and the Dutch embassy in Kabul, provide a useful example of building international support and a coordinated network for aid related to the water sector. Yet these meetings cannot replace more stringent mechanisms for coordination and prioritization that, first and foremost, also need to include Afghan representation and leadership.

A more formal approach came to light at a meeting of the foreign ministers of Denmark, Finland, Iceland, Norway, and Sweden on April 18, 2008, in Stockholm. At the meeting, the ministers established a "Plan of Action for Nordic Cooperation in Afghanistan" in order for the Nordic countries to become more effective partners for the government of Afghanistan.²⁰ Possible benefits for Afghans are expected to include a move on the part of donors toward a stronger nationwide and regional focus, as opposed to a provincial focus. Expected benefits for Nordic donors themselves would be the sharing of the workload, a stronger Nordic voice in Afghan reconstruction, and a stronger understanding in the donor community at large for coordination in line with the Paris Declaration on Aid Effectiveness.²¹

manner that is sensitive to regional concerns. A commitment to a more comprehensive regional approach to water development would provide a foundation for investment and would also give Afghanistan's neighbors a major incentive to take steps toward regional integration. Enhanced cooperation in the water sector also has added potential of positive spillover effects into other policy fields.

^{19 &}quot;U.N. Envoy—Water management key to tackling poverty and tribal conflicts," http://unama.unmissions.org/Default.aspx?tabid=1783&ctl=Details&mid= 1882&ItemID=4596.

²⁰ Norad Report, "Strengthening Nordic Development Cooperation in and with Afghanistan," March 2009, pt. 4, http://www.cmi.no/publications/file/3323strengthening-nordic-development-cooperation-in.pdf.

²¹ Ibid., pt. 14.

Steps Toward Effective and Sustainable Cross-Border Cooperation on Water

I: Improvement of the hydro-meteorological knowledge base in Afghanistan and the region

Afghanistan's reluctance to engage in regional dialogues on water has to be attributed, among other concerns, to the country's limited hydro-meteorological capacity, the lack of adequately skilled human resources (with solid knowledge of international law and the ability to negotiate in international forums), and a knowledge gap of about thirty years of hydrological data due to war. Many in Afghanistan therefore fear that they might lose in bilateral forums, never mind regional cooperation agreements on water.

Good policies certainly require good facts and figures and a skilled handling of well-defined national interest. The lack of proper hydro-meteorological information for the past thirty years no doubt constitutes an obstacle to identifying interests and formulating policies at the national level, let alone policies with a regional perspective. Ultimately the collection and maintenance of such data has to be left to Afghans and therefore requires sufficient Afghan capacity. The development of such capacity and assistance with data collection (in particular its transboundary aspects) should be a priority for the donor community and Afghanistan's neighbors alike.

One way of reaching this goal could be the creation of a transparent and shared repository of scientific hydrological data on each of Afghanistan's trans-boundary river basins. This would need to be a joint effort of Afghanistan and its neighbors, with financial support from the international community. The repository would increase predictability of water flows and establish transparency of available water resources at the regional level. It would thus constitute a common basis for better-informed water-related national policy measures that take the interests of neighboring countries into account. 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. All countries concerned must have guaranteed, unlimited, and permanent access to such a database.

In a similar, less formal fashion, Afghanistan and its neighbors may wish to explore the establishment of a regional center of excellence on hydro-meteorological expertise, uniting academic and private sector expertise from Afghanistan, its neighbors, and the donor community on all matters relating to water expertise. Mutually beneficial cooperation on scientific and technical aspects first will build trust in the region and alleviate concerns for both upstream and downstream nations alike.

Building up cooperation on the nonpolitical, technical aspects of water is the most promising starting point for any eventual bilateral or regional framework of cooperation. Information sharing and building technical capacities would contribute to regional trust building and lay a foundation for regional cooperation on other policy issues as well.

II: Establishment of a formal confidence-building framework to share water policies between Afghanistan, its neighbors, and the donor community

The predictability and transparency of policy planning is crucial to interstate confidence and mutual trust. EWI therefore recommends an examination of possible mechanisms that allow Afghanistan and its neighbors to share relevant policy plans with each other.

If built incrementally in a pragmatic way, such mechanisms could be the cornerstone of a confidence-building regime under which signatory states would be obliged to inform all other signatories on plans related to the water sector. They would do so in an agreed format and in full transparency for all signatories. Treaties such as the Treaty on Conventional Armed Forces in Europe can serve as an example for how confidence can be built through transparency and predictability of policies.

III: Mobilization of support from the international community to move toward regional rather than national water strategies

In order to address immediate concerns, Afghanistan should seize the momentum of the international community's attention for its security and development. As mentioned earlier, there is unprecedented interest from the international community for Afghanistan's development, including considerable aid packages for the water sector. The international community should look beyond merely national realities and incorporate regional water strategies into political and development agendas by fully empowering the U.N. Assistance Mission to Afghanistan to improve coordination of international water-related aid. Without a doubt, Afghanistan and the region would greatly benefit from increased coordination of donor efforts in a regional context, rather than a merely national context.

The international community should, in a more concerted way, lend its capacity and financial leverage to generate the necessary human, financial, and technical resources toward strengthening Afghanistan's water sector. The thirty-year gap of expertise in Afghanistan can be filled through exchange of experts, training opportunities, and shared information—such as geospatial mapping and remote sensing—with neighboring states and the international community.

IV: Launch a multilateral dialogue process to build confidence and establish an agenda for a cross-border water management mechanism and intergovernmental river-basin-based water security watchdogs

Afghanistan and its neighbors may wish to launch a multilateral dialogue process 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.

There are several ongoing processes toward bilateral and regional cooperation between Afghanistan and its neighbors. Established frameworks such as the Economic Cooperation Organization and the Regional Economic Cooperation Conferences on Afghanistan may look to widen their scope to include regional water security as a priority. The water-focused Interstate Coordinating Water Commission should in turn aim to fully incorporate Afghanistan, a crucial source of water for many of its neighbors, in its process.

In addition, an informal gathering of scientists from Afghanistan and its neighbors could complete a joint scientific and technical assessment on the value of establishing river-basin-based hydrological mechanisms in order to improve the collection, evaluation, and assessment of hydrological data.

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