



# Developing transboundary water resources: What perspectives for cooperation between Afghanistan, Iran and Pakistan?

Vincent Thomas  
with

Mujib Ahmad Azizi and Khalid Behzad  
May 2016



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# Afghanistan Research and Evaluation Unit

## Case Study

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## Acronyms

ADD-G	Abu-Dhabi Dialogue Group
AIAS	American Institute of Afghanistan Studies
APTTA	Afghanistan-Pakistan Transit Trade Agreement
BATNA	better alternative to a negotiated agreement
BSA	Bilateral Security Agreement
CAREC	Central Asia Regional Economic Cooperation
CDKN	Climate and Development Knowledge Network
CINC	composite index of national capability
CSM	Christian Science Monitor
DMI	domestic, municipal and industrial
ECO	Economic Cooperation Organisation
FAO	Food and Agriculture Organisation
FSI	failed states index
GDP	gross domestic product
GIRI	Government of the Islamic Republic of Iran
GIRoA	Government of the Islamic Republic of Afghanistan
GIZ	Gesellschaft fur Internationale Zusammenarbeit
GNI	gross national income
GOP	Government of Pakistan
GWP	Global Water Partnership
ha	hectares
HDI	human development indicators
ICIMOD	International Centre for Integrated Mountain Development
IRD	International Relief and Development
IRSA	Indus River System Authority
ISAF	International Security Assistance Forces
JICA	Japan International Cooperation Agency
KEI	knowledge economy index
KRB	Kabul River Basin
MAIL	Ministry of Agriculture Irrigation and Livestock
MCM	million cubic metres
MEW	Ministry of Energy and Water
MoBTA	Ministry of Borders and Tribal Affairs
MoD	Ministry of Defence
MoF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
MP	Member of Parliament
MW	megawatt
NATO	North Atlantic Treaty Organisation
NDS	National Directorate of Security
NPP-1	National Priority Program-1
ODA	official development assistance
PPP	purchasing power parity
RECCA	Regional Economic Cooperation Conference on Afghanistan
SAARC	South Asian Association for Regional Cooperation
SAWI	South-Asia Water Initiative
SCO	Shanghai Cooperation Organisation
SGP	Small Grants Program
TAPI	Trans Afghanistan Pakistan India
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
USD	US dollars
WAPDA	Water and Power Development Authority
WSS	Water Sector Strategy

## Glossary

Ayatollah	Persian term referring to a high-ranking title given to Usuli Twelver Shia clerics.
Hamun	Generic Persian term which refers to shallow lakes, usually seasonal. It also applies to wetlands.
Quds (force)	Special forces unit of the Iran's Revolutionary Guards, responsible for their extraterritorial operations.
Wolesi Jirga	House of the People. Pashto term referring to the lower house of the National Assembly of Afghanistan, alongside the House of Elders (Meshrano Jirga). The House of the People is the chamber that bears the greater burden of law making in the country.

## Executive Summary

Since the fall of the Taliban, the Government of the Islamic Republic of Afghanistan (GIROA) has been actively trying to resume its hydraulic mission that was put on hold in the late 1970s. Improving water control through the construction of dams has been described by the GIROA as a silver bullet for Afghanistan's development, including food security, hydropower production and mitigating the impacts of droughts and floods. In a country where 90 percent of the surface water resources are shared with downstream neighbouring countries, this long-term and ongoing process of transboundary water resources development raises the question of the nature of interactions between Afghanistan and its riparian neighbours. Of particular importance is whether interactions are likely to evolve toward more conflict or more cooperation.

The international community has been particularly concerned about how to support a cooperative process of transboundary water resources development in the region.

So far there have not been any studies that have systematically looked at how Afghan stakeholders have approached the issue of cooperation over transboundary water resources development in the post-Taliban era. This research is meant to address this gap, with a focus on three river basins shared with Iran, Turkmenistan and Pakistan. The findings contribute to a discussion on the existing and foreseeable impediments but also opportunities for cooperation. They also help to assess whether and to what extent interactions between Afghanistan, Iran and Pakistan are likely to evolve (or not) toward greater cooperation. On this basis, the findings inform the international community on how it could better support a process of cooperation regarding transboundary water resources development.

The first part of the research describes the context in which interactions are taking place.

From an hydrological point of view there is room for compromise whereby Afghanistan could legitimately benefit from water resources development projects in an equitable manner, while the impacts on downstream riparian neighbours would remain reasonable. Nevertheless, the foreseeable Afghan projects, such as the Salma, also have the potential to create harm downstream.

It is important to note that transboundary water interactions take place within a context of acute power asymmetries. From an international relations perspective, both Afghanistan's neighbours (Iran and Pakistan) have been greatly concerned with their own regime survival when engaging with Afghanistan in the past few years. Neighbouring countries have approached bilateral relations on transboundary water assuming a zero-sum game and have therefore focused on their own relative gains, not only with regards to Afghanistan, but also when it comes to other regional and international powers.

The research shows that in this context, the dominant view in the GIROA has been that it would be in the best interests of Afghanistan to stall negotiations and pursue unilateral resource capture. This has been happening in the Harirod and Helmand basins with the ongoing construction of Salma and Kamal Khan. In response, Iran has opted mainly for a containment strategy. Until very recently with the embryonic and uncertain agreement for the Kunar project, the GIROA has followed the same strategy in the Kabul basin but failed to secure funding for its projects.

The reluctance among a large number of Afghan stakeholders to engage in dialogue and negotiations so far has been due to a combination of views and beliefs that fit within a global neo-realist perspective on international relations, whereby transboundary water resources development is seen as a zero-sum game:

- The frustration over the inability to control water during decades of wars has led to a feeling that transboundary water resources development should not be hampered by compromises and negotiations.

- This demand for what is perceived as a legitimate “grace period” becomes a virtually nonnegotiable issue in a situation where neighbours are viewed with mistrust and suspicion. Furthermore, for some respondents, negotiations are also constrained by the perception (rightly or wrongly) that the risks induced by power asymmetries are not significant enough to justify compromises or even dialogue.
- The possibility for cooperation is rendered even more complicated when dams and water resources development projects (i.e. irrigation and hydropower) are seen as an invaluable means for adjusting power asymmetries that are currently unfavourable to Afghanistan. Through a neo-realist lens, such unfavourable asymmetries would dictate an unfavourable outcome for Afghanistan if negotiations were to take place. The idea of compromises then becomes associated with the idea of “weakening the potential to reduce existing asymmetries.”

In this context, the limited understanding of the water context (i.e., the issues at stake, potential impacts and international conventions) among most Afghan decision-makers is an aggravating factor that limits dialogue.

Transboundary interactions between Afghanistan and its neighbours have been characterised by a two-levels game. For most of the past decade, senior GIRoA officials were concerned that interactions at the international level would be politically sensitive on the domestic scene. However, most of those interviewed do not necessarily share this view.

In the past, the GIRoA has often forwarded the argument of “lack of capacity to negotiate” as a reason for non-engagement at the international level. Many of the MPs interviewed contested that notion. In the view of some MPs and international development organizations it is the “limited commitment of the GIRoA to develop this capacity” that has limited dialogue.

An important finding in this research is that not all decision-makers and influential non-ministerial actors in Afghanistan share the view that unilateral resource capture and absence of dialogue is the best way to go about transboundary water resources development.

The MPs and academics who support the initiation of dialogue and cooperation believe that the issue of transboundary water resources development should be de-politicised. They also believe that the framework of discussions should exclude links with historical contentions between the different neighbours. They believe that dialogue and compromise would be in the best interest of Afghanistan, including when it comes to improving security and diplomatic relations with its neighbours.

A distinction is made between negotiations on water rights and negotiations on the design of the dams. There is only a minority of MPs and academics who believe that there should be compromise over the designs of dam-related projects. However, the most common view among a large number of MPs has been that it would be in the best interests of Afghanistan to delay negotiations and continue developing its resources until such time as they have built a number of dams and come to the table with greater negotiating power.

As the international community plans to further engage in facilitating dialogue and compromises, this paper suggests a few recommendations:

- Continuing activities related to awareness raising, technical research and capacity development is a necessary condition but it may not be a sufficient.
- It is important to support incentives for public debates on transboundary issues to help depoliticise and de-securitise the topic.
- Efforts need to be made to demonstrate the value added of a possible cooperation scenario, in terms of social, economic and political gains, as compared to the unilateral path followed so far.
- In order to decrease the possible impact of Afghan projects, it is important to develop and support programmes that increase the productivity and improve the management of irrigation systems.
- Lastly, more research needs to be undertaken to understand the views of local actors in the concerned basins, as no sustainable solution can be designed without the endorsement of local water users.

**Note:**

This study was researched and written in 2013, with publication originally scheduled for early summer 2014. However, due to the need for an inclusive consultative and review process, the publication was delayed until spring 2016. As a result of this, please keep in mind that it was written in the context of 2013/2014.

# 1. Introduction and Conceptual Framework

## 1.1 Background

Water resources flowing through Afghanistan are relatively abundant. At more than 2,700 m<sup>3</sup>/capita/year, the surface water availability is 60 percent above the threshold necessary for a country to have, in theory, sufficient water to meet its domestic, agricultural, energy, industrial and environmental needs.<sup>1</sup>

Yet Afghanistan uses only around 33 percent of the 57 billion m<sup>3</sup> of surface water available each year<sup>2</sup>. Barely half of the irrigable land is intensely<sup>3</sup> cultivated, while the rest is only intermittently<sup>4</sup> irrigated.<sup>5</sup> In 2012, Afghanistan generated around 670 megawatts (MW) of electricity and imported some 623 MW, which could only provide 40 percent of the 3,571 MW demanded by its population. Yet its hydropower potential is estimated at 23,000 MW.<sup>6</sup> Having one of the lowest storage capacities in the world—estimated at 80 m<sup>3</sup>/capita/year<sup>7</sup>—has contributed, along with other factors, to this situation and has also left the country extremely vulnerable to the episodic floods and droughts that characterise arid and semi-arid countries.

Thus, Afghanistan is in a position of high demand and high potential for: (a) developing irrigated agriculture and addressing food insecurity; (b) responding to increasing demand for energy; and (c) improving technical control over the high variability in water availability.

Since the early years of the post-Taliban Afghanistan, the Government of the Islamic Republic of Afghanistan (GIROA) has considered the construction of large-scale irrigation and hydropower projects to be its main priority in order to address the issues mentioned above. The early drafts of the 2008 water sector strategies have already highlighted this interest in pursuing Afghanistan's "hydraulic mission,"<sup>8</sup> which was halted in the late 1970s. Since then, the former Minister for Energy and Water Ismail Kahn had repeatedly underlined how critical dams are for Afghanistan's development, in order to "reduce poverty in the country,"<sup>9</sup> increase "self-reliance,"<sup>10</sup> reduce insecurity<sup>11</sup> and "build the public's confidence in the government."<sup>12</sup> He has described water resources development as a "silver bullet" for Afghanistan's development issues, saying: "Once we have water, no one will grow poppies, no one will fight, no one will leave Afghanistan [for work]...water will resolve all problems in Afghanistan."<sup>13</sup>

1 This threshold is defined by the Falkenmark indicator at 1,700 m<sup>3</sup>/capita/year.

2 Government of the Islamic Republic of Afghanistan, "Water Sector Strategy" (Kabul: 2008), 8.

3 One or two crops a year.

4 Once every several years.

5 Favre and Kamal (2004) estimated that at the beginning of the post-Taliban period, 49 percent of the total irrigable area was intensely cultivated. There have been improvements over the past decade, but they remain limited in the absence of completed storage dams and new large-scale irrigation projects. (Favre, R., and G. M. Kamal, *Watershed Atlas of Afghanistan* (Kabul: Ministry of Irrigation, Water Resources and Environment, 2004), 65).

6 Zia Gul Saljuki, Ministry of Energy and Water, Powerpoint Presentation, National Water Conference, January 2013.

7 Per design, the storage capacity was estimated at 140 m<sup>3</sup> per capita (World Bank, "Pakistan: Country Water Resources Assistance Strategy; Water Economy: Running Dry," (Report 34081-PK, Agriculture and Rural Development Unit, South Asia Region, World Bank, Washington, DC, 2005).

8 The term is borrowed from Reissner (1986). It makes reference to the Government-driven pursuit of massive damming of rivers, development of large-scale irrigation systems and power generation. These periods have been a defining feature of many countries during the 20th century. Hydraulic missions have been driven by an ideology of domination of nature and have symbolised state power (see also Molle et al., 2009).

9 Sharif Amiry, "Afghanistan Will Not Cope With Climate Change: Karzai," Tolo News, <http://tolonews.com/en/afghanistan/9246-afghanistan-will-not-cope-with-climate-change-karzai>, 29 January 2013.

10 Jay Price and Rezwan Natiq, "Iran-Donated Power Plants Won't Dent Afghans' Energy Needs," McClatchy DC, <http://www.mcclatchydc.com/2013/01/28/181259/iran-donated-power-plants-wont.html>, 28 January 2013.

11 Frozan Muradi, "Water and Energy Sector in Critical Situation," *Pajhwok Afghan News*, <http://www.pajhwok.com/en/2012/04/03/water-energy-sector-critical-situation>, 3 April 2012.

12 Wikileaks, "Afghan Water and Energy Minister Ismail Khan on Infrastructure Priorities," [http://www.wikileaks.org/plusd/cables/09KABUL3165\\_a.html](http://www.wikileaks.org/plusd/cables/09KABUL3165_a.html), 7 October 2009.

13 Wikileaks, "Afghan Government's High Hopes For Hydropower," [https://www.wikileaks.org/plusd/cables/09KABUL2688\\_a.html](https://www.wikileaks.org/plusd/cables/09KABUL2688_a.html), 5 September 2009.

Consequently, as a senior official for the Ministry of Energy and Water (MEW) explained, the mission has been about controlling water: “We want to control Afghanistan’s water, the president has strictly ordered us to address this issue. Our planning is to build small and big dams and implement a good canal system [...]”<sup>14</sup>

This hydraulic mission is taking place in an area where 90 percent of the surface-water resources flowing through Afghanistan are transboundary. And in most cases, Afghanistan is the upstream country.<sup>15</sup> Downstream countries such as Iran, Pakistan or Turkmenistan<sup>16</sup> are already constrained in terms of mobilising new volumes of water to meet increasing water demand within their own borders. These countries have also already put most of their resources to use.

This concept has not been lost on senior staff of GIRoA. In his address to the 3rd National Water Conference (January 2013), President Karzai, acknowledged the importance of transboundary water in Afghanistan and underscored the need for establishing and respecting water rights. In this regard he also noted the importance of promoting and enhancing dialogue with neighbouring countries over the issue.

Afghanistan’s position of “late developer” is what McMurray and Tarlock have defined as a “classic transboundary river regime nightmare,”<sup>17</sup> as legitimate projects development in Afghanistan will likely have an impact on its neighbours. Although some impacts may be very limited, as in the case of Pakistan in the Kabul basin, others may be potentially large, such as the case in the Harirod (See Section 3).

Studies from Wolf and his team have shown on the other hand that whether basins fall into conflict or rise to cooperation is less dependent upon the physical situation as it is upon the capacity of the institutions to address the issues.<sup>18</sup> Consequently, of particular importance is whether there is the right institutional capacity and willingness to address the impending water issues in a cooperative manner.

To this end it is important to understand what the 1997 UN Convention says on the subject as it codifies the principles of customary international law regarding transboundary watercourses. The 1997 UN Convention does not prescribe ‘equitable and reasonable’, but rather outlines what is to be considered when establishing ‘equitable and reasonable’ in any specific context. All relevant factors, including, geography, hydrology, socio-economic needs, dependent populations, impacts of use, existing and potential uses, conservation, efficiency of use, and availability of other sources are all to be considered when determining whether the use of water is equitable and reasonable. As will be discussed later, the concept of equitable and reasonable use applies equally to upstream and downstream states. Therefore, while upstream states have to consider downstream uses, existing and potential, downstream states are also to consider upstream use, both existing and potential, when developing their projects. The fundamental question is whether or not the potential downstream impacts associated with Afghanistan’s development are reasonable and equitable.

However water dialogue does not take place in a vacuum. High power asymmetries exist between Afghanistan, Iran, Pakistan and to a lesser extent Turkmenistan. Bilateral relations between Afghanistan and Iran in particular have largely been characterised by mistrust and acrimony.

14 <http://www.asiacalling.kbr68h.com/en/archives/946-afghan-iran-water-war>

15 Except for the Kunar river, which originates from Pakistan, flows through Afghanistan and ends up back in Pakistan where it joins the Indus River.

16 Due to limitations in time and resources, the study was limited to transboundary water issues between Afghanistan, Iran and Pakistan. The Panj-Amu Darya basin and Murghab were not included, which would also have included Tajikistan, Turkmenistan and Uzbekistan.

17 James C. McMurray and A. Dan Tarlock, “The Law of Later-Developing Riparian States: The Case of Afghanistan,” *New York City: NYU Environmental Law Journal*, 12 (2005), 711-763.

18 Wolf, A. T., K. Stahl and M. F. Macomber. (2003). *Conflict and Cooperation Within International River Basins: The Importance of Institutional Capacity*. *Water Resources Update*. 125; and Wolf, A., S. Yoffe and M. Giordano (2003). *International Waters: Identifying Basins at Risk*. *Water Policy*. 5 (1):29-60



Formal water-sharing agreements are limited to the 1973 treaty on the Helmand River.<sup>19</sup> The existence of this treaty has not eliminated mistrust over water sharing on the river. Other important rivers in the study area, such as the Harirod, Farahrud and Kabul rivers, do not have formal or informal water-sharing agreements.

Over the past decade or so, the GIRoA has initiated a number of projects, including the Salma and Pashdan in the Harirod basin, and Kamal Khan and Bakhshabad in the Helmand basin. It has also been working on completing feasibility studies and designs for numerous other projects while actively looking for funding.

These activities have raised concerns among neighbours (see Section 3) and a number of key donor organisations in the international community (e.g. the World Bank and USAID) and the UN. These organisations have initiated or supported a number of programmes to encourage and facilitate a cooperative process over the development of transboundary water resources. The general idea is to support “opening up water dialogues” and “widening Afghanistan’s views on solutions to cross-border water questions”<sup>20</sup> with the hope that this will lead toward mutually agreeable water-sharing arrangements or other forms of benefit-sharing or compensation. The US State Department, for instance, thinks that: “Any major hydrologic project will require Afghanistan to launch negotiations with its neighbours,”<sup>21</sup> and that subsequently it will be necessary for the Afghanistan Government “to strengthen its capacity in transboundary water rights diplomacy and improve upon existing water rights treaties with its neighbours.”<sup>22</sup>

In this regard, the international community has been keen to promote the balanced and compromising approach embodied in the key principles of the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses.

Over the past decade, the GIRoA has been pursuing the construction of projects while declining dialogue and negotiations, despite the requests of its neighbours, with the noticeable exception of the recent bilateral agreement with Pakistan in August 2013, on developing a joint hydropower project on the Kunar river (see more details in Section 3).

At the time of the post-2014 transition in Afghanistan, the long-term outcomes of transboundary interactions between Afghanistan and its riparian neighbours remain uncertain. Whether the process evolves toward appeased agreements or increased tensions will depend on the views, beliefs and attitudes of Afghan decision-makers (among other regional actors) in a complex context of international and domestic politics.

So far, no studies have systematically looked at how Afghan stakeholders approach the issue of cooperation over transboundary water resources development, whether they are favourable to it or not, and why. Yet, understanding their views, attitudes, motivations, values and beliefs is critical for gaining insights into some of the foreseeable impediments to and also opportunities for cooperation. Such understanding would thus help to better inform programmes aimed at supporting cooperation over transboundary water resources development.

This research is helping to fill this gap. Considering the absence of studies on the topic in Afghanistan, this research is exploratory. In this regard, no specific hypotheses are being tested.

19 The treaty was ratified in 1977 and the two Governments exchanged the approved documents in Khordad 1356 (May-June 1977). Source: Gholam-Reza Fakhari, *Dispute Between Iran and Afghanistan on the Issue of Hirmand River*, (S. FidaYunas eds., 1993).

20 Wikileaks, “Trans-Boundary Water Issues: Slow But Sure Progress,” [https://www.wikileaks.org/plusd/cables/10KABUL442\\_a.html](https://www.wikileaks.org/plusd/cables/10KABUL442_a.html), 4 February 2010.

21 Wikileaks, “Afghan Government’s High Hopes for Hydropower,” [https://www.wikileaks.org/plusd/cables/09KABUL2688\\_a.html](https://www.wikileaks.org/plusd/cables/09KABUL2688_a.html), 5 September 2009.

22 Wikileaks, “Afghan Government’s High Hopes for Hydropower,” [https://www.wikileaks.org/plusd/cables/09KABUL2688\\_a.html](https://www.wikileaks.org/plusd/cables/09KABUL2688_a.html), 5 September 2009.

## 1.2 Objectives of the study

The primary objective of this study is to provide a better understanding of the views, preferences and attitudes of non-ministerial actors toward cooperation over transboundary water resources development. Thus, the research has focussed primarily on members of Parliament as they have, in theory, a major decision-making role over transboundary water resource development agreements. Academics have also been included as part of the epistemic community that – in theory – should have good knowledge and understanding of transboundary water issues and thus an influential role in decision-making (see Methodology in this section).

While the views of GIRoA are very important for determining a path towards cooperation, it has tended to be cautious about discussing transboundary waters in public<sup>23</sup> preferring to keep it within the President’s Office and key ministries, such as those identified in the 2009 Water Law.<sup>24</sup>

The findings should contribute to a discussion on the foreseeable challenges but also opportunities for cooperation. They should also make it clearer whether current interactions between Afghanistan, Iran and Pakistan are likely to evolve toward greater cooperation.

On this basis, the findings should inform the international community on how it could better support a process of cooperation regarding transboundary water resources development.

## 1.3 Research questions

The study will address two research questions:

- **RQ 1:** What are the differences in the views and attitudes between Afghan non-ministerial stakeholders with regards to cooperation over the development of transboundary resources in the Kabul, Helmand and Harirod river Basins?
- **RQ 2:** What are the main challenges to and opportunities for cooperation over transboundary water resources between Afghanistan and its neighbours?

## 1.4 Conceptual underpinnings

Our enquiries and analysis have been guided by a number of themes and concepts related to the overall topic of cooperation in the context of transboundary water resources development. Getting to understand the position of respondents in relation to these themes helped in framing the underlying motivations, beliefs and values that justified a certain position (favourable or unfavourable) with regards to dialogue and negotiations over transboundary water resources development.

These themes and concepts are presented below as part of the conceptual framework for analysis.

### 1.4.1 Attitudes toward transboundary water resources development in relation to international relations theories

Transboundary water resources development cannot be separated from international politics. Attitudes toward cooperation over transboundary water resources depend on broader concerns related to international relations. In this regard it is very difficult to ‘de-politicize’ the issue and rather requires that transboundary water resource development take stock of broader political relations and development issues. Indeed, there are often situations where linkages with economic sectors such as trade may prove a means for developing a working agreement.

The lens through which people conceive international relations will have an influence (although there is no strict determinism) on how transboundary water sharing is approached. Box 1 contains the main features of two key schools of thought on international relations and how they link – in principle – with cooperation over transboundary water resources.

<sup>23</sup> Key Ministry staff involved in transboundary water declined to contribute to this research.

<sup>24</sup> See Article 8 (9).

For this research it has been useful to investigate whether the neo-institutionalist perspective shared and promoted by the key international community actors in the water sector in Afghanistan is also shared by non-ministerial actors. It has also been considered whether, in the sensitive political context of the region and considering the reluctance of the GIRoA to partake in dialogue with its neighbours for most of the past decade, a neo-realist perspective may be more reflective to the actions taken by the GIRoA.

There are other schools of thought that could also provide some useful perspectives. These include, for instance, “constructivism,” which takes an anti-deterministic and pro-human agency perspective on hydro politics (see Julien, 2012). For this research, we adopt the constructivist perspective which states that there is no determinism and no future scenario is inevitable. Critical theory has also become influential, including in Europe (see for instance Zeitoun and Warner, 2006).

For ease of analysis in this first exploratory research on recent hydro politics in Afghanistan and the region, this paper is limited to the neo-realist and neo-institutionalist schools of thought.

The interviews have looked at how the prospect of cooperation over water resonates with the core concerns of respondents, such as sovereignty, security and rivalries over relative gains. The issue of trust deficit between the riparian countries and how it may affect cooperation has also been discussed.

**Box 1: Neo-realist and neo-institutionalist perspectives on international relations and what they could mean for interactions over transboundary water resources development.**

**Neo-realism:**

According to neo-realists, states are rational actors that aim at maximising their relative power compared to other states (i.e. surpassing the capabilities of other states rather than falling behind) in an endless struggle for survival. Neo-realists privilege relative gains over absolute gains when they interact with other states.

Relations with the other states are characterised largely by “fear,” “distrust,” “suspicion” and “insecurity.” In a neo-realist paradigm, power is seen as the main factor shaping the outcome of discussions (or negotiations) on bilateral issues.

Neo-realists expect states to favour self-help behaviour over cooperation. Even if states may sometimes adopt more cooperative attitudes on the international scene, they constantly ensure that they have sufficient power to defend themselves and advance the material interests necessary for their survival.

For neo-realists, states see institutions as a reflection of power relations in the international system; a veil behind which the real ulterior motives of major powers are hidden; and a forum in which the acquiescence of the less powerful can be attained.

When decision-makers look at international relations through a neo-realist lens they tend to see transboundary water resources development as a “zero-sum security issue.”<sup>1</sup>

For instance, cooperation over water may become difficult and tensions more likely if the upstream states attempt to reduce their dependence (e.g. trade or power) on downstream countries. Cooperation over international rivers may fail when it challenges the states’ core concerns such as sovereignty, territorial integrity and security.

The least powerful states are likely to be reluctant to embrace the idea of dealing with transboundary issues via formal forums and international conventions (i.e. institutions), particularly when they perceive that power ultimately shapes interactions through formal platforms and that institutions only reflect power relations. Thus, less powerful states are more likely to avoid negotiations if alternatives are available.

Note that neo-realism does not look at water and environment as possible causes for war. From its strict perspective, water is considered a “low politics”<sup>2</sup> issue. This research has followed the more lenient perspective followed by several thinkers (e.g. Dinar) who have included water as part of the relevant (“high politics”) issues to be considered within a neo-realist perspective.

**Neo-institutionalism:**

Neo-institutionalists reject the notion that power is the only factor that determines relationships between states. They believe that cooperation between states is possible as part of a rational, self-interested strategy.

Neo-institutionalists are more concerned with absolute gains than relative gains when they interact with other states.

The emergence of cooperation among parties is possible when compliance problems and mistrust can be mitigated with the help of institutions that provide information, lower transaction costs, increase transparency and reduce uncertainty. Neo-institutionalists, therefore, would encourage the development of treaties, agreements and organisations to facilitate international relations.

For decision-makers who look at international relations through a neo-institutionalist lens, compromises over water sharing are more likely to be accepted as absolute gains are more important than relative gains. Water is usually seen as another resource for trading and water resources development is not considered a zero-sum game. For neo-institutionalists, cooperation over water may be viewed as relatively independent from the larger political context. Institutions (including international conventions) may be thought of as relevant resources for mediating tensions around water, as neo-institutionalists tend to believe that cooperation emerges through the development of norms and regimes.

*Adapted from Anne-Marie Slaughter, “International Relations, Principal Theories,”* [http://www.princeton.edu/~slaughtr/Articles/722\\_IntlRelPrincipalTheories\\_Slaughter\\_20110509zG.pdf](http://www.princeton.edu/~slaughtr/Articles/722_IntlRelPrincipalTheories_Slaughter_20110509zG.pdf), 2011 (accessed May 9, 2013); Dinar (2008); Julien (2012); Rees (2010).

1 Frédéric Julien, “Hydropolitics is What Societies Make of It (Or Why We Need a Constructivist Approach to the Geopolitics of Water),” *International Journal of Sustainable Society* 4, Nos. 1/2, (2012).

2 An issue may be considered to be “low politics” when it does not directly concern the survival of the state and strict national security.

## 1.4.2 Power asymmetries, capabilities, issue-linkage and risk perceptions

### Power asymmetries and geography

Cooperative interactions over international rivers require engaging in a complex network of environmental, economic, political and security interdependencies. Some studies have affirmed that imbalances in power relations impede cooperation.<sup>25</sup> This may be the case when an upstream country is also the most powerful. On the other hand, in a case where the most powerful country is located downstream, the power asymmetry may force a less powerful upstream country to avoid a resource-capture strategy (e.g. building dams and diverting water without discussions with and compensations for downstream countries) and engage in negotiations to avoid sanctions.

There are, however, no deterministic rules. Dinar (2008) explains that as strong as a hegemon may be with regard to its aggregated power, it may not always be able to impose its will on other states in the form of water-sharing agreements (or other forms of institutional arrangements). Referring to the work of Barret (2003), Sjöstedt and Spector (1995), and Young (1994), he claims that an economically asymmetrical relationship may actually favour the least powerful state. As a negotiating tactic, the weaker party can always deprive the stronger actor of “what it desires.”<sup>26</sup> In such a situation, countries with higher structural power may not necessarily decide to use raw force to coerce the weaker party into abandoning such a tactic. As Young notes: “Countries in possession of structural power will often find that they can achieve more by using their power to make promises and offer rewards than they can by relying on threats and punishments.”<sup>27</sup> Thus the smaller power could gain proportionally more benefits.

Whether power asymmetries may impede cooperation depends on how decision-makers perceive and assess the risks associated with their actions as well as the risks associated with the actions of neighbouring states in an ever-changing context. This research looks at how Afghan stakeholders perceive the risks associated with unilateral actions or cooperation in a context where Afghanistan is located upstream but is less powerful than its neighbours.

One choice could consist, for instance, of using an upstream position to develop infrastructure and projects that deprive (at least on paper) a downstream state of “what it desires” in order to increase its bargaining position for future negotiations. In other words, unilateral action may be preferred for some time as an entry point for future negotiations on a more balanced power setting.

Another way to look at the issue would be that such a strategy may be too risky, and the more powerful downstream state may use sanctions (e.g. economic, diplomatic, covert actions, etc.) or even force before the upstream country is able to reach a sufficient level of infrastructure build-up and project development (e.g. an increase in irrigated areas). The consequent increase in tensions may be perceived as something to be avoided. If this is the case, then a negotiated agreement before the construction of dams begins would be the preferred option.

### Issue linkage and reciprocity

The concept of “issue linkage” lies at the heart of benefit-sharing approaches. It refers to the idea of bargaining water-sharing agreements (or other forms of water regimes) in exchange for cooperation on other unrelated issues (e.g. trade agreement, migration issues, border security,

25 R. Hijri and D. Grey, “Managing International Waters in Africa: Process and Progress,” in *International Watercourses: Enhancing Cooperation and Managing Conflict*, eds. S. Salman and L. Boisson de Chazournes, World Bank Technical Paper, 414 (Washington, DC, 1998); R. Just and S. Netanyahu (1998) “International Water Resource Conflicts: Experience and Potential,” in *Conflict and Cooperation on Trans-Boundary Water Resources*, eds. R. Just and S. Netanyahu (Boston: Kluwer Academic Publishers, 1998).

26 Shlomi Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*, (London & New York: Routledge, 2008).

27 O. Young, *International Governance: Protecting the Environment in a Stateless Society* (Ithaca: Cornell University Press, 1994) as quoted in Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*.

political support, etc) or side-payments.<sup>28</sup> Thus, the possibility of linking negotiations over transboundary water resources development with negotiations on other bilateral issues can facilitate appeased settlements.<sup>29</sup>

For example, an upstream country may cooperate with its downstream neighbour to, say, share hydropower production, knowing that such an agreement would require the downstream neighbour's cooperation on unrelated issues in the future. An upstream landlocked country may be more inclined to engage in dialogue with a downstream neighbour to gain or secure an outlet to the sea.<sup>30</sup> Thus, cooperation on the water issue can be a way of gaining cooperation and support on other fronts.

Furthermore, neighbouring countries may not want a dispute over water to threaten the prospects of forging a cordial relationship. This can also be a strong incentive for cooperation.<sup>31</sup>

Dinar (2008) emphasises that one should not assume that an upstream country, whether a hegemon or not, is less likely to negotiate some form of a cooperative agreement. He stresses that an upstream country may have more to gain by cooperating – for instance on a joint project, or by limiting its water use – than by unilaterally exploiting its part of the river.<sup>32</sup>

An upstream state may also agree to cooperate in exchange for some kind of compensation, which could take the form of “side-payments” from the downstream country.

What is important to note is that approaching issues of transboundary water sharing through the issue-linkage perspective is first and foremost a political choice, which relates to foreign-policy considerations.<sup>33</sup> Parts of the interviews with MPs and academics looked precisely at the awareness of, openness to, and interest in approaching cooperation via an issue-linkage perspective. This helped again in assessing the opportunities for and impediments to foreseeable cooperation between Afghanistan and its neighbours.

### Capabilities and resources

A deficiency in technical capabilities (e.g., international conventions, technical assessments, negotiation skills, etc.) may contribute to decision-makers feeling uncomfortable with the idea of negotiating with a neighbouring country. This may be a particularly strong impediment to negotiations in a context where bilateral relations are characterised by mistrust and acrimony.

The amount to which an upstream country engages in the unilateral exploitation of a transboundary river may be facilitated or constrained by the level of that state's resources.<sup>34</sup> If internal resources are limited, international support, whether financial, technical or military/security, may be accessed.<sup>35</sup>

Countries with financial mobilisation constraints may become more inclined toward cooperative approaches if international donors—such as the World Bank or the Asian Development Bank—condition their financial help on the adoption of a cooperative approach. On the other hand, an upstream country with the ability to fund its own projects could be less inclined to cooperate, especially in an international-relation context characterised by acrimony and mistrust—unless there are other factors that motivate this country to cooperate.

28 Examples can be found in Arun Elhance, *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins* (Washington, DC: United States Institute of Peace Press, 1999); John Waterbury, *Hydropolitics of the Nile Valley* (Syracuse: Syracuse University Press, 1979); and G. Browder, “An Analysis of the Negotiations for the 1995 Mekong Agreement,” *International Negotiation*, 5, (2000): 237-61, in different international contexts.

29 Erik Mostert, “Conflict and Cooperation in the Management of International Freshwater Resources: A Global Review” (Paris: UNESCO, 2003); Claudia Sadoff, Dale Whittington and David Grey, “Africa's International Rivers: An Economic Perspective” (Washington, DC: World Bank, 2002); Ines Dombrowsky, “Benefit-Sharing in Transboundary Water Management Through Intra-Water Sector Issue Linkage?” (undated).

30 Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*.

31 Browder, “Analysis of the Negotiations for the 1995 Mekong Agreement.”

32 Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*, 24.

33 Browder, “Analysis of the Negotiations for the 1995 Mekong Agreement.”

34 Zeitoun and Warner talk about “coercive resources.” M. Zeitoun and J.F. Warner, “Hydro-Hegemony: A Framework for Analysis of Transboundary Water Conflicts,” *Water Policy*, 8, No. 5 (2006): 435-460.

35 Zeitoun and Warner, “Hydro-Hegemony: Framework for Analysis of Transboundary Water Conflicts.”

Overall, decision-makers take into consideration their level of international support or diplomatic isolation as well as the relative situation of their neighbours when they evaluate whether a cooperative attitude is preferable or not. The interviews with MPs and academics have covered how capabilities and resources may influence the perception of cooperation over transboundary water resources.

### Second-order resources

This research also looks into the ability of a state to access “second-order resources.” This concept proposed by Turton (2003) and based on the earlier work of Ohlsson (1998) and Homer-Dixon (2000) provides an indication of a country’s capacity for adapting to the constraints of water scarcity or poor access. Such adaptation can, for instance, take the form of developing an economy away from agriculture – thus reducing dependency on water and becoming less vulnerable to water-related climate shocks – or adopting virtual water policies.

A country highly dependent on water and highly vulnerable to climate shock, and with poor second-order resources, may perceive “resource capture” as the only alternative for developing its economy. On the other hand, a country with a high level of second-order resources may feel less pressure to pursue a resource-capture strategy. In this case, negotiations on compromises with riparian countries may be easier. An overview of the indicators of second-order resources in each country will provide an understanding of the room (or not) for alternatives to the development of transboundary water resources, and how this may influence the views of decision-makers when it comes to cooperation.

#### 1.4.3 Domestic-international politics in transboundary water resources development

Putnam (1998) has described international negotiations on transboundary water as a “two-level game.” He explains that “at the international level, national governments seek to maximise their own ability to satisfy domestic pressures, while minimising the adverse consequences of foreign developments.”<sup>36</sup> Therefore, conflict and cooperation are to a large extent shaped by how decision-makers evaluate the interests (or assumed interests) of domestic elements.<sup>37</sup> Decision-makers’ attitudes with regards to cooperation may be more influenced by the fear of a decision’s repercussion on the domestic scene (e.g. national actors accusing the government of compromising the nation’s sovereignty and national interest if they pursue negotiations) than by the consequences on the international scene.

A government’s attitude to transboundary water relations is usually the result of internal power processes. Elhance has argued that domestic political support for cooperation over transboundary water resources is often hard to generate (and sustain) as it is vulnerable to appeals both to nationalism and from interest groups.<sup>38</sup>

Therefore, the domestic dynamics need to be considered as they too may explain how cooperation over transboundary water resources development takes place, or how it may be hampered or stalled.

The interviews with MPs look at how negotiations on the international scene could be affected by the perception of risks (or absence of risks) that negotiations could have on the domestic scene, and how this may be an impediment to cooperation.

36 Robert D. Putnam, “Diplomacy and Domestic Politics: The Logic of Two-Level Games,” *International Organization*, 42, No. 3. (Summer, 1998): 427-460.

37 Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*, referring to the work of Fred Iklé, *How Nations Negotiate* (New York: Harper and Row, 1964) and Andrew Moravcsik, “Taking Preferences Seriously: A Liberal Theory of International Politics,” *International Organization*, 51 (1997): 513-53.

38 Elhance, *Hydropolitics in the Third World*, referred to in Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*.

#### 1.4.4 International water law: Finding a compromise between absolute territorial sovereignty and absolute territorial integrity

Traditionally upstream and downstream use of shared river basin has been perceived as a struggle between the upstream state using its geographic advantage to develop at will with little or no regard to the downstream state (territorial sovereignty or the ‘right of initiative’) versus the downstream assuming that it should always expect the river to flow into it as it has in the past (territorial integrity - or absolute ‘no harm’). The former has been rejected by the international community as gives too much power to the upstream state and undermines the downstream state, and the latter has been rejected in that it places a virtual veto on development in the hands of the downstream state and is equally ‘unfair’. To balance this, the international water law has evolved to adopt the principle of equitable and reasonable utilization as embodied in the 1997 UN Convention on Watercourses.

The other significant principle applied to water is that of avoiding “significant harm”. This principle stems from a long history of environmental law as embodied in Principle 21 of the 1972 Stockholm Declaration that states can develop providing they do not harm others in the process.<sup>39</sup> This has also to be balanced with the ‘Right to Develop’. Such that in the 1997 UN Convention, article 7 states that when developing resource States take “all appropriate measures to prevent causing significant harm” to other States on the watercourse. The wording is important in that it is not an “absolute no-harm” but rather all appropriate measures should be taken to prevent significant harm. As such article five recognises that states that have had a later start in developing their water resources (as is the case with Afghanistan) may have the right to develop these resources despite the harm caused to other riparian states that had an earlier start.<sup>40</sup> Article 7 of the 1997 UN Convention goes on to say that if significant harm does occur that states causing the harm will, with respect to ‘equitable and reasonable utilization’, take all appropriate measures it can to mitigate the harm or (if appropriate) provide compensation.

It is further important to note that the issue of ‘impacts to development’ are one of the key elements to be included in considering what constitutes ‘equitable and reasonable’, the list includes:<sup>41</sup>

- Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;
- The social and economic needs of the watercourse States concerned;
- The population dependent on the watercourse in each watercourse State;
- The effects of the use or uses (ie the impacts) of the watercourses in one watercourse State on other watercourse States;
- Existing and potential uses of the watercourse;
- Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;
- The availability of alternatives, of comparable value, to a particular planned or existing use.

In essence the 1997 UN Convention obligates states to discuss all these issues, and other issues the states feel are relevant, when determining what is equitable and what is reasonable when developing an international watercourse (river or lake, etc). The convention does not prescribe a solution to water rights but rather promotes dialogue and cooperation to arrive at a solution. This

<sup>39</sup> Principle 2 of the 1992 Rio Declaration is identical to Principle 21 of the Stockholm Declaration made 20 years previously and states that: “States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”

<sup>40</sup> Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*

<sup>41</sup> See article 6 of the 1997 UN Watercourses Convention.



has been noted as one of the main limitations of the convention. Dinar (2008) says: “The clauses and factors that make up the main principles, such as ‘equitable, reasonable, and significant’ are fuzzy and afford a poor definition of rights.” Consequently, as Haftendorn says: “Consensus is difficult to reach on what constitutes equitable and reasonable utilisation [...] when another state is adversely affected by the utilisation.”<sup>42</sup> However, its limitation for some is also seen as its strength as it recognises that each basin is unique and different and requires different solutions.

This research makes use of the 1997 UN Convention as a lens through which water development in Afghanistan has proceeded in the past and may proceed in the future. It is important to note that neither Afghanistan, Iran, nor Pakistan are parties to the Convention. Nevertheless, in the absence of an existing treaty it represents the principles of customary international law that could/should be applied when dealing with transboundary water.

The interviews look at the extent to which the principles embodied in the 1997 UN Convention are shaping the perception of MPs and the academics on transboundary water resources development, and how much the idea of compromise as suggested by UN Convention echoes the values of the respondents.

Note that, for the purpose of this research, a broad definition of “cooperation” is used within the framework of the UN Convention. This implies providing notice of potential projects which may have impacts, exchanging information and conducting dialogue with the “view to arrive” at a negotiated compromise or agreement mutually satisfactory for all parties.

## 1.5 Methodology

### 1.5.1 Power asymmetries, international relations and water resources in this context

As discussed earlier, transboundary water interactions are shaped by specific contexts. In order to better understand and analyse the views and attitudes of non-ministerial Afghan decision-makers interviewed during this research, a background desk-review and analysis of the context of transboundary water interactions in the region was conducted. This background focused on three themes: power asymmetries, international relations and water resources.

#### Power asymmetries

Power asymmetries have been looked at based on a number of classic indicators to do with economic resources, trade dependencies, military resources and second-order resources (or adaptive capacity). These indicators are discussed in order to get a better understanding of the potential use of coercive threats by the more powerful countries, including trade embargoes, economic sanctions and the threat of military action.

#### International relations

Although Afghanistan, Iran and Pakistan have long-intertwined histories, the focus of the desk review on international relations was limited to documents that provided analysis on the most recent years. And while the focus is on bilateral relations between Afghanistan and its riparian neighbours, the roles of other nations and the significant influences they have had on these bilateral relations – including India in the case of the Afghanistan-Pakistan relationship – are touched upon. For Example India is funding the building of the Salma dam in the Harirod.

The brief overview below is based on recent English literature,<sup>43</sup> with a focus on the most recent years of interactions between the riparian neighbours. The points that are presented in

42 Helga Haftendorn, “Water and International Conflict,” *Third World Quarterly*, 21 (2000): 51.

43 It is also worth noting that the databases searched are mainly oriented toward a Western-centric selection of journals, although searching on Google Scholar helped to balance that scope restriction. Finally, language must be considered; because the author could not search for articles in Farsi or Urdu, it is likely that articles that take more of an Iranian, Pakistani or Afghan perspective were not found. Therefore, future investigation should use a Farsi and/or Urdu speaker to search for a wider scope of articles.

Section 2 do not constitute an exhaustive overview of international relations and foreign policies in Afghanistan, Iran or Pakistan, but they outline the most relevant issues in the context of the research that draws a link between international relations and transboundary water interactions.

In our analysis of bilateral relations between riparian states, the interactions are couched in terms of the two broad theoretical frameworks from the discipline of international relations: neo-realism and neo-institutionalism, which have been briefly defined in Box 1.

## Water resources

The physical aspects of the basin are not necessarily decisive in the occurrence of water-related conflicts or cooperation in transboundary settings.<sup>44</sup> Nevertheless, an understanding of these characteristics is important if the existing stakes and potential challenges are to be understood, and if interactions on transboundary water resources development are to be discussed. In this regard, the review looks at water availability, usage and demand, as well as the characteristics and potential impacts of projects. It also puts these elements into perspective with regards to the UN Convention and/or the existing water-sharing agreements in the different basins being studied.

This review helps in understanding the sensitivity of transboundary water resources development projects for downstream riparian states, by outlining the potential implications for development on the downstream state.

The data used in this report are based on official publications endorsed by the GIRoA (e.g. water sector strategy, Watershed Atlas), data published by the Government of the Islamic Republic of Iran (GIRI) and by the Government of Pakistan (GOP) and official publications in international journals and UN reports (e.g. the Food and Agriculture Organisation (FAO)). All data that have been used have been cross-checked to the best extent possible.

Although the quality and reliability of data used are not always optimal, they do provide a reasonable basis on which a number of points of analysis can confidently be made regarding the stakes and challenges of transboundary water resources development.

## Interactions over transboundary water resources

As part of the contextual overview, the interactions over transboundary water resources development that occurred between Afghanistan and its neighbours during the past decade or so (i.e. the post-Taliban period) were also analysed and a summary was provided. It gives a broad perspective on the main strategies followed so far by the GIRoA and its counterparts, and includes the positions and actions taken in relation to cooperation (or absence thereof).

This analysis is partly based on a desk review and is also supported by information gathered through interviews and informal discussions with key informants.

As part of the desk review, publications, reports and news articles (both English and Dari) were looked at from Afghan, Iranian and Pakistani online news organisations. News articles were used mainly to gather quotes from Government officials.

Key informants included national and international advisers as well as senior consultants and staff from the main water-donor organisations involved in Afghanistan.

Considering the limited reliability of information in general, considerable efforts have been made in cross-checking data.

In a later section of this report, the findings have been discussed alongside the views of MPs and academics in order to better anticipate foreseeable challenges and opportunities for cooperation over transboundary water resources.

<sup>44</sup> Aaron Wolf, "Water for Peace in the Jordan River Watershed," *Natural Resources Journal* 33 (1993): 797-839; Anders Jägerskog, "Why States Cooperate Over Shared Water: The Water Negotiations in the Jordan River Basin," (PhD Dissertation, Department of Water and Environmental Studies, Faculty of Arts and Science, Linköping University, 2003).

## 1.5.2 Interviews and qualitative analysis of the views and attitude of Afghan non-ministerial stakeholders with regards to cooperation

### Selection of respondents

The research has focused on non-ministerial stakeholders who have, in theory, an important part to play with regard to decision-making over transboundary water resource development plans. Due to limitations in time and resources, the selection of respondents among non-ministerial stakeholders has been limited to members of Parliament and academics. These two categories were selected for the following reasons:

- Members of Parliament (Wolesi Jirga) occupy the highest level of Provincial elected representatives. Their role is in fact critical when it comes to ratifying international agreements and treaties, including on transboundary water.”
- In the broad category labelled “academics,” teachers and professors were selected primarily from Kabul University as well as Herat University, along with independent analysts and members of research and advocacy organisations based in Afghanistan. Although they do not make decisions directly, it was thought that they could play a potential role in influencing debates and discussions, and providing informed opinions on the topic as they do in many other countries.

As mentioned, the GIRoA considers the topic of transboundary water resources development to be sensitive and prefers to keep discourse centred around the President’s office and key ministries such as those identified in the 1997 Water law. As such, senior staff declined to participate in this research.

### Sampling for members of Parliament (MPs)

One-hundred and five MPs were selected for the sample, which corresponds to all the MPs from the 12 provinces that lie within the three river basins covered in this study. The initial intention was to interview as many MPs as possible. It was proposed that all the respondents be interviewed under strict confidentiality conditions.<sup>45</sup>

In the end, 71 MPs (68 percent) agreed to be interviewed. The remaining 34 MPs declined the request for an interview noting that the topic was too sensitive. This underscores the perceived sensitivity of the issue in the country.

After presenting the different views of respondents (Section 4), there is a discussion on whether and how the absence of responses may have biased the results.

### Sampling for academics

The selection was first designed to include informants who had a direct or indirect involvement in water management and who had been writing about or discussing the topic of transboundary water resources development in various forums. In the course of the interviews, respondents suggested new informants, who were then included – when they fitted the criteria mentioned above – through snowball sampling. Among the 26 potential informants, only 15 agreed to be interviewed.

### In-depth semi-structured interviews

Considering the exploratory nature of this research, data collection was done through semi-structured interviews. Questions focusing on the attitude of respondents toward cooperation included the different themes and issues discussed in the conceptual framework.

When relevant, questions referred to specific examples from the three river basins covered in this research.

Interviews were designed to last approximately one hour. Questions were first tested on a few MPs from other Provinces not covered in this research.

<sup>45</sup> MPs were assured that neither their name nor their province would be disclosed in the final report.

The categorisation of respondents on the basis of their attitude toward cooperation (see Section 4) was discussed during group sessions among research staff involved in the interviewing process.

### **Confidentiality and issues related to the perceived sensitivity of the topic**

Considering the highly sensitive nature of the topic, the identities of informants, academics and MPs has been kept confidential.

### **1.5.3 General layout of the report**

The rest of this paper is organised as follows:

The second section provides a contextual analysis of the relevant international relations and power asymmetries, and discusses the implications for transboundary water resources development.

The third section provides an analysis of the water resources in the three river basins covered by this research. It also includes a summary of the interactions between Afghanistan and its neighbours over the past decade regarding transboundary water resources development. It highlights how the past decade has mainly consisted of unilateral actions and development on the Afghan side and a containment strategy on the neighbours' side.

The fourth section focuses mainly on a detailed descriptive analysis of the views and attitudes of the MPs and academics regarding cooperation on transboundary water resources development. On the basis of these findings, the section concludes on a reflection of the likelihood of a change toward cooperation in the foreseeable future, as well as the major impediments and opportunities for dialogue and cooperation.

In the fifth and concluding section a number of recommendations are provided, focusing on what the international community could do to support a cooperative settlement of existing tensions on transboundary water resources development between Afghanistan and its neighbours.

## 2. Understanding the International Relations and Power Asymmetries Context

As discussed earlier, the attitudes of decision-makers over transboundary water resources need to be analysed and understood in the specific contexts of power asymmetries and bilateral and international relations. This section first provides an understanding of power asymmetries using classic indicators of power and interdependence. It then gives an overview of the international relations between Afghanistan, Iran and Pakistan<sup>46</sup> to shed light on the context within which interactions over transboundary water resources control have taken place so far.

In this overview, the interactions between nations are couched in terms of the two broad theoretical frameworks discussed earlier in Box 1: neo-realism and neo-institutionalism.<sup>47</sup>

The question asked throughout this section is whether international relations between Afghanistan and its neighbours Iran and Pakistan are better understood through a neo-realist or neo-institutionalist perspective; and what the answer to that question could imply in terms of interactions – cooperative or not – over transboundary water resources development.

### 2.1 Overview of power and capacities asymmetries: The Afghan deficit

Power asymmetries are discussed based on economic resources and military resources. The focus is on Iran and Pakistan as these are the principle actors in the basins being reviewed.

#### 2.1.1 Economic resources indicators

There is a sharp asymmetry between Afghanistan and its neighbours in terms of basic economic resources indicators such as gross domestic product (GDP) or gross national income (GNI) per capita. In contrast with its neighbours, Afghanistan is also characterised by a heavy reliance on external aid, which corresponds to more than one third of its GDP, compared to Pakistan (two percent), and Iran (negligible). It is also characterised by a low investors' trust in the stability of the country.

The balance of trade for Afghanistan is negative, as it is for Pakistan, which is in contrast to the oil-exporting economy of Iran.

Overall, economic resources indicators underline the relatively weak position of Kabul compared to Tehran or Islamabad.

<sup>46</sup> While the focus is on bilateral relations between Afghanistan and its neighbours, the roles of other nations with significant influence on these bilateral relations, in particular India and the US, are also touched upon.

<sup>47</sup> There are other theories such as institutionalism and constructivism that help with analysing international relations. This study is limited to two for ease of understanding.

Table 1: Economic resources indicators

	Afghanistan	Pakistan	Iran
GDP (million USD) - 2011	18,034	210,741	514,060
GDP per capita, PPP (million USD) - 2011	1,399	2,756	11,395
GNI per capita, PPP (USD) - 2011	1,400	2,880	10,320
Foreign direct investment, net inflows (million USD) - 2011	83.4	1,308	4,150
Official development assistance (ODA) per capita (USD) - 2011	231	20	1
Official development assistance (ODA) as percentage of GDP - 2011	35 %	2%	0.02%
Balance of trade (million USD) - average 2008-2012	- 4,571 <sup>3</sup> to -3,757 <sup>4</sup>	- 32,523 <sup>5</sup> to -14,627 <sup>6</sup>	+ 12,467 <sup>7</sup> to + 38,799 <sup>8</sup>
<p>3 Average period 2009-2011. Based on Central Statistics Office, Afghanistan. Document available at <a href="http://cso.gov.af/Content/files/External%20Trade%281%29.pdf">http://cso.gov.af/Content/files/External%20Trade%281%29.pdf</a></p> <p>4 Average period 2008-2012. Based on data from <a href="http://www.tradingeconomics.com">www.tradingeconomics.com</a> (accessed 26/08/12)</p> <p>5 European Commission, Directorate General for Trade, European Union, Trade in Goods With Pakistan (July 2013). Document accessed at <a href="http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113431.pdf">http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113431.pdf</a></p> <p>6 Pakistan Bureau of Statistics. Document available at <a href="http://www.pbs.gov.pk/sites/default/files/tables/14.1_0.pdf">http://www.pbs.gov.pk/sites/default/files/tables/14.1_0.pdf</a></p> <p>7 European Commission, Directorate General for Trade, European Union, Trade in Goods With Iran (July 2013). Document accessed at <a href="http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113392.pdf">http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113392.pdf</a></p> <p>8 Average period 2008-2012. Based on <a href="http://www.tradingeconomics.com">www.tradingeconomics.com</a></p>			

## 2.1.2 Indicators for economic power and dependence: Trade dependencies

Trade dependence<sup>48</sup> gives an indication of the potential coercive power that one country has over another when it comes to using the threat of trade embargoes and/or economic sanctions.

In this regard, Afghanistan is highly dependent on its neighbours, and its situation is highly vulnerable. What the figures in Table 2 indicate is that trade between Afghanistan and Iran is more than 200 times more important for Afghanistan than it is for Iran. This is due to the fact that while Iran accounts for almost eight percent of Afghanistan's exports, Afghanistan represents an insignificant 0.04 percent of Iran's imports. Similarly, trade between Afghanistan and Pakistan is more than 100 times more important for Afghanistan than it is for Pakistan.<sup>49</sup>

Thus, Iran and Pakistan are in a strong position when it comes to using trade sanctions as a means to coerce Afghanistan into agreements that Afghanistan would not have preferred. This is because trade sanctions or embargoes would significantly affect Afghanistan while having only a minor effect on its neighbours' economies. Whether this dependency has been used as leverage in relation to transboundary water interactions is discussed in Section 3.

48 Fink et al.'s indicators for economic power and dependence, based on the economic relations between countries, provide an insight into the extent to which Iran and Pakistan have power over Afghanistan. The export (import) dependence indicator between Afghanistan and Iran (or Pakistan) looks at the relation between the importance of Afghanistan's exports to Iran (or Pakistan) for Afghanistan on the one hand, and the importance of Afghanistan's exports to Iran (or Pakistan) for Iran (or Pakistan) on the other hand. The trade dependence indicator takes into account both import dependence and export dependence.

See formula of import dependence between nation A and B:

$$\text{export dependence}_{A,B} = \frac{\frac{\text{exports}_{A-B}}{\sum \text{exports}_A}}{\frac{\text{exports}_{A-B}}{\sum \text{imports}_B}}$$

49 This is mainly due to the fact that Pakistan represents almost 45 percent of Afghanistan's exports while Afghanistan represents less than half of a percent of Pakistan's imports.

Table 2: Trade dependencies between Afghanistan, Iran and Pakistan

	Afghanistan --> Iran	Afghanistan --> Pakistan
Import dependence indicator <sup>9</sup>	29	6
Export dependence indicator <sup>10</sup>	200	116
Trade dependence indicator <sup>11</sup>	229	122

9 An indicator of 10 would mean that imports are 10 times more important for Afghanistan than for Iran (or Pakistan).  
10 An indicator of 10 would mean that exports are 10 times more important for Afghanistan than for Iran (or Pakistan).  
11 Trade dependence = Import dependence + Export dependence.

Source: Indicator based on Based on Fink et al. (2010); calculations based on data from on Central Statistics Office, Afghanistan, document available at <http://cso.gov.af/Content/files/External%20Trade%281%29.pdf> and [www.tradingeconomics.com](http://www.tradingeconomics.com). The data cover an average for the period 2009-2011.

### 2.1.3 Military resources indicators

Although Afghanistan has the highest rate of military expenditure as a percentage of GDP, the actual spending in real terms remains lower than its neighbours. Currently, Afghanistan's military power is highly dependent on the financial support of the international community, a situation that is not sustainable in the long-term.

In theory, when it comes to "hard power" (measured in part by the composite index of national capability (CINC)), Afghanistan does not really possess the capability to coerce its neighbours into accepting unilateral actions. Note, however, that the presence of a large international military force in Afghanistan for the past decade has affected these figures. Taking this into account, Afghanistan would not appear as weak as indicators would suggest. Section 4 discusses how this last point has been important in shaping the GIRoA and MPs in their approach to transboundary water resources development.

Table 3: Military resources indicators

	Afghanistan	Pakistan	Iran
Military expenditure (% of GDP) - 2011 <sup>12</sup>	4.7	3.1	2.2
Military expenditure (million USD) - 2011 <sup>13</sup>	848	6,533	11,309
Composite Index of National Capabilities, 2007 <sup>14</sup>	0.00142 Ranked 77 out of 193	0.01377 Ranked 13 out of 193	0.01345 Ranked 15 out of 193

12 World bank indicators, available at <http://data.worldbank.org/indicator> (accessed 27/08/13)  
13 World bank indicators, available at <http://data.worldbank.org/indicator> (accessed 27/08/13)  
14 The CINC refers to the resources they have to support military action. Nations are assigned a score and then a ranking based on a formula combining total population, urban population, iron and steel production, energy consumption, military personnel, and military expenditure. Composite Index of National Capabilities data are available at <http://stats.omniatlas.com/correlates/cinc/heatmap/> (accessed 27/08/13).

### 2.1.4 Second-order resources indicators

Second-order resources indicators provide some general insights into the capacity of a state to adapt to the constraints of water scarcity, poor access to water and vulnerability to climate shocks<sup>50</sup> that does not include large-scale hydraulic infrastructure development.

Whether one looks at the human development indicators (HDI), failed states index (FSI) or GDP (in terms of purchasing power parity (PPP)) per capita, Afghanistan clearly ranks very low, particularly in comparison to Iran (see Table 4). Although data are missing when it comes to the knowledge economy index (KEI), it is likely that in the case of Afghanistan it would be lower than Pakistan and Iran, which both rank relatively low themselves. This would suggest a low capacity for knowledge to be used effectively for economic development. A very high level of

<sup>50</sup> Such adaptation can for instance take the form of developing an economy away from irrigated agriculture (the main consumer of water).

corruption also suggests reduced chances for developing the reliable governance systems and robust economy that would decrease dependence on natural resources.

Although agriculture is still an important contributor to Afghanistan's overall GDP, it has decreased slightly over the years due to an increase in services, thus driving the economy away from being so heavily dependent on agriculture. However, this difference is expected to fall with the withdrawal of the international community post -2014.<sup>51</sup> Thus, Afghanistan's adaptive capacity is expected to remain low in the short to mid-term.

Table 4: Second-order resources indicators

	Afghanistan	Pakistan	Iran
GDP per capita, PPP (million USD) - 2011 <sup>15</sup>	1,399	2,756	11,395
Human Development Indicators (HDI) - 2013 <sup>16</sup>	0.374 (ranked 175/187)	0.512 (ranked 146/187)	0.742 (ranked 76/187)
Failed States Index (FSI) - 2013 <sup>17</sup>	106.7 (ranked 7 of 178)	102.9 (ranked 13 of 177)	89.7 (ranked 37 of 177)
Perception Corruption Index - 2013 <sup>18</sup>	8 (ranked 175 of 177)	28 (ranked 127 of 177)	25 (ranked 144 of 177)
Knowledge Economic Index (KEI) <sup>19</sup>	DNA	2.24 (ranked 115 of 140)	3.39 (ranked 94 of 140)
Services sector as percentage of GDP (%) - 2011 <sup>20</sup>	50.7%	54%	51% <sup>21</sup>
Agriculture sector as percentage of GDP (%) - 2011 <sup>22</sup>	23.3%	20%	10%

15 World bank indicators, available at <http://data.worldbank.org/indicator> (accessed 27/08/13)

16 HDI indicators, available at <http://hdr.undp.org/en> (accessed 12/11/13)

17 Failed States Index, available at <http://ffp.statesindex.org/rankings-2013-sortable>

18 Corruption Perceptions Index from Transparency International, available at <http://cpi.transparency.org/cpi2013/results/#myAnchor2>  
The Corruption Perceptions Index ranks countries and territories based on how corrupt their public sector is perceived to be. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 - 100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean.

19 Perception Corruption Index from World Bank, available at [http://info.worldbank.org/etools/kam2/KAM\\_page5.asp](http://info.worldbank.org/etools/kam2/KAM_page5.asp) (accessed 27/08/13)

20 World bank indicators, available at <http://data.worldbank.org/indicator> (accessed 27/08/13). Unless indicated otherwise.

21 Source: [www.tradingeconomics.com](http://www.tradingeconomics.com)

22 World bank indicators, available at <http://data.worldbank.org/indicator> (accessed 27/08/13).

In such conditions, it can be assumed that resource capture would be a preferred short to mid-term strategy for a country such as Afghanistan. Iran is better off than Afghanistan and Pakistan, particularly when it comes to HDI and GDP, and it is less dependent on agriculture for its economy. One may thus anticipate that Iran has – at a country level – a greater capacity for adapting to the mounting pressure of water resources access. This would not appear to be the case for Pakistan, particularly due to its still-high dependence on agriculture as a contributor to GDP, including large-scale irrigation.

In short, one can assume that if there is less ability to adapt to change, more emphasis is likely to be placed on resource capture as a means of meeting needs.

51 World Bank, "Overview," *Afghanistan in Transition: Looking Beyond 2014*, 1 (2012).



## 2.2 Overview of salient characteristics of international relations between Afghanistan, Iran and Pakistan: A neo-realism paradigm

This section looks at the important and general characteristics of international relations between Afghanistan, Iran and Pakistan as a general background to interactions over transboundary water, and the extent to which they are better understood from a neo-realist or a neo-institutionalist perspective.

### 2.2.1 Afghanistan-Iran bilateral relations

#### Iran's foreign policy perspective toward Afghanistan: hedging its bets

The recent literature emphasises that the dominant paradigm regarding Iran's foreign policy is realism and pragmatism, motivated primarily by national-security interests, but also increasing political influence and seizing economic opportunities.<sup>52</sup> Iran views its diplomatic and economic interactions in the region as a zero-sum game, aimed at preserving the survival of its regime.

From an economic point of view, Iran sees Afghanistan as an entry point for economic trade with Central Asia.<sup>53</sup> Iran has invested in certain efforts to support economic development in Afghanistan, particularly in the west of the country (e.g. Herat in the Harirod Basin). The support may be due to being at closer proximity and more cultural ties, but could also be seen as means to advance the material interests necessary for Iran's own political survival.<sup>54</sup>

In terms of politics, Iran may fear two potential undesirable outcomes in the near-future for Afghanistan. On the one hand, Iran fears a pro-US (or pro-Western) Afghan Government. On the other hand, Iran may fear an Afghanistan influenced by Saudi Arabia and Pakistan via the Taliban. Caught in this dilemma of choice between the US and the Taliban, Iran tends to take a foreign-policy perspective of "hedging its bets."<sup>55</sup>

The American Institute of Afghanistan Studies (AIAS) report argues that Iran's economic investments in Afghanistan are best understood in the light of pragmatism given an uncertain future in Afghanistan: "If Afghanistan devolves into anarchy, the economic investment in the west [of Afghanistan] would lay the groundwork for a buffer zone; while if Afghanistan becomes stable, Iran is well-positioned to use Afghanistan as an economic link to Central Asia and Pakistan."<sup>56</sup>

But Iran's involvement in Afghanistan has been limited for a long time by its place in the "axis of evil," as defined by the US. This has hindered Afghanistan's ability to develop independent and deep bilateral relations with Iran.<sup>57</sup>

In practice, Iran's perspective on Afghanistan has translated into a dual-track approach of maintaining and increasing its influence on Kabul.

52 Rouzbeh Parsi, "Exploring Iran & Saudi Arabia's Interests in Afghanistan & Pakistan: Stakeholders or Spoilers – A Zero Sum Game? Part 2: Iran," *Sources of Tension in Afghanistan and Pakistan: A Regional Perspective* (Barcelona: CIDOB, April 2013); Roberto Toscano, "Iran's Role in Afghanistan," *Sources of Tension in Afghanistan and Pakistan: A Regional Perspective* (Barcelona: CIDOB, January 2012); Robert M. Shelala II, Nori Kasting, Sam Khazai and Sean Mann. "US and Iranian Strategic Competition: The Impact of Afghanistan, Central Asia, and Pakistan," *Burke Chair in Strategy Report* (Washington, DC: Center for Strategic & International Studies, 11 October 2012). As Toscano sums up: "Iran's Afghan policy is not ideological. Nor is it inspired by religious priorities, but aims more at guaranteeing security, increasing political influence, and seizing economic advantage."

53 Stephen Carter, "Iran's Interests in Afghanistan and Their Implications for NATO," *International Journal* 65, no. 4 (Autumn, 2010), 977-993; E. Laipson, "Engaging Iran on Afghanistan," (Washington, DC: Henry L. Stimson Center, March, 2012); Andreas Wilde, "Continuity and Hiatus: Structural Patterns of Iran's Policy in Afghanistan," *Internationales Asien Forum* 40, nos. 1-2 (2009), 11-38; Toscano, "Iran's Role in Afghanistan."

54 American Institute of Afghanistan Studies and the Hollings Center for International Dialogue, "Afghanistan's Other Neighbors: Iran, Central Asia, and China," Report from Conference held 24-26 July 2008, Istanbul, (February, 2009).

55 Karim Sadjadpour, "Iran," *Is a Regional Strategy Viable in Afghanistan?* eds. A.J. Tellis and A. Mukharji (Carnegie Endowment for International Peace, 2010); AIAS, "Afghanistan's Other Neighbors."

56 AIAS, "Afghanistan's Other Neighbors."

57 AIAS, "Afghanistan's Other Neighbors."

Iran has been investing in infrastructure, industry and mining development – a policy that supports economic reconstruction.<sup>58</sup> Iran has also sought to grow its soft power by fostering relationships with ethnic groups who are opposed to the Taliban and with which it has cultural, linguistic and religious ties, for instance through building schools, mosques and cultural centres, and nurturing ties with the political and intellectual leaders of these groups.<sup>59</sup> While making significant donations to reconstruction, it may also be taking advantage of governmental weakness in Afghanistan to advance a strategy of part reconstruction, part education and part propaganda.<sup>60</sup> Some suggest that Iran may have attempted to directly gain the support of some Afghan political leaders through cash payments.<sup>61</sup>

Besides these overt means of maintaining and developing its influence in Afghanistan, Iran has undertaken covert activities by providing limited support to the Taliban as a destabilising factor to undermine US efforts and encourage its exit from the region. Various literature sources point out that Iran has been providing funding and weapons to the Taliban via the Quds Force branch of the Islamic Revolutionary Guard.<sup>62</sup> By doing so, Iran has been sending a message to the US that it can undermine stability in Afghanistan if it feels overly pressurised.<sup>63</sup>

### Main areas of conflicts in the Iran-Afghanistan relations

The literature identifies four main areas of conflict in the relations between Iran and Afghanistan: the issue of Afghan refugees in Iran; cultural influence; the issue of cross-border drug trafficking; and the issue of transboundary water rights over the Helmand River.

#### *Afghan refugees*

While some authors emphasise Iran's hospitality in hosting the refugee population, who contribute to local economic development, other authors point to the problems Iran faces with the refugees.<sup>64</sup> For example, some state that Afghan refugees are sometimes viewed as a drain on state welfare.<sup>65</sup> The occasional forced expulsion of refugees from Iran is identified as a significant source of tension. Kagan et al. (2012) note that such expulsions and their alleged use as covers for infiltration of insurgents in Afghanistan fuels anti-Iranian sentiment. Both Laipson (2012) and Nader and Laha (2011) identify the forced repatriation<sup>66</sup> and general treatment of refugees as powerful sources of leverage for Iran over the Afghan Government, as Afghanistan does not have the means to reabsorb this population. Note, however, that some forced repatriation campaigns may be driven more by Iran's domestic politics than bilateral relations.<sup>67</sup>

58 Frederick W. Kagan, Ahmad K. Majidyar, Danielle Pletka, and Marisa Cochrane Sullivan, "Afghanistan," *Iranian Influence in the Levant, Egypt, Iraq and Afghanistan*, 79-89. (American Enterprise Institute and the Institute for the Study of War, 2012); Sadjadpour, "Iran"; Janet Kursawe, "Iran's Influence in Afghanistan," *The Afghanistan Challenge: Hard Realities and Strategic Choices*, 129-140, eds. H.G. Ehrhart and C.C. Pentland (Kingston, Ontario: Queen's Centre for International Relations, 2009).

59 Mir H. Sadat and James P. Hughes, "U.S.-Iran Engagement Through Afghanistan," *Middle East Policy* 17, no. 1 (Spring 2010): 31-51; Brenton Clark, "Iranian Foreign Policy Towards Tajikistan and Afghanistan During the Ahmadinejad Presidency: The Rising Salience of Persian National Identity," *OAKA* 7, no. 13 (2012): 73-105; Sadjadpour, "Iran"; Kursawe, "Iran's Influence in Afghanistan."

60 Kursawe, "Iran's Influence in Afghanistan."

61 Sadat and Hughes, "U.S.-Iran Engagement Through Afghanistan."

62 Kagan et al., "Afghanistan"; Alireza Nader and JoyaLaha, "Iran's Balancing Act in Afghanistan" (Santa Monica, CA: RAND Corp, 2011); Carter "Iran's Interests in Afghanistan and Their Implications for NATO"; Sadjadpour, "Iran"; Kursawe, "Iran's Influence in Afghanistan"; Shelala et al., "US and Iranian Strategic Competition."

63 Nader and Laha "Iran's Balancing Act in Afghanistan"; Carter, "Iran's Interests in Afghanistan and Their Implications for NATO"; Kursawe, "Iran's Influence in Afghanistan."

64 Toscano, "Iran's Role in Afghanistan"; Kagan et al., "Afghanistan"; Laipson, "Engaging Iran on Afghanistan"; Nader and Laha "Iran's Balancing Act in Afghanistan."

65 Toscano, "Iran's Role in Afghanistan."

66 Example of mass repatriation was witnessed for instance in 2007 but were also witnessed before 2001 (Christensen; 2011)

67 Janne Bierre Christensen, "Strained Alliances: Iran's Troubled Relations to Afghanistan and Pakistan," (DIIS Report 2011:03. Copenhagen: Danish Institute for International Studies, 2011).

### *Cultural influence*

The AIAS report underlines the perception some Afghans have of Iranian cultural imperialism – including through local media – in Afghanistan. The AIAS report attributed this fear of cultural imperialism to Kabul's view that Iran's development of Herat is an attempt to undermine the Government, and to Iran's support for ethnic groups (Hazara and Tajik) that traditionally oppose the Pashtun-dominated Government.<sup>68</sup> Other literature, however, saw Iranian efforts in developing cultural ties in Afghanistan as potential space for mutual understanding and cooperation.<sup>69</sup>

### *Cross-border drug trafficking*

Iran sees the issue of cross-border drug trafficking as a serious national security concern. While Afghanistan is the main source of opium, it is in Iran that the highest addiction rates are recorded. The drug issue is closely tied to the issue of border control, with Iran accusing Afghanistan of being unable to maintain a secure border.<sup>70</sup> In this area of conflict, however, Iran and Afghanistan have found ways of cooperating, as discussed in the Section 3.

### *Water sharing over the Helmand river*

The issue of water sharing on the Helmand river is considered by Wilde (2009) as the longest running conflict between Afghanistan and Iran. Despite the existence of a treaty clearly stipulating water sharing agreements, tensions remain between Afghanistan and Iran. This issue is discussed in most detail with regards to the water situation in the Helmand Basin (Section 3).

### **Main areas of cooperation in the Iran-Afghanistan relations**

The most-cited example of mutually beneficial cooperation between Iran and Afghanistan – and also Pakistan – is related to the issue of controlling drug trafficking along the border, under the auspices of the United Nations Office on Drugs and Crime's (UNODC) "triangular" initiative. The success of this initiative is based upon the mutual desire of the three nations to combat the devastating effects of drug trafficking and secure their national borders.<sup>71</sup>

Economic development and aid are also highlighted in several studies as an area of cooperation.<sup>72</sup> However, as discussed earlier, this "cooperation" maybe driven less by an interest in supporting Afghanistan's economy per se than it is by political gains or political survival. In that sense, economic development is particularly emphasised in the West of Afghanistan, including Herat in the Harirod basin, which is expected to ultimately become a "buffer zone."<sup>73</sup> For Parsi (2013) and Kagan et al. (2012), economic ties are more beneficial to Iran than Afghanistan.

The geographic placement of Afghanistan as an access route between the Central Asian Republics and Iran has also encouraged the development of infrastructure and the economy,<sup>74</sup> and there have been discussions on creating a "New Silk Road."<sup>75</sup>

68 This manifested itself in refugees with Iranian education being denied employment in Afghanistan, and Ministries refusing to certify Iranian diplomas, effectively shutting returned refugees out of the job market and fortifying Afghanistan's brain drain.

69 Carter, "Iran's Interests in Afghanistan and Their Implications for NATO"; Sadat and Hughes, "U.S.-Iran Engagement Through Afghanistan"; Sadjadpour, "Iran"; Kursawe, "Iran's Influence in Afghanistan."

70 Shelala et al., "US and Iranian Strategic Competition."

71 Laipson, "Engaging Iran on Afghanistan"; Toscano, "Iran's Role in Afghanistan"; Shelala et al., "US and Iranian Strategic Competition"; Sadjadpour, "Iran."

72 Kursawe, "Iran's Influence in Afghanistan"; Amir M. Haji-Yousefi, "Iran's Foreign Policy in Afghanistan: The Current Situation and Future Prospects," *South Asian Studies* 27, no. 3 (January-June 2012): 63-75; Toscano, "Iran's Role in Afghanistan"; Thowidul Islam, "Impact of Helmand Water Dispute on the Bilateral Relations between Iran and Afghanistan; an Evaluation" *International Journal of Central Asian Studies*, 15 (2011).

73 AIAS, "Afghanistan's Other Neighbors"; Kagan et al., "Afghanistan."

74 AIAS, "Afghanistan's Other Neighbors."

75 Carter "Iran's Interests in Afghanistan and Their Implications for NATO."

## 2.2.2 Afghanistan-Pakistan bilateral relations

### Pakistan's foreign policy perspective toward Afghanistan: Protecting national security by undermining India's power in the region

For many years during the post-Taliban era, Pakistan's foreign policy has been guided by a strong realism paradigm, underpinned by a sense of national insecurity and a perceived threat from India's growing influence in the region. Pakistan has in fact been playing a zero-sum game in the region, with India as its main adversary.<sup>76</sup> Yusuf (2013) sees Pakistan's main objective in Afghanistan as being to secure an Afghan Government that is friendly and unchallenging, that will not exploit Pashtun nationalism nor support India ahead of Pakistan. Similarly, Hanauer and Clark add that Pakistan's interests are in developing economic links with Central Asia through Afghanistan, while also curbing other states' influence in this domain.

However, since around 2009, Pakistan's foreign policy in Afghanistan has been moderated due to the priority placed on handling domestic instability.<sup>77</sup> As domestic terror groups have become more threatening, Pakistan has realised that it needs to work with a stable neighbour to the northwest to reduce the threat to its own stability.<sup>78</sup> This has resulted in Pakistan making a (moderate) strategic shift in its foreign policy with Afghanistan and India, defined as a more hands-off approach combined with greater willingness to engage in Afghan peace talks, regional outreach and public calls on the Taliban to negotiate sincerely. Nevertheless, Yusuf (2013) maintains that this shift is still a reflection of Pakistan's traditional position; a move to take advantage of the timing to push the process in the direction it desires, and therefore still guided by a strong realism paradigm.

The Pakistani perspective described above has translated into foreign policy practices consisting of attempts to increase its influence over the Afghanistan Government by supporting elements it perceives as friendly to its national security and interests. Pakistan supports a reconciliation process that includes some elements of the Taliban in the Afghan Government – although it is against a strong rise to power<sup>79</sup>—as a way to form an Afghan Government that will ultimately be more open to its own influence in the region. Not only would Pakistan be able to exert influence over Kabul with regards to India, but also, due to the large Pashtun population in the border areas, perhaps even be able to reach a settlement concerning the Durand Line, which remains an important area of tensions with Kabul.

### Main areas of conflicts in the Pakistan-Afghanistan relations

Besides Afghanistan's relation with India, which Pakistan sees as a threat of encirclement by Indian forces,<sup>80</sup> there are other areas identified as important points of conflict. These include the issues of the Durand Line,<sup>81</sup> Pashtun nationalism and Pakistan's support of the Afghan Taliban. The fact that Afghanistan has never acknowledged the Durand Line as being the official border between the two countries has fed Pakistan's fear of irredentist claims.<sup>82</sup> Hussain and Latif view the dispute over the border as a serious hurdle to mutual prosperity between the two nations.<sup>83</sup>

76 Moeed Yusuf, *Decoding Pakistan's 'Strategic Shift' in Afghanistan* (Stockholm: Stockholm International Peace Research Institute, May 2013); Qandeel Siddique, "Pakistan's Future Policy Towards Afghanistan: A Look at Strategic Depth, Militant Movements and the Role of India and the US," DIIS Report 2011:08 (Copenhagen: Danish Institute for International Studies 2011); Larry Hanauer and Peter Chalk, "India's and Pakistan's Strategies in Afghanistan: Implications for the United States and the Region," *RAND Center for Asia Pacific Policy* (Santa Monica, CA: RAND, 2012).

77 Yusuf, *Decoding Pakistan's 'Strategic Shift' in Afghanistan*.

78 Yusuf, *Decoding Pakistan's 'Strategic Shift' in Afghanistan*; Safdar Sial, "Pak-Afghan Relations: Emerging Trends and Future Prospects," *Conflict and Peace Studies* 4, no. 1 (Jan-Mar 2011): 1-14; Sunil Dasgupta, "Regional Politics and the Prospects for Stability in Afghanistan," *Peace works* No. 86 (Washington, DC: United States Institute of Peace, 2013).

79 Yusuf, *Decoding Pakistan's 'Strategic Shift' in Afghanistan*; Siddique, "Pakistan's Future Policy Towards Afghanistan."

80 Sadika Hameed, "Prospects for Indian-Pakistani Cooperation in Afghanistan," (Washington, DC: Center for Strategic and International Studies, August, 2012). Hameed (2012); Sial (2011); Siddique (2011); Khan (2010).

81 Hameed, "Prospects for Indian-Pakistani Cooperation in Afghanistan"; Sial, "Pak-Afghan Relations"; Siddique, "Pakistan's Future Policy Towards Afghanistan."

82 Frédéric Grare, "Pakistan," *Is a Regional Strategy Viable in Afghanistan?* Edited by Ashley J. Tellis and Aroop Mukharji, 17-25 (Washington, DC: Carnegie Endowment for International Peace, 2010).

83 Safdar Hussain and Muhammad Ijaz Latif, "Issues and Challenges in Pakistan-Afghanistan Relations after 9/11," *South Asian Studies* 27, no. 1 (January-June, 2012): 89-99.

Roy-Chaudhury also notes that the porous border feeds into Pakistan's fear of Pashtun nationalism and separatism. The perceived desire for Pashtuns on both sides of the border to form "Pashtunistan" is very worrisome to Pakistan, as it indicates a lack of governmental control.<sup>84</sup>

The third major area of conflict between Afghanistan and Pakistan is Pakistan's support of the Afghan Taliban. Various authors claim that Pakistan views the Afghan Taliban as a strategic asset in its manoeuvring with regards to India.<sup>85</sup> Some authors also state that the Taliban represent a means by which to threaten India if it becomes too influential in Afghanistan, and to keep the International Security Assistance Forces (ISAF) in Afghanistan so as to retain an element of relevance to the peace process.<sup>86</sup> Other authors also say that support for the Afghan Taliban represents a way to exert some control and influence from within the Afghan Government. In that respect, some studies perceive Pakistan as a staunch supporter of a reconciliation process that involves Afghan Taliban representation in the Afghan Government. Overall, these areas of conflict have led to a trust deficit between Pakistan and Afghanistan.<sup>87</sup>

### Main areas of cooperation in the Pakistan-Afghanistan relations

Over the past decade, Afghanistan and Pakistan have also been part of several regional platforms, focusing mainly on trade issues. These include the Regional Economic Cooperation Conference on Afghanistan (RECCA), the Central Asia Regional Economic Cooperation (CAREC), the Economic Cooperation Organisation (ECO), the South Asian Association for Regional Cooperation (SAARC), and the Shanghai Cooperation Organisation (SCO). However, observers, including those from the Delhi Policy Group, have noted that although these were valuable starting points, they would still need significant bolstering in order to provide the frameworks and guidance needed to significantly improve cooperation between Afghanistan and Pakistan. Note that until now, transboundary water cooperation has not been part of the agenda for any of these conferences. Nonetheless, a few areas were mentioned as an illustration of bilateral cooperation, including trade agreements, with the 2010 Afghanistan-Pakistan Transit Trade Agreement (APTTA) leading to an increase in the number of ports, carriers and border-crossing points. The agreement codifies the importance of Pakistan for Afghanistan's access to India, and the importance of Afghanistan for Pakistan's access to the Central Asian Republics.<sup>88</sup> Although to some extent the APTTA may be an example of Pakistan's strategic shift, a lack of trust between the partners was a significant hurdle to its smooth application<sup>89</sup> as it was subject to several regulatory disputes.<sup>90</sup> Eventually the nations came to a pragmatic compromise, to the extent that the APTTA is now considered successful by a number of observers.<sup>91</sup>

As an additional illustration of cooperation, both Afghanistan and Pakistan have recently reached agreements on multi-lateral regional projects (e.g., Trans Afghanistan Pakistan India (TAPI) pipeline<sup>92</sup> and Casa-1000<sup>93</sup>), which are expected to improve and strengthen cooperative ties between the two countries, and reflect the possibility for pragmatic negotiations on mutually beneficial projects.

84 Yusuf, *Decoding Pakistan's 'Strategic Shift' in Afghanistan*; Hameed, "Prospects for Indian-Pakistani Cooperation in Afghanistan"; Siddique, "Pakistan's Future Policy Towards Afghanistan."

85 Sial, "Pak-Afghan Relations."

86 Siddique, "Pakistan's Future Policy Towards Afghanistan."

87 Delhi Policy Group, "Afghanistan-India-Pakistan Triologue 2010: Bridging the Trust Deficit(s)," Report of the 2010 Triologue, (New Delhi: Bibliophile South Asia, 2011); Rahul Roy-Chaudhury, "Pakistan," *Afghanistan to 2015 and Beyond*, edited by Nicholas Redman and Toby Dodge, 167-186 (London: International Institute for Strategic Studies, 2011); Gare, "Pakistan."

88 Eray Basar, "The Roles of India & Pakistan in Afghanistan's Development and Natural Resources" (Civil-Military Fusion Centre, March 2012).

89 Interview with government official (Gov-32), 11 September 2013.

90 Steven A. Zyck explains that the most contentious of which was the provision of customs guarantees for Afghanistan-bound goods to prevent their dumping on the Pakistani black market. Other concerns included the negative impact on the Pakistani National Logistics Cell, which has a dominant role in commercial transport in both Pakistan and Afghanistan, the easier possibility for goods to be dumped on the market in Pakistan, and that Indian goods may be going back to Afghanistan in violation of the agreement. (Steven A. Zyck "Transit Trade in Transition: The APTTA & the Afghan Economy" (Civil-Military Fusion Center, [https://www.cimicweb.org/cmo/afg/Documents/Economic/Afghanistan\\_Pakistan\\_Transit\\_Trade.pdf](https://www.cimicweb.org/cmo/afg/Documents/Economic/Afghanistan_Pakistan_Transit_Trade.pdf), (2011).

91 Sial, "Pak-Afghan Relations"; Zyck "Transit Trade in Transition."

92 The Trans Afghanistan Pakistan India (TAPI) pipeline will transport natural gas from Turkmenistan through Afghanistan into Pakistan and then to India, with the support of the Asian Development Bank (ADB). Although the project has been delayed and occasionally halted due to disagreements (mainly on transit fees), it has now been green-lit and will allow Afghanistan, Pakistan and India to access Turkmen gas.

93 Casa-1000 is a power-import project supplying Afghanistan and Pakistan with power from Kyrgyzstan and Tajikistan. It is in its final stage of approval at the time of writing, and would respond to an energy crisis in Afghanistan and most acutely in Pakistan. An accord was reached on structure and commercial principles in September 2013 in Islamabad.

### 2.3 Conclusion: An overall unfavourable context for cooperation over transboundary water resources?

Power, trade dependence and capacity indicators all point to the weak position of Afghanistan relative to its neighbours. This overarching trend in international relations is best understood within a neo-realist framework. Both Pakistan and Iran have been greatly concerned with their own regime survival when engaging with Afghanistan in the past few years. Each country is playing a zero-sum game and is focusing on its own relative gains not only with regards to Afghanistan, but also when it comes to other regional and international powers.

What does this context mean in terms of understanding the possible cooperative or conflictive nature of transboundary water interactions? As mentioned in the conceptual framework, states tend to see transboundary water resources development as a zero-sum security issue when bilateral relations best fit a neo-realist paradigm. Afghanistan, as the least powerful state, may be more likely to be reluctant to embrace the idea of dealing with transboundary issues via formal forums and international conventions (i.e. institutions) as it may see power as the ultimate factor that shapes the outcome of interactions through such formal platforms. Afghan decision-makers in this case may be more likely to avoid negotiations if alternatives are available.

Thanks to Afghanistan's upstream position, and in the face of very limited second-order resources, Afghan decision-makers may be more inclined to push unilateral large-scale hydraulic infrastructure water resources development (e.g. dams, irrigation development and hydropower). From a neo-realist perspective, such an approach could be motivated by the possibility of reducing trade dependence with its neighbours – including reducing electricity import dependence with Iran in the west of the country.

Thus, when it comes to transboundary water interactions, the power asymmetry situation combined with the salient features of international relations indicate that transboundary water interactions fit what Frey describes as “the least stable [situation] [...] when the downstream nation is most powerful and has most interest in water but the upstream nations also have considerable interest.”<sup>94</sup>

Considering Afghanistan's status of “late developer” in a situation that is perceived as a ‘zero-sum game’ cooperation may be more complicated, but not impossible as discussed in section 3. However, Afghan decision-makers may also see the same power asymmetries and international relations context as a motivation to engage in dialogue and avoid unilateral actions.

Furthermore, although power asymmetry indicators may appear more favourable to Iran or Pakistan, and even though only a limited number of examples of cooperation can be put forward (including the establishment of institutions (i.e. rules and regulations) as in the case of the APTTA), both Iran and Pakistan have a long-term interest in a stable Afghanistan – provided that it is not a potential political threat – through which economic opportunities can be developed. This is particularly true in terms of energy in the case of Pakistan, considering the power crisis in the country. In addition, considering both neighbours have an interest in keeping or further integrating Afghanistan within their sphere of influence, they may want to avoid the complete alienation of Kabul. Indeed, alienation may result in pushing Afghanistan closer to rival neighbour or the pro-Western international community – a situation that neither Iran or Pakistan wants to risk. Thus, a too-confrontational attitude toward Afghanistan's water resources development plans could also be seen as counter-productive in the broader scheme of international relations.

94 Frederick W. Frey, “The Political Context of Conflict and Cooperation Over International River Basins,” *Water International* 18, no. 1 (1993): 54-68.

### 3. Contextual Overview of Three River Basins: A Decade of Unilateral Development of Transboundary Water Resources

#### 3.1 The Kabul-Indus river basin

##### 3.1.1 Key transboundary challenges and opportunities in the Kabul/Indus river basin

###### The Kabul-Indus river basin at a glance

The Indus river basin covers 1.12 million km<sup>2</sup>, an area that includes Pakistan (47 percent), India (39 percent), China (8 percent) and Afghanistan (6 percent).<sup>95</sup> The Indus basin is fed by the 2,900 km-long Indus River and its five tributaries: the western rivers coming from Afghanistan, the Jhelum and Chenab, and the eastern rivers of Ravi and Sutlej. It stretches from the Himalayan mountains in the north to the southern delta of Sindh, where it discharges into the Arabian Sea (see Map 4 in Annex).

The Kabul basin (i.e. the Afghan part of the Indus River basin) drains water from the Kotal-i Shibar and the Paghman Mountains in the west, the Salang and Panjsher valley in the north, the Kunar Valley in the northeast, and the Koh-iSafid in the south of Jalalabad. Several western rivers including the Panjsher, Salang, Shakardara, Kabul, Loghar, Tagab and Laghman join the Kunar river<sup>96</sup>—by far the biggest contributor to the Indus — close to Jalalabad city before entering Pakistan at the level of the Daka hydrometric station. The Kabul river basin also includes minor tributaries — including the Khurram and Shumal rivers — to the Indus further south (See Map 1). The key characteristics (non-exhaustive) of the international basin are provided in Table 10 and are discussed in more details further below.

<sup>95</sup> FAO Aquastat Pakistan.

<sup>96</sup> Note that this river has the peculiarity of originating in Pakistan (where it is called the Chitral), then flowing through Afghanistan before entering back again into Pakistan.

Table 5: Key characteristics (non-exhaustive) of the Kabul-Indus river basin

	Afghanistan	Pakistan
Area (km <sup>2</sup> ) - (Country's share <sup>23</sup> )	72,000 - 6%	520,000 - 47%
Population - (Country's share)	7,184,974 <sup>24</sup>	143,120,000 <sup>95</sup>
Population density (cap/km <sup>2</sup> )	100	276
Average precipitations (mm)	992 (Upper basin <sup>26</sup> ) 182 (Lower basin <sup>27</sup> )	459 (Upper basin <sup>28</sup> ) 109 (Lower basin <sup>29</sup> )
Irrigable area in the basin (ha) <sup>30</sup>	484,100	14,870,000 <sup>31</sup>
Total surface water available (MCM)	21,650 <sup>32</sup>	181,620 <sup>33</sup>
Total groundwater available (MCM)	1,920 <sup>34</sup>	55,000 <sup>35</sup>
Total water available (MCM)	23,570	236,620
Storage capacity (MCM) (effective in 2013)	564.5 <sup>36</sup>	18,177 <sup>37</sup>
Proportion of surface water use in basin as compared to surface water available	24%	69% <sup>38</sup>
Proportion of groundwater use in basin as compared to groundwater available	28% <sup>39</sup>	112%
Proportion of total water use in basin as compared to available total water available	25%	77% <sup>40</sup>
Dependency ratio <sup>41</sup>	58% <sup>42</sup>	16-17% <sup>43</sup>

23 The focus here is only on Afghanistan and Pakistan as other countries are not practically concerned by water resources in Afghanistan. Other countries include India (39 percent of basin area) and China (eight percent of basin area).

24 Favre and Kamal, Watershed Atlas of Afghanistan. This is the population estimated for 2004. It is most likely to be above nine million in 2013.

25 The population of Pakistan was estimated at 178.9 million in 2012 (Source: <http://www.tradingeconomics.com/pakistan/population>). And the Pakistan Ministry of Water and Power estimates that 80 percent of the population lives in the basin

26 North Salang station (Source: FAO-Climwat2.0 database)

27 Jalalabad station (Source: FAO-Climwat2.0 database)

28 Astore station (Source: FAO-Climwat2.0 database)

29 Jacobabad station (Source: FAO-Climwat2.0 database)

30 FAO Aquastat Indus River basin (available at [http://www.fao.org/nr/water/aquastat/basins/indus/indus\\_bp.pdf](http://www.fao.org/nr/water/aquastat/basins/indus/indus_bp.pdf))

31 This is the figure for the Indus Basin Irrigation System. But there are 19,270,000ha irrigated in Pakistan. (Source: FAO Aquastat Indus River basin)

32 Favre and Kamal, Watershed Atlas of Afghanistan. The GIROA - Water Sector Strategy (2008) indicates 20,760 MCM.

33 Only 170,200 MCM are secured by the Indus Basin Treaty. (Source: FAO Aquastat Indus River Basin, 4. Accessed at [http://www.fao.org/nr/water/aquastat/basins/indus/indus\\_bp.pdf](http://www.fao.org/nr/water/aquastat/basins/indus/indus_bp.pdf))

34 Uhl, "Afghanistan." This is the reference used by FAO Aquastat Afghanistan.

35 Note that there is a strong overlap between groundwater and surface water availability. (Source: FAO Aquastat Pakistan, 5.)

36 Mott MacDonald Ltd., "Progress on Helmand River Basin Model and Scenario Development."

37 A World Bank estimation mentions 17,890 MCM from three major dams (taking into account a 22 percent loss due to sedimentation) plus 287 MCM from 50 small dams (taking into account a 25 percent loss due to sedimentation). (Source: FAO Aquastat Indus River basin – [http://www.fao.org/nr/water/aquastat/basins/indus/indus\\_bp.pdf](http://www.fao.org/nr/water/aquastat/basins/indus/indus_bp.pdf))

38 It is 69 percent of total water availability but it would be 72 percent of the availability secured by the Indus Basin Treaty.

39 Uhl, "Afghanistan." This value is likely to be underestimated. There are high variations across the basin. For instance, groundwater is already depleting in the aquifer covering Kabul city.

40 It would represent 81 percent if one took only the surface water secured by the Indus Basin treaty.

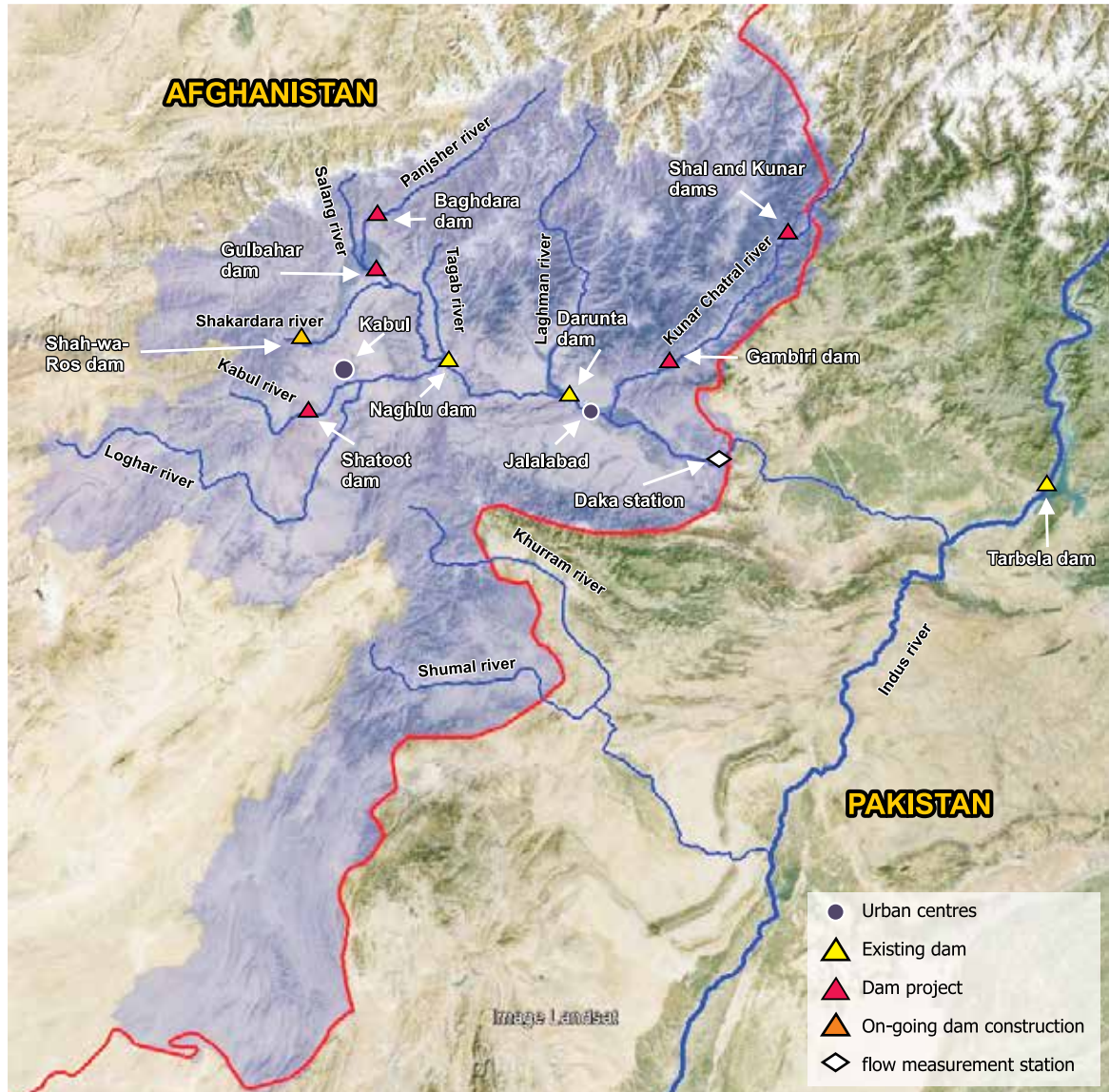
41 It is the part of the total renewable water resources originating outside the country.

42 Given that 12,552 MCM of the 21,640 MCM in the Kabul basin comes from the Kunar river, which originates in Pakistan.

43 This figure is to be taken with caution as there are no official figures. At national level it would represent 78 percent (Source: FAO Aquastat Pakistan. Available at [http://www.fao.org/nr/water/aquastat/countries\\_regions/PAK/CP\\_PAK.pdf](http://www.fao.org/nr/water/aquastat/countries_regions/PAK/CP_PAK.pdf).)



Map 1: Kabul river basin and links to the Indus river



Source: Google, Image Landsat

## Underdeveloped basin on the Afghan side and high potential for hydropower production

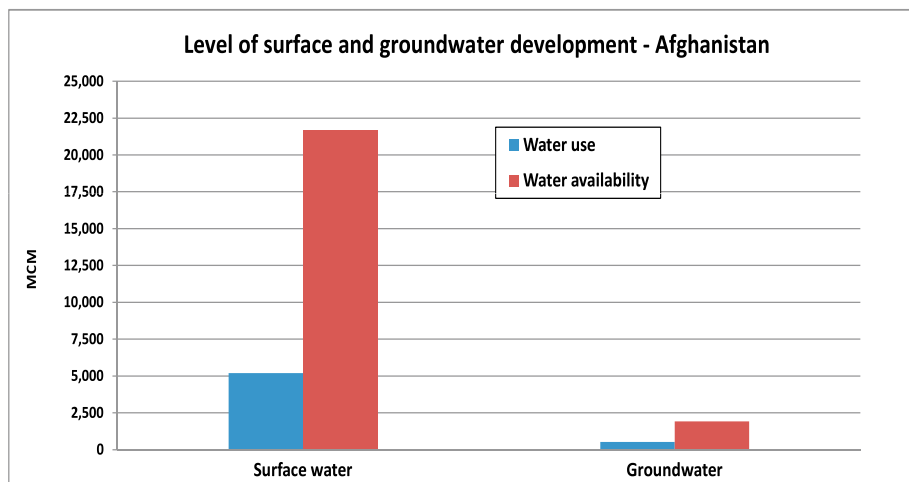
Considering the very limited storage capacity that represents less than three percent of the average surface water availability (see Table 10), the Kabul basin is highly under-developed.

Surface water use (5,200 MCM<sup>97</sup>) represents less than 25 percent of total availability. Similarly, the groundwater use (520 MCM) is less than a third of availability<sup>98</sup> (see Figure 1). Note, however, that in Kabul city's unconsolidated aquifer, groundwater is already depleting.<sup>99</sup> Indeed, the Shatoot dam is designed primarily for municipal water to Kabul.

In the absence of more storage capacity, most of the surface water in the Kabul basin is flowing toward Pakistan where it contributes to the Indus river flow. The MEW historical data show that there is an average flow of 20,073 MCM<sup>100</sup> leaving the basin for the period 1965-1980.<sup>101</sup> Moreover, while the Kabul basin has approximately 484,100 ha of irrigable land, only 306,000 ha can be irrigated on a yearly basis with one or two crops.

In order to exploit the high potential for development provided by its transboundary rivers, the Kabul basin has numerous projects planned – with two being ongoing – funded by the GIRoA (see Table 6).<sup>102</sup> An important point is that these projects are primarily focused on hydropower production, with a potential total of 1,891 MW. Irrigation of new land would be limited to 16,400 ha in contrast with irrigation projects in Harirod (with 40,000 ha newly irrigated) and Helmand (with 101,154 ha newly irrigated) basins. The new storage capacity would increase from three percent to 24 percent of the annual surface water availability.

Figure 1: Level of surface and groundwater development – Afghanistan



Source: Based on WSS (2008); Favre and Kamal (2004) and Uhl (2003).

97 GIRoA, *Water Sector Strategy* (2008).

98 Uhl, "Afghanistan." Note that the groundwater use may be underestimated due to lack of recent data.

99 Afghanistan Human Development Report (2011).

100 Based on MWRE hydrological yearbooks (1965-1980). There are 19,813 MCM from the Kunar and Kabul rivers measured at the Daka station and 259 MCM from the Khuram and Shumal rivers.

101 This is close to the estimations of the FAO at 21,500 MCM. The figure of 20,073 MCM flowing to Pakistan would represent 93 percent of the water available in the Kabul basin. Yet the Afghan Water Sector Strategy estimates that 5,200 MCM are used in Afghanistan and consequently 76 percent of the water leaves the country. This important difference may be due to some inaccuracy in measuring the actual water availability in a complex hydrological network. This may also be due to important return flow along the basin.

102 Note that the two ongoing projects have virtually no transboundary impacts.

Table 6: Planned and ongoing projects funded by the GfRoa

Name of Project	River	Province	Power Generation (MW)	Total Storage (MCM)	Total irrigated area (ha)			Cost	Status
					Existing	New	Total		
Shatoot	Maidan	Wardak	4.5	250	2,575	0.0	2,575	362	Plan
Gulbahar	Panjsher	Parwan	116	490	43,000	11,000	54,000	1,437	Plan
Baghdara A2	Panjsher	Panjsher	165	1.9	-	-	-	475	Plan
Baghdara D1	Panjsher	Panjsher	244	400	-	-	-	547	Plan
Surubi - stage 1	Kabul	Kabul	105	ROR	-	-	-	1,058	Plan
Surubi - stage 2	Kabul	Kabul	23	ROR	-	-	-		Plan
Shal	Kunar	Kunar	798	1,874	-	-	-	1,819	Plan
Kunar A	Kunar	Kunar	366	1,680	-	-	-	876	Plan
Gambiri	Kunar	Kunar	23	ROR	3,000	3,000	6,000	253	Plan
Kama	Kunar	Kunar	45	ROR	4,200	2,000	6,200	341	Plan
Shah-wa-Aros	Kabul	Kabul	1.2	9.4	2,340	0.0	2,340	48	On-going
Machalghoo	Kabul	Kabul	0.1	ROR	1,600	400	2,000	30	On-going
TOTAL			1,891	4,705	56,715	16,400	73,115	7,246	

Source: World Bank (2013); MEW. Presentation from Eng. Zia Gul Saljuki. National Water Conference, Kabul, 29 January 2013.

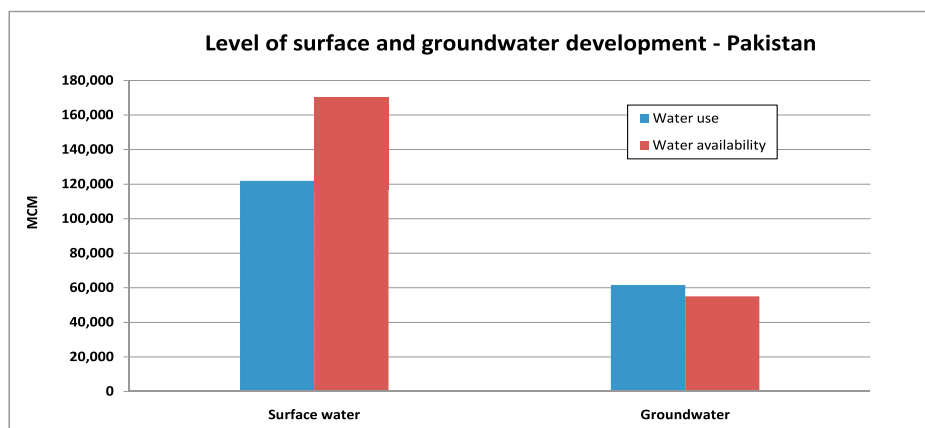
Note: ROR = Run-of-the-river (i.e., no storage)

### Pakistan: An already high level of basin exploitation

In contrast to Afghanistan, the level of water use in Pakistan is very high, with a ratio of water withdrawal to water availability of 77 percent. Overall, groundwater extraction is higher than the average recharge, although there are important differences from one area to another.

As in the case of Iran, Pakistan is also facing a situation of high pressure on its water resources as it is close to a maximum level of exploitation (Figure 2).

Figure 2: Level of surface and groundwater development - Pakistan



Source: FAO Aquastat Pakistan

However, one important difference is that the situation in Pakistan is largely due to a drastic increase in water demand over the last 40 years, due to extending and intensifying irrigation.<sup>103</sup> From the 1970s to the 1990s the cropped area in Pakistan increased by 39 percent from 10.76 million ha to 14.96 million ha.<sup>104</sup> During this same period, the irrigation intensity increased from 116 to 132 percent,<sup>105</sup> which translates into a significant increase in water demand per hectare.

<sup>103</sup> Such increase in water withdrawal has not been happening—at least not significantly—in the case of Iran, for instance.

<sup>104</sup> FAO Corporate Document Repository (accessed at <http://www.fao.org/docrep/005/ac623e/ac623e0i.htm>).

<sup>105</sup> The “irrigation intensity” is the ratio of net irrigated area to the total irrigable area. An irrigation intensity of 80 percent means that during the whole year only 80 percent of the area will be put to use for irrigation. An irrigation intensity of 200 percent means that during the whole year, the irrigable area will be used two times to grow crops (for instance by growing one crop in winter/spring over the entire area and a second crop in summer over the entire irrigable area).

Table 7: Storage capacities of dams in Pakistan

Name of dam	Storage capacity per design (MCM)
Tarbela	11,960
Mangla	10,150
Chasma	870
Other 50 small dams	383
TOTAL	23,363

Source: FAO Aquastat Pakistan.

The storage capacity of Pakistan is limited as it barely represents 10 percent of the total annual surface water availability. Pakistan's storage capacity per capita (approximately 150 m<sup>3</sup>/capita/year) is one of the lowest in the world, yet is still above the level of Afghanistan.<sup>106</sup> Pakistan can barely store 30 days of water in the Indus basin. Low storage capacity is currently a constraint to irrigation development in Pakistan.

### A relatively limited dependency on Afghanistan

The Kabul river reaches the Indus river in the upstream part of the basin (see Map 4 in Annex). The estimated 20,073 MCM inflow from Afghanistan – out of which 19,813 MCM comes from the Kabul and Kunar rivers – into the Indus basin would contribute an additional 13 percent to the supply coming from the western rivers and secured through the Indus treaty. According to the Water and Power Development Authority (WAPDA), the Kabul river would contribute the equivalent of 16 to 17 percent of Pakistan's water supply.<sup>107</sup>

Thus, Pakistan's overall dependency on Afghanistan remains relatively limited, particularly when compared to the case of Iran for the Harirod and Helmand basins, where the level of dependency would be 61 to 96 percent respectively.

Note that before reaching the Indus River, the Kabul river irrigates close to 100,000 ha<sup>108</sup> of land around Peshawar. This irrigated land (which represents less than 1 percent of the irrigated land in the Pakistani part of the Indus River Basin) depends exclusively on the Kabul river. However, the water availability is largely sufficient for such surface.

### What are the potential impacts of Afghan water resources development projects on Pakistan?

As of 2013, there are no formal water-sharing agreements between Afghanistan and Pakistan in the Kabul basin.

In this context, one important question to be raised is how reasonable the impacts of the foreseeable Afghan projects will be on Pakistan.

Considering that the potential for development in Afghanistan is largely about hydropower rather than irrigation, the overall water withdrawal in Afghanistan would be limited. In January 2013, a study funded by the World Bank under the AWARD project found that the combined effect of the six main projects<sup>109</sup> planned in the Kabul basin would be a reduction in the overall water flow toward Pakistan of a mere three percent. What the projects would do, however, is change the flow pattern with an increase during the period of January to March and a proportional decrease during the period of April to June.

106 Afghanistan has an overall storage capacity which is below 140 m<sup>3</sup>/capita/year (Source: AHDR (2011)).

107 Source: <http://tribune.com.pk/story/193655/ministry-suggests-water-treaty-with-kabul-to-avoid-dispute/>. This dependence is accentuated during winter months when the flow of the Indus is five times less than during summer months. Note that 80 percent of the total surface water availability coming from India and China to Pakistan is supplied during the Kharif season (July to October).

108 <http://www.ipsnews.net/2003/09/environment-planned-afghan-reservoirs-worry-pakistan/> This includes the Warsak canal system (69,000ha) and the Kabul river canal system (29,137ha).

109 The six main projects are: Shatoot, Gulbahar, Baghdara, Gambiri, Kama and Kunar.

Thus, from a water availability point of view, and in the light of this World Bank study, Afghan developments (as understood at the time of research) do not seem to be a significant threat to Pakistan.

The government-funded Islamabad Institute of Policy Studies<sup>110</sup> provided a contrasting estimation – but without evidence or references to actual studies – of a possible decrease of 15 to 20 percent in the flow that was being supplied by the Kabul river, due to the foreseeable construction of “13 dams” in Afghanistan.<sup>111</sup> This claim was again re-stated in November 2011.<sup>112</sup> Finally, the Afghan projects offer potential for benefit-sharing given the large hydropower potential in Afghanistan and the power crisis facing Pakistan and the possible benefits of regulating the Kabul river in downstream Pakistan.

In August 2013, the GIRoA and the GOP agreed on the idea of a joint hydropower project on the Kunar river, even though the content of these benefit-sharing agreements have not been defined yet. This point is discussed in more detail below.

### 3.1.2 Afghanistan and Pakistan interactions in a nutshell

#### 2003 to August 2013: Pakistan proposing for a treaty

As early as 2003, Pakistani officials – including those from the Water and Power Ministry, the Federal Secretary of Water and Power, the Government-funded Islamabad Institute of Policy Studies and the Chairman of the Indus River System Authority (IRSA) – have all raised concerns over the implementation of “13 dams” in the Kabul basin.

For instance, in August 2003, officials from the Water and Power Ministry in Pakistan said that the Afghan Government’s intention to construct dams on the Kabul river “would certainly affect the water availability in Pakistan.”<sup>113</sup> During the same period, Nasr Rajput, Chairman of the IRSA claimed that: “We will have no water to build new dams if big dams are constructed by Afghanistan on Kabul river.”<sup>114</sup>

From 2003 to 2011, the suggested course of action from Pakistani officials was to contain the perceived threat through the negotiation of water rights for Pakistan with Afghan officials.

In 2003, the Federal Minister for Water and Power of Pakistan said, “Pakistan [was] ready to enter into a water accord with Afghanistan, like the Indus-Basin Water Treaty, for the better use of water resources across the border.” At that time, the WAPDA made such an offer (i.e. to have a water treaty over the Kabul river) to the MOFA in Kabul. But no reply was received from Afghanistan.<sup>115</sup> Again in 2004 the President of a technical committee on water resources in Pakistan reiterated a preference for a water treaty when he stated that, “The committee discussed prospects of water flows from river Kabul and felt that there should be a water treaty between the two countries, enabling Pakistan to make long-term water availability projections.”<sup>116</sup>

In 2011, the IRSA increased their emphasis on the necessity for Pakistan and Afghanistan to engage on the issue. It warned the Government about “the proposed construction of around a dozen dams by Afghanistan on the Kabul river and suggested that talks be initiated immediately with the Afghans for finalising an agreement to protect Pakistan’s water rights.”<sup>117</sup> In November 2011, the Federal Secretary of Water and Power Ashfaq Mahmood was reported as saying that

110 Muddassir Rizvi, “Planned Afghan Reservoirs Worry Pakistan,” Inter Press Service, <http://www.ipsnews.net/2003/09/environment-planned-afghan-reservoirs-worry-pakistan/>, 4 September 2003.

111 In the light of the detailed World Bank study and considering the limited irrigation potential development in the Kabul basin, the figure provided in this estimation is very unlikely.

112 “Proposed Dams on Kabul River: Pakistan to Suffer Drop in Water Supply,” *Dawn*, <http://www.dawn.com/news/670691/proposed-dams-on-kabul-river-pakistan-to-suffer-drop-in-water-supply-2>, 1 November 2011.

113 “Pakistan Cannot Challenge Construction of Dam on Kabul River,” *Pakissan.com*, <http://www.pakissan.com/english/news/2003/aug/pakistan.shtml>, 21 August 2003.

114 Muddassir Rizvi, “Planned Afghan Reservoirs Worry Pakistan,” Inter Press Service, <http://www.ipsnews.net/2003/09/environment-planned-afghan-reservoirs-worry-pakistan/>, 4 September 2003.

115 “Pakistan Ready to Sign Water Accord with Afghanistan: Sherpao,” *Dawn*, <http://www.dawn.com/news/122815/pakistan-ready-to-sign-water-accord-with-afghanistan-sherpao>, 2 November 2003.

116 “Need Stressed for Water Treaty With Afghanistan,” *Dawn*, <http://www.dawn.com/news/371911/need-stressed-for-water-treaty-with-afghanistan>, 28 September 2004.

117 “Water Storage Capacity to be Raised by 20MAF,” *Dawn*, <http://www.dawn.com/news/629891/water-storage-capacity-to-be-raised-by-20maf>, 19 May 2011

“it was the right time for Islamabad to sit with Kabul and form a water treaty otherwise it would be too late.”<sup>118</sup> Similarly, the CEO and National Programme Director of the Climate and Development Knowledge Network (CDKN) was reported as saying that “a water treaty between Pakistan and Afghanistan was very necessary to avoid future conflicts.”<sup>119</sup> Thus, as early as 2003, Pakistani officials have consistently indicated their preference for developing a treaty for water sharing in the Kabul basin.

### International encouragement for a water sharing agreement

International organisations such as the World Bank and USAID have also been actively supporting the idea of negotiated water-sharing agreements and have attempted to play a direct mediation role in order to bring both parties together. In 2006, the World Bank proposed to mediate a consultation process between Afghanistan and Pakistan,<sup>120</sup> but the consultation did not have much traction as the Afghan officials explained that they lacked data and capacity, and that they subsequently needed more time to prepare.<sup>121</sup>

Similarly, in June 2011, the World Bank proposed “a mechanism for dispute resolution and joint management of water resources by the two countries with the name of Kabul River Basin (KRB) Management Commission on the pattern of Pakistan-India Permanent Indus Commission.”<sup>122</sup> The World Bank’s plan was to “sponsor and promote dialogue and cooperation between Afghanistan and Pakistan for economic development and security in the region.” The focus was “to develop institutional capacity in both countries, particularly Afghanistan, for promotion of greater cooperation and understanding through exchange and sharing of hydro-meteorological data of the KRB between the two countries and development of a management plan using hydrological, hydraulic and economic models.”<sup>123</sup> This undertaking was closely embedded within World Bank-funded capacity-building programmes that were ongoing in Afghanistan, such as AWARD and other dialogue platforms such as the Abu-Dhabi Dialogue Group (ADD-G), funded by the World Bank and facilitated by the South-Asia Water Initiative (SAWI).

The US were also involved in a similar effort when in April 2011 they facilitated “initial talks between Pakistan and Afghanistan on a bilateral water treaty”<sup>124</sup> with the hope of establishing a mechanism “to ward off such disputes in future and instead have a joint system in place for long-term benefit of the two countries.”<sup>125</sup> The US worried that if Pakistan and Afghanistan did not establish a treaty, then “at a later stage, acrimony may emerge between the two countries.”<sup>126</sup> The involvement of the US needs to be understood as a practical follow-up to their high-profile report “Avoiding Water Wars: Water Scarcity And Central Asia’s Growing Importance For Stability In Afghanistan And Pakistan,” signed in February 2011 by John Kerry, then Chairman of the Committee on Foreign Relations and US Secretary of State since February 2013

Note that the intervention of the US and the World Bank was also sought by the GOP in order to reach an accord “on the pattern of Indus Waters Treaty signed with India” or at least “put in place a mechanism of information-sharing on building of dams on the Kabul river to avoid any dispute on water issues.”<sup>127</sup>

118 “Proposed Dams on Kabul River: Pakistan to Suffer Drop in Water Supply,” *Dawn*.

119 “Proposed Dams on Kabul River: Pakistan to Suffer Drop in Water Supply,” *Dawn*.

120 This role of mediator by the World Bank was successful in the case of the Indus Waters Treaty, for instance.

121 Interview with key experts (K-6), 18 June 2013; informal discussion with key informant (K-16), 17 February 2013.

122 “Joint Management of Water Proposed with Afghanistan,” *Dawn*, <http://www.dawn.com/news/636374/joint-management-of-water-proposed-with-afghanistan>, 13 June 2011

123 “Joint Management of Water Proposed with Afghanistan,” *Dawn*.

124 “Pak-Afghan Water Talks Under Way,” *Dawn*, <http://www.dawn.com/news/622243/pak-afghan-water-talks-under-way>, 19 April 2011

125 “Pak-Afghan Water Talks Under Way,” *Dawn*.

126 “Pak-Afghan Water Talks Under Way,” *Dawn*.

127 “Ministry Suggests Water Treaty with Kabul to Avoid Dispute,” *Express Tribune*, <http://tribune.com.pk/story/193655/ministry-suggests-water-treaty-with-kabul-to-avoid-dispute/>, 22 June 2011

### **From Afghanistan reluctance to engage in water-sharing dialogue to an agreement to jointly share the Kunar river**

During the period between 2003 and 2013 GIRoA appeared reluctant to enter into any water sharing agreements with Pakistan or indeed notify Pakistan of ongoing or proposed projects. In 2003 Afghanistan was less than enthusiastic when a nine-member technical committee led by the then-Chairman of the Federal Flood Commission in Pakistan took the initiative to start drafting a water treaty with Afghanistan. However, in August 2013, the Ministers of Finance from Afghanistan and Pakistan signed an agreement regarding a joint-hydropower project on the Kunar river. Although important aspects of the joint-venture had not been decided – and are still pending at the time of writing – such as how benefits (i.e. hydropower) would be shared, how operations would be managed and how funding would be provided, the agreement clearly indicates a move toward an integration strategy by both countries.

This agreement came as part of a presidential trip to Pakistan to talk about trade, security issues and dialogue with the Taliban ahead of the Afghan presidential election of April 2014. The agreement was not known to MEW and MoFA prior to the talks. Nevertheless, if it is a framework to agree to explore possibilities and potential avenues for cooperation then it is likely that MEW and MoFA will be brought in at a later stage to discuss the technical, economic and procedural elements of the agreement.

## 3.2 The Helmand/Hirmand river basin

### 3.2.1 Key transboundary challenges and opportunities in the Helmand/Hirmand river basin

#### The Helmand/Hirmand river basin at a glance

The Helmand basin covers the southern part of Afghanistan (or approximately 40 percent of the country), draining water from the southern Hindu Kush ranges, from Gardez in the east, Parwan northwest of Kabul and Herat in the north. In the west, the basin is confined by the East-Iranian ranges and in the south and east by the Baluchistan mountain ranges in Pakistan.

The 1,300 km Helmand river is the main stream in the basin. As the river approaches the southwestern part of the basin, it enters the 18,000 km<sup>2</sup> Sistan depression (or delta), located in both Afghanistan and, principally, Iran. The Sistan delta forms a large complex of three main inter-connected wetlands: the Hamun-e-Puzak,<sup>128</sup> Hamun-e-Saberi and Hamun-e-Hirmand.

The surplus water in the Sistan depression flows out from the southern end of Hamun-e-Hirmand, through a channel into the depression of Gaud-e-Zirreh inside Afghanistan (See Figure 3 and Map 5 in Annex).

In Afghanistan, water is mainly used for irrigation purposes. In Iran, it is used in parts for irrigation, but also for several activities that make use of the existence of the wetlands, such as fishing, reeds harvesting and bird hunting. The wetlands have also been internationally recognised as an important ecological site since 1975 under the Ramsar Convention, and also under the Montreux Record.<sup>129</sup>

The key characteristics (non-exhaustive) of the international basin are provided in Table 8 and are discussed in more detail further below. This paper considers only the situation between Iran and Afghanistan, although the river basin does include a small part of Pakistan.<sup>130</sup>

128 Hamun is an ancient Persian word meaning "lake." In Afghanistan the wetland is known as Hamun-e-Helmand.

129 "The Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference. It is maintained as part of the Ramsar List." (Source: [http://www.ramsar.org/cda/en/ramsar-documents-montreux/main/ramsar/1-31-118\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-documents-montreux/main/ramsar/1-31-118_4000_0__))

130 However, this is mainly a desert area and Pakistan's interests in this basin are virtually nil. Thus, the remainder of this paper does not discuss the case of Pakistan for this basin.



Table 8: Key characteristics (non-exhaustive) of the Helmand/Hirmand basin

	Afghanistan	Iran
Area (km <sup>2</sup> ) <sup>44</sup>	287,986	54,844
Population <sup>45</sup>	7,758,000	1,197,000
Population density (cap/km <sup>2</sup> )	26.9	21.8
Average precipitation (mm) <sup>46</sup>	50-300	50-60
Irrigable area in the basin (ha)	250,219 <sup>47</sup>	120,000 <sup>48</sup>
Total surface water available (MCM)	9,552 <sup>49</sup>	5,875 <sup>50</sup>
Total groundwater available (MCM)	2,480 - 3,650 <sup>51</sup>	229 <sup>52</sup>
Total water available (MCM)	12,032 - 13,202	6,104
Storage capacity (MCM) (effective in 2013)	1,400 <sup>53</sup>	1,400 <sup>54</sup>
Proportion of surface water use as compared to surface water available	38% - 57% <sup>55</sup>	100%
Proportion of groundwater use as compared to groundwater available	41% - 60% <sup>56</sup>	65% <sup>57</sup>
Proportion of total water use as compared to total water available in country	52% - 57%	99%
Dependency ratio <sup>58</sup>	NA	96%
Percentage of grain (mainly wheat) in cropping pattern	55% - 80%	81%
Average wheat yield (T/ha)	3 - 5.5 <sup>59</sup>	1.6 - 2.1 <sup>60</sup>

44 Source: <http://www.transboundarywaters.orst.edu/>

45 Source: <http://www.transboundarywaters.orst.edu/>

46 Source: FAO - Climwat2.0.

47 Mott MacDonald Ltd., "Helmand River Basin Master Plan. Phase 2: Technical Report 1: Progress on Helmand River Basin Model and Scenario Development," Ministry of Energy and Water (Kabul, October 2012).

48 Karen Meijer, Eelco van Beek and Koen Roest, "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran," Annex C Sistan Water Resources System - Supply and Demand (2006).

49 MWRE hydrological yearbooks (1961-1980).

50 Based on Meijer et al., "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran."

51 Based on Uhl, "Afghanistan."

52 Ministry of Energy, "Hamun Socio Report," (August-September 2011). Note that this water is available outside the delta (i.e., the area where 78 percent of the agriculture area is located).

53 Per design it would be 2,400 MCM. (Source: Mott MacDonald Ltd., "Progress on Helmand River Basin Model and Scenario Development," (October 2012).)

54 Meijer et al., "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran."

55 See more details further below about variations in figures depending on assumptions.

56 Based on Uhl, "Afghanistan." This figure is probably under-estimated due to lack of a recent groundwater survey.

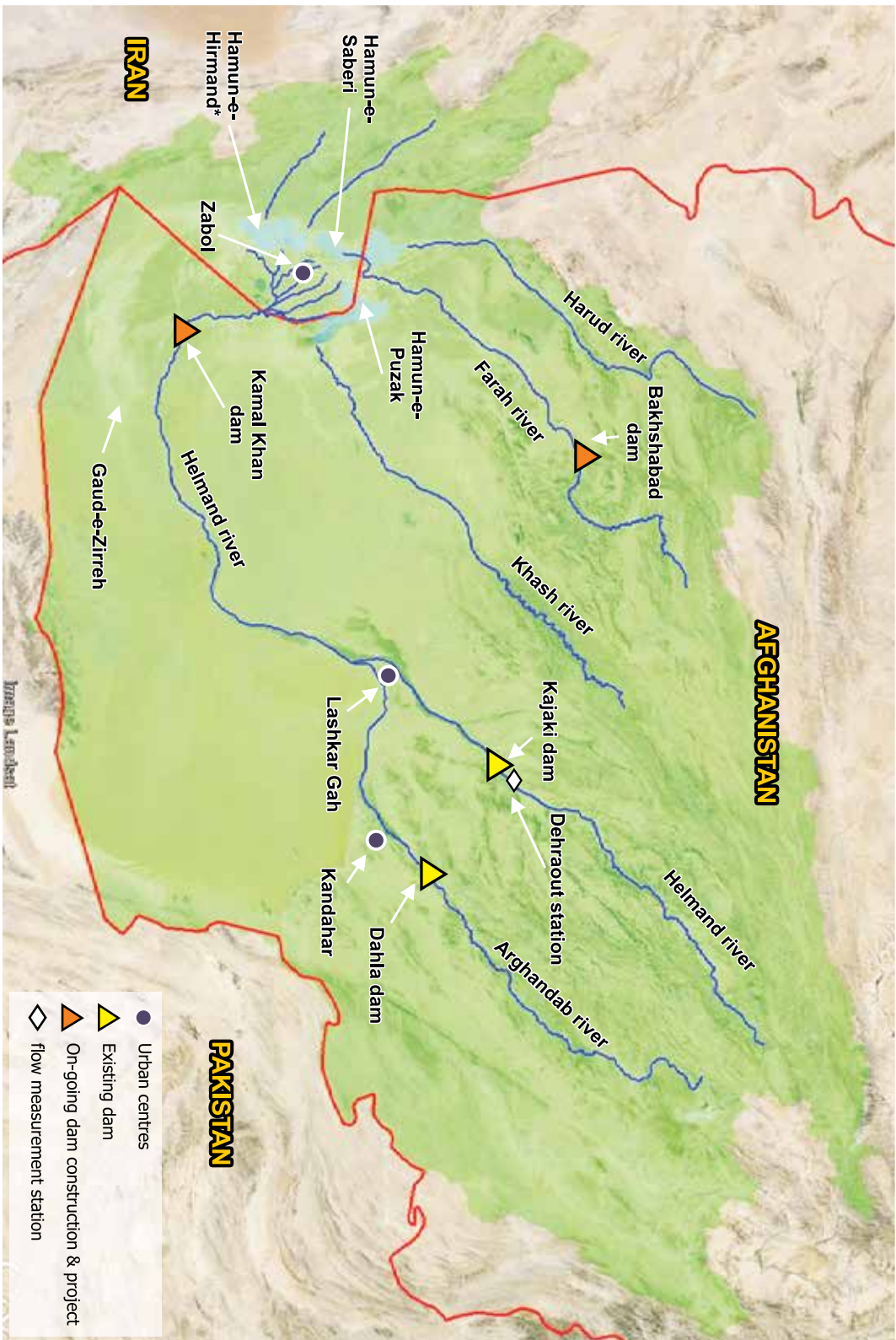
57 Based on Ministry of Energy, "Hamun-Socio Report."

58 It is the part of the total renewable water resources originating outside the country.

59 Mott McDonald Ltd., "Progress on Helmand River Basin Model and Scenario Development," (October 2012).

60 Meijer et al., "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran"; Ministry of Energy, "Hamun-Socio Report."

Map 2: The Helmand/Hirmand river basin.



(\*) In Afghanistan the wetland is known as Hamun-e-Helmand

Source: Google, Image Landsat

## Potential for water resource development in upstream Afghanistan

The Afghan part of the Helmand River basin is characterised by a medium level of surface water exploitation and some potential for expanding irrigation.

The average surface water availability in the basin is estimated at 9,552 MCM.<sup>131</sup> The Helmand River (at Kajaki dam) represents close to 60 percent of this total surface water availability of the basin.

Different estimations indicate that Afghanistan uses between 38 percent<sup>132</sup> and 57 percent<sup>133</sup> of the water available within its border.<sup>134</sup> The level of groundwater use is in the same range of 41 percent to 60 percent of total availability (i.e. 2,480-3,650 MCM).

Afghanistan's ability to regulate the flow of its rivers is not ideal, despite the presence of two large dams,<sup>135</sup> as the storage represents barely 15 percent of the annual average water availability. The current storage capacity does not allow for storing the large flow during the spring period in order to support irrigation during summer. Thus, the irrigation of the 250,219 ha on the Afghan side cannot be satisfied to its fullest extent.

In order to address this gap, the GIRoA is in the process of developing the Kamal Khan and Bakhshabad projects under GIRoA funding. Combining the two would enable existing irrigation areas to be fully used and provide another 101,154 ha of land to be newly irrigated—a 40 percent increase compared to the existing irrigated area. The storage capacity would increase from 15 percent to 35 percent of the annual surface water availability.<sup>136</sup> Note, however, that most of this new storage capacity would be concentrated on the Farah River, not the Helmand River.

131 MWRE hydrological yearbooks (1961-1980). The Watershed Atlas of Favre and Kamal (2004) estimates the overall availability at 9,300 MCM. However, the details for each river tend to be inaccurate, for instance Farahrod and Khasrod are largely underestimated as compared to the official records of hydrological yearbooks.

132 Based on Meijer et al., "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran."

133 MEW, *Water Sector Strategy* (2008).

134 Calculation of water use in Afghanistan (versus water use in Iran) is somewhat difficult due to the complexity of the hydrological system in the face of the interconnection between wetlands and the location of the border, which cuts across different wetlands. Thus, it is rather arbitrary to estimate whether the flow entering wetlands such as Puzak and Saberi from the Afghan side is considered as Afghan use, considering that part of this flow will be contributing – in good and wet years – to the supply of the other wetlands including Hamun-e-Helmand, which is located inside Iran's territory. In dry years, however, this would not be the case.

135 Kajaki has a storage capacity estimated at 1,076 MCM (1,844 MCM per design) and Dahla has a storage capacity estimated at 1,412 MCM (2,294 MCM per design). (Source: Mott-McDonald, "Progress on Helmand River Basin Model and Scenario Development," (October 2012).

136 Based on Mott McDonald Ltd., "Progress on Helmand River Basin Model and Scenario Development."

## Iran: The situation in the Sistan delta

Around 96 percent<sup>137</sup> of the surface water resources in the Sistan delta originate in Afghanistan. Groundwater availability is insignificant.<sup>138</sup>

The existing agro-ecological system in the Sistan delta is considered viable but far from ideal given the current average levels of surface water availability.<sup>139</sup>

Given the closed and integrated nature of the system, all the estimated 5,935 MCM<sup>140</sup> of surface water that enter the Sistan delta are used in their entirety, whether for domestic, municipal and industrial (DMI) uses, irrigation or to maintain the wetlands as a freshwater ecosystem.<sup>141</sup> The various types of usage are listed in Table 9.

Table 9: Water usage in the Sistan delta

	Average water use (MCM)	Contribution as percentage of total (%)
Agriculture (120,000 ha <sup>61</sup> )	1,161 <sup>62</sup>	20%
Public water supply	34	1%
Hamuns evaporation	4,378	74%
Chahnimeh evaporation <sup>63</sup>	124	2%
Outflow to Shelarud and Gaud-e-Zirreh.	238	4%
<b>TOTAL</b>	<b>5,935</b>	<b>100%</b>

61 The 120,000 ha refer to irrigable land. On average, much less is actually irrigated (see details further below).  
62 It includes 593 MCM (similar value is found in Ministry of Energy, Hamun-Agro Report [July-August 2012] Page 44 Table 7-2-3) for crops demand, 564 MCM for irrigation losses and 4 MCM for agriculture in Sikhisar.  
63 This corresponds to the evaporation of Chahnimeh 1, 2 and 3. Chahnimeh 4 was only planned at the time of the study of Meijer et al. (2006).

Source: Meijer et al. (2006)

The main water users in the delta are the three interconnected wetlands, which represent close to 75 percent of the demand for the whole system. Note that these wetlands are critical to the livelihood of the local inhabitants (see Box 2).

137 The small perennial rivers flowing within Iran (mainly on the western part of the wetlands) have a combined average flow of around 225 MCM, which represents less than 4 percent of the overall water available in the Hamun basin. (Source: Ministry of Energy, "Hamun-Hydro Report" (April-May 2012).

138 Meijer et al., "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran" (based on Absaran, 2005).

139 Eelco van Beek et al., "Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran," Irrigation and Drainage Systems (2008). The author explains that, at the time of the study, the supply/demand ratio for irrigation in the Sistan was limited to 63 percent as compared to a reference of 80 percent. When it comes to the wetland, while the flushing should optimally happen every eight years (or more often), it happened on average once every 12.5 years. This situation may change depending on how the Chahnimeh-4 reservoir (in the process of being completed as of 2013) is used. In terms of agriculture production, the average yield for winter wheat is between 30 percent and 45 percent lower in the Sistan than it is in the Lower Helmand. The figures would be 60 to 69 percent lower as compared to mid-Helmand. (Sources: based on Mott McDonald Ltd., "Progress on Helmand River Basin Model and Scenario Development," (October 2012); Meijer et al., "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran" (based on Absaran (2005); Ministry of Power, "Hamun-Agro Report" (July-August 2012).

140 This figure includes 5,875 MCM of surface water as well as 60 MCM in the form of precipitation.

141 Meijer et al., "Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran"; Beek et al., "Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran."

### Box 2: The importance of the Hamuns in the Sistan Delta.

The Hamuns have the unique characteristic of being a freshwater system, despite being located at the end of a closed basin. The Hamuns provide goods and ecological services not only for farmers and fishermen but for the whole population, producing crops, mat, bird meat and fish. Local residents have also stressed on the health effects of the wetlands in the area; the combination of strong winds and water provide a type of natural air conditioning, while the same strong winds empty the Hamuns and result in severe sand storms in the area, which have important negative effects on the health of the residents. The wetlands are also considered important for providing “independence” and strengthening “social structure.”<sup>64</sup>

In an area where 55 percent of the rural population directly depends on the agriculture sector for their income and employment<sup>65</sup> and where the industrial sector is very small (6 percent<sup>66</sup>), maintaining the wetlands as a freshwater ecosystem is critical. In that regard, the frequent spilling in Gaud-e-Zirreh is of utmost importance.<sup>67</sup> A significant reduction in water cover on the Hamuns would not only harm the ecological functioning of the lake, it would also endanger the livelihoods of the people that depend on the products and services that this system sustains. During the extended drought and the ecosystem collapse of the early 2000s, 124 villages were abandoned and unemployment rose considerably.<sup>68</sup> Preserving the wetlands has also become an internal political matter for the GIRI in this volatile area bordering Afghanistan and Pakistan. Indeed, the Sistan-and-Baluchestan Province is one of the most marginalised areas in Iran. The GIRI fears that this mainly Sunni population – in a majority Shi’a country – may feel increasingly disenfranchised by Tehran if the economic structure were to deteriorate.

Sources: Beek (2008); Meijer et al. (2006); <http://www.stimson.org/spotlight/transboundary-water-sharing-iran-and-afghanistan/> (2011)<sup>64</sup> Beek et al., “Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran.”

64 Beek et al., “Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran.”

65 I. Ebrahimzadeh and M. Esmaelnejad, “Climate Changes and the Role of Recent Droughts on Agricultural Economy of Sistan,” *Romanian Review of Regional Studies* 9, no. 1 (2013): 11-22.

66 Beek et al., “Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran.”

67 Meijer et al., “Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran.” Currently the spilling happens on average every 12.5 years, while it should ideally happen every eight years.

68 Andrew Houk, “Transboundary Water Sharing: Iran and Afghanistan,” *Spotlight*, <http://www.stimson.org/spotlight/transboundary-water-sharing-iran-and-afghanistan/>, 22 March 2011

In the early 1980s, Iran started developing reservoirs for securing DMI demand,<sup>142</sup> which used to be threatened in times of drought.

In 2006, the construction of a fourth reservoir with a storage capacity of 819 MCM was initiated to bring the total capacity to 1,400 MCM,<sup>143</sup> further satisfy DMI demand<sup>144</sup> and improve the reliability of water supply for irrigation.<sup>145</sup> The use of the Chahnimeh-4 reservoir is predicted to improve the reliability of the demand/supply ratio for existing irrigated agriculture from 63 to 79 percent, while having reasonably low impacts on the wetlands compared to the 2006 base scenario.<sup>146</sup>

### Water-sharing agreement between Afghanistan and Iran: The 1973 treaty

In 1973, the Afghan and Iranian governments signed a treaty guaranteeing an average of 820 MCM (or 26 m<sup>3</sup>/s) per year from the Helmand River for use to Iran.<sup>147</sup> (See description of the treaty in Box 7 in Annex). The treaty is clear that Iran has no claim for water use beyond that amount.

142 The Chahnimeh reservoirs provide drinking water for all households of Zabol Shahrestan as well as for Zahedan and the Afghan city of Shahr-e-Naw.

143 Thus the storage of the Chahnimeh reservoirs is comparable to the current storage on the Afghan side, from Kajaki and Argandhab.

144 Note that during the 2001-2002 drought, 100 villages were abandoned due to a lack of drinking water (Source: Partow (2003) as referred to in Whitney (2006)).

145 Meijer et al., “Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran.”

146 Beek et al., “Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran.” According to the authors there was a potential for developing 145,000 ha in addition to the existing 120,000 ha. This would have been done with the help of the Chahnimeh-4 reservoir. But Beek et al. (2008) models estimate that this would be a very problematic scenario, both for agriculture and the wetlands. This is not an option that the government of Iran is looking into. (Source: [www.wnn.ir/html/index.php?name=News&file=article&sid=9498](http://www.wnn.ir/html/index.php?name=News&file=article&sid=9498)).

147 *The Afghan-Iranian Helmand River Water Treaty* with Protocol No. 1 and Protocol No. 2, 13 March 1973. Note that the final exchange of documents after ratification by Iranian and Afghan Parliaments happened later in Khordad 1356 (May-June 1977). (Source: Fakhari, “Dispute Between Iran and Afghanistan on the Issue of Hirmand River”: 60.)

The 820 MCM supply of water for Iran represents a small proportion (less than 14 percent) of the current overall water demand and use<sup>148</sup> in the Sistan delta (See Table 10). In fact, the estimation of the 820 MCM in the treaty was specifically thought to be Iranian use for irrigation and domestic consumption (minor portion).

Table 10: Iran's water supply from the Hirmand river as a proportion of overall water demand and use in the Sistan delta

The 820 MCM water rights of Iran on the Hirmand river represent...	... 19% of Hamun evaporation demand (4,378 MCM).
	... 71% of average irrigation supply (1,161 MCM) in Iran (but 40% of actual demand (2,069 MCM)).
	... 519% of domestic demand and evaporation of Chahnimeh reservoirs.
	... 14% of total average demand.

Source: Calculations based on data from Meijer et al. (2006).

Modelling studies by Meijer et al. (2006) and Beek (2008) estimate that if the average water availability reaching the Sistan delta fell to a level below 3,250 MCM, this would have “disastrous effects for the agricultural activities in the Sistan delta and for the Hamuns,” with a “nearly complete collapse of the ecology of the Hamuns”<sup>149</sup> (See also Table 15 in Annex). This means that in a hypothetical scenario where the Farah and Khash rivers were left untouched (i.e. a status quo scenario) and Iran received close to 160 percent of what the treaty stipulates from the Helmand river, the Sistan delta would still face the same consequences as found in the studies of Meijer et al. (2006) and Beek (2008).

In short, there is the likelihood that a certain level of increased water withdrawal in Afghanistan could significantly harm the integrity of the delta (i.e. irrigated land and wetlands) despite being permitted under the Helmand Treaty.

Thus, by guaranteeing only 820 MCM per year - which is primarily for irrigation use in Iran - the treaty does not offer much protection for preserving the socio-economic and ecological integrity of the wetlands. But it is clear that through its article five, the 1973 treaty gives Afghanistan complete liberty to undertake any water resource development project as long as it provides water to Iran according to the treaty's requirements.

### Foreseeable water resources developments in Afghanistan and possible impacts

In the context of water resources development in Afghanistan, the question is to what extent the Sistan delta can cope with a more continuous decrease in inflow.

The extreme scenario simulated by Beek (2008), which implies a water flow reduction from 5,875 MCM to around 3,250 MCM per year, is unlikely to happen in the short to mid-term.<sup>150</sup> Thus the “disaster in the making” announced by Mojtahed-Zadeh<sup>151</sup> may not be the most accurate way to describe the situation in the delta, at least as far as foreseeable developments in Afghanistan are concerned.

Nevertheless, this does not mean that the more modest on-going and foreseeable plans<sup>152</sup> of the MEW won't cause any significant harm to the Sistan delta. A study by Mott McDonald estimates

148 Note that due the nature of the Sistan delta's agro-ecological system, all the water that enters the system is used. No water leaves the system unused.

149 Beek et al., “Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran,” 141.

150 This scenario is based on a development plan that would correspond to an increase in the irrigated area on the Afghan side from the current 246,111 ha to 682,664 ha (a plus 436,553 ha or 2.8 times increase). The scenario also assumes storage capacity increasing from an estimated 1,887 MCM to 4,440 MCM (a plus 2,553 MCM or 2.4 times increase). This increase entails an assumption of a restoration and enlargement of existing reservoirs for the Dahla dam and Kajaki respectively. It also assumes the construction of new reservoirs (Bakhshabad and Olumbagh).

151 Pirouz Mojtahed-Zadeh, “Lake Hamun, a Disaster in the Making: Hydropolitics of Hirmand and Hamun,” United Nations Environment Programme, <http://www.unep.or.jp/ietc/Publications/techpublications/TechPub-4/lake1-7.asp>.

152 The foreseeable plans in Afghanistan are not yet at the level of the Meijer et al. (2006) scenario. What is expected is an increase in storage capacity from 1,412 MCM (current scenario) to 2,944 MCM (a plus 1,532 MCM or 2.1 times increase). In terms of irrigated land, the increase is expected to be 101,154 ha, or 4.3 times less than the scenario of Beek (2008).

that the Kamal Khan project could reduce the water flow to Iran by 380 MCM<sup>153</sup> (estimation for 51,000 ha of newly irrigated land). On the basis of the Meijer et al. (2006) study, the impact could be between 493 MCM (estimation for 51,000 ha of newly irrigated land) and 580 MCM (estimation for 60,000 ha of newly irrigated land).<sup>154</sup> On the same basis (i.e. the Meijer et al. (2006) study), the impact of the Bakhshabad project in the presence of a large storage could be well above 710 MCM. The study conducted by Mott-McDonald provides an estimate of 350 MCM.<sup>155</sup>

Thus, while Meijer et al. estimate that a 2,685 MCM<sup>156</sup> decrease in the delta would mean an “ecological disaster,” the foreseeable Afghan plans are likely to entail a decrease in water availability of approximately 730 MCM and possibly as much as 1,290 MCM<sup>157</sup>, depending on assumptions made given the current understanding of the projects. This would represent between 17 percent and 29 percent of the average water demand to compensate the wetlands evaporation. This would also represent between 63 percent and more than 100 percent of the current average agriculture water use in the Sistan delta.

Note that these figures do not take into consideration the flood water that could be diverted at the level of Kamal Khan to the saltmarsh of Gaud-e-Zireh – and thus diverted from the Sistan wetlands– in order to protect against possible flood damages on the Afghan side (right bank downstream Kamal Khan).<sup>158</sup>

The extent of the transboundary socio-economic and environmental impacts of impending Afghan development has not yet been evaluated. More work in this area is clearly warranted. It is also important to note that there have been limited independent studies on the impacts of Afghan projects in the Helmand basin. Moreover, the existing and future vulnerability of the wetlands cannot be accounted for solely to transboundary water resources development in Afghanistan –Iran’s mismanagement of its wetlands has been contributing to its vulnerability<sup>159</sup> and may continue to do so depending on Iran’s decisions on how to manage water allocation from Chahnimeh-4, and how it will manage the wetlands.<sup>160</sup>

For their part, the GIRoA needs to decide whether they should engage (or not) in discussions with Iran when it comes to projects on the Helmand River. As noted there is no water sharing agreement on the Farah River. Consequently, from the perspective of the 1997 UN Convention, the Bakhshabad project would likely require notification as part of cooperation over the resources.

The main international community actors such as the UN and NATO have been hoping that a right balance can be found through discussions and negotiations. For instance, following the August 2011 tender for the first phase of construction of the Kamal Khan dam on the Helmand River, the Deputy Secretary General of NATO explained in a December 2011 report to the UN Secretary General that: “As the dam will have an impact on the flow of water from the Helmand River into Iran, transnational water agreements to facilitate its implementation as well as potential international investments in other dam constructions in Afghanistan will be required.”<sup>161</sup>

153 Estimation based on a reduction of flow at Zaranj (Afghanistan) from 124 to 112 m<sup>3</sup>/s. (Source: Mott-McDonald, “Progress on Helmand River Basin Model and Scenario Development,” (October 2012).

154 In the Sistan, in the absence of storage for irrigation and based on a traditional cropping pattern, the water use for 120,000 ha is 1,161 MCM. Considering that there is no storage at Kamal Khan, and assuming a similar cropping-pattern for the upcoming 60,000 ha of newly irrigated land, the water use would be at 580 MCM.

155 Mott McDonald, “Progress on Helmand River Basin Model and Scenario Development.”

156 From 5,935 MCM to 3,250 MCM.

157 See Beek (2008) This would be a straight loss to Iran’s water supply. The way the GIRoA is planning to deal with floods at the level of Kamal Khan has not been studied yet.

158 This would be a straight loss to Iran’s water supply. The way the GIRoA is planning to deal with floods at the level of Kamal Khan has not been studied yet.

159 Beek et al., “Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran.” According to the authors, Iran’s mismanagement includes, “Intensified cattle grazing and the introduction of exotic herbivorous fish” that have “destroyed the regeneration capacity of the reeds after dry years.”

160 Beek et al., “Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran.”

161 Source: [http://www.un.org/ga/search/view\\_doc.asp?symbol=S/2011/760](http://www.un.org/ga/search/view_doc.asp?symbol=S/2011/760)(Page 11).

Note that it is not clear whether was aware of the existence of the 1973 treaty on Helmand river.

### 3.2.2 Summary of Afghanistan and Iran dialogue and interactions in the Helmand Basin

With the understanding that the 1973 Helmand Treaty offers limited guarantees for maintaining the wetlands, Iran has been looking primarily for a containment strategy away from the legal field. Over the past decade, the GIRI has not publicly requested the revision of the 1973 treaty. Instead, Iran has been engaged in a dual tactic of incentives and coercive compliance mechanisms as a way of containing what it perceives as a threat.

The general incentive strategy is similar to the one discussed in the case of Harirod (see Section 3), through investment and development in Afghanistan.

On the coercive side, Iran is strongly suspected of having conducted covert attacks, or attempts, on both the Kamal Khan and Bakhshabad dams including in April 2009<sup>162</sup> and in March 2012.<sup>163</sup> As in the case of Harirod, these covert actions slowed down the projects, giving Iran time to adapt to the predicted reduction in surface water availability.<sup>164</sup>

On the legal front, since the critical drought of 1999-2001 in the region, the GIRI has voiced its concerns through its senior local and national leaders regarding the alleged non-application of the 1973 Treaty.

For instance, during the dry years 2000-2001, Iran formally raised its concerns to the Embassy of the Islamic State of Afghanistan regarding an alleged blockage of the Helmand waters at the Kajaki dam resulting in a failure (according to Iranian authorities) to honour the Treaty. The complaint letter was later circulated on the 21 September 2001 as part of an agenda item of the General Assembly Security Council (see Box 6 in Annex).

In September 2002, an Iranian Member of Parliament stated: “The least we expect is implementation of the accord signed between Iran and Afghanistan before the Islamic revolution in Iran.”<sup>165</sup> In March 2003, Iranian Supreme Leader Ayatollah Ali Khamenei gave a speech in Zabol in which he urged Afghanistan to fulfil its commitments on supplying water: “We expect Afghanistan to respect the rights of Iran and of the residents of Sistan-wa-Baluchistan Province to Hirmand River water, and the issue will be followed up seriously by the Islamic Republic of Iran.”<sup>166</sup> From January to May 2005, the Friday prayer leader in Zabol, the Sistan-wa-Baluchistan Provincial Governor as well as the Ayatollah Akbar Hashemi Ravsanjani<sup>167</sup> repeatedly declared publicly once again that Afghanistan should fulfil its commitment on the water-sharing treaty.<sup>168</sup> In January 2013, the Ministry of Energy and Power for Iran handed over a letter to President Karzai during an official visit, insisting that the two countries should bring the 1973 water treaty into effect to avoid future disputes.<sup>169</sup>

In 2011, in response to the recurrent claims of Iran, the MEW publicly described Iran’s concerns over Kamal Khan and the alleged non-respect of the 1973 treaty as “baseless.”<sup>170</sup>

162 “Tehran Accused of Complicity in Growing Weapons Trade,” Institute for War and Peace Reporting, <http://www.unhcr.org/refworld/topic,45a5199f2,45deafd02,49f7ff55c,0,,AFG.html>, 20 April 2009

163 Shoib Tanha, “Fund Crunch, Security Derail Big Plans for Dams,” The Killid Group, <http://www.tkg.af/english/reports/political/889-fund-crunch-security-derail-big-plans-for-dams>, 24 April 2012

164 For instance, during the period 2006 to 2013, Iran has constructed and filled the Chahnimeh-4 reservoir to secure even further its DMI and to improve the reliability of water supply for irrigation. The outlet canal was still under construction at the time of writing in 2013. Furthermore, Iran has also been initiating fish farming in the Chahnimeh-4 - thus supporting livelihoods based on fishing that are at risk during the periods of drying-up of the wetlands. (Source: [www.wnn.ir/html/index.php?name=News&file=article&sid=9498](http://www.wnn.ir/html/index.php?name=News&file=article&sid=9498)).

165 Bill Samii, “Iran/Afghanistan: Still No Resolution For Century-Old Water Dispute,” Radio Free Europe Radio Liberty, <http://www.rferl.org/content/article/1061209.html>, 7 Septmeber 2005.

166 <http://reliefweb.int/report/iran-islamic-republic/iran-supreme-leader-urges-afghanistan-recognize-irans-water-rights>

167 Ayatollah Akbar Hashemi Ravsanjani was president of Iran from 1989 to 1997.

168 Samii, “Iran/Afghanistan: Still No Resolution For Century-Old Water Dispute.”

169 Abasin Zaheer, “Tehran Wants Water Treaty With Kabul Enforced,” Pajhwok Afghan News, <http://www.pajhwok.com/en/2013/01/27/tehran-wants-water-treaty-kabul-enforced>, 27 January 2013.

170 Ghanizada, “Iranian Concerns Over Kamal Khan Dam Construction Baseless: Officials,” Khaama Press, <http://www.khaama.com/iranian-concerns-over-kamal-khan-dam-construction-baseless>, 8 September 2011.



In parallel to this, since September 2005, Iran and Afghanistan have been officially participating on the Helmand Commission,<sup>171</sup> which is working on assessing and ensuring the application of the treaty. Based on descriptions from Afghan sources, the discussions (see Box 3) have not eliminated the tensions and have largely been back-and-forth about whether the treaty is being implemented properly.<sup>172</sup>

### Box 3: About the Helmand Commission

Since September 2005, both Afghanistan and Iran have put in place the Helmand Commission. The existence of a commission is prescribed in Protocol Number One of the 1973 treaty, which had never been functional since the ratification of the treaty in 1977 (on the Afghan side) due to the wars and political turmoil in both countries. On the surface, such an approach should correspond with a cooperative approach that aims to resolve differences through institutional platforms.

The Commission is working to assess and ensure the application of the treaty, and meets “when required” – which ends-up, on average, being on a quarterly basis.

Both sides seem to measure the flow separately on their own side.<sup>69</sup> It is important to note that measuring the flow on only the Afghan side will not give a fair estimate of the flow actually going into Iran along the common Parian as there are no functional measuring stations there at the moment. However, the intake structures which the Iranian operate would presumably have measuring gauges. Under the Treaty Afghan and Iranian commissioners are to act jointly in the measurement of the water delivery to Iran but there is no evidence that this happens on a regular basis (if ever).

Measurements and data are, however, difficult to determine in Afghanistan. One senior international adviser underlined his scepticism: “Afghans keep saying that they have 6,000 MCM in Helmand. For the last five to 10 years I know that there has not been 6,000 MCM in Helmand, it’s been more like 3,500 MCM. So I don’t know how they can make such an assessment. It think it’s based on assumptions.”<sup>70</sup> In the absence of a functional station at Dehraout on the Afghan side it is difficult to estimate exactly what should be the actual water rights to Iran, particularly in dry years.<sup>71</sup>

In the absence of any joint fact-finding missions, advancing the implementation of the Treaty may prove difficult. Note that the discussions happening in the Helmand Commission could not be verified by Iranian sources. The information should thus be considered with caution.

<sup>69</sup> Interview (Gov-31, 06-06-13).

<sup>70</sup> Interview (K-5, 10-10-13).

<sup>71</sup> These water rights depend on the flow measured at Dehraout station (upstream Kajaki dam in Afghanistan) but the station has never been rehabilitated due to security reasons according to Afghan officials.

<sup>171</sup> This commission is part of the institutional arrangements stipulated in the 1973 treaty.

<sup>172</sup> Such information could not be confirmed by Iranian sources. The minutes of the Helmand Commission meetings are not publicly available.

### 3.2.3 Opportunities and limitations for dialogue and benefit sharing

There is limited scope for direct benefit sharing from water development in the Helmand Basin when it comes to the Kamal Khan and Bakhshabad projects.

- Electricity is not needed for Iran as they already export some to Afghanistan.
- Flood control via the Kamal Khan project: For most years, Iran is relatively well prepared with reservoirs, dykes and floodways. And floods, when non-destructive, are useful for flushing out the wetlands and preserving them as a freshwater ecosystem. Thus flood control would not necessarily make sense in normal years. However it could potentially be useful for extreme flood events. So there is some room for cooperation over flood control (see recommendations) in theory.

Despite limited direct integration benefits, the overall, the hydrology and development figures show that there is room for finding a balance whereby Afghanistan and Iran can benefit from the development of water resources while the impacts on the delta in Iran remain reasonable.

Moreover, there is possibility to fully implement the Helmand Commission roles in terms of monitoring and compliance. Although it is not to be excluded that in certain exceptional years, and possibly certain months, Afghanistan may not release the required water under the Treaty this would happen only rarely.<sup>173</sup> Furthermore, data are insufficient to confirm whether the non-respect of the treaty in certain dry years is due to mismanagement on the Afghan side (as the case in Box 4 may suggest) or due to exceptional circumstances (e.g. drought). In the latter case, and as anticipated in article XI of the treaty, Afghanistan cannot be held responsible, but specific measures still have to be taken (see Box 7 in Annex). Furthermore, in very dry years, the non-respect of the treaty cannot be considered as the main reason for the drying-up of the wetlands. As explained in different studies, such events are largely part of a natural cycle.<sup>174</sup>

One question therefore in the Helmand Basin will be how much Afghanistan and Iran can develop their water resources and maintain the integrity of wetlands while respecting the legality of the Helmand Treaty? Such understanding should improve, providing that there is a better joint measurement and monitoring of water flows and use.

To date the feasibility studies of the Afghan projects as well as basin planning do not include transboundary impact and comprehensive environmental assessments.<sup>175</sup> The potential degree to which development interests outweigh environmental concerns is underscored by the fact that awarding of the contracts for projects were taken before the river basin modelling studies by Mott-McDonald.<sup>176</sup>

Clearly, there is room for improved dialogue and relations with Iran in the Helmand basin, particularly on the environmental front and in particular with the preservation of the Sistan wetlands.

173 Beek et al., "Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran."

174 As Beek et al. (2008) explains: "In dry periods the lakes can fall completely dry as has been the case in the period 2000-2005, temporarily creating a desert-like environment. When the lakes start filling after a rainy period, the ecology recovers. Reed starts growing again and birds and fish return. This process has been going on for ages and proves that the system can absorb to some extent these natural dynamics." During the last century, they have completely dried up at least three times. (J.W. Whitney, "Geology, Water, and Wind in the Lower Helmand Basin, Southern Afghanistan," U.S. Geological Survey Scientific Investigations Report 2006-5182, 40 (2006).

175 Interview with Government official (Gov-29), 19 May 2013.

176 The report was published in October 2012. The contract for Bakhshabad was awarded in November 2012. (Source: <http://zaraimedia.com/2012/11/30/nepak-wins-2-mega-dam-projects-in-afghanistan/>). This means that while the report was still in finalisation, the bidding process was already underway. Also, Kamal Khan was awarded in 2011; see Afghanistan Awards Dam Construction Contract to Tajik Firm," Central Asia Energy Newswire, <https://centralasianewswire.com/Energy/Afghanistan-awards-dam-construction-contract-to-tajik-firm-/viewstory.aspx?id=4643>, 15 August 2011.

### 3.3 The Harirod/Tejen<sup>177</sup> river basin

#### 3.3.1 Key transboundary challenges and opportunities in the Harirod/Tejen river basin: Balancing Afghanistan's opportunities and legitimate demand for development with limiting impacts on Iran and Turkmenistan's existing uses

##### The Harirod/Tejen river basin at a glance

Afghanistan, the Islamic Republic of Iran and Turkmenistan all share the 1,124 km-long Harirod/Tejen river. It originates in the western part of Afghanistan, with the upstream part located in Ghor Province (at an altitude of 4,000m) and the downstream part – where most irrigation takes place – located in Herat Province (Herat city is located at an altitude of around 920m). Runoff comes from snowmelt, which is the major source of surface water. Below the Tir-Pol station, the river flows along the border between Afghanistan and Iran, and then between Iran and Turkmenistan (see Map 3). In Iran the water is mainly used for irrigation around the Sarakhs area and, since recently, for domestic and industrial purposes in Mashhad city. As it passes the Sarakhs area, the river enters Turkmenistan territory where it feeds into the Karakum canal system – the intake of which is located on the Amu Darya – and mainly irrigates land located north of Tejen city. (See Map 3.)

The key characteristics (non-exhaustive) of the international basin are provided in Table 11.

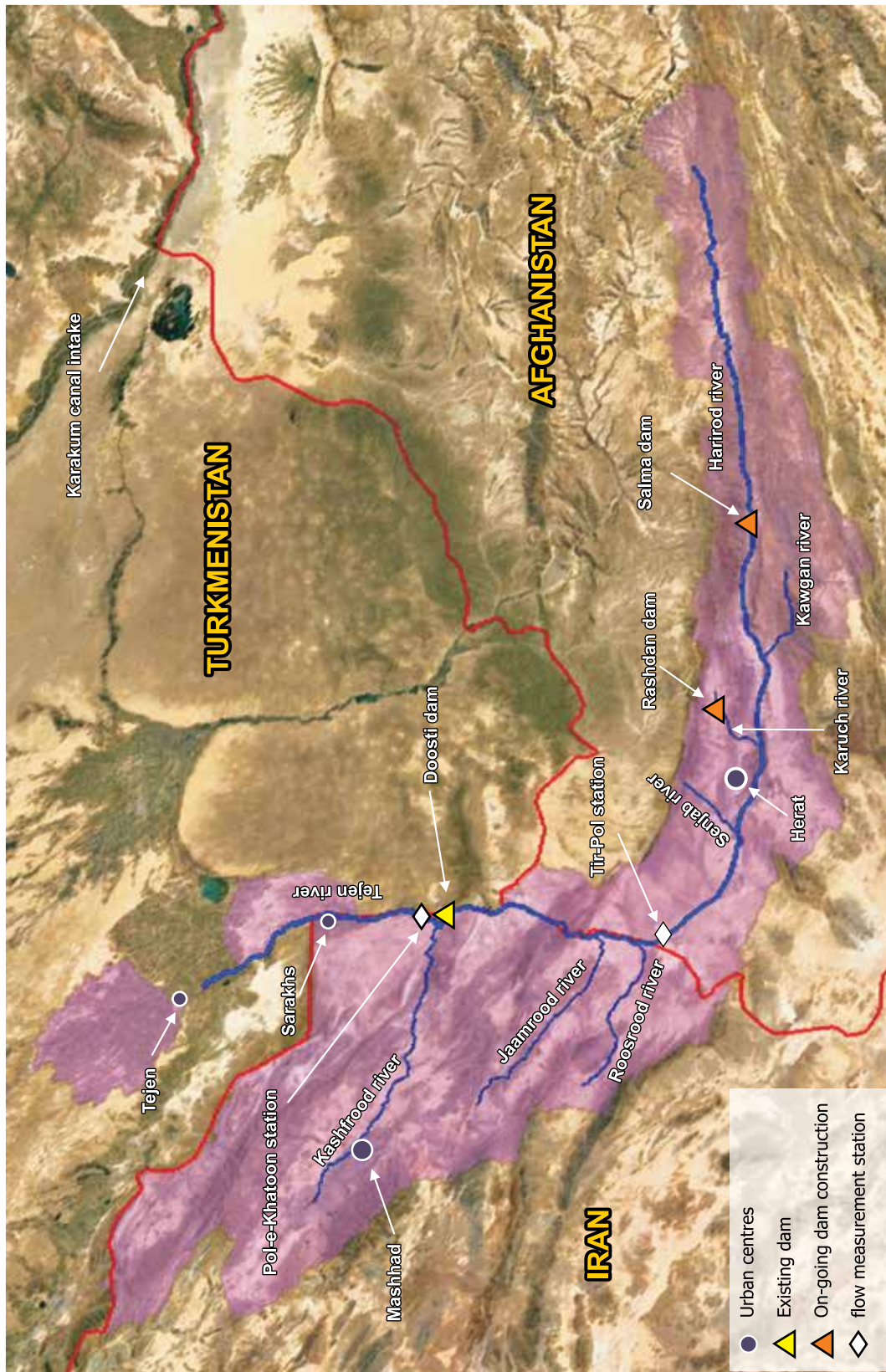
Table 11: Key characteristics (non-exhaustive) of the Harirod/Tejen river basin

	Afghanistan	Iran	Turkmenistan
Area (km <sup>2</sup> ) - (Country's share) <sup>72</sup>	39,300 - (35%)	49,264 - (44%)	23,640 - (21%) <sup>73</sup>
Population - (Country's share) <sup>74</sup>	1,723,000 – (32%)	3,526,316 – (65%)	168,000 - (3%) <sup>75</sup>
Population density (cap/km <sup>2</sup> )	44	72	7 <sup>76</sup>
Average precipitations (mm)	245 <sup>77</sup>	219 <sup>78</sup>	161 <sup>79</sup>
Irrigable area in the basin (ha)	213,900 <sup>80</sup>	238,906 <sup>81</sup>	393,400 <sup>82</sup>
Total surface water available (MCM)	1,570 <sup>83</sup>	771 <sup>84</sup>	508 <sup>85</sup>
Total groundwater available (MCM)	640 <sup>86</sup>	1,523 <sup>87</sup>	NDA <sup>88</sup>
Total water available (MCM)	2,210	2,294	NA
Storage capacity (MCM) (effective in 2013)	0 <sup>89</sup>	625 <sup>90</sup>	995 <sup>91</sup>
Proportion of surface water use in basin as compared to surface water available	40%	Approx. 100% (since Dosti) <sup>92</sup>	100% <sup>93</sup>
Proportion of groundwater use in basin as compared to groundwater available	25%	135% <sup>94</sup>	100%
Proportion of total water use in basin as compared to available total water available	36 %	122 % <sup>95</sup>	100 %
Dependency ratio <sup>96</sup>	NA	61% <sup>97</sup>	100% <sup>98</sup>
Percentage of grain (mainly wheat) in cropping pattern	74%	53%	52%
Average wheat yield (T/ha)	2.85	3.00	2.75
<p>72 Source: <a href="http://www.transboundarywaters.orst.edu/">http://www.transboundarywaters.orst.edu/</a></p> <p>73 This figure is rather arbitrary as there are no river basins in Turkmenistan (see details in the section on Turkmenistan). It should therefore been taken only as an indicative figure.</p> <p>74 Source: <a href="http://www.transboundarywaters.orst.edu/">http://www.transboundarywaters.orst.edu/</a></p>			

<sup>177</sup> The main river in the basin is called the Harirod. It is also called the Harirod in Iran but only until the Dosti dam. The name then changes to the Tejen.

- 75 This figure is rather arbitrary as there are no river basins in Turkmenistan (see details in the section on Turkmenistan). It should therefore be taken only as an indicative figure.
- 76 Ibid.
- 77 At Herat station.
- 78 Source: FAO Climwat 2.0. Based on an average of four main climatic stations in the basin (Mashhad: 240 mm; Kashafrush: 265 mm; Torbat: 222 mm; Sabzevar: 150 mm)
- 79 Source: FAO Climwat 2.0. Figures are closer to 190 mm in the southern part close to the border with Iran.
- 80 R. Favre and G. M. Kamal, Watershed Atlas of Afghanistan (Kabul: Ministry of Irrigation, Water Resources and Environment, 2004). This includes only 133,100 ha which are irrigated every year. 80,800 ha are irrigated only once every several years.
- 81 Ministry of Energy and Power, "Karakum-Agro Report" (July-August 2012). There are however only 32,000 ha that are directly irrigated by the Harirod/Tejen river. The remaining land is irrigated by tributaries that do not depend directly on Afghanistan sources.
- 82 This figure is an estimate of the area that could receive water from the Tejen river (from a geographical and topographical point of view). Only 15 percent of this area (i.e., 59,010 MCM) can actually be irrigated on average.
- 83 Based on MWRE hydrological yearbooks (1962-1978).
- 84 Ministry of Energy and Power, "Karakum-Hydro Report" (May-June 2011). This research considers water availability at the head of Kashrood (250 MCM), Jamrod (50 MCM) and half of the flow of Harirod coming from Afghanistan (est. half of 942 MCM).
- 85 FAO Aquastat Turkmenistan. As per water rights, this corresponds to half of the water available at the Pol-e-Khatoun station (i.e., half of 1,015 MCM). Note that the Tejen river contributes to an overall supply of 24,110 MCM through the Karakum canal network, which is itself supplied by the Amu Darya river.
- 86 Vincent W. Uhl, Afghanistan: An Overview of Groundwater Resources and Challenges (2003).
- 87 Based on the three sub-basins hydrologically related to the Harirod/Tejen river (i.e., Kashrood, Jamrod and Sarakhs aquifers). Ministry of Energy and Power, "Karakum-Socio Report" (August-September 2011).
- 88 FAO Aquastat Turkmenistan provides only a national figure of 405 MCM.
- 89 There are ongoing projects that should provide a storage capacity of 678.8 MCM in the short to mid-term.
- 90 This corresponds to half of the overall storage of Dosti dam (i.e., half of 1,250 MCM).
- 91 This corresponds to half of the overall storage of Dosti dam (i.e., half of 1,250 MCM) and 370 MCM of storage on the Tejenriver in Turkmenistan. In practice, the overall storage may be closer to 800 MCM due to siltation.
- 92 Prior to Dosti, around 70 percent of the available water was actually used. The 30 percent remaining could not be used due to the absence of storage on the Harirod river, and flowed to Turkmenistan.
- 93 This is from the Harirod/Tejen river only. At country level, the surface water withdrawal is 111 percent of availability because abstraction from Amu Darya is slightly more than entitled. Source: FAO Aquastat Turkmenistan.
- 94 The groundwater table is drastically decreasing in the Karakum basin (i.e., Iranian side of the Harirod/Tejen basin).
- 95 This figure is currently reducing as groundwater withdrawal in Sarakhs is reducing thanks to Dosti storage (see details below).
- 96 It is the part of the total renewable water resources originating from outside the country.
- 97 Based on Ministry of Energy and Power, "Karakum-Hydro Report" (May-June 2011). Overall figure based on water available from Harirod, Jamrod and Kashrood.
- 98 The Tejen river flow entering Turkmenistan depends 93 percent on Afghanistan and 7 percent on Iran, but this water feeds into the Karakum canal system in Turkmenistan and contributes only 2 percent of this total surface water availability in Turkmenistan.

Map 3: The Harirod/Tejen river basin



Source: Google, Image Landsat

## Important potential for water resource development in upstream Afghanistan

Afghanistan has the potential to improve its technical control over water on the Harirod, and to subsequently expand irrigation and develop hydropower to support both the local and national economy. Currently, Afghanistan uses approximately 40 percent (or 628 million cubic metres (MCM)<sup>178</sup> of the 1,570 MCM total surface water flowing through its territory. In terms of groundwater, only 25 percent of total availability (i.e., 640 MCM) is used.<sup>179</sup> This again leaves potential for Afghanistan to support further water resources development.

There is no storage at the moment on the Afghan side. This limits Afghanistan's irrigation development capacity and hydropower production.

To fulfil this potential, Afghanistan is engaged in the implementation of the Salma (since 2004) and Pashdan (since 2013) dam projects. The new storage capacity would represent approximately 44 percent of the annual surface water availability (see Table 12). Out of the 213,900 ha already under irrigation, 42,000 ha would receive better irrigation access. In addition, 40,000 ha would be newly irrigated. In addition, 44 MW of hydropower would be generated.

Table 12: Details of the Salma and Pashdan dam projects

Name of Project	River	Province	Power Generation (MW)	Storage capacity (MCM)	Irrigated area (ha)			Cost (million USD)	Status
					Existing	New	Total		
Salma	Harirod	Herat	42	633	35,000	40,000	75,000	200	Under construction <sup>99</sup>
Pashdan	Karuch	Herat	2	46	7,000 <sup>100</sup>	0	7,000	118	Under construction
<b>TOTAL</b>			<b>44</b>	<b>697</b>	<b>42,000</b>	<b>40,000</b>	<b>82,000</b>	<b>318</b>	

99 The feasibility study of the Salma dam was completed in 1972 while the excavation work started in 1976. At the time of the Soviet invasion, excavation of the dam foundation had not been completed, and the work on the dam had not been halted. The construction started again in 2006. At the time of writing, approximately 80 percent is said to be completed.

100 Based on Ministry of Energy, "Karakum-Hydro Report" (May-June 2011). Another source from the MEW mentions 12,296 ha of existing land. (MEW, "Building the Future: The Revival of Dam Building in Afghanistan" (undated).

Source: MEW. Presentation from Eng. Zia Gul Saljuki, National Water Conference, Kabul, 29 January 2013.

From a current usage of around 628 MCM of surface water, Afghanistan could potentially increase its use by an additional 584 MCM,<sup>180</sup> for a total of 1,212 MCM after Salma is completed.

178 The water availability in Afghanistan is estimated at 1,570 MCM (MWRE Hydrological yearbooks (1962-1978). Estimations based on 1966-2006 Iranian data series indicate that the water availability from the Harirod at the Afghanistan-Iran border is estimated at 942 MCM. The water availability at the Pol-e-Khatoun station on Tejen river is 1,015 MCM. However, this flow includes an average of 66 MCM coming from Kashfrod (Iranian tributary) and 7 MCM coming from Jamrod (Iranian tributary). (Based on Ministry of Energy and Power, "Karakum-Hydro Report" (May-June 2011). Thus the contribution from Afghanistan is estimated at 942 MCM. The rest (i.e., 628 MCM) is used in Afghanistan. Based on only nine years of flows estimated at the Tir-Pol station close to the Iranian border, the water leaving the country toward Iran is on average around 763 MCM (MWRE Hydrological yearbooks (1962-1978). But this figure seems to be under-estimated, possibly because of the short period of data series.

179 Based on Uhl, *Afghanistan*. This figure is likely to be under-estimated as groundwater use has developed over the past decade. Unfortunately, no proper survey has been conducted to estimate current usage. It is, however, likely that Afghanistan still has potential for groundwater development.

180 S.K. Adhikary, S.K. Das, S.S. Atef, A. DasGupta and M.S. Babel, "Simulating Impacts of EFR Consideration on Reservoir Operation Policy and Irrigation Management in the Hari Rod River Basin, Afghanistan," presented at the 19th International Congress on Modelling and Simulation, Perth, Australia, 12-16 December 2011 <http://mssanz.org.au/modsim2011>.

## Pressure on already over-exploited resources in Iran and Turkmenistan

Iran depends on Afghanistan for around 61 percent of its surface water availability (estimated at 771 MCM<sup>181</sup>) in the Karakum basin.

The total irrigable area along the Harirod/Tejen river and its main tributaries such as Kashfrod, Jamrood and Roosrood is about 238,906 ha,<sup>182</sup> with only 13 percent (i.e., 32,000 ha) being directly irrigated by the Harirod/Tejen river. The rest is irrigated along tributaries that do not depend on Afghanistan (see Map 3).

In 2005, the Governments of Iran and Turkmenistan finished the construction of the Dosti dam – initiated in 1996 – on their mutual border (see Map 3). This dam has a storage capacity of 1,250 MCM,<sup>183</sup> which represents more than the yearly surface water availability of the Tejen river at the dam's location (1,015 MCM). Note that 93 percent of the water reaching the dam comes from the Harirod river (i.e., Afghanistan).<sup>184</sup>

Following a new water-sharing agreement (signed in 1999 but applicable in practice on completion of the Dosti dam<sup>185</sup>), Iran and Turkmenistan share equally the available water at the dam (approximately 507 MCM each). Between 1926 and the signing of this agreement,<sup>186</sup> Iran was entitled to 30 percent (i.e. 304 MCM) but could not make use of all this water due to a lack of storage facilities. The rest of the water flowed toward Turkmenistan. Thus, in practice, Turkmenistan used to receive more than the 710 MCM it was entitled to.

Thanks to improved water availability, Iran has re-allocated its water usage (see Table 14 in Annex). Around 150 MCM are now transferred to the city of Mashhad in response to a largely man-made water crisis (see Box 5 in Annex). The rest still supplies the irrigated area of Sarakhs.

Overall, Iran and Turkmenistan are using approximately 100 percent of the Harirod surface water that enters their borders. Furthermore, Iran has been in a state of over-exploitation of its groundwater resources for many years.<sup>187</sup>

## What are the potential impacts of the Salma hydropower and irrigation project on Iran and Turkmenistan?

A reduction of water flow along the Harirod as a consequence of Afghanistan's large-scale hydraulic projects could potentially harm Iran (and to a lesser extent Turkmenistan). This is due to the relatively high dependence of these two countries on Afghanistan in terms of surface water availability, and their very limited room for increasing water withdrawal from sources within their own border (in the Harirod basin).

181 Ministry of Energy and Power, "Karakum-Hydro Report" (May-June 2011). To simplify the estimations, half of the flow at the Afghan-Iranian border was considered to be entitled to Iran, in addition to the water availability from Iran's tributaries (i.e., Jamrod and Khashfrod), which are almost entirely used before joining the Harirod/Tejen river.

182 Ministry of Energy and Power, "Karakum-Agro Report" (July-August 2012).

183 Saeed Nairizi, "Integrated Water Resources Management (IWRM) In Critical Arid Basin Of Iran (Mashhad Basin)," Power Point Presentation (Undated). Nairizi is the Head of the Board and Managing Director of Toossab Consulting Engineers Co.; the company that built the Dosti dam. The Director of Operations and Maintenance Bureau of the Khorasan Razavi Regional Water Authority talks about an effective volume of 950 MCM, of which 720 MCM can be regulated.

184 Ministry of Energy and Power, "Karakum-Hydro Report" (May-June 2011).

185 The agreement was entitled "About Construction and Exploitation of the Water Reservoir Dostluk (Friendship)" (Source: UNDP (2010)).

186 Article 1 of the agreement between the USSR and the Imperial State of Iran (dd. 20-02-26.) states: "All water of the river of Gerirud (Tejen), starting from the bridge of Pol-i-Khatoun and downstream along the whole length of the border reach, is divided into ten equal parts between the contracting parties: three parts are used by Persia and seven parts by the USSR."

187 Although groundwater extraction has been forbidden in several aquifers including in Jaamrood/Fariman and Sarakhs, illegal extraction is still ongoing. It is estimated the rate of groundwater exploitation in Jamrood, Kashfrod and Sarakhs is 135.5 percent average (Source: Ministry of Energy and Power, "Karakum-Socio Report" (August-September 2011)).

The impact of the Salma hydropower and irrigation project is estimated – based on the existing publications and studies to date – as a reduction in the flow of the Harirod of around 62 percent<sup>188</sup> at the Iranian border, which would mean a reduction of 58 percent<sup>189</sup> at the level of the Dosti dam. If one were to use the limited-time series data from the Afghan Government regarding the average flow at the border and compare it with the water demand for irrigation provided by Adikhary et al., the flow reduction due to the Salma project would translate into more than 76 percent at the border.<sup>190</sup> Taking the most conservative estimate of a 62 percent reduction, water availability for Iran and Turkmenistan at the Dosti dam would be reduced from 507 MCM to 215 MCM.<sup>191</sup> In other words, the water availability for Iran would fall below its historical use during the period 1926-1999. The new level of water use of the Harirod would be around 74 percent for Afghanistan and approximately 13 percent each for Iran and Turkmenistan;<sup>192</sup> while the current level of water use is approximately 40 percent, 30 percent and 30 percent respectively. Note that this estimation does not consider the impact – probably limited – of the Pashdan dam project. If this were to happen, the new transfer of water supply to the municipality of Mashhad may be assured, but irrigation in Sarakhs would be severely affected.<sup>193</sup> The most pessimistic scenario would barely guarantee the planned 150 MCM supply to Mashhad to address the crisis in the Kashfrod sub-basin.

For Turkmenistan, agriculture would be affected but to a lesser extent. The 215 MCM remaining after completion of the Salma project would still allow irrigation of around 20,000 ha – instead of the planned 30,000 ha. This would mean that the Tejen river would not contribute to the Karakum canal system. Here, the impact appears much less significant than for Iran, considering that the current contribution of the Tejen river to the Karakum irrigation network is extremely limited (i.e. 2 percent).

Note that the estimation provided above would need to be improved and fine-tuned through further modelling studies that investigate different scenarios of balanced use between agriculture and hydropower. Such studies should include better understanding of local cropping patterns, irrigation efficiencies and return flow. It is not to be excluded that new studies may show that the Salma project has less of an impact than initially predicted, depending on the scenarios evaluated and assumptions made.

188 The long-term average surface water reaching Iran at the border is 942 MCM. Adikhary et al. (2011) estimate that an average of 584 MCM would be newly used for irrigation from the Salma dam and they also estimate through modelling that this demand can be met—except in very dry years—by the dam.

189 The difference between 58 percent and 62 percent is because a small part of the inflow at Dosti dam comes from Iranian tributaries (Jamrod and Khashfrod) to the Harirod. (Derived from Ministry of Energy and Power, bureau of macro-level planning for water and wastewater, “Studies for updating the comprehensive water plan of Eastern basins.” Package one - present situation and possibilities of water resources development, Volume four - surface water resources (quantitative and qualitative aspects) (Karakum Basin). Report number 430594 - 4417/1. Khordad 1390 [May-June 2011].)

190 A news article by the *Christian Science Monitor* (CSM) refers to Iranian experts who estimated a reduction of the flow by an average of 73 percent; a figure for which no reference is given as to how it was estimated but which was confirmed by a senior Afghan government official. (Source: email exchange with Scott Peterson (4 August 2013), author of the article “Why a dam in Afghanistan might set back peace,” <http://www.csmonitor.com/World/Asia-South-Central/2013/0730/Why-a-dam-in-Afghanistan-might-set-back-peace>, 30 July 2013.) An earlier article in the CSM of 15 June 2010 stated—again without any documented references or evidence—that the Salma dam would “reduce the amount of water that flows from the HariRod River to Iran and Turkmenistan from 300 million cubic meters per year to 87 million cubic meters.” In light of the flow data available both in Afghanistan and Iran and in the light of scientific studies (e.g., Adikhary et al. (2011)), such figures appear clearly unrealistic. These data are quoted—without verifications—in other articles (see for instance Dehghan et al. (2012)). Note that the MEW in Afghanistan has not conducted formal studies evaluating the impacts of the Salma project (Interview with government official (Gov-31), 6 June 2013.)

191 Based on Adikhary et al., “Simulating Impacts of EFR Consideration on Reservoir Operation Policy and Irrigation Management in the Hari Rod River Basin, Afghanistan.” If one refers to the claims of the *Christian Science Monitor*, the remaining water availability at the Dosti dam would be 164 MCM. Here one assumes that the base line for the flow reaching Iran is the Iranian data (as the claim is from Iran sources). As shown earlier, the long-term average flow reaching Iran would be 942 MCM. Thus a 73 percent reduction would mean 688 MCM less available water. Thus, the reduction at Dosti would be 1015 MCM - 688 MCM = 327 MCM, of which 50 percent is the belongs to Iran (i.e., 164 MCM).

192 If the projections of Adikhary et al. (2011) are correct, Afghanistan would be using on average 1,212 MCM of the Harirod/Tejen while Iran and Turkmenistan would each receive 215 MCM from Dosti. If one counts all of Iran's usage including the tributaries, Iran's usage would represent 36 percent of what Afghanistan would be using.

193 In that scenario, 65 MCM would remain to Sarakhs, which is largely below even its historical use of around 213 MCM prior to the 1999 agreement with Turkmenistan.



## UN convention: Determining “fair and reasonable” development

In the absence of formal water-sharing agreements, one may reflect on the Harirod issue through the lens of the 1997 UN Convention.<sup>194</sup> From this perspective, the question posed by the Afghan projects is: “To what extent can Afghanistan develop so that the water use in each country can be considered by all parties as ‘equitable and reasonable’ taking into account all appropriate measures not to cause significant harm?” Ideally, finding this balance would be happening through dialogue and by following the “prior notification” procedure suggested in the 1997 UN Convention.

With regards to prior notification, the GIROA has indicated that notification is redundant as it considers that Salma was approved by Iran 40 years ago. However, there is little evidence to suggest that any form of notification or acceptance was done for any of the major projects undertaken in the basin, including Dosti, Salma or Pashdan<sup>195</sup> (see also discussion in Box 4).

### Box 4: About “prior notification” and “legal harm” in the Harirod basin

#### Prior notification of Salma and Dosti dams in the Harirod basin:

Senior decision-makers in the GIROA do not consider the construction of the Salma dam to be a new project as it was already underway in 1976.<sup>101</sup> The claim is that at the time, the Iranian Government agreed – or at least did not raise any formal objections – to the project. In a recent interview, the Afghan Deputy Minister for the MEW said that: “The idea of building this dam emerged 40 years back. At that time, Iran had no request of water.”<sup>102</sup> While conducting this research we did not gain access to documentations confirming Iran’s agreement to the dam at the time.<sup>103</sup> Also, Farouq (1999) explains that in 1970 “the development of the Hari-Rud river basin project and the proposed construction of the Salma dam on the Hari-Rud river became a [...] worry to Iran.”<sup>104</sup>

One could refer to the fourth Afghan five-year-plan of 1973 as the base of information being made public about the project—at a time when the plans for the Salma dam were ready. According to this five-year-plan the characteristics of the Salma project were different to what is presented nowadays by the MEW. In 1973, the Ministry of Planning talked about a 220 MCM project that could eventually be increased to 400 MCM.<sup>105</sup> However, the current plan has a capacity of 650 MCM. This raises the question of whether or not what was discussed in the 1970s was referring to the current project’s characteristics. Overall, evidence that Iran and Afghanistan engaged in a prior notification process in good faith regarding Salma in 1976, and which resulted in an agreement (or no objection) on the Iranian side, remains limited at this point. Furthermore, as one international expert on transboundary water resources explained, the UN Convention – which recommends prior notification as a process – was not really written for cases where a dam project would be restarted 30 years after being initiated.<sup>106</sup>

101 The project was halted due to the war at a time when the foundations were being dug.

102 Scott Peterson, “Why a Dam in Afghanistan Might Set Back Peace,” *Christian Science Monitor*, 30 July 2013, <http://www.csmonitor.com/World/Asia-South-Central/2013/0730/Why-a-dam-in-Afghanistan-might-set-back-peace>

103 Interviews with government officials (Gov-31), 6 June 2013; and key expert (K-3), 22 September 2013. Advisers have recommended—since 2010—that the MEW and MoFA find the claimed documents, but neither has been able to find them.

104 Ghulam Farouq, “The Effects of Local, Regional and Global Politics on the Development of the Helmand-Arghandab Valley of Afghanistan” (London: School of Oriental and African Studies, University of London, August 1999), 116.

105 Ministry of Planning, “Draft Fourth Five Year Plan: National Development Plan for Afghanistan 1351-1355 (1972/73-1976/77)” (1973), 117.

106 Informal conversation with key informant (K-3), 22 September 2013.

194 Water resources development in Afghanistan, Iran and Turkmenistan happens in a context where none of these countries has signed and ratified the 1997 UN Convention. Furthermore, enforcement of international legislation on water sharing is weak.

195 Interview with key informant (K-13), 15 August 2013; informal conversation with key informant (K-3), 22 September 2013.

The figures presented above regarding the estimated reduction in water flow toward Iran and Turkmenistan associated with the Salma project suggest that there is potential for appreciable harm. Under the 1997 UN Convention it would require notification and cooperation in good faith with a “view to arriving at a reasonable solution.”<sup>196</sup>

At the same time, and still from the perspective of the 1997 UN Convention, the fact that Iran has no room for developing additional water resources to mitigate the impact of Afghanistan development cannot be used as an argument against the water resource development projects in Afghanistan (see discussion on the concept of absolute territorial integrity<sup>197</sup>). Some level of harm is unavoidable, but the questions are “how much is reasonable and equitable?”, “what does ‘significant’ mean?”, and “what constitutes all appropriate measures to not cause significant harm?”

Where the point of equilibrium considered as acceptable by both sides may fall is a subjective matter which those who support a cooperative process hope to find through negotiations.

It is beyond the scope of this paper to explore all possible objective and subjective arguments that each player may put forward. As mentioned in the conceptual framework, the 1997 UN Convention indicates a number of criteria to be considered when determining “equitable and reasonable” use. However, it does not proscribe an objective answer as to what it would be, rather ‘how’ it should be determined.

However, a cooperative approach to determining ‘equitable and reasonable’ use would help ultimately answer some tough questions through a process of fact finding, discussion, and the opportunity to learn jointly as opposed to moving directly to issues that at first glance appear as a zero-sum game and thus confrontational.

### 3.3.2 Summary of dialogue and interaction in the Harirod Basin

As noted, the 1997 UN Convention obligates states sharing an international watercourse to cooperate to obtain “optimal utilization and adequate protection of an international watercourse”.<sup>198</sup> Key to developing such cooperation is opening up dialogue regarding resource use and development.

Yet, since the fall of the Taliban there is no evidence of productive dialogue between the GIRoA and the GIRI. The GIRI has never formally or officially contested the construction of the Salma dam (which re-started in 2006) *per se*. Similarly, it has not contested in principle the development of water resources on the Afghan side of the Harirod basin. However, it has requested that water rights be defined so as to guarantee a certain flow at the border.<sup>199</sup>

Afghanistan, for its part does not appear eager to engage in dialogue on the Harirod. As recently as July 2013 the Afghan Minister for the MEW noted that the GIRoA did not see any need to talk with Iran or to negotiate.<sup>200</sup> The GIRoA has often explained that it lacks the capacity for dialogue and negotiation, and that too little data is known to reach an adequate understanding of water sharing.

196 Informal conversation with key experts (K-3), 22 September 2013; and (K-12), 19 February 2013; and interview with key informant (K-1), 22 September 2013.

197 Note that this argument has not been used by Iranian officials.

198 Article 8: General obligation to cooperate.

199 Official letters have evidently been sent to GIRoA requesting dialogue on the Harirod developments. See: Wikileaks, “FM Spanta’s Visit to Iran: Concerns Amidst Cooperation,” [www.wikileaks.org/plusd/cables/07KABUL1327\\_a.html](http://www.wikileaks.org/plusd/cables/07KABUL1327_a.html), 18 April 2007; Wikileaks, “Iran Trilateral: Ahmadinejad Suggests US-Iran Reconstruction Cooperation; Afghan-Iran Water Rights Tension,” [http://www.wikileaks.org/plusd/cables/09KABUL1395\\_a.html](http://www.wikileaks.org/plusd/cables/09KABUL1395_a.html), 2 June 2009; “Iran Calls For Forming Commission Over Water Issue With Afghanistan, Tajikistan,” [http://news.xinhuanet.com/english2010/world/2010-12/28/c\\_13666728.htm](http://news.xinhuanet.com/english2010/world/2010-12/28/c_13666728.htm)

200 Peterson, “Why a Dam in Afghanistan Might Set Back Peace.”

### 3.3.3 Opportunities and limitations for dialogue and benefit sharing

The potential for direct benefits-sharing from a project such as Salma is very limited, whether in terms of hydropower sharing, sediment control or flood control.

- In terms of hydropower production, Iran has little need for electricity from the Salma dam as it is already exporting electricity to western Afghanistan, including Herat.

- Sediment control would not be relevant given that Salma is located far from the Iranian border. Indeed, erosion will take place anyway between Salma and the Dosti dam location, leading to sedimentation at the Dosti dam.

- Flood control would have some limited relevance for Iran, given that the Dosti dam can already fulfil that purpose to a large extent, thanks to its high storage capacity.

Nevertheless, the figures presented in this section suggest that there is room for a solution, which includes a significant development on the Afghan side within the scope of reasonable limits and reasonable impacts on Iran and Turkmenistan. There may also be a number of opportunities for negotiations beyond strict water rights that could potentially satisfy all parties (see recommendations).

One of the key areas to explore is whether linkages exist between water and other areas of interest such as trade. When benefit-sharing cannot be readily found within the water sector, an alternative is to look ‘beyond the river’ to see if there are potential areas of compromise and shift the perception of a zero-sum game. We come-back to this point in the recommendations section.

## 3.4 Conclusion

The water situation is different between the Kabul-Indus basin shared with Pakistan and the basins shared with Iran.

In the Kabul-Indus basin, it would be hard to qualify the impacts of the planned projects on the Afghan side as significantly harmful to Pakistan. There is also potential for benefit-sharing, as illustrated in the Kunar agreement.

In comparison, the impacts of Afghan development on Iran for the Harirod basin could be much more significant as far as water is concerned. Further study should help in better estimating its extent.

For the Helmand basin, the projects on the Helmand river are within Afghanistan’s legal right under the 1973 Helmand Treaty. From an agro-ecological impact point of view, however, the combined impacts of Kamal Khan and Bakhshabad projects (as currently designed) may well be problematic for the population of the Sistan. What the figures also show is that if both governments are interested in cooperation, there is room for a compromise (as far as water is concerned) whereby Afghanistan could benefit from a certain level of water resources development while keeping the impacts on Iran to a reasonable level.

Cooperation and dialogue have not been extensive in the basins studied. As mentioned the reasons are complex and somewhat basin specific.

The apparent option to engage in unilateral resource capture, in a context of high power asymmetries and international relations is fitting under a neo-realist paradigm.

The anticipated linkage between domestic and international politics may also have contributed in limiting dialogue with its neighbours. Nevertheless, the fact that the Helmand Commission continues to meet and develop relations provides a potential catalyst for Afghan-Iranian water relations. This would be particularly true if the commission increases the implementation of procedural elements of the treaty. The 2013 Agreement with Pakistan to jointly develop hydropower on the Kunar River could also become a catalyst whereby water may prove a focal point for cooperation between Afghanistan and Pakistan.

## 4. Toward Cooperation Over Transboundary Water Resources Development or Maintaining Course on Unilateral Resource Capture?

It appears that over the past decade, the GIRoA has mainly followed a rather straightforward unilateral resource capture strategy, away from any meaningful dialogue<sup>201</sup> (see Section 3). The recent Kunar agreement suggests a possible shift in the approach of the GIRoA, although it may be too early to judge, particularly given that the MEW and MoFA were not involved in this venture—and may not endorse it. Furthermore, there were a number of additional indications during 2013 that suggest a possible change toward cooperation. Yet there are also reasons to believe that, beyond appearances, the GIRoA could maintain its course away from dialogue and compromises.

This section explores the possible shift in attitude toward cooperation on the basis of the two main indicators that are considered by key informants as signs of change. First, there are the recent changes in the discourse and attitude of President Karzai and the MEW with regards to transboundary water. Second, there is the recent draft of a transboundary policy developed in 2013 by the MEW and MoFA with the support of USAID and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

The second part of this section analyses the attitude of non-ministerial stakeholders (i.e. MPs and academics) and assesses whether they have approached transboundary water development from the same perspective as the GIRoA during the past decade, or whether they suggest and support more dialogue and negotiations.

### 4.1 Analysing recent signs of changes in the GIRoA's attitude toward cooperation over transboundary water resources development

International advisers have all emphasised their perception of a shift in the attitude of President Karzai and the GIRoA regarding cooperation over transboundary water at the end of 2012 and during 2013.<sup>202</sup> In January 2013 at the National Water Conference in Kabul, President Karzai gave a speech in which he evoked for the first time “neighbours’ water rights.” Although the President also insisted during his speech that the GIRoA would “try to convince them [i.e. Afghan neighbours] to be content with their own resources”<sup>203</sup>, the speech as a whole has been perceived – by most national and international advisers – as a shift on the topic of transboundary water. Indeed, there was a contrast with the approach observed during the past decade. As a Member of Parliament close to the president also explained in reference to the pre-2013 period: “Several times I met President Karzai and I suggested he talks with neighbouring countries about water but he said, ‘Let’s stay away from this issue and let not my name be associated with a ‘water seller’ ”.<sup>204</sup>

As another possible sign of a shift, international observers noticed that the GIRoA has become less reluctant to attend regional and international conferences on transboundary water compared to the past. It is important to remember that until recently the GIRoA was sensitive to the term “transboundary” as part of the agenda for regional conferences, including, for instance, the Regional Economic Cooperation Conference on Afghanistan (RECCA).<sup>205</sup> By contrast, in 2013, the Deputy Minister of the MEW attended the High-Level International Conference on Water Cooperation in August 2013. While the speech focused first and foremost on justifying the need for Afghanistan to develop large-scale hydraulic infrastructure, the Deputy Minister also said that the GIRoA supported “the responsible and equitable development and management of water

201 The participation in the Helmand Commission is a form of dialogue, but with clear limitations as discussed in Section 3.

202 Interviews with key informant (K-14), 22 June 2013; and key informant (K-17), 9 June 2013; informal discussion with key informant (K-3), 22 September 2013.

203 Hasan Khitab, “President Slams Donors’ Refusal to Fund Dams,” *Pajhwok Afghan News*, <http://www.pajhwok.com/en/2013/01/29/president-slams-donors%E2%80%99-refusal-fund-dams>, 29 January 2013.

204 Interview with MP (MP-12), 17 June 2013.

205 Wikileaks, “Afghanistan Repeats Request for Assistance on Water,” <http://wikileaks.org/cable/2009/05/09KABUL1336.html>, May 27 2009.

resources in the region provided it does not preclude Afghanistan from fair (equitable) and reasonable use of shared water resources to meet the needs of its people.”<sup>206</sup> He also underlined Afghanistan’s support for “fostering good relationship between countries sharing water” and promoting “cooperation based on mutual respect and reciprocity.”<sup>207</sup>

On the domestic scene, however, senior GIROA officials still remain very cautious about bringing the discussion into the public sphere.

In 2011, when an Afghan think-tank wanted to organise a conference on transboundary water management, it was strongly discouraged by the MEW and the event was cancelled.<sup>208</sup> Similarly, in February 2013, when the Global Water Partnership (GWP) suggested a scoping meeting for establishing a country water partnership in Afghanistan, the MEW, requested that the whole workshop be cancelled, wrongly assuming that transboundary water management was the main topic on the agenda.

The GWP reported succinctly in its monthly report: “The politico-bureaucratic environment of Kabul was extremely unfavorable for such a meeting.”<sup>209</sup> It will be important to follow whether and how this apparent shift of attitude towards dialogue concretise in the future.

It has also been mentioned in several donor forums that the GIROA has been developing a transboundary water policy. When the transboundary policy will be finalised for review by parliament is not known. So far, only the National Priority Program-1 (NPP-1) report, published in 2011 by the Ministry of Finance talks about the GIROA being committed to following “international regulations on water resources development and utilisation in transboundary rivers.”<sup>210</sup> It underlines that “the overriding principles in the context of sharing these water resources would be equity and the just distribution of riparian resources”.<sup>211</sup> It mentions that water resources development is supposed to be done “with careful consideration of environmental, socio-economic and transboundary impacts”<sup>212</sup> and that “Afghanistan has the opportunity to develop its water resources when it would pass the test of ‘no significant harm’”.<sup>213</sup>

## 4.2 Divided attitude of members of Parliament with regards to cooperation

This section provides a detailed descriptive analysis of the views and attitudes of MPs and academics regarding cooperation on transboundary water resources development. It offers further reflection on the likelihood of a change toward cooperation in the foreseeable future. The detailed review of non-ministerial actors’ views will also help to identify impediments and opportunities for dialogue and cooperation.

As of 2013, MPs from the 12 Provinces involved with the Harirod, Helmand and Kabul basins are divided over the attitude to adopt when it comes to the development of transboundary water resources.

206 Afghanistan Statement at the High-Level International Conference on Water Cooperation, Dushanbe, Tajikistan, 20-22 August 2013.

207 Afghanistan Statement at the High-Level International Conference on Water Cooperation, Dushanbe, Tajikistan, 20-22 August 2013.

208 Interview with Government official (Gov-31), 6 June 2013.

209 “Monthly Report – GWP South Asia,” Global Water Partnership, [http://www.gwp.org/Global/GWP-SAs\\_Files/Monthly%20reports/With%20IWPFebruary%202013%20GWP%20SAS%20Monthly%20report.pdf](http://www.gwp.org/Global/GWP-SAs_Files/Monthly%20reports/With%20IWPFebruary%202013%20GWP%20SAS%20Monthly%20report.pdf), 7 March 2013

210 GIROA, “Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement,” 20. The document is undated but was released in 2011. (Interview with key informant (K-1), 22 September 2013.)

211GIROA, “Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement,” 20. The document is undated but was released in 2011. GIROA, “Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement,” page 20 Section 2.5.5. The document is undated but was released in 2011.

212 GIROA, “Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement,” page 45. Section 5.2.2.4. The document is undated but was released in 2011.

213 GIROA, “Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement,” p.53 Section 2.5.4.10. The document is undated but was released in 2011.

Based on the analysis, three different positions were identified:

- A first category of MPs strictly oppose any form of discussions with neighbours, whether in the short or long-term. They represent around 40 percent of the people interviewed.
- The second and third categories of respondents are not opposed to discussions over water rights and/or benefit sharing with riparian neighbours. However, they pose a number of conditions and limitations as to what can be discussed and the timing of discussions. The main difference between the second and third categories of respondents is that the second category would be open to discussions on water rights (or benefit sharing), but only after completion of existing dam projects, while the third category suggest engaging in negotiations as soon as possible.

The different arguments put forward by the three categories are presented below, followed by a reflection on the findings.

Note that, in general, the views of the MPs discussed below apply to the projects on rivers that do not have a treaty. In the case of the Helmand river, all the MPs interviewed were of the opinion that no discussions should be pursued with Iran, and that the GIRoA should only commit to respecting the treaty. Note as well that the vast majority of the MPs interviewed did not have a significantly different attitude, whether it applied to basins shared with Iran or Pakistan.

As a general remark, the MPs had a very limited understanding of the projects' characteristics and possible impacts – as discussed in Section 3 – in each river basin.

Note also that the interviews were conducted prior to the Kunar agreement with Pakistan.

#### **4.2.1 First perspective: Pursuing unilateral actions and resisting any demand for dialogue**

The overarching view of the first category of respondents is that the current and next GIRoA should proceed with the construction of dams and related projects (i.e. irrigation and hydropower) without engaging in any form of discussions with neighbours. This position is largely influenced by a neo-realist conception of international relations.

The different factors and views affecting their position are discussed below.

##### **Unilateral resource capture as a just compensation for the Afghan “late developer”**

For this category of respondents, the view that Afghanistan should develop its water resources outside any form of dialogue with neighbours is also fed by a strong frustration with regards to the recent history of transboundary water use. The fact that a large proportion of water originating from Afghanistan has flowed toward Iran and Pakistan for the past few decades and still continues to do so is perceived by most respondents as “an unfair advantage for Afghan neighbours.” In their opinion, this situation justifies the construction of dams and unrestricted water use in Afghanistan, as a form of compensation. A common statement is: “They have used our water during the 30 years of war without compensation for Afghanistan. So now it is time for us to benefit from this water.”<sup>214</sup>

Note also that in order to justify strict unilateral action in the specific case of Salma, a number of respondents in this category also use the same argument as the GIRoA, discussed in Section 3, concerning Iran's alleged agreement over the construction of the dam in the 1970s.

Thus, the idea of issue-linkage is viewed through a historical perspective whereby past events justify present-day unilateral resource capture.

<sup>214</sup> Interview with MP (MP-81), 7 January 2013.

### **Acrimony and trust deficit with regards to neighbours**

The refusal to discuss transboundary water resources development is also due to past and current general bilateral relations with Iran and Pakistan that have been characterised by trust deficits, frustration and acrimony.

Statements by respondents in this category are usually similar to: “We don’t get anything else from Pakistan except suicide bombers, war, conflict and disunity. On the other hand we don’t receive anything from Iran but cultural war and drug addicts. So why should we talk to them about our water?”<sup>215</sup>

Both neighbours are perceived to be constantly “interfering” in Afghan national politics as part of a strategy to limit Afghanistan’s development, and curbing its potential for economic and political independence – something that Iran and Pakistan “want to avoid.” As an example of a common sentiment: “Iran and Pakistan are interfering and creating problems for our country since the day of our independence. They do not want to see a powerful, self-reliant and independent Afghanistan.”<sup>216</sup> Or as one respondent sums it up: “They want to keep us dependent on them.”<sup>217</sup> For those who share this perspective, the idea of negotiations on water would be seen as a “humiliation” if not “a treason.”

### **Entrenched sovereignty perspective on water rights**

All the respondents falling in this category share a very entrenched belief that the construction of dams as well as the use of water (i.e. irrigation and/or hydropower) originating in Afghanistan is the exclusive prerogative of the Afghan Government. Neighbouring countries do not have any right to claim any part of it. For instance, most expressions are similar to: “This water is the property of Afghanistan. According to international laws, any property of a country has to be managed by this country only.”<sup>218</sup> Another common statement is: “If the water is originating from Afghanistan, and the land is from Afghanistan, why do we have to negotiate with Iran?”<sup>219</sup> Water sharing is thus seen from the perspective of territorial sovereignty. Most respondents strongly believe that Afghanistan has the right to use as much water as it needs, irrespective of the consequences on downstream countries, thus directly rejecting the “no significant harm” principle of the UN Convention. As an example of a common statement: “I don’t care about the harms of the neighbouring country. For me, Afghanistan’s benefit is what matters.”<sup>220</sup>

And the minority of respondents (within this category) who would agree with defining water rights would stress that it is for the GIRoA to decide the nature and characteristics of those rights, as “Afghanistan owns the resource.” As an example of statements illustrating such a view: “I agree if we give Iran some water rights as neighbourly support, but this is for us to decide, not for them to tell us.”<sup>221</sup> Or for instance: “We can give them water for their domestic needs and keeping their livestock alive, which may amount to five or ten percent. But we can’t give more than that, because they don’t have any rights over water from Afghanistan.”<sup>222</sup>

Thus, negotiating the use of a national resource would be seen as a lack of sovereignty. As a respondent put it: “We are an independent country and we have the right to use our own resources. If we seek agreement of Iran, including for dams and water rights, this means that one day we will also need to take their approval for eating of our lunch or dinner.”<sup>223</sup> The idea of benefit sharing is also strongly rejected.

215 Interview with MP (MP-53), 17 July 2013.

216 Interview with MP (MP-101), 30 May 2013.

217 Interview with MP (MP-13), 30 June 2013.

218 Interview with MP (MP-53), 17 July 2013.

219 Interview with MP (MP-107), 22 August 2013.

220 Interview with MP (MP-62), 2 August 2013.

221 Interview with MP (MP-101), 30 May 2013.

222 Interview with MP (MP-28), 24 July 2013.

223 Interview with MP (MP-101), 30 May 2013.

## Brushing aside potential risks associated with unilateral resource capture

Most respondents agree that there are risks – including trade embargoes, increased security threats or diplomatic isolation – associated with not negotiating when there are strong power asymmetries between Afghanistan and its neighbours (see Section 2). But unilateral resource capture remains the preferred course of action, as they expect the benefits to eventually outweigh the risks. As one respondent explains: “I agree that there are important risks, but we should accept them because it will just be for a few years. After that, these dams will stay forever to support our agriculture and produce electricity. This means that they will reduce our dependence on them [i.e., neighbouring countries].”<sup>224</sup>

Besides, for most of those respondents, risks would remain the same irrespective of the GIRoA’s attitude on transboundary water resources development: “There will be insecurity and even deterioration of economic or diplomatic relationships with Iran and Pakistan whether we negotiate with them or not, and whether we build dams or not.”<sup>225</sup> In other words, the belief is that “there is nothing to lose,” or in fact “nothing to gain” from cooperation.

The alternatives (i.e. discussions and negotiations over water rights) are actually perceived as a far greater risk for Afghanistan, in terms of signing a disadvantageous agreement or “giving Iran and Pakistan an entry point to increase its influence in Afghanistan.” The general view is that the outcomes of negotiations would reflect power asymmetries, so they should be avoided. As one MP puts it: “Afghanistan is powerless. If your opposing party does not possess the same power as you do, you would naturally try to get more rights and privileges.”<sup>226</sup>

With regards to the risks associated with negotiations, there is a consensual trust deficit toward the current Government. This is particularly true with regards to the MEW, which is generally perceived by this category of respondents as “influenced” if not “infiltrated by neighbours’ agents.” Note that for these respondents, the fact that the GIRoA has been following a resource capture strategy and constantly rejecting discussions with its neighbours is viewed more as a relief than a support for the GIRoA.<sup>227</sup>

Only a minority of respondents consider the risks of unilateral strategies to be limited. They perceive – rightly or wrongly – that Iran and, to a lesser extent, Pakistan would be more impacted than Afghanistan by trade embargoes. There is also a perception that Afghanistan could find some trade alternatives with Central Asia (see Section 2). Such a view is illustrated in the following statement: “Iran now has many internal problems and Afghanistan is a good market for them. If they use trade embargoes, the relationship with Afghanistan will deteriorate and Iran will lose its influence in our country, which is not good for them. I am sure that they will not do this [i.e., trade embargoes on Afghanistan].”<sup>228</sup>

## Building dams to reduce power asymmetries in a zero-sum game

Not only do the respondents suggest ignoring the risks of unilateral actions, but most of them actually encourage such strategies as a way to ultimately “upset power asymmetries” between Afghanistan and its neighbours. The majority of respondents in this category hope that it would help to reduce their dependence on neighbours for such things as electricity and food. Having control over transboundary water resources is also perceived as providing a unique means for Afghanistan to develop leverage on its neighbours regarding broader bilateral issues. As an example of a common statement: “Once we have dams, we can show our power. We can tell our neighbours, ‘If you send suicide attackers, we will cut the water’.”<sup>229</sup> I’m sure this will improve security.”<sup>230</sup>

224 Interview with MP (MP-13), 30 June 2013.

225 Interview with MP (MP-103), 24 June 2013.

226 Interview with MP (MP-82), 7 July 2013.

227 Note again that the interviews were done before the Kunar agreement.

228 Interview with MP (MP-66), 23 August 2013.

229 It is important to note that such an approach may face technical limitations. In a case like Salma for instance, the anticipated level of water use (see Section 3) takes into consideration the optimal use of the storage. Any water that cannot be stored and that is not used for irrigation would flow into Iran.

Thus there is limited room for turning the tap off. Or if this happens it would have an impact on either hydropower production or irrigation within Afghanistan.

230 Interview with MP (MP-77), 26 August 2013.



For this category of respondents, negotiating a compromise would be seen as “an act of weakness” in what is viewed as a zero-sum game.

### **Bitterness with regards to the behaviour of the international donor community**

The respondents are also critical – in the vast majority of cases – of the role of the international community. They believe that the “neutral” position of donors, which consists of conditioning financial support on mutual agreement over transboundary water resources development projects, is unfair in a context of power asymmetries already unfavourable to Afghanistan. Most respondents believe that “this attitude of donors is for the benefit of Iran and Pakistan, not for the benefit of Afghanistan.”<sup>231</sup> There is an expectation that the long-term presence of the international community should provide Afghanistan with a favourable security environment for continuing its strategy. As one respondent puts it: “The USA and the international community have to fund these projects and bring Pakistan under the control of Afghanistan until we can put pressure on Pakistan by cutting water to them.”<sup>232</sup>

### **Rejecting “capacity constraints” as an argument to justify an absence of negotiations**

The vast majority of respondents reject the idea that Afghanistan (not only the GIRoA) does not have the capacity to negotiate. Most statements are similar to: “The Government officials don’t have any capacity, but I don’t accept the idea that the Afghan people don’t have capacity to negotiate. We have intelligent university teachers and experts.”<sup>233</sup> These respondents believe there is no need for negotiation anyway.

## **4.2.2 Second perspective: Accepting negotiations exclusively on water rights and only after completions of dam projects**

A second category of respondents is open to negotiations but only on water rights, not on construction of dams, and only after the completion of current dam projects. The main arguments used to justify their position, as well as their more general view on cooperation with riparian neighbours, are discussed below.

### **Constructing dams: A non-negotiable issue of absolute sovereignty and a tool to upset power asymmetries**

This category of respondents share the same trust deficit, frustration and acrimony with regards to Iran and Pakistan as the first category of respondents. Similarly, the fact that Afghanistan could not develop its water resources for the past few decades, allowing a large proportion of surface water to flow toward its neighbours, has generated a feeling of frustration among this second group of respondents. What is perceived as “an injustice” is put forward as a justification for Afghanistan to develop water resources without having to be asked for compromises on its water usage.

Nevertheless, this category of respondents does not exclude the idea of discussions and negotiation with neighbours. However, they should only apply to water rights. As one of the respondents puts it: “I think we need to make a distinction between negotiations on water rights and negotiations on the construction of dams. When it comes to dams, we don’t need to discuss with anyone because this is our right, as we are a sovereign country. We can discuss about their water rights separately.”<sup>234</sup> Construction of dams is therefore considered to be an issue of absolute territorial sovereignty.

Furthermore, dams are perceived by the respondents as one of the only forms of leverage over their neighbours when it comes to bilateral relations. Building dams is in fact seen as a way to “upset the balance of power” and as a way to “strengthen Afghanistan’s independence.” As an illustrative example of this sentiment: “We will never be able to stand against these countries if

231 Interview with MP (MP-24), 13 July 2013.

232 Interview with MP (MP-66), 23 August 2013.

233 Interview with MP (MP-28), 24 July 2013.

234 Interview with MP (MP-11), 7 July 2013.

we do not take those steps [i.e. building dams]. Water is one of our precious assets to be used so that Iran and Pakistan will come begging us.”<sup>235</sup>

But dams are also seen as a potential means of dissuasion in a broader context of international relations: “If Afghanistan could control its water, we could sell it to Iran. Then we could use this water as political tool to tell them ‘if you do not cooperate with us in other sectors we will not sell our water to you’. [...] This is called diplomacy, nowadays in the world water is used as a political tool.”<sup>236</sup>

Discussions on the construction of dams are therefore excluded.

### **Water rights: Negotiations only after completion of dams**

Respondents are open to negotiations on water rights – in contrast to the previous category – but this comes with the condition that they should take place only after the completion of dams. These reasons, largely related to power asymmetries, are summed-up by one respondent: “The main risk about negotiating now [i.e. before completion of dams] is that Pakistan<sup>237</sup> would have the upper hand in the discussion. If we start a discussion now and we refuse to agree on water rights, we will be in a weaker position because we will be seen as responsible for explicitly refusing to give water rights to Pakistan. Furthermore, if we have to reach an agreement now it is likely that it won’t be beneficial for us because they are more powerful. And weak countries must accept the speech of powerful countries. So it is better to wait.”<sup>238</sup> The idea is that if post-dam negotiations were to fail, it would not be as big a problem as the dams would – at least – not be in jeopardy and there would be much less to lose. The perception is that negotiations after dams are in place would also contribute to levelling the power balance during negotiations and thus give a better chance for a more favourable outcome. thus give a better chance for a more favourable outcome.

### **A perceived “time-constraint” that explains the stalling of dialogue post-dams construction**

Another reason put forward by some respondents in this category to justify the postponing of negotiations is related to a perceived “time constraint.” The perception is that negotiations would be a time-consuming process, and that as long as a large international donor community is present in Afghanistan, the focus should be on acquiring funds for the projects and/or to construct dams under the security protection of the international forces. The belief is that the presence of the international community is more important for the construction of dams than for negotiations afterwards. Statements made by respondents are along the lines of: “We don’t have time for discussion because there won’t be resources after 2014. If there are long discussions we will lose the opportunity for projects [referring to dams].”<sup>239</sup> As another respondent put it: “I think Afghanistan is enjoying an unprecedented golden opportunity. More than 40 countries have come to support Afghanistan with all their economic, political and military power. We have to use this opportunity fast to develop our dams.”<sup>240</sup> Respondents in this category (but also in the first category) are in fact frustrated that the GfRoa has been “under-performing” – in their view – when it comes to attracting foreign funds for building dams over the past decade.

235 Interview with MP (MP-63), 7 April 2013.

236 Interview with MP (MP-57), 25 June 2013.

237 Similar statements were made regarding Pakistan.

238 Interview with MP (MP-54), 15 July 2013.

239 Interview with MP (MP-19), 27 May 2013.

240 Interview with MP (MP-41), 17 August 2013.

### Negotiating water rights: A necessary balancing act

When it comes to the construction of dams, respondents do not perceive the risk of unilateral actions as a constraint that justifies caution. This view is similar to the previous category of respondents. It is, however, different when it comes to the issue of water rights. Respondents think it is important to limit the level of tensions and potential confrontation with neighbours. Thus, they consider negotiations over water rights to be necessary.

The idea is to find a balancing act. It is about achieving independence and upsetting power asymmetries through unilateral construction of dams on the one hand, while maintaining non-conflictive relations with neighbours by negotiating water rights.

### Negotiating water rights: Contrasting motivations

There are also differences within this category of respondents to do with the underlying motivations for negotiating water rights.

For approximately half of the respondents within this category, agreeing to discuss water rights is associated with the view that water sharing is an issue of limited territorial sovereignty. The respondents recognise explicitly that downstream countries have water rights, as per the international conventions – although most of the respondents do not have a clear idea of the main principles of the 1997 UN Convention.

However, the extent to which they are ready for a compromise on the amount of water that should be used by Afghanistan is not clearly stated.

For the second half of respondents in this category, neighbours should have water rights but compliance with international conventions is not a motivating or justifying factor for dialogue. Respondents are in favour of negotiating water rights with Iran or Pakistan in the form of a “trade agreement.” An example of such a view is summarised in this statement: “After finalising the construction of our dams, we should negotiate with our neighbours to determine their water rights as a fixed percentage of the flow. But it should be based on some conditions, not for free.”<sup>241</sup> The bilateral issues that are repeatedly quoted as possible elements included in a bargain on water rights include “improved custom transit agreements,” guaranteed “access to sea-ports,” guarantees on “the issue of refugees” and “improved border security.”

### ‘Afghan needs first’: A minority view

A minority of respondents within this category also believe that discussions on water sharing should be initiated only when Afghanistan’s water demand has been satisfied, which means no limitations on the potential water use in Afghanistan (as opposed to what could be a maximum use for irrigation, DMI uses, etc.). Most respondents with this view think the same as this: “We have to use water based on our needs first; experts can make such assessments. With the water remaining we will consider the rights of our neighbours.”<sup>242</sup> As another respondent summarises it: “As we say [in Pashto] *‘awal zaan pasi jahan’* [first myself, second the world].”<sup>243</sup> For these respondents, whether water rights agreements would be based on financial compensation or based on broader bilateral transaction is open to discussion: “We don’t have to talk with our neighbours about how we use our water, it is up to us how much we should use. But once our needs are satisfied, and only after the construction of dams, we should talk with them, whether they want to buy some of our water or get it based on other forms of agreements.”<sup>244</sup>

241 Interview with MP (MP-3), 7 July 2013.

242 Interview with MP (MP-61), 28 August 2013.

243 Interview with MP (MP-3), 7 July 2013.

244 Interview with MP (MP-105), 1 July 2013. Note that such a view on negotiation could arguably be interpreted as de-facto “non-cooperative” in the sense that it rejects the idea of compromise. Furthermore, for reasons already mentioned in an earlier note, such an approach may be technically unfeasible as it would require Afghanistan to be able to “turn the tap off,” which is unlikely with the kind of projects planned. Yet, as this perspective is considered by respondents as “cooperative,” it has been kept within the category of respondents who support a cooperative process.

## Rejecting the argument of “capacity constraints” to justify a lack of negotiations

Note that the vast majority of respondents in this second category also refute the idea that Afghanistan in general does not have the technical capacity to negotiate with neighbouring countries. However, they stress that such capacity is clearly lacking in the case of the GIRoA officials and most particularly the MEW staff.

For this category of respondents, one criticism that emerges with regards to the Government is that in their view the GIRoA has not sufficiently prepared itself for possible negotiations in the future. The following statement captures the general perception among respondents: “Currently, if you ask the MEW which team they have formed and trained to conduct research, and what studies have been conducted so far, they won’t be able to show you anyone or any document. There are no differences as compared to ten years ago.”<sup>245</sup>

### 4.2.3 Third perspective: Favouring negotiations and exploring compromises as soon as possible

For the third category of respondents, dialogue and negotiations with neighbours should apply prior to the construction of dams. This means that agreements should include not only water rights but also the design and characteristics of the projects – which could include benefit sharing. Their main arguments justifying this position, as well as their more general view on cooperation with neighbours, are discussed below.

#### Going beyond acrimony and mistrust, and forging good relations with neighbours

Respondents in this category share the same frustration as other respondents when it comes to past and current relations with Pakistan and Iran. However, they believe that the GIRoA should think beyond acrimony and mistrust when they think about transboundary water resources development. As an illustrative statement: “If we look at the past three decades, it is clear that these neighbouring countries have contributed to the insecure situation of our country. But we can’t go back to 1980s or 1990s and ask for compensation from Pakistan and Iran. It is better for Afghanistan to engage in a dialogue.”<sup>246</sup> Or as another respondent sums it up: “We must pass the war step and jump to the reconstruction step.”<sup>247</sup> The example of India and Pakistan being able to find agreements on water sharing despite troubled relationships is often quoted as an example to follow.

Respondents think that a confrontational relationship with neighbours is not sustainable. As one respondent explains: “A reason for discussing before construction of dams is that we should avoid tensions and problems in the future, not just about water but also in other aspects of our international relations.”<sup>248</sup>

Maintaining good relations with neighbours is considered as particularly important within the context of the withdrawal of the international community. As one respondent puts it: “We should not forget that the UN and US will leave Afghanistan soon, but we will still be neighbours with Iran and Pakistan. So we should not deteriorate our relations with them.”<sup>249</sup>

#### Risks associated with unilateral actions are not worth taking

For this category of respondents, the idea of favouring negotiations as soon as possible is also centred on the belief that power asymmetries and the risks associated with unilateral actions are too great in the mid to long-term. Thus, negotiations are seen as the only viable option. Statements were usually similar to: “We don’t have sufficient budget, and we don’t have a resourceful police or army to prevent threats on our dams coming from Iran.”<sup>250</sup> Unilateral actions are a threat for our projects’ sustainability and for our long-term relationships with our neighbours.”<sup>251</sup> As another

245 Interview with MP (MP-39), 23 June 2013.

246 Interview with MP (MP-5), 27 May 2013.

247 Interview with MP (MP-74), 27 June 2013.

248 Interview with MP (MP-100), 22 August 2013.

249 Interview with MP (MP-68), 7 June 2013.

250 Similar comments were made regarding Pakistan.

251 Interview with MP (MP-5), 27 May 2013.

illustration of the perception of security risks: “For the MEW, it is easy to say, ‘With this dam we will irrigate that much land and produce so much electricity,’ but the people living on the border Provinces are the ones facing insecurity on a daily basis. [...] We should be realistic [by engaging in discussions on water rights with neighbours].”<sup>252</sup>

Insecurity as a direct result of pursuing the construction of dams without any form of dialogue is one of the main risks highlighted by respondents, together with possible trade embargoes, expulsion of Afghan refugees and diplomatic isolation. The possibility of actually losing dams – or not getting any completed – due to insecurity is also underlined by a large number of respondents in this category. This last point motivates respondents to avoid any further delays to negotiations.

### Negotiations as a pragmatic and beneficial solution

These respondents believe that all the issues mentioned above could be resolved if dialogue and negotiations were initiated. This contrasts with the other categories of respondents who mainly see risks in negotiations at this point in time.

These respondents believe that the security around the dams’ sites would improve, and the work would subsequently be completed much faster if water rights agreements were made without delay. Some refer to the experience of Salma to underline the failure of the GIRoA’s strategy. As one respondent puts it: “You can see the result of this strategy [i.e. unilateral resource capture without any dialogue], which is the absence of completion of any single dam since Karzai is in power.” They believe that projects would have already been completed and that Afghan farmers would have already seen some benefits, had the GIRoA engaged in negotiations earlier.

Another important factor that motivates these respondents to engage in negotiations is the expectation of increased access to funding once agreements have been made. Indeed, the respondents believe that more projects are required, including in the Kabul basin, and they would require a high level of funding that would be difficult to acquire outside the international donor community (e.g. the World Bank). As one respondent sums it up: “Currently we can see that we have several potential dam projects but we can’t find a sufficient budget. Our Government should realise that it is in the interest of the Afghan people to accept the conditions of the donors and engage into negotiations with our neighbours.”<sup>253</sup>

Respondents also believe that the current projects (i.e. Kamal Khan, Pashdan and Bakhshabad) may not be completed as Government funds may become insufficient.<sup>254</sup> For many respondents in this category it is hard to understand why the GIRoA is still trying to get funds from donors when, according to respondents, “They have known for a long time already that it will not get any.”

In the end, the overarching argument put forward by this category of respondents is that it would be better to reach a secured agreement regarding transboundary water resources development – even if it isn’t optimal<sup>255</sup> – rather than be unable to finalise or develop new projects. This is illustrated in the statement of one MP: “Now all the water is going to the neighbouring countries. If we can get a project that can give us electricity and irrigation, even if at only 60 or 80 percent of what we could actually get, it is better than the status-quo. Business men of Afghanistan<sup>256</sup> have an expression: ‘If you can get now 10 Afs per day, it is better than waiting for the day you may get 1,000 Afs at once.’”<sup>257</sup>

Overall, an important aspect that differentiates this category of respondents from others is that they do not perceive negotiations to be risky. They refute the idea that power asymmetries are necessarily dangerous when it comes to negotiations, as long as the GIRoA has the support of national and foreign advisers and ensures an inclusive decision-making process. The following view captures how this category of respondents approaches negotiations: “We should know the meaning of discussion and negotiation; it does not mean signing an agreement in the first or

252 Interview with MP (MP-17), 28 May 2013. Note that the interview was conducted before the Kunar agreement.

253 Interview with MP (MP-12), 17 June 2013.

254 Here the example of Salma, where the actual cost was much higher than what was anticipated, may be one of the reasons for such a statement.

255 Optimal meaning “using as much water as Afghanistan wants.”

256 The respondent is himself a businessman.

257 Interview with MP (MP-17), 28 May 2013.

second meeting. Discussions and negotiations mean sharing and knowing each other's interests, considering both countries benefits and risks as well as finding a solution for preventing these risks and finding ways for sharing benefits. What could be the risk in such process?"<sup>258</sup> Or as one MP says: "Misunderstanding is more dangerous than discussion; negotiation is the way to bring solutions between the countries."<sup>259</sup>

### **Beliefs and values: Following the framework of the 'international conventions'**

For the majority of respondents in this category, openness toward negotiations before the construction of dams is also associated with the belief that interactions between Afghanistan and its riparian neighbours over transboundary water resources development should fall within the framework of international conventions. Most statements are similar to: "Taking unilateral action regarding shared rivers would be against the international law."<sup>260</sup> These current MEW projects are breaking international rules and regulations.<sup>261</sup> There should be discussions based on the international law on transboundary water resources development."<sup>262</sup> As another respondent says: "Water is not like mines. It is an international resource. Rivers are like a canal in our villages; the upstream village cannot use the whole water as it pleases."<sup>263</sup>

By taking international transboundary water sharing conventions as the framework within which negotiations should happen, respondents refute the idea that Afghanistan has the right to use as much water as it wants and only leave what remains to its neighbours, even if personally they believe that this would be the best option. As one respondent explains: "My personal idea is that we should complete the construction of the Salma dam and leave only the remaining water to Iran. But if we do this we would violate the international water conventions. I think it is better to follow international conventions."<sup>264</sup>

The question of the extent to which respondents would be ready to compromise on water-use plans is a question that they have not been comfortable addressing.

Note that there is a small minority of respondents within this category who do not share this view, and instead adopt an absolute territorial sovereignty view on water (similar to most respondents in the other categories). Although these respondents favour negotiation, it is not the preferred choice. This is due mainly to the power asymmetries that would put Afghan projects and the overall security and economic situation in jeopardy if unilateral actions were pursued. In fact, they would find it unfair if Afghanistan's water rights were lower than the maximum potential water use (based on potential irrigable area, for instance).

### **International community expected to play a mediation role**

The respondents in this category expect the international community to assist in facilitating negotiations between riparian countries.

They also have a different perspective on what the GIRoA should be focusing on, given the withdrawal of the international community post-2014. As one respondent explains: "The MEW is saying that we should accelerate the construction work before 2014 and the withdrawal of the international community. But from my point of view, it is better to use this period to focus on discussions. I wish Karzai would take this issue into account and give the order of discussion for the MoFA and the MEW to start the preliminary dialogue with Iran and Pakistan."<sup>265</sup> I think now is the best time because we have lots of expert consultants, academics and donors in the country for supporting conducting discussions."<sup>266</sup>

258 Interview with MP (MP-79), 6 April 2013.

259 Interview with MP (MP-60), 17 August 2013.

260 Although respondents used the term "law," it would be more accurate to refer to "convention" as there are no laws regulating transboundary water sharing.

261 The reference was here focused on Salma, Pashdan and Bakhshabad and did not concern Kamal Khan.

262 Interview with MP (MP-5), 27 May 2013.

263 Interview with MP (MP-44), 7 July 2013.

264 Interview with MP (MP-46), 7 July 2013.

265 The interview was conducted prior to Kunar agreement.

266 Interview with MP (MP-17), 25 May 2013.

## Rejecting capacity constraints as an argument to justify a lack of negotiations

Note that the MPs in this third category generally share the same view regarding lack of capacity as an argument to justify a lack of negotiations.

### 4.2.4 Remark on the non-response issue and its possible bias on the results

It is difficult to speculate how the 34 non-respondents would have been distributed among the three categories described above.

On the one hand, one may hypothesise that refusing to discuss the topic during interviews suggests an attitude similar to that of the senior GIRoA staff in the MEW and MoFA. Thus, the non-respondents would be more likely to adhere to the views of the first or second group described above (i.e. stalling dialogue while pursuing unilateral resource capture activities). On the other hand, one may argue that the non-respondents that could fall into the third category and prefer to remain silent in order to avoid upsetting the GIRoA. Although the reluctance to be interviewed should be mitigated somewhat by the assurance of anonymity, there have been examples of academics who also refused to be interviewed despite being favourable to dialogue with neighbours on transboundary water resources development issues. A similar situation could also have happened among the MPs.

Thus, overall, it is the opinion of the authors that the 34 non-respondents would be unlikely to introduce a significant bias in the proportions of each of the three categories described above.

## 4.3 Attitude of the Afghan academia: Divided but mostly favourable to negotiations without delays

The academics are also divided on the question. However, almost half of the respondents in our sample are favourable to negotiations without delays.

For this group, most of the arguments are similar to the ones made by the third category of MPs. Indeed, these respondents believe that tensions with neighbours will arise whatever the attitude of the GIRoA may be, but that negotiated and durable solutions will be much more difficult and costly if the GIRoA waits too long to start negotiations. In that regard, most of these respondents feel that the GIRoA has failed to properly prepare for negotiations and that it wasted the presence of the international community in Afghanistan for a decade.

Recognising that neighbouring countries have water rights and referring to the international conventions are two points mentioned as important and which should frame any discussions. The overarching idea is about compromise. As one respondent puts it: "Upstream countries can use water and build dams but the international [water] law also says that this usage of water must not affect downstream countries too much. Therefore I think the only way to solve this problem is to negotiate."<sup>267</sup> The international community is also expected to play a mediation role.

Some new arguments have also been put forward by the academics. The majority of them believe that a project should not be implemented without detailed planning, which includes defining how much water each country would be entitled to.<sup>268</sup> Perhaps not surprisingly, this category of academics is keen on the idea of involving technical specialists in this regard. They are even open to joint evaluations with neighbouring counterparts. A few respondents emphasise that in the case of the Kabul basin such fact-finding would be useful to Afghanistan as they believe it would show that Pakistan has nothing to fear from the Afghan projects in terms of water reduction.<sup>269</sup>

Although they agree with the GIRoA's argument that data and information are lacking for proper planning, they emphasise that filling the gap should be considered a priority. In that regard, they believe the GIRoA has not tried hard enough to do so in the past decade.

Similar to the situation described above with the MPs, there remains some uncertainty as to how

<sup>267</sup> Interview with academic (AC-16), 28 July 2013.

<sup>268</sup> This argument, which was not heard often among MPs, is perhaps not surprising as most academics with an interest in the topic have a technical-often engineering-background.

<sup>269</sup> This view is likely to be correct in the light of a recent World Bank study on the combined impact of the main Afghan projects in the Kabul basin.

far the respondents are ready to compromise on the extent of water use in Afghanistan.

Only a few respondents were reluctant for Afghanistan to take part in any form of negotiations. The arguments used were similar to those made by the MPs who share this position. They emphasise, for instance, on the case of the Dosti dam, which was – according to them – implemented unilaterally, and which should consequently give Afghanistan the right to do the same in the case of Salma.

Some respondents also promote the idea of negotiating only over the water that would remain after Afghanistan had used as much as it possibly can. Those respondents are ready to grant limited rights in order to satisfy environmental considerations. As discussed above, this position may not exactly be considered as open to compromise.

The overall acrimony and mistrust with regards to Iran and Pakistan is usually a key reason for refusing discussions.

For the few who are ready to negotiate but only after construction of dams, the overall reasoning echoes the one described above for MPs who share this view. One of the main points in the reasoning is that negotiations over water rights after dams have been constructed are more likely to be beneficial to Afghanistan. But some respondents also hope that postponing negotiations to “a later time” could also be useful as it may provide a chance for Afghanistan to reduce power asymmetries.

## 4.4 Reflections and conclusion

This concluding paragraph reflects on two points related to the objective set out in Section 1. The first is about the likelihood – in the light of our findings – that the interactions between Afghanistan, Iran and Pakistan will evolve toward greater cooperation. The second one is about the foreseeable impediments but also opportunities for a process of cooperation in light of the views shared by MPs and academics.

### 4.4.1 Will practical change toward cooperation on transboundary water resources development wait?

For the past decade, the position of the GIRoA has largely been in line with the overall position of the first category of MPs: namely unilateral resource capture and limited dialogue.

A few signs – such as a change in rhetoric and the drafting of a transboundary water policy – may indicate a possible shift in the attitude of the GIRoA toward increased dialogue over transboundary water resources development in the near future. This could particularly be the case for future projects due to the necessity of acquiring funding from international organisations that favour dialogue and mutual agreements prior to finalising the designs of projects.

However, it is difficult to be certain about whether these signs represent a shift in attitude toward cooperation.

A possible change in attitude toward discussions over water rights after the completion of dams (the position defended by the second category of MPs) cannot be excluded, and could in fact reflect the new position that the GIRoA is pursuing, although it has not been clearly articulated in those terms by the GIRoA so far. This may apply for rivers on which there are no agreements yet. Such a scenario could be backed-up by a majority of MPs (i.e. the second and third category of respondents) as our study suggests (see more details further below).

For the specific case of the Helmand river, a change in approach by the GIRoA is unlikely to happen, considering the agreement among MPs and academics that Afghanistan should stick to applying the existing treaty.

A shift toward the neo-institutionalist approach supported by the third category (i.e. negotiations as soon as possible, including before the completion of ongoing projects) seems to be less likely.



## 4.4.2 Insights into key challenges to dialogue and cooperation

### A combination of factors as impediments to cooperation

The views, beliefs and perceptions of MPs opposed to cooperation provide useful insights into what are (and could still be in the future) some of the major impediments to engaging in a genuinely cooperative process.

Findings from the interviews reveal that it is actually a combination of views and beliefs that have made dialogue and negotiations difficult so far. All these views fit within a global neo-realist perspective on international relations, where transboundary water resources development is seen as a zero-sum game:

- The frustration over the inability to control water during decades of wars has led to a feeling that transboundary water resources development should not be hampered by compromises and negotiations.

- This demand for what is perceived as a legitimate “grace period” becomes a virtually non-negotiable issue in a situation where neighbours are viewed with acrimony, mistrust and suspicion.

- Furthermore, for some respondents, negotiations are also constrained by the perception (rightly or wrongly) that the risks induced by power asymmetries are not significant enough to justify compromises or even dialogue.

- The possibility for cooperation is rendered even more complicated when dams and water resources development projects (i.e. irrigation and hydropower) are seen as an invaluable mean for upsetting power asymmetries that are currently unfavourable to Afghanistan. Through a neo-realist lens, such unfavourable asymmetries would dictate an unfavourable outcome for Afghanistan if negotiations were to take place.<sup>270</sup>

The idea of compromises then becomes associated with the idea of “weakening the potential to reduce existing asymmetries.”

From such a perspective, transboundary water resources development becomes a politicised issue. The findings show that it is these above-mentioned perspectives that cause the most striking differences between the first category and the third category of MPs. Those who are favourable to negotiations tend to promote a view that separates transboundary water resources from other past and present points of political contentions with neighbours. They tend to distance themselves from the idea that transboundary water resources development should be part of an international relations struggle with their neighbours. Compromises are not seen as weakening Afghan interests, but actually opening up prospects for other gains, including appeased relations with neighbours.

Although the views of the first category of MPs may not be overwhelmingly dominant, they may still have some influence in the coming years, particularly if the future decision-makers are sensitive to domestic politics. These same factors may continue to make cooperation a difficult option to promote for the next GIRoA.

### Limited understanding of the water context: An aggravating factor

A limited understanding of the possible impacts of the projects from a “water point of view” and a limited understanding of the international conventions may also be an aggravating factor in explaining why decision-makers oppose dialogue and negotiations.

In the case of the Helmand basin, for instance, the general assumption is that as long as the treaty is respected there is no problem and thus no reason for Iran to complain. From a legal point of view this is true. Yet, as discussed earlier, from a “water point of view,” respecting the decree does not exclude the possibility of significant ecological degradation.

Similarly, a lack of understanding of the core principles of the international conventions on transboundary water resources would not help in deterring the entrenched belief that water resources originating in Afghanistan are the exclusive property of Afghans.

This is not to say that better awareness would ensure stronger cooperation. But a lack of it does limit the chances of an appeased outcome.

<sup>270</sup> Note that from a neo-realist perspective (see Section 1, Box 1) such an approach is understandable. Increasing water withdrawal for expanding irrigated areas and therefore increasing food production would reduce to some extent the acute Afghan trade dependency. Similarly, production of hydropower would improve self-reliance in energy.

### **The impact of domestic politics on the GIRoA's position over transboundary water resources: Irremediable impediment to dialogue?**

There are also a number of factors that have prevented open dialogue over the past few decades, but which may not necessarily apply anymore.

For instance, in the past, the fear of opening a public debate or to openly engage in dialogue with Iran over water rights was an impediment to cooperation. Yet the MPs who support dialogue and negotiations (whether before or after the completion of infrastructure projects) do not share the view that opening dialogue and negotiations on water rights through compromises would be politically risky on the national scene, as long as there is a transparent process that involves non-ministerial actors and mediation by the international community.

Thus, although it may have been a critical limitation to cooperation in the past, it may not necessarily be the case in the future.

### **Window of opportunity and the presence of the international community: Does the post-2014 scenario favour cooperation over transboundary water resources?**

Interviews with MPs from the second category highlight another impediment that may have contributed to the stalling of negotiations by the GIRoA over the past decade, but which may become less relevant in the future.

The perception was that the presence of the international community provided a time frame during which international funding would be more easily accessible, and an international military presence would help to balance power asymmetries – including for maintaining security around dam sites. The belief was that when this time-window closed post-2014, pursuing unilateral resource capture would become more complicated. The NPP-1 (2011) also increased this perception when it warned about the possible loss of a “window for opportunity for investment.”<sup>271</sup>

In the face of the “hard power” indicators discussed earlier (see Section 2) in a scenario of significant withdrawal of international community forces post-2014, this view may be understandable. And the cases of military support by the international forces for the Salma dam in 2011<sup>272</sup> as well as the support for improving security for the Kamal Khan<sup>273</sup> (also in 2011) may again justify this view. In a post-2014 scenario, with the international community less likely to be involved despite the possible signature of a Bilateral Security Agreement (BSA) with the US,<sup>274</sup> the GIRoA may think that a shift toward a more cooperative attitude would be beneficial. This view is put forward by the third category of MPs, who suggest starting dialogue and negotiations without delay.

Considering the realisation in the GIRoA that accessing international funding is going to require a change in attitude toward cooperation, there may be a shift in the case of new projects. However, for ongoing projects on the Iranian side where the funding is already secured – including Salma – a change of course is less likely to happen.

### **Lack of capacity to conduct discussions and negotiations with Iran: A contested argument**

The GIRoA has frequently stated that it lacks the capacity both in terms of technical engineering and negotiation skills to be able to conduct discussions with neighbours.<sup>275</sup> The claim that a lack of capacity within Afghanistan in general is an impediment to discussions and negotiations is rejected by the vast majority of the 71 MPs – and also the academics – that were interviewed. However, as discussed above, MPs stress that technical capacity within the GIRoA itself is very poor. The vast majority of respondents add that in their view very limited efforts have been made to remedy this deficiency within the GIRoA.

This last point needs to be seen alongside the views of international advisers from major donor organisations engaged in capacity development in the water sector in Afghanistan (e.g. the Japan

271 GIRoA, “Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement.” (Interview with key informant (K-1), 22 September 2013.)

272 Sexton, “Natural Resources and Conflict in Afghanistan.”

273 Source: [http://www.un.org/ga/search/view\\_doc.asp?symbol=S/2011/760](http://www.un.org/ga/search/view_doc.asp?symbol=S/2011/760)

274 At the time of writing the BSA has not been signed by the Afghan President Hamid Karzai.

275 King and Sturtewagen (2010); Price et al. (2014).

International Cooperation Agency (JICA), USAID, the World Bank). In late 2013, these senior advisers concurred that, despite training, engineering and negotiations skills among Government staff were still not optimum to say the least.<sup>276</sup> The same informants emphasised their scepticism regarding the commitment that the GIRoA has shown over the years to capitalise on capacity development projects funded by international donors. They agreed that capacity development could have provided much better results had the GIRoA put more effort into it and perhaps considered it as a priority.<sup>277</sup> According to a senior representative of a major donor: “There is still

also no plan to integrate and keep those Afghans who manage to develop their skills abroad [i.e. MSc degrees] by their own means.”<sup>278</sup>

When it comes to capacity for negotiations skills based on the principles of the UN Convention on transboundary waters, a comprehensive training that was conducted in 2010 and early 2013 by USAID. However, it is unclear whether those trained staff have been involved in transboundary water discussions or development.

An international adviser from a large donor organisation in the water sector explained: “On the non-engineering side [i.e. training related to negotiations skills and international water law] I have seen that consultants come and organise trainings, but in between nothing happens. There is no push from the Government for this capacity to be practically developed.” Similarly, a national expert in the water sector working for a major donor organisation in charge of monitoring water programmes said: “There has not been a serious effort by the Government to develop this capacity to the best of its potential. Similar trainings [the ones provided in 2013] were given years ago [i.e. 2010]. But after the trainings there are no follow-ups. The Ministries should have given their staff some small tasks to apply knowledge through practical exercises. Then with time they should have given bigger assignments.” An international expert on transboundary negotiation who participated in the recent training stressed that in the absence of concrete follow-up actions to put the lessons learnt from the training into practice, such exercises would remain futile.<sup>279</sup> According to the same informant, it would take three to four years to get a well-trained team of negotiators.<sup>280</sup>

From 2008 to 2011, official Government documents such as the Water Sector Strategy (WSS) and NPP-1 have invariably echoed these views. The 2008 WSS, for instance, warned that: “A lack of sufficient capable staff to plan, design and implement projects is assessed within all the ministries in the water sector.”<sup>281</sup> In 2011, the NPP-1 mentioned that: “A master plan for capacity building of irrigation and water resources management staff needs to be created, with capacity development needs identified.”<sup>282</sup> In other words, three years after the warning of the WSS, the same issue was underlined, indicating again that the capacity gap may not have been given sufficient importance.

It may also be worth mentioning that according to the academics interviewed, the MEW has never asked them to provide their views, analysis and suggestions on the issue of transboundary water resources development.

In light of the views of a vast majority of MPs, the observations of senior international and national advisers and official Government reports, it becomes difficult to put the argument of “lack of capacity” on the list of impediments to cooperation. Perhaps the “limited commitment of the GIRoA to develop this capacity” would be a more accurate description of an impediment for cooperation.

276 Interviews with key experts (K-1), 22 September 2013; (K-5), 10 October 2013; and (K-6), 18 June 2013. Note that in 2013, the GIRoA still had to rely heavily on external engineering and management expertise in order to conduct infrastructure development. For instance, USAID (via its consulting organisation International Relief and Development (IRD) funded foreign Senior Water Resources Engineers to support the MEW in the construction of dams, including Pashdan in the Harirod. (Source: [http://www.bullhornreach.com/job/358155\\_senior-water-resources-engineer-dam-construction-qaqc-kabul-afghanistan](http://www.bullhornreach.com/job/358155_senior-water-resources-engineer-dam-construction-qaqc-kabul-afghanistan))

277 Interviews with key informants (K-1), 22 September 2013; (K-5), 10 October 2013; and (K-6), 18 June 2013.

278 Interviews with key informant (K-5), 10 October 2013.

279 This is not to put into question the quality of the training.

280 Informal discussion with key informant (K-15), 27 February 2013.

281 GIRoA, “Water Sector Strategy” (2008): 27.

282 GIRoA, “Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement.” (Interview with key experts (K-1), 22 September 2013.)

#### 4.4.3 Negotiations post-construction of dams: The most viable opportunity for an appeased cooperative settlement?

The second category of MPs points to the possibility of dialogue and negotiations after the completion of dams. Although it may not be the most conventional approach, it may be the most realistic in the current context when it comes to basins shared with Iran.

Such an approach has, however, some practical limitations that are discussed below.

##### **Negotiations post-completion of dams: The foreseeable way forward?**

Based on interviews with the second category of MPs, there is the possibility of negotiations on water rights with neighbours once the dams are built (at least for those constructions that are ongoing).

It may not be the most conventional approach. Indeed, the UN Convention suggests that, ideally, negotiations would happen as part of a process of “prior notification” where the characteristics of projects would be studied and discussed by both parties prior to agreement and implementation. Yet in a context of strong power asymmetries and an international relation context viewed by most actors through the lens of neo-realism, the “ideal” situation is perceived as favourable to the most powerful.

Though not ideal for those who defend an approach within the framework of the UN Convention, this approach would have the advantage of being viewed as acceptable by the third category of respondents, who support negotiations “as soon as possible.” It may even gain some support from MPs in the first category of respondents. Indeed, having dams constructed when negotiations on water rights start would give – in theory – some leverage to Afghanistan for negotiations; something which may appeal to those who take a neo-realist perspective on foreign policy.

For instance, in a case like the Salma dam on the Harirod, the completion of the dam would indeed give Afghanistan more leverage if it wanted to engage in discussions on a possible compromise on water withdrawal on the Afghan side (for instance, by reducing the extent of the newly irrigated area). Considering the importance of water for DMI uses in Mashhad (see Section 3), one could speculate that Iran would most likely be open to compensating Afghanistan if Afghanistan limits its water withdrawal as compared to its maximum potential. In the case of the Kamal Khan diversion dam, the GIRoA could have some leverage – in theory – over Iran for finding a possible compromise on the water withdrawal for Kamal Khan’s irrigated area, considering the constraints in the Sistan delta.

Overall, this perspective would be in line with the scenario discussed in our conceptual framework, where, in the context of an economically asymmetric relationship, the weaker party would try to “deprive the stronger actor of what it desires.” In this sense, the GIRoA may gain the upper hand in future discussions. Based on the figures in Section 3, this may work in Harirod and Helmand, but not in the Kabul basin as the Afghan hydro-power dams (assuming funding can be found) would not really deprive Pakistan of water.

The question is whether Iran would feel comfortable with and trust this scenario. Such a plan has also a number of foreseeable practical limitations that are discussed below.

##### **Building dams first in order to get a stronger leverage on possible future negotiations: Practical limitations**

One major problem with the scenario mentioned above is its practical applicability. In order for an agreement on water sharing to be applicable it would first require the GIRoA to have the ability not only to decide but also to enforce how much water should be newly irrigated downstream of the Salma dam. It would also require the GIRoA to have the capacity to control – i.e. limit – water abstraction along the river between Salma and the Iranian border (approximately 300 km), in order to ensure that Iran would receive its agreed share. Similarly, in the case of Kamal Khan, it would require the GIRoA to have the ability to control and limit how much water could be diverted at the diversion dam.

There are a few reasons to doubt that the GIRoA has such capacity – or that it will have it in the foreseeable future. In practice, water acquisition from the river is handled mostly by water users. Studies on inter-provincial water sharing in dry years show that government intervention may only have limited effects in ensuring that downstream users receive their share of water.

For instance, in the Taloqan sub-basin in 2011, a presidential decree pushed by MPs from the downstream Kunduz Province could not be respected.<sup>283</sup> During the same year, in the Lower-Kunduz sub-basin, despite agreements reached among water users, provincial governors and local government, water stealing occurred along the river and prevented most downstream users from acquiring the water they were entitled to.<sup>284</sup> In the Sar-e-Pul sub-basin, where strong social capital is binding upstream and downstream provinces, respecting a 100-year-old water sharing agreement is always a difficult task that requires constant monitoring by representatives of downstream users.<sup>285</sup>

The situation would be even more complicated if the Government had to control water use and enforce water-sharing agreements not between Afghan water users at inter-provincial (or district) level, but between Afghan and Iranian water users. Would water users and local power holders agree to restrict their water use to let some water flow toward Iran when stipulated by an agreement? To complicate matters further, the GIROA has been endorsing the principles of decentralisation and the devolution of decision-making to water users for river basin management, which makes the decision-making process – in theory – less in the hands of the government.<sup>286</sup>

Thus, the success of a cooperative solution post-construction of dams may not be as simple as it looks on paper.

An alternative solution could have been finding an agreement prior to the construction of the dam, which would have been reflected in the structural design. But at this point in time it is rather late for changing the design of projects such as the Salma.

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283 The treaty was, however, useful for ensuring that Kunduz received more water than it would have without the presidential intervention (see Thomas et al., 2012).

284 Thomas et al. (2012).

285 Thomas et al. (2013).

286 Whether the GIROA is really interested in the “good water governance principles” enshrined in the water law has been put into question (see Thomas, 2013).

## 5. Conclusion and Recommendations

This concluding section first sums-up the key points discussed so far. Then, considering the interest of the international community in promoting an appeased and negotiated agreement, we suggest a few recommendations, while stressing some of their limitations.

### 5.1 A decade of unilateral resource capture versus containment strategies

The past decade of interactions between Afghanistan and its neighbours over transboundary water resources development could be summarised as an opposition between unilateral resource capture and containment strategies. The one exception is the recent agreement in August 2013 over a joint-venture with Pakistan for a hydropower project on the Kunar river.

In the case of Harirod, the Salma project is expected to significantly reduce the water flow to Iran and raises the question as to whether the extent of these impacts is reasonable. For Kamal Khan, the project could raise concerns, not from a legal point of view, but because of the possibility of the socio-ecological impacts.

Afghanistan clearly has the right to develop water resources on its side of the border. This point has not been contested by its neighbours or the international community. Yet, an approach in line with international conventions – as supported by the international community – would require greater dialogue and the search for an appeased compromise whereby Afghanistan would develop its water resources while harms to downstream countries (mainly Iran) would remain reasonable.

#### 5.1.1 The pros and cons of a unilateral approach

As mentioned in the introduction, the international community has been advocating cooperation on the basis that unilateral actions could contribute to increased regional tensions. It is, however, important to emphasise that in the view of a large proportion of MPs (i.e. the first category of respondents), there are a number of pros to pursuing unilateral action as an upstream country (see Table 13 for a non-exhaustive list of the pros and cons for unilateral resource capture and abstaining from negotiations). For proponents of a realist (realpolitik) reasoning, and from a strategic negotiation perspective, these pros constitute a better alternative to a negotiated agreement (BATNA). Thus, it is important to note that a cooperative approach may not always be considered to be the most relevant.

Table 13: Non-exhaustive list of the pros and cons of pursuing unilateral resource capture and abstaining from negotiations as an upstream country

Pros of unilateral resource capture and absence of negotiations	Cons of unilateral resource capture and absence of negotiations
<ul style="list-style-type: none"> <li>Dams (with non-negotiated characteristics) may contribute to increased leverage for later negotiations (on water or non-water related bilateral issues).</li> </ul>	<ul style="list-style-type: none"> <li>Impacts of Afghan projects may further alienate neighbours, contributing to a degradation of bilateral relations, potentially leading to security degradation, and economic and diplomatic sanctions.</li> </ul>
<ul style="list-style-type: none"> <li>Limit the risks of domestic political tensions with different Afghan interest groups that strongly oppose any form of negotiations.</li> </ul>	<ul style="list-style-type: none"> <li>May limit access to international funding.</li> </ul>
<ul style="list-style-type: none"> <li>Avoiding possible delays in infrastructure development in a context of limited time-frame (i.e. presence of international community support).</li> </ul>	<ul style="list-style-type: none"> <li>May limit the possible value added of bargaining in the form of compensations.</li> </ul>

### 5.1.2 Turning point: Can the situation evolve toward cooperation?

In the new and uncertain context of the post-2014 transition, can the transboundary water resources development issue evolve toward more cooperation? This question is particularly pertinent when it comes to basins shared with Iran, and still ongoing projects such as Salma, Kamal Khan and Bakhshabad. Also, what are the main impediments and opportunities emerging from the findings, and what kind of support and facilitation can the international community offer?

Non-ministerial actors involved in decision-making (i.e. MPs) are divided on how best to approach interactions with neighbours. Some believe that unilateral actions may help in upsetting power asymmetries and supporting Afghanistan in its struggle with neighbours. They would support maintaining the course followed so far.

Others oppose this view and believe that dialogue and compromises within the framework of international conventions would better serve the interests of the country.

The recent Kunar agreement, the possible development of a transboundary water policy and recent changes among some Afghan officials are too ambiguous or uncertain to suggest that appeasement will be the preferred option on transboundary water resources development in the future, particularly when it comes to the Harirod and Helmand basins.

The main impediments to initiating a process of dialogue and cooperation have little to do with the technical aspects related to water. They are related mainly to entrenched perceptions that view transboundary water resources development as a zero-sum game, and the struggle to upset existing power asymmetries in a context of bilateral acrimony.

A learning point from the MPs who support the initiation of dialogue and cooperation is how, in their view, the issue of transboundary water resources development should be de-politicised and how the framework of discussions should exclude linkages with historical contentions between the different neighbours.

From this perspective, the questions around the possibilities for future cooperation are ultimately about which views and beliefs the next Government will feel closest to, and what the overall position of its foreign policy will be. Will it perceive that it has more to gain in pursuing the past approach compared to engaging in negotiations and looking for a compromise? Would it also perceive that the economic, social and political gains of maintaining a unilateral approach outweigh those of a negotiated settlement? Would it believe that the risks associated with pushing a unilateral approach would be worth taking?<sup>287</sup>

Answers to the questions above would depend on the political agenda pursued by the next GIRoA in terms of foreign policies. Whether the GIRoA should opt for cooperation and compromises or pursue the same unilateral course is first and foremost a political choice.

As an Israeli hydrologist puts it: “If there is a political will for peace, water will not be a hindrance. If you want reasons to fight, water will give you ample opportunities.”<sup>288</sup> Or as Julien says: “Hydropolitics is first and foremost about politics, not water.”<sup>289</sup>

In that regard, the political change in Afghanistan in 2014 will soon give an indication of the political will for cooperation.

287 As mentioned earlier, Iran still has the ability to maintain and even increase its coercive pressure should the GIRoA decide to continue a non-compromising approach.

288 Quoted from Julien (2012). Quote from Uri Shamir, Israeli hydrologist, originally quoted by Lonergan (2001, 124).

289 Julien, “Hydropolitics is What Societies Make of It.”

### 5.1.3 Recommendations: How can the international community support the initiation of dialogue and negotiated settlements?

The following recommendations target an audience that would be interested in finding a cooperative path for transboundary water resources development at a regional level. In that regard, the recommendations take a perspective that goes beyond a single country's interests. Note that such a cooperative path may not necessarily be the most relevant to follow for Afghanistan compared to a unilateral resource capture path, depending on how one balances the pros and cons discussed earlier in Table 13.

As a general remark, it is important to remember that the international community is already engaged in ongoing support activities to do with "awareness," "technical research" and "capacity development." Such activities should be maintained, but their scope and targeted beneficiaries could be expanded.

In order to limit the politicising of the issue, debates on the topic could be facilitated and made accessible to non-political actors, including civil society. This could include discussions on the added-value of cooperative scenarios for Afghanistan.

Last but not least, the issue of water resources development may become less sensitive if the issue of productivity and efficiency is also addressed inside Afghanistan's borders.

In any case, it must be realised that such interventions may well be insufficient and may provide very limited results depending on the foreign policy agendas followed by the next GIRoA.

#### **Awareness, technical research and capacity development: A necessary but not sufficient condition**

Continuing to develop awareness among GIRoA officials on the international conventions is necessary if dialogue is considered as the best way forward. But such initiatives may need to be more inclusive. Donors could provide training and capacity development to non-ministerial actors as well, including academics, students and also Members of Parliament and/or their advisers. This may help, for instance, to improve understanding around issues such as limited territorial sovereignty when it comes to water resources among non-ministerial decision-makers and influential leaders. Awareness raising could also go beyond the legal aspects of transboundary water resources development. A technical understanding of the possible impacts and issues at stake may also be important to ensure that decisions are taken on the basis of information that encompasses all aspects of the problems.

Continuing to develop models that focus on the possible impacts of various scenarios of development in the river basins would be useful. Improving technical understanding of the issues at stake and the possible impact of various scenarios would be important for supporting any negotiation process (if it were to happen).

Ideally, studies should be conducted by independent research organisations and universities. Joint ownership by the governments of riparian neighbours would also be critical and would be enhanced if studies were conducted in a joint fact-finding fashion that included all riparian countries (e.g. Afghanistan and Iran in the case of Harirod or Helmand).

Focus should be on understanding the social, environmental and economic impacts of the ongoing projects in order to facilitate a more informed understanding of the foreseeable repercussions of the path chosen, whether it is unilateral resource capture or engaging in dialogue and negotiations. Dissemination of findings through workshops would need to be improved, including when it comes to existing studies. This may help in limiting the aggravating factor of limited understanding of the issues at stake.

It is important to remain aware that capacity building and technical research may not have much impact if the political will for practical engagement in dialogue remains limited.



## **Support incentives for public debates on transboundary issues to help de-politicise and de-securitise the issue**

So far, as discussed earlier, the GIRoA has been rather reluctant in allowing the issue to be debated publicly and has made efforts to securitise and politicise the issue in order to keep control of what is said and who says it.<sup>290</sup> This means that alternatives to the GIRoA's approach of unilateral resource capture have not been discussed. As seen in Section 4, there are a reasonable number of MPs and academics who are open to the idea of engaging in negotiations with neighbours straight away.

The international community could promote public forums and discussions among national actors on how to approach transboundary water resources development. A long-term and sustainable cooperative solution may only be found if the civil society is given room in the decision-making process.

Such incentives may also decrease the fear among decision-makers that engaging in the issue of cooperation over transboundary water resources is too politically risky on the domestic scene.

Yet, developing de-politicised initiatives and platforms may remain a challenge when it comes to transboundary water resources development. It is important to remember that the World Bank and USAID have attempted to promote such platforms. The Abu Dhabi Dialogue Group (ADD-G), funded by the World Bank, initiated in 2008 the Abu Dhabi Dialogue Knowledge Forum (ADD-KF), which launched in 2010 the Small Grants Program (SGP). This programme was designed to support research and encourage the sharing of information, data and the development of river organisations.<sup>291</sup> Yet, this information is not made available to the public.

### **Understanding the views of local actors**

Research would be needed to understand the views of local actors. No agreement on water sharing is likely to be viable if water users are not convinced that it is in their best interests (see discussion earlier about water control). It may therefore be critical to investigate how local actors perceive the possibility of cooperation, including their readiness to compromise and under what conditions they will do so. On this basis, foreseeable resistance or openness to cooperation can be assessed and guide decision-makers at a national level.

It may equally be important to then facilitate dialogue and debates among water users, community leaders, elected representatives (i.e. Provincial Councils) and River Basin Council members in the Provinces and areas concerned by the issues.

### **Demonstrating the value added of a possible cooperation scenario: Focusing on the issue-linkage opportunities**

Assuming that cooperation is necessarily better by definition than non-negotiated solutions may be naïve. As mentioned earlier, there are pros and cons for Afghanistan in following unilateral actions. A cooperative path would only be appealing to decision-makers if they are convinced that the balance of pros and cons between negotiated and non-negotiated solutions is leaning toward negotiated solutions.

Consequently, an important step to increase the commitment of Afghan decision-makers for cooperation would be to demonstrate the added value that different scenarios (including alternatives to or compromises with existing development plans) could bring in terms of social, economic and political gains, as compared to the unilateral path.

Although in the basins related to Iran there is little potential for direct benefit-sharing as there is with Pakistan, exploring the possibilities for linking the water issue with non-water related issues could be given attention and become better articulated. This may be required if one wants to convince those who are opposed to cooperation that it should not be seen as “a loss” or something “counter-productive to Afghan interests.”

<sup>290</sup> Note that the more technical and hydrology-oriented models developed by consultants with the funding of large donors (e.g., the Department for International Development (DFID), the World Bank) for the MEW have been kept confidential, and great care has been taken to ensure they do not reach the public domain.

<sup>291</sup> “South Asia Water Initiative (SAWI) Multi-Donor Trust Fund Report,” prepared by the World Bank for the 2011 Annual Donors Meeting, New Delhi, India, November 3-4, 2011.

A reflection on the political gains would be particularly important considering the criticality of politics in shaping transboundary water interactions. In the absence of substantiated arguments there would be no reasons to deviate from the status quo.

Thus, more attention could be paid to the concept of issue-linkage, including direct compensations. The advantages of negotiated alternatives to the existing water-use plans<sup>292</sup> could be explored and evaluated, first from a socio-economic point of view. Here are a broad selection of possible alternatives together with their limitations:

- In the Harirod basin, the volume of water that Afghanistan could agree not to use for irrigation – as compared to existing plans – could yield many more benefits for Afghanistan if the water were allowed to flow to Iran in exchange for a negotiated compensation. In Harirod, Iran is first and foremost concerned with supplying Mashhad with enough water for DMI uses. The cost of water for DMI uses is much higher than for irrigation use. It may therefore be more economically beneficial for Afghanistan to trade part of the water it could have used for irrigation. Socio-economic models could support the development of such a scenario to assist decision-making.

There are also a number of alternative potential benefits of engaging in a negotiation process that are at least as important but harder to quantify and more subjective. As indicated by the third category of MPs in Section 4, improved security, access to funding, and general improvement in relations with neighbours could emerge as collateral outcomes of engaging in a genuine negotiation process. The risks associated with pursuing the existing plans through a no-negotiation path may also be difficult to assess and quantify, but the scenarios need to be drawn.

Political and diplomatic gains or losses may be more difficult for the international community to raise and evaluate as such assessments and suggestions may be viewed as politically motivated. The role and involvement of the civil society in voicing their opinions will be critical.

As seen earlier, there are important practical limitations when negotiations happen after the completion of dams

- Still, with Harirod, given that Afghanistan has a relatively large potential for underground water resource development, another alternative could be to negotiate financial support from Iran to develop, maintain and operate an alternative underground water supply for irrigation in exchange of limiting (in proportion) surface water use. Considering the state of over-exploitation of Iranian water sources and the subsequent limitations on developing new ones, Iran may be inclined to pay compensation if it is guaranteed that Afghanistan will limit its surface water abstraction to a reasonable level.<sup>293</sup>

Limitations highlighted earlier regarding water control would still apply here.

In the case of the Helmand basin, the following alternatives to existing plans could be explored as well:

- Given that Afghan development on this river – including development of a large new irrigation area downstream of Kamal Khan – could be significantly harmful from a socio-economic and ecological point of view, yet fully legal under the specification of the 1973 treaty (see discussion in Section 3), the GIRoA has strong leverage in negotiating a less threatening plan for the Sistan delta. The GIRoA could therefore explore the possibility of negotiating a reduction in water withdrawal for irrigation below Kamal Khan compared to existing plans – for instance by limiting the irrigation area compared to the maximum potential. Alternatively it could maintain the same plan for the increased irrigation area on the condition of improving irrigation efficiency and possibly practice rotations.

Considering Iran's limited alternatives to mobilising new resources and the high dependence on water coming from Afghanistan, the GIRoA has room to ensure that what it gets in return for compromising on water use would be more beneficial from a socio-economic point of view than its existing plans.

There is thus potential for both sides to find a satisfactory compromise.

<sup>292</sup> The existing water use plans are based on Adikhary et al. (2011) as presented in Section 3.

<sup>293</sup> As mentioned earlier, the fact that Iran is looking for expensive alternatives to pumping water from the Caspian Sea or from Tajikistan to sustain the development of Mashhad is a sign that they are ready for significant financial investment in order to ensure its surface water supply.

There are, however, limitations to such an approach, similar to those mentioned in the case of Harirod.

- Negotiations on managing floodwater at the level of Kamal Khan would also be an important area of cooperation that could benefit both sides. As discussed earlier, diverting floods from Kamal Khan to the Gaud-e-Zireh is a straight loss for the Sistan and particularly for the wetlands. In order to ensure that this flood water, which would not be useable for Afghanistan, reaches the Sistan, Iran could support construction of flood protection infrastructure on the Afghan side downstream of Kamal Khan as a form of compensation. This way, the flood water would flow from Kamal Khan to the Sistan fork and Common Parian – instead of being diverted to the Gaud-e-Zireh – and would not cause damage on the Afghan side.

Such a scenario could again potentially benefit both sides. It has, however, some limitations as highlighted earlier in Section 3, including the fact that a pre-requisite of joint-management on the Afghan side between agriculture and the power ministries has not yet happened.

Overall, it should not be assumed that the pros/cons of cooperation scenarios would necessarily outweigh the pros/cons of pursuing unilateral resource capture scenarios. But in the absence of convincing arguments, those who would support a cooperative settlement may not be able to change the status quo.

### **Develop and support programmes to increase the productivity and improved management of existing irrigation systems**

The foreseeable increase in irrigation water demand in Afghanistan due to the creation of new irrigated areas is at the heart of the existing and future tensions with Iran. This expansion is understandable for the purpose of increasing crop production.

But rather than focusing only on expansion, the GIRoA could try to find a balance between expansion and increasing the productivity of existing system (“more crops per drop”). The same results may be achieved in terms of overall crop production while using less water as compared to only expanding irrigated areas, thus decreasing tensions with neighbours. The international community may well support such initiatives.

This could be a temporary solution before a negotiated agreement on water sharing is found.

#### **5.1.4 Recommendations for further research**

In the light of the findings of this exploratory research, it would be important to improve further our understanding of the political and economic dynamics that keep Afghanistan and its neighbours in a non-cooperative state. At the same time, it would also be important to better understand the dynamics that would bring these regional countries closer to genuine and sustained dialogue. It would be particularly important to further investigate how the national political dynamics within Afghanistan, Iran and Pakistan affect the nature of the transboundary water interactions.

## Annexes

Table 14: Surface water availability, demand and use before and after Dosti dam.

	Prior to 2005 1926 water rights	After 2005 with Dosti dam and change in water rights
Surface water availability at Dosti dam (MCM)	313 <sup>1</sup>	507 <sup>2</sup>
Surface water demand below Dosti dam (MCM)	506 (Irrigation) <sup>3</sup>	150 (DMI uses in Mashhad) 347 (Irrigation + groundwater recharge) <sup>4</sup> 497 (Total)
Surface water use at Dosti dam (MCM)	213 (Irrigation) <sup>5</sup>	150 (DMI uses) 357 <sup>6</sup> (Irrigation + groundwater recharge <sup>7</sup> ) 507 (Total)

<sup>1</sup> 30 percent of the flow at Pol-e-Khatoun (location of Dosti dam).

<sup>2</sup> 50 percent of the flow at Pol-e-Khatoun (location of Dosti dam).

<sup>3</sup> Derived from Ministry of Energy, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan of Eastern Basins, Package One - Present Situation and Possibilities of Water Resources Development, Volume Nine - Agriculture, Agricultural Needs and Consumption and Effluent. (Karakum Basin). Report number 4406/1. Mordad 1391 [July-August 2012]. Page 100 Table 11-21.

It is based on 32,000 ha in Sarakhs.

<sup>4</sup> Between 2009 and 2012, Iran and Turkmenistan initiated the construction of a new conjunctive irrigation and surface drainage network supplied from the Shir Tepeh diversion dam. Irrigation efficiency is expected to improve from 35 percent to 51 percent (Source: <http://www.taice.de/project1.htm>). This should lead to a reduction of the current irrigation water demand from 506 MCM to 347 MCM - assuming there are no changes in cropping patterns.

<sup>5</sup> Derived from Ministry of Energy, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan of Eastern Basins, Package One - Present Situation and Possibilities of Water Resources Development, Volume Nine - Agriculture, Agricultural Needs and Consumption and Effluent. (Karakum Basin). Report number 4406/1. Mordad 1391 [July-August 2012]. Page 100 Table 11-21. Without regulation, the actual water consumption was close to 213 MCM, or 42 percent of the 506 MCM irrigation demand in Sarakhs. According to Vosooghi (2007), many conflicts (including criminal acts) over irrigation water sharing used to be recorded in the Sarakhs area during dry years. As a consequence of limited surface water availability to satisfy the demand, farmers were compensating by using underground water.

<sup>6</sup> Derived from Ministry of Energy, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan of Eastern Basins, Package One - Present Situation and Possibilities of Water Resources Development, Volume Nine - Agriculture, Agricultural Needs and Consumption and Effluent. (Karakum Basin). Report number 4406/1. Mordad 1391 [July-August 2012]. Zarkhani and Lofti (2011) mention 250 MCM. That is because they assumed an average water availability at Dosti of 820 MCM and a 410 MCM share for Iran.

<sup>7</sup> By reducing irrigation water demand and increasing supply, one of the objectives is also to reduce the pressure on groundwater utilisation from the Sarakhs aquifer. Currently, groundwater extraction to compensate surface water deficits is highly unsustainable (as in the Kashfrod sub-basin), with 250 MCM withdrawal every year while the recharge is about 110 MCM. In other words, the construction of the Dosti dam associated with the improvement in water use efficiency (i.e., Shir-Tapeh lines canals) as well as the change in water rights between Iran and Turkmenistan is allowing the Sarakhs area to satisfy the demand for its existing cropping patterns (prior to Dosti) without having to resort to groundwater extraction, thus reducing the pressure on this over-exploited resource.

### Box 5: Water crisis in Mashhad: why Iran is now pumping water from the Dosti Dam

In 1996, at the time of completion of the feasibility study of the Dosti dam, the Kashfrod sub-basin, within which Mashhad city is located, was just above absolute scarcity<sup>8</sup> with 633 m<sup>3</sup> available per capita and per year. In 2006, a year after the inauguration of the dam, the sub-basin crossed the absolute scarcity line to reach 492 m<sup>3</sup> per capita per year.

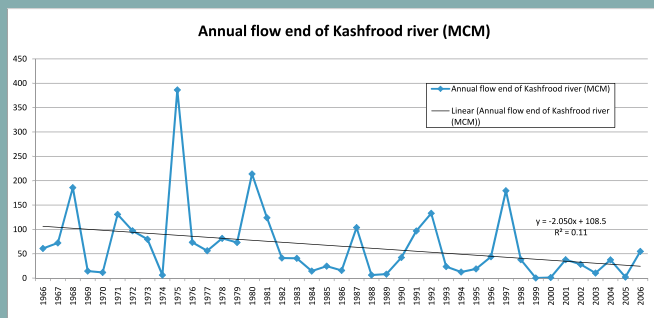
Mashhad city and its surroundings have developed tremendously over the past four decades, putting a heavy pressure on water resources demands:

- The population has multiplied by more than five times since 1972 and is now at 2,760,000 (Census 2011). In addition, this holy city welcomes 20 million pilgrims every year.
- In the Mashhad plain (along the Kashfrod sub-basin), irrigated agriculture increased from 100,000 ha to 130,000 ha between 1972 and 2003.
- With barely no industrial plants in 1963, Mashhad hosted close to 4,300 in 2005.

The government constructed small dams in the sub-basin to better control the available resources, but the overall surface water availability was insufficient to face the demand. Thus, between 1971 and 2006, the number of wells has increased from 1,299 to 6,008 to meet the increasing demand. But groundwater use has now reached the point of over-exploitation. Government regulations on the construction of wells have largely been ignored.

From 1963 to 1973, the groundwater level faced a drawdown of 0.7 m per year. The issue has accelerated since, with an average drawdown of 1.2m per year from 1973 to 2002. (Nairizi, undated). Thus, in large parts around Mashhad city, the groundwater table has fallen by 40 to 60 meters over the past four decades. As a consequence, land subsidence has been observed, causing a threat to constructions' foundations (e.g., roads, bridges, transmissions towers).

The figure below shows how drastically the average surface water availability at the downstream end of the Kashfrod has decreased over the last 40 years.



The Deputy to Managing Director of Regional Water Company of Razavi Khorassan (the province where Mashhad is located) underlined in October 2011 the unsustainable nature of developments in the area: "The industrial growth accompanied with agricultural development has not been based on an approved program. The compatibility with science and nature and capacity of natural resources of Mashhad plain was ignored in such developments. [...] The high water consuming industries with high pollution hazard were selected while they were not matched to Mashhad water situation" (Alaei, 2011; 95).

As an illustration of the unreasonable nature of water use in Mashhad, the daily water consumption per capita in Mashhad is 224 litres while it is 125 in a city like London. The difference in water consumption per capita between Mashhad and London represents close to 110 MCM per year. In other words, close to 75 percent of the 150 MCM pumped from the Harirod (at Dosti dam) will be used to satisfy what could be considered as unreasonable usage of water relative to international standards.

To address this man-made crisis, the local authorities have also initiated some more sustainable measures such as waste water recycling and re-use of effluents, since 2002.

In the plain, the re-use of treated effluents for irrigation was initiated in 2005. The operation consists of transferring clean water from small dams located upstream of the city and which have been used in the past for irrigation; and to compensate farmers with treated effluent water—from the city—which would be pumped back to the upstream fields (with a quality only satisfactory for irrigation).

The objective is now to stabilise the groundwater table level, and improve the quality of drinking water to the city without jeopardising irrigation water rights.

Alternative possibilities such as pumping water from the Caspian Sea or importing water from Tajikistan are being explored. The costs are, however, expected to be extremely high, according to the Iranian Ministry of Energy and Water.

Sources: Based on Nairizi (undated); Alaei (2011); <http://www.mashhadkhabar.com/index.php?page=view&id=3252>; and <http://bokhdinews.af/world-news/9082->

<sup>8</sup> Absolute scarcity line is considered at 500 m<sup>3</sup>/capita/year, according to the Falkenmark indicator. Table 15: Base-line and estimated impact of different water use scenario in the Sistan Delta.

Table 15: Base-line and estimated impact of different water use scenario in the Sistan Delta

Scorecard IWRM Sistan Inland Delta			Scenario 1		Scenario 2
Criteria	Unit	Target	Base case	2 Chahnimeh 4 for irrigation	Base case
<b>General information (on case)</b>					
Irrigated area in Sistan	Ha	-	120,000	120,000	120,000
Average inflow from Afghanistan	MCM/yr	-	5875	5875	3250
<b>Domestic water supply</b>					
DMI raw water supply (Zabol + Zahedan)					
Months supply < demand	%	0	0	12.8	0
<b>Economy – agriculture</b>					
Supply/demand ratio	-	>0.80	0.63	0.79	0.31
Agricultural production	ktons/yr		401	580	348
<b>Economy – Hamouns</b>					
Fish	ktons/yr		20.7	20.8	4.8
Birds	ktons/yr		0.78	0.77	0.17
Reed	ktons/yr		299	296	133
<b>Ecology – Hamouns</b>					
Suitable conditions for ecology in Hamouns					
Average maximum area in fall (Oct-Jan)	ha		90,000	88,000	45,000
Flushing of Hamouns– Hirmand	T	<8 yr	12.5	12.5	16.7
Estimation of ecosystem condition	% of ref		90–100	90–100	0–20
<b>Environment/Health</b>					
Return per. in years Saberi <20% of max area	T	0	13	13	2
<b>Income (return period of years with &lt; 50% of reference income)</b>					
Bird catchers	T		5.44	4.45	1.00
Fishermen	T		5.44	4.45	1.00
Reed harvesters	T		5.44	4.45	1.00
Pastoralists	T		5.44	4.45	1.00

As reference, the situation in the 1970s has been selected as a period in which the conditions were considered to be good.

T return period = 1/f

n/a not applicable; the situation did not occur in the 55 years of the simulation, and hence no return period could be assessed.

Source: Adapted from Beek et al. (2008)

The table indicates that:

1) The scenario 1-2 would improve the reliability of the supply/demand ratio (in agriculture) from 63 percent to 79 percent while maintaining the integrity of the wetlands to a level close to the base-line scenario (i.e., there won't be any change in the economy of the Hamouns, the frequency of flushing, or the frequency of cases when the wetlands dry-up. The impact on the incomes of the bird catchers, reed harvesters, fishermen or pastoralists would be limited).

2) The scenario 2 would mean that with a water supply limited to 3,250 MCM, the reliability of the supply/demand ratio for agriculture would decrease from 63 percent to 31 percent. The wetlands would dry up on average every two years while every 13 years is the case now. The economy (production from fish, birds and reeds) would fall by 58 percent to 78 percent. The incomes would drop by 50 percent of the current reference income, while such a scenario would happen only every five to six years in the base-line scenario.

### Box 6: About Iranian complaints regarding the alleged non-respect of the water sharing treaty during the dry year of 2000

During the dry years 2000-2001, Iran formally raised its concerns to the Embassy of the Islamic State of Afghanistan regarding an alleged blockage of the Hirmand waters at the Kajaki dam resulting in a failure (according to Iranian authorities) of the fulfilment of the treaty. The complaint letter was later circulated on 21 September 2001 as part of an agenda item of the General Assembly Security Council.

The letter explains that, according to Iranian officials, between March 2000 and August 2001 the Afghan authorities (i.e., the Taliban regime at the time) had allegedly blocked the Hirmand waters at the Kajaki dam, resulting in a failure (according to Iranian authorities) of the fulfilment of the treaty.

The letter states that: “The blockage of water flow into the Hirmand River, which began on 8 March 2000 and continues to date, has caused tremendous damage to the agriculture and the animal husbandry of the people in the region. They are facing even great difficulties in securing drinking water supplies. Moreover, the internationally recognised wetland of Hamun has been completely dried out.”<sup>9</sup>

The letter further states that in July 2000, a joint inspection team observed a flow of 46.8 m<sup>3</sup>/s flowing upstream of Kajaki (i.e., Dehrawud station) and a storage of 1,000 MCM at the dam while the gates were closed. On this basis, the document concluded: “Iran reserves its right to seek compensation for the damage inflicted by the breach of the said Treaty and the blockage of the Hirmand waters and will take all steps at its disposal to ensure the utilisation of its water rights.”

Although Iran refers to figures collected through a joint-commission, the points stated in the letter could not be independently verified and should therefore be taken with care as to whether they accurately portray the situation. For the sake of argument, it remains insightful to look at what the points mentioned could mean, including in the broader context of the socio-ecological situation in the Sistan delta.

If the points mentioned are indeed true, they could mean that Afghanistan did not fulfil the requirements of the treaty in that specific event. But, and perhaps more importantly, what they would also highlight is the limitations of the treaty as a tool to preserve the integrity of the wetlands. Indeed, even if the treaty had been respected it would have made no difference for the Hamun.

For a normal year, the treaty defines the water flow at Dehrawud for July as 97.2 m<sup>3</sup>/s (Protocol 1 article 5). The measured flow was thus 48 percent of the normal flow. Assuming that the river flow had been 48 percent of a normal flow during the whole water year, the water rights of Iran would not have been 26 m<sup>3</sup>/s (or 820 MCM) but around 12.5 m<sup>3</sup>/s (or 395 MCM) (i.e., 48 percent of the 26 m<sup>3</sup>/s based on adjustments as stipulated in the treaty<sup>10</sup>). Assuming that Iran did not receive this amount and that at the same time 1,000 MCM were stored at the dam at the time, it could indicate that Afghanistan had the means to fulfil the treaty but failed to do so. In such case it may be difficult to invoke article XI of the treaty, which mentions:

“If extreme drought or force majeure should make the reaching of the water to the Helmand Delta temporarily impossible, the Commissioners of the two parties shall immediately enter into consultation and shall formulate and submit an urgent necessary plan for meeting or minimising the emergency to their respective governments.”

Providing the required volume would have certainly made a difference in terms of supporting drinking water access for the Sistan. However, when it comes to protecting the wetlands from drying up, the issue of non-application of the treaty in some rare occasions is to some extent irrelevant. Indeed, providing the 395 MCM (again the figure is based on assumptions for the sake of argument) would have made virtually no difference for the wetlands, which need 4,378 MCM on a yearly basis. Thus, associating the fact that “the internationally recognised wetland of Hamun has been completely dried out” with the non-respect of the treaty would in any case be incorrect.

<sup>9</sup> Source: <http://www.un.org/documents/ga/docs/56/a56393.pdf>

<sup>10</sup> In reality, the adjustments should be calculated on monthly basis. We assume here that during the whole year, the flow has been 48 percent of normal.

Map 4: Indus River Basin



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

**Indus river basin**

**Legend**

International boundary	Lake	Dam, Barrage
Administrative boundary	Intermittent Lake	River
Line of Control	Salt Pan	Canal
Capital, town	Zone of irrigation development	River basin

**FAO - AQUASTAT, 2011**

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The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

0 75 150 300 450 km  
Albers Equal Area Projection, WGS 1984

Source: Encyclopedia Britannica



### Box 7: Illustration of the flexibility of the 1973 treaty

The treaty defines—in its article three—a monthly water right for Iran according to a defined schedule in order to ensure that the distribution of water is spread adequately throughout the year, in line with irrigation requirements at the time (i.e., more water during winter months and less water during summer months). According to these values, the water rights for Iran would amount to a total of 820 MCM for an entire year. However, the monthly water rights values provided in that article three are valid only in normal hydrological conditions. Normal hydrological conditions are defined in article five of the treaty at the level of the Dehraout station, located upstream of Kajaki dam.

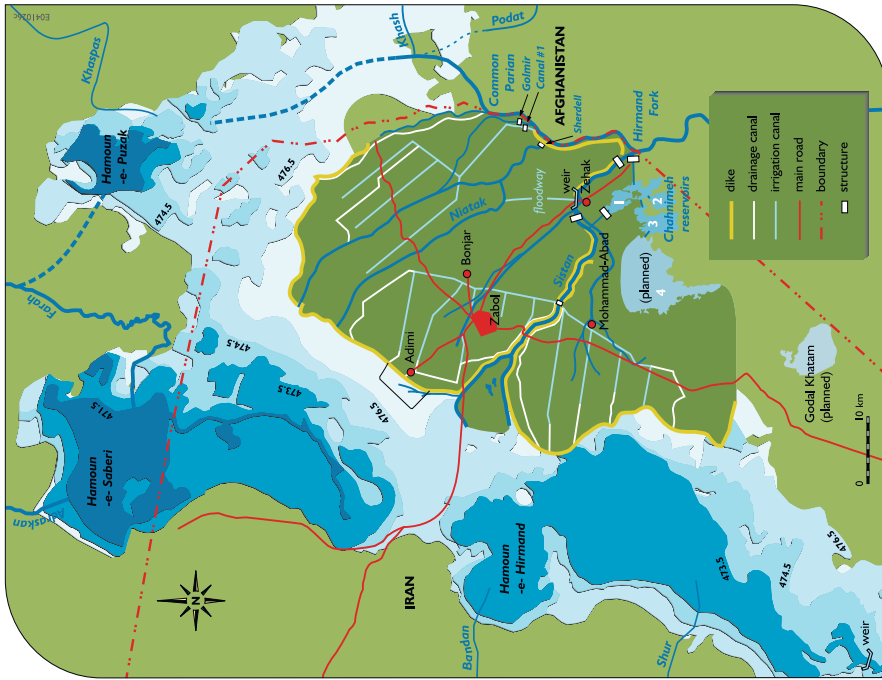
On this basis the following procedure should be followed:

- Each month, average monthly water flow measured at the Dehraout station should be compared with the values given in a table in article five.
- If the measured monthly values at Dehraout are equal or superior to the normal value stipulated in article five, Iran should receive a certain volume of water as stipulated in article three.
- If the measured monthly value is lower than the normal value stipulated in article five, the water rights of Iran have to be re-calculated according to a defined protocol:
- If for instance the average flow at Dehraout for month one is 20 percent lower than the normal figure for that month one, the water right for Iran in month two should be 20 percent lower than what the normal water right for that month two.

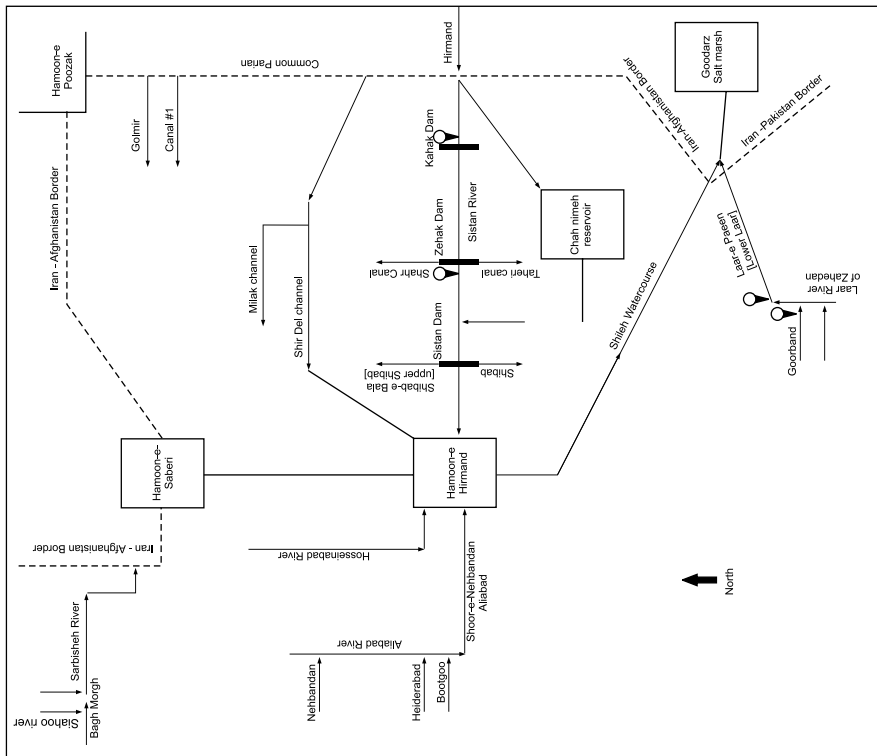
The same procedure should be repeated each month.

What this procedure means is that during a dry years (i.e., when the monthly flows measured are lower than normal for most months) the water rights to Iran would be less than 820 MCM.

Figure 3 and Map 5: Schematic and map of the Sistan delta  
The Hirmand river splits at the Iranian border (at the Helmand Fork) in two rivers



Source: Beek et al. (2008). Note the Chamimeh reservoir-4 (marked as planned on the map) is now active (as of 2013).



Source: Adapted from Ministry of Energy. Hamun-Hydro Report [April-May 2012]. Page 11 Figure 2.2.

The Sistan river (which enters Iranian territory and provides water for DMI and agriculture uses, before entering the Hamun-e-Saberi and Hamun-e-Hirmand)  
The Common parian (which flows along the border with Afghanistan and supplies water for irrigation on Iranian (left) and Afghan (right) sides, before entering the Hamun-e-Puzak).  
The Khash river supplies the Hamun-e-Puzak, while the Farah river supplies mainly the Hamun-e-Saberi.

Table 16: Monthly water right for normal and wet years as suggested by the 1973 treaty on the Helmand river.

	October	November	December	January	February	March	April	May	June	July	August	September	Annual
Iran monthly water rights in normal year (m <sup>3</sup> /s)	5.0	12.7	23.0	34.7	78.2	73.1	31.1	9.0	19.7	13.7	9.4	2.3	26.0

## Bibliography

- Adhikary, S.K., S.K. Das, S.S. Atef, A. DasGupta and M.S. Babel. "Simulating Impacts of EFR Consideration on Reservoir Operation Policy and Irrigation Management in the Hari Rod River Basin, Afghanistan." Presented at the 19th International Congress on Modelling and Simulation, Perth, Australia, 12-16 December 2011, <http://mssanz.org.au/modsim2011>.
- American Institute of Afghanistan Studies and the Hollings Center for International Dialogue. "Afghanistan's Other Neighbors: Iran, Central Asia, and China." Report from Conference held 24-26 July 2008, Istanbul, (February, 2009).
- Barret, Scott. *Environment and Statecraft: The Strategy of Environmental Treaty-Making*. Oxford: Oxford University Press, 2003.
- Basar, Eray. "The Roles of India & Pakistan in Afghanistan's Development and Natural Resources." Civil-Military Fusion Centre, March 2012.
- Van Beek, Eelco et al. "Limits to Agricultural Growth in the Sistan Closed Inland Delta, Iran." *Irrigation and Drainage Systems* (2008).
- Browder, G. "An Analysis of the Negotiations for the 1995 Mekong Agreement." *International Negotiation* 5, (2000).
- Carter, Stephen. "Iran's Interests in Afghanistan and Their Implications for NATO." *International Journal* 65, no. 4 (Autumn, 2010).
- Christensen, Janne Bierre. "Strained Alliances: Iran's Troubled Relations to Afghanistan and Pakistan." DIIS Report 2011:03. Copenhagen: Danish Institute for International Studies, 2011.
- Clark, Brenton. "Iranian Foreign Policy Towards Tajikistan and Afghanistan During the Ahmadinejad Presidency: The Rising Salience of Persian National Identity." *OAKA* 7, no. 13 (2012).
- Dasgupta, Sunil. "Regional Politics and the Prospects for Stability in Afghanistan." Peaceworks No. 86, Washington, DC: United States Institute of Peace, 2013.
- Dehgan, Alex, Jean Palmer-Moloney and Mehdi Mirzaee. "Water Security and Scarcity: Potential Destabilization in Western Afghanistan and Iranian Sistan and Baluchestan due to Transboundary Water Conflicts." *Water and Post-Conflict Peacebuilding*, eds Erika Weinthal, Jessica J. Troell, Mikiyasu Nakayama (2012).
- Delhi Policy Group. "Afghanistan-India-Pakistan Trialogue 2010: Bridging the Trust Deficit(s)." Report of the 2010 Trialogue, New Delhi: Bibliophile South Asia, 2011.
- Dinar, Shlomi. *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*. London & New York: Routledge, 2008.
- Dombrowsky, Ines. "Benefit-Sharing in Transboundary Water Management Through Intra-Water Sector Issue Linkage?" undated.
- Ebrahimzadeh, I. and M. Esmaelnejad. "Climate Changes and the Role of Recent Droughts on Agricultural Economy of Sistan." *Romanian Review of Regional Studies* 9, no. 1 (2013).
- Elhance, Arun. *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins*. Washington, DC: United States Institute of Peace Press, 1999.
- European Commission. "Directorate General for Trade, European Union, Trade in Goods With Pakistan (July 2013)." Document accessed at [http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\\_113431.pdf](http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113431.pdf)
- European Commission. "Directorate General for Trade, European Union, Trade in Goods With Iran (July 2013)." Document accessed at [http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\\_113392.pdf](http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113392.pdf)
- Fakhari, Gholam-Reza. *Dispute Between Iran and Afghanistan on the Issue of Hirmand River*. S. Fida Yunas eds., 1993.

- Farouq, Ghulam. "The Effects of Local, Regional and Global Politics on the Development of the Helmand-Arghandab Valley of Afghanistan." School of Oriental and African Studies, University of London, August 1999.
- Favre, R., and G. M. Kamal. "Watershed Atlas of Afghanistan." Kabul: Ministry of Irrigation, Water Resources and Environment, 2004.
- Fink, Simon, Daniel Rempe and Axel Obermeier. "Indicators for Economic Power and Dependence." University of Bamberg, 2010.
- Frederick W. Frey. "The Political Context of Conflict and Cooperation Over International River Basins." *Water International* 18, no. 1 (1993).
- Government of the Islamic Republic of Afghanistan. "Water Sector Strategy." Kabul: 2008.
- Government of the Islamic Republic of Afghanistan. "Agriculture and Rural Development Cluster, National Priority Program 1: National Water and Natural Resources Development, Final Draft for Endorsement." 20.
- Grare, Frédéric. "Pakistan," *Is a Regional Strategy Viable in Afghanistan?* edited by Ashley J. Tellis and Aroop Mukharji, 17-25, Washington, DC: Carnegie Endowment for International Peace, 2010.
- Hameed, Sadika. "Prospects for Indian-Pakistani Cooperation in Afghanistan." Washington, DC: Center for Strategic and International Studies, August, 2012.
- Hijri, R. and D. Grey. "Managing International Waters in Africa: Process and Progress." In *International Watercourses: Enhancing Cooperation and Managing Conflict*, eds. S. Salman and L. Boisson de Chazournes, World Bank Technical Paper, 414, Washington, DC: 1998.
- Haftendorn, Helga. "Water and International Conflict." *Third World Quarterly* 21 (2000).
- Haji-Yousefi, Amir M. "Iran's Foreign Policy in Afghanistan: The Current Situation and Future Prospects." *South Asian Studies* 27, no. 3 (January-June 2012).
- Hanauer, Larry and Peter Chalk. "India's and Pakistan's Strategies in Afghanistan: Implications for the United States and the Region." RAND Center for Asia Pacific Policy, Santa Monica, CA: RAND, 2012.
- Homer-Dixon, T.F. *The Ingenuity Gap*. London: Jonathan Cape, 2000.
- Hussain, Safdar and Muhammad Ijaz Latif. "Issues and Challenges in Pakistan-Afghanistan Relations after 9/11." *South Asian Studies* 27, no. 1 (January-June, 2012).
- Iklé, Fred. *How Nations Negotiate*. New York: Harper and Row, 1964.
- Islam, Thowidul. "Impact of Helmand Water Dispute on the Bilateral Relations between Iran and Afghanistan; Sn Evaluation." *International Journal of Central Asian Studies* 15 (2011).
- Islamic Republic of Iran. Ministry of Power, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan (Eastern basins), Package One – Present Situation and Possibilities of Water Resources Development, Vol. 9 – Agriculture, Agricultural Needs and Consumption and Effluent (Hamoon-e Hirmand Basin), Mordad 1391 [July-August 2012].
- Islamic Republic of Iran. Ministry of Power, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan (Eastern basins), Package One – Present Situation and Possibilities of Water Resources Development, Vol. 4 – Surface Water Resources (Quantitative and Qualitative Aspects), Ordibehesht 1391 [April-May 2012].
- Islamic Republic of Iran. Ministry of Power, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan (Eastern basins), Package One – Present Situation and Possibilities of Water Resources Development, Vol. 13 – Socio-Economic (Hamun-e Hirmand Basin), Shahrivar 1390 [August-September 2011].
- Islamic Republic of Iran. Ministry of Power, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan (Eastern basins), Package One – Present Situation and Possibilities of Water Resources Development, Vol. 4 – Surface Water Resources (Quantitative and Qualitative Aspects), (Karakum Basin), Khordad 1390 [May-June 2011].

Islamic Republic of Iran. Ministry of Power, Bureau of Macro-level Planning for Water and Wastewater, Studies for Updating the Comprehensive Water Plan (Eastern basins), Package One – Present Situation and Possibilities of Water Resources Development, Vol. 13 – Socio-Economic (Karakum Basin). Shahrivar 1390 [August-September 2011].

Jägerskog, Anders. “Why States Cooperate Over Shared Water: The Water Negotiations in the Jordan River Basin.” PhD Dissertation, Department of Water and Environmental Studies, Faculty of Arts and Science, Linköping University, 2003.

Julien, Frédéric. “Hydropolitics is What Societies Make of It (Or Why We Need a Constructivist Approach to the Geopolitics of Water).” *International Journal of Sustainable Society* 4, Nos. 1/2, (2012).

Just, R. and S. Netanyahu. “International Water Resource Conflicts: Experience and Potential.” In *Conflict and Cooperation on Trans-Boundary Water Resources*, eds. R. Just and S. Netanyahu, Boston: Kluwer Academic Publishers, 1998.

Kagan, Frederick W., Ahmad K. Majidyar, Danielle Pletka, and Marisa Cochrane Sullivan. “Afghanistan.” In “Iranian Influence in the Levant, Egypt, Iraq and Afghanistan,” 79-89, American Enterprise Institute and the Institute for the Study of War, 2012.

Khan, Feisal. “Why Borrow Trouble for Yourself and Lend It to Neighbors? Understanding the Historical Roots of Pakistan’s Afghan Policy.” *Asian Affairs: An American Review* 37 (2010).

King, Matthew and Benjamin Sturtewagen. “Making the Most of Afghanistan’s River Basins: Opportunities for Regional Cooperation.” EastWest Institute 2010.

Kursawe, Janet. “Iran’s Influence in Afghanistan.” *The Afghanistan Challenge: Hard Realities and Strategic Choices*, 129-140, eds. H.G. Ehrhart and C.C. Pentland (Kingston, Ontario: Queen’s Centre for International Relations, 2009).

Laipson, E. “Engaging Iran on Afghanistan.” Washington, DC: Henry L. Stimson Center, March 2012.

McMurray, James C. and A. Dan Tarlock. “The Law of Later-Developing Riparian States: The Case of Afghanistan.” *N.Y.U. Environmental Law Journal* 12 (2005), 711-763.

Meijer, Karen, Eelco van Beek and Koen Roest. “Integrated Water Resources Management for the Sistan Closed Inland Delta, Iran.” Annex C Sistan Water Resources System - Supply and Demand (2006).

Ministry of Energy and Water. “Transboundary Water Policy.” Working draft 3.2-1, 12 June 2013.

Ministry of Planning. “Draft Fourth Five Year Plan: National Development Plan for Afghanistan 1351-1355 (1972/73-1976/77).” 1973.

Mott MacDonald Ltd. “Helmand River Basin Master Plan. Phase 2: Technical Report 1: Progress on Helmand River Basin Model and Scenario Development.” Ministry of Energy and Water, Kabul: October 2012.

Ministry of Water and Power. *Hydrological Yearbook 1965-1975*. Part I-1A Lower Kabul River basin Up to Naghlu Reservoir, Water and Soil Survey Department, General Directorate of Hydrology.

Ministry of Water and Power. *Hydrological Yearbook 1965-1975*. Part I-1B Upper Kabul River Basin Above Panjshir Confluence, Water and Soil Survey Department, General Directorate of Hydrology.

Ministry of Water and Power. *Hydrological Yearbook 1976-1978*. Part I Rivers of Indus Basin (Kabul, Khurram a Shamal), Water and Soil Survey Department, General Directorate of Hydrology.

Ministry of Water and Power. *Hydrological Yearbook 1963-1975*. Part I-2 Khurram River Basin, Water and Soil Survey Department, General Directorate of Hydrology.

Ministry of Irrigation and Water Resources. *Hydrological Yearbook 1979-1980*. Part (I and II) Rivers of Indus and Helmand Basin (Kabul, Khurram, Helmand and Ghazni), Water and Soil Survey Department, General Directorate of Hydrology.

Ministry of Water and Power. *Hydrological Yearbook 1962-1975*. Part III-8 Harirud River Basin, Water and Soil Survey Department. General Directorate of Hydrology.

- Ministry of Water and Power. *Hydrological Yearbook 1976-1978*. Part III West Flowing Rivers. (Khash, Farah, Adraskan and Harirud), Water and Soil Survey Department, General Directorate of Hydrology.
- Ministry of Water and Power. *Hydrological Yearbook 1961-1975*. Part II-4A Helmand River Basin (Excluding Argandhad River Basin), Water and Soil Survey Department, General Directorate of Hydrology.
- Ministry of Water and Power. *Hydrological Yearbook 1961-1975*. Part II-4B Arghandab River Basin, Water and Soil Survey Department, General Directorate of Hydrology.
- Ministry of Water and Power. *Hydrological Yearbook 1962-1975*. Part II-3 Ghazni River Basin, Water and Soil Survey Department, General Directorate of Hydrology.
- Ministry of Water and Power. *Hydrological Yearbook 1976-1978*. Part II Rivers of Helmand Basin (Ghazni and Helmand), Water and Soil Survey Department, General Directorate of Hydrology.
- Mojtahed-Zadeh, Pirous. "Lake Hamun, a Disaster in the Making: Hydropolitics of Hirmand and Hamun." United Nations Environment Programme, <http://www.unep.or.jp/ietc/publications/techpublications/TechPub-4/lake1-7.asp>
- Mojtahed-Zadeh, Pirous. *Small Players of The Great Game. The Settlement of Iran's Eastern Borderlands and the Creation of Afghanistan*. London: Routledge, 2004.
- Moravcsik, Andrew. "Taking Preferences Seriously: A Liberal Theory of International Politics." *International Organization*, 51 (1997).
- Mostert, Erik. "Conflict and Cooperation in the Management of International Freshwater Resources: A Global Review." Paris: UNESCO, 2003.
- Nader, Alireza and Joya Laha. "Iran's Balancing Act in Afghanistan." Santa Monica, CA: RAND Corp, 2011.
- Nairizi, Saeed. "Integrated Water Resources Management (IWRM) In Critical Arid Basin Of Iran (Mashhad Basin)." Power Point Presentation (Undated)
- Ohlsson, Leif. "Water and Social Resource Scarcity - An Issue Paper Commissioned by FAO/AGLW." Paper presented for the second FAO Email Conference on Managing Water Scarcity, WARSCAR2, June-July 1998.
- Parsi, Rouzbeh. "Exploring Iran & Saudi Arabia's Interests in Afghanistan & Pakistan: Stakeholders or Spoilers – A Zero Sum Game? Part 2: Iran." Sources of Tension in Afghanistan and Pakistan: A Regional Perspective. Barcelona: CIDOB, April 2013.
- Putnam, Robert D. "Diplomacy and Domestic Politics: The Logic of Two-Level Games." *International Organization* 42, No. 3. (Summer, 1998).
- Rees, Gerdy. "The Role of Power and Institutions in Hydrodiplomacy: Does Realism or Neo-Liberal Institutionalism Offer a Stronger Theoretical Basis for Analysing Inter-State Cooperation over Water Security?" Paper was submitted as a requirement for the degree of MA International Studies and Diplomacy of the School of Oriental and African Studies, University of London, 2010.
- Reisner, M. *Cadillac Desert: The American West and its disappearing water*. (Revised and updated). Penguin Books: New York, 1993.
- Roy-Chaudhury, Rahul. "Pakistan." In *Afghanistan to 2015 and Beyond*, edited by Nicholas Redman and Toby Dodge, 167-186. London: International Institute for Strategic Studies, 2011.
- Sadat, Mir H. and James P. Hughes. "U.S.-Iran Engagement Through Afghanistan." *Middle East Policy* 17, no. 1 (Spring 2010).
- Sadjadpour, Karim. "Iran." In *Is a Regional Strategy Viable in Afghanistan?* edited by A.J. Tellis and A. Mukharji. Washington, DC: Carnegie Endowment for International Peace, 2010.
- Sadoff, Claudia, Dale Whittington and David Grey. "Africa's International Rivers: An Economic Perspective." Washington, DC: World Bank, 2002.
- Saljuki, Zia Gul. Ministry of Energy and Water, Powerpoint Presentation, National Water Conference, January 2013.

- Sexton, Renard. "Natural Resources and Conflict Natural Resources and Conflict in Afghanistan in Afghanistan: Seven Case Studies, Major Trends and Implications for the Transition." Kabul: Afghanistan Watch, 2012.
- Shelala, Robert M. II, Nori Kasting, Sam Khazai and Sean Mann. "US and Iranian Strategic Competition: The Impact of Afghanistan, Central Asia, and Pakistan." Burke Chair in Strategy Report. Washington, DC: Center for Strategic & International Studies, 11 October 2012.
- Sial, Safdar. "Pak-Afghan Relations: Emerging Trends and Future Prospects." *Conflict and Peace Studies* 4, no. 1 (Jan-Mar 2011).
- Siddique, Qandeel. "Pakistan's Future Policy Towards Afghanistan: A Look at Strategic Depth, Militant Movements and the Role of India and the US." DIIS Report 2011:08. Copenhagen: Danish Institute for International Studies, 2011.
- Toscano, Roberto. "Iran's Role in Afghanistan." Sources of Tension in Afghanistan and Pakistan: A Regional Perspective. Barcelona: CIDOB, January 2012.
- Turton, Anthony Richard. "The Political Aspects of Institutional Developments in the Water Sector: South Africa and its International River Basins." Pretoria, South Africa: University of Pretoria, Ph.D. Dissertation, 2003.
- Uhl, Vincent W. "Afghanistan: An Overview of Groundwater Resources and Challenges." Uhl, Baron, Rana and Associates Inc., 2003.
- United Nations Development Program. "Report Assessment of Water Sector in Turkmenistan." Ashgabat, Turkmenistan: 2010.
- Waterbury, John. *Hydropolitics of the Nile Valley*. Syracuse, NY: Syracuse University Press, 1979.
- Whitney, J.W. "Geology, Water, and Wind in the Lower Helmand Basin, Southern Afghanistan." U.S. Geological Survey Scientific Investigations Report 2006-5182, 40, 2006.
- Wilde, Andreas. "Continuity and Hiatus: Structural Patterns of Iran's Policy in Afghanistan." *Internationales Asien Forum* 40, nos. 1-2 (2009).
- Wolf, Aaron. "Water for Peace in the Jordan River Watershed." *Natural Resources Journal* 33 (1993).
- World Bank. "Overview." *Afghanistan in Transition: Looking Beyond 2014*, 1, 2012.
- World Bank. "Pakistan: Country Water Resources Assistance Strategy; Water Economy: Running Dry." Report 34081-PK (14 November). Washington, DC: Agriculture and Rural Development Unit, South Asia Region, 2005.
- Landell Mills Development Consultants. "Afghanistan Water Resources Development (AWARD) Technical Assistance Project - Technical and Implementation Support Consultancy (TISC)." Investment Plan for Kabul River Basin, World Bank, 2013.
- Young, Oran R. *International Governance: Protecting the Environment in a Stateless Society*. Ithaca: Cornell University Press, 1994. As quoted in Dinar, *International Water Treaties Negotiation and Cooperation Along Transboundary Rivers*.
- Yusuf, Moeed. *Decoding Pakistan's 'Strategic Shift' in Afghanistan*. Stockholm: Stockholm International Peace Research Institute, May 2013.
- Zeitoun, M., and J.F. Warner. "Hydro-Hegemony: A Framework for Analysis of Transboundary Water Conflicts." *Water Policy* 8, no. 5 (2006).
- Zyck, Steven A. "Transit Trade in Transition: The APTTA & the Afghan Economy." Norfolk, VA: Civil-Military Fusion Center, 2011, [https://www.cimicweb.org/cmo/afg/Documents/Economic/Afghanistan\\_Pakistan\\_Transit\\_Trade.pdf](https://www.cimicweb.org/cmo/afg/Documents/Economic/Afghanistan_Pakistan_Transit_Trade.pdf).



### Online News Articles References

“Work on Salma Dam to Continue.” *Afghanistan Times*, [http://www.afghanistantimes.af/news\\_details.php?id=559](http://www.afghanistantimes.af/news_details.php?id=559) (undated).

“Afghanistan Awards Dam Construction Contract to Tajik Firm.” Central Asia Energy Newswire, <https://centralasianewswire.com/Energy/Afghanistan-awards-dam-construction-contract-to-Tajik-firm-/viewstory.aspx?id=4643>, 15 August 2011.

Scott Peterson. “Why a Dam in Afghanistan Might Set Back Peace.” *Christian Science Monitor*, 30 July 2013, <http://www.csmonitor.com/World/Asia-South-Central/2013/0730/Why-a-dam-in-Afghanistan-might-set-back-peace>

“Pakistan Ready to Sign Water Accord with Afghanistan: Sherpao.” *Dawn*, <http://www.dawn.com/news/122815/pakistan-ready-to-sign-water-accord-with-afghanistan-sherpao>, 2 November 2003.

“Need Stressed for Water Treaty With Afghanistan.” *Dawn*, <http://www.dawn.com/news/371911/need-stressed-for-water-treaty-with-afghanistan>, 28 September 2004.

“Pak-Afghan Water Talks Under Way.” *Dawn*, <http://www.dawn.com/news/622243/pak-afghan-water-talks-under-way>, 19 April 2011.

“Water Storage Capacity to be Raised by 20MAF.” *Dawn*, <http://www.dawn.com/news/629891/water-storage-capacity-to-be-raised-by-20maf>, 19 May 2011.

“Joint Management of Water Proposed with Afghanistan.” *Dawn*, <http://www.dawn.com/news/636374/joint-management-of-water-proposed-with-afghanistan>, 13 June 2011.

“Proposed Dams on Kabul River: Pakistan to Suffer Drop in Water Supply.” *Dawn*, <http://www.dawn.com/news/670691/proposed-dams-on-kabul-river-pakistan-to-suffer-drop-in-water-supply-2>, 1 November 2011.

Khaleeq Kiani. “Pakistan, Afghanistan Mull Over Power Project on Kunar River.” *Dawn*, <http://dawn.com/news/1038435/pakistan-afghanistan-mull-over-power-project-on-kunar-river>, 26 August 2013.

“Ministry Suggests Water Treaty with Kabul to Avoid Dispute.” *Express Tribune*, <http://tribune.com.pk/story/193655/ministry-suggests-water-treaty-with-kabul-to-avoid-dispute/>, 22 June 2011.

“CASA-1000 Project: Accord Reached on Structure and Commercial Principles.” *Express Tribune*, <http://tribune.com.pk/story/605193/casa-1000-project-accord-reached-on-structure-and-commercial-principles/>, 16 September 2013.

Muddassir Rizvi. “Planned Afghan Reservoirs Worry Pakistan.” Inter Press Service, <http://www.ipsnews.net/2003/09/environment-planned-afghan-reservoirs-worry-pakistan/>, 4 September 2003.

Ghanizada. “Iranian Concerns Over Kamal Khan Dam Construction Baseless: Officials.” Khaama Press, <http://www.khaama.com/iranian-concerns-over-kamal-khan-dam-construction-baseless>, 8 September 2011.

Shoib Tanha. “Fund Crunch, Security Derail Big Plans for Dams.” The Killid Group, <http://www.tkg.af/english/reports/political/889-fund-crunch-security-derail-big-plans-for-dams>, 24 April 2012.

Jay Price and Rezwan Natiq. “Iran-Donated Power Plants Won’t Dent Afghans’ Energy Needs.” McClatchy DC, <http://www.mcclatchydc.com/2013/01/28/181259/iran-donated-power-plants-wont.html>, 28 January 2013.

“Iran Calls For Forming Commission Over Water Issue With Afghanistan, Tajikistan.” [http://news.xinhuanet.com/english2010/world/2010-12/28/c\\_13666728.htm](http://news.xinhuanet.com/english2010/world/2010-12/28/c_13666728.htm), 28 December 2010.

Frozan Muradi. “Water and Energy Sector in Critical Situation.” Pajhwok Afghan News, <http://www.pajhwok.com/en/2012/04/03/water-energy-sector-critical-situation>, 3 April 2012.

Abasin Zaheer. “Tehran Wants Water Treaty With Kabul Enforced.” Pajhwok Afghan News, <http://www.pajhwok.com/en/2013/01/27/tehran-wants-water-treaty-kabul-enforced>, 27 January 2013.

Hasan Khitab. “President Slams Donors’ Refusal to Fund Dams.” Pajhwok Afghan News, <http://www.pajhwok.com/en/2013/01/29/president-slams-donors%E2%80%99-refusal-fund-dams>, 29 January 2013.

“Pakistan Cannot Challenge Construction of Dam on Kabul River.” Pakissan.com, <http://www.pakissan.com/english/news/2003/aug/pakistan.shtml>, 21 August 2003.

“Iran: Supreme Leader urges Afghanistan to recognize Iran’s water rights.” Radio Free Europe Radio Liberty, <http://reliefweb.int/report/iran-islamic-republic/iran-supreme-leader-urges-afghanistan-recognize-irans-water-rights>, 4 March 2003.

Bill Samii. “Iran/Afghanistan: Still No Resolution For Century-Old Water Dispute.” Radio Free Europe Radio Liberty, <http://www.rferl.org/content/article/1061209.html>, 7 September 2005.

Frud Bezhan. “Insecurity Springs From Afghan Dam Projects.” Radio Free Europe Radio Liberty, <http://www.rferl.org/content/afghan-dam-projects/24936270.html>, 13 May 2014.

Andrew Houk. “Transboundary Water Sharing: Iran and Afghanistan.” Spotlight, <http://www.stimson.org/spotlight/transboundary-water-sharing-iran-and-afghanistan/>, 22 March 2011.

Sharif Amiry. “Afghanistan Will Not Cope With Climate Change: Karzai.” Tolo News, <http://tolonews.com/en/afghanistan/9246-afghanistan-will-not-cope-with-climate-change-karzai>, 29 January 2013.

Kabir Goswami. “Security Guards Of Herat Salma Dam Killed.” Tolo News, <http://www.tolonews.com/en/afghanistan/10565-security-guards-of-herat-salma-dam-killed>, 21 May 2013.

Sayed Tareq Majidi. “Kabul-Islamabad Commit to Kunar Dam Project.” Tolo News, <http://www.tolonews.com/en/afghanistan/11702-kabul-islamabad-commit-to-kunar-dam-project>, 27 August 2013

“Salma dam to be completed in 9 months: Afghan Ministry of Energy and Water.” Wadsam, <http://www.wadsam.com/salma-dam-to-be-completed-in-9-months-afghan-ministry-of-energy-and-water-232/>, 7 September 2013.

Mujib Mashal. “What Iran and Pakistan Want from the Afghans: Water.” *Time*, <http://world.time.com/2012/12/02/what-iran-and-pakistan-want-from-the-afghans-water/>, 2 December 2012.

“NESPAC Wins 2 Mega Dam Projects in Afghanistan.” Zaraimedia, <http://zaraimedia.com/2012/11/30/nespac-wins-2-mega-dam-projects-in-afghanistan/>, 30 November 2012.

## Online References

Central Statistics Office, Afghanistan, <http://cso.gov.af/Content/files/External%20Trade%281%29.pdf>.

European Commission, Directorate General for Trade, European Union, Trade in Goods With Iran (July 2013). Document accessed at [http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc\\_113392.pdf](http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_113392.pdf).

FAO Aquastat: <http://www.fao.org/nr/water/aquastat/main/index.stm>.

FAO Corporate Document Repository: <http://www.fao.org/docrep/005/ac623e/ac623e0i.htm>.

“Monthly Report – GWP South Asia.” Global Water Partnership, [http://www.gwp.org/Global/GWP-SAs\\_Files/Monthly%20reports/With%20IWPFFebruary%202013%20GWP%20SAs%20Monthly%20report.pdf](http://www.gwp.org/Global/GWP-SAs_Files/Monthly%20reports/With%20IWPFFebruary%202013%20GWP%20SAs%20Monthly%20report.pdf), 7 March 2013.

Human Development Indicators: <http://hdr.undp.org/en>.

Official Documents System of the United Nations: [http://www.un.org/ga/search/view\\_doc.asp?symbol=S/2011/760](http://www.un.org/ga/search/view_doc.asp?symbol=S/2011/760).

OmniAtlas: <http://stats.omniatlas.com/correlates/cinc/heatmap/>.

Oregon State University - Program in Water Conflict Management And Transformation: <http://www.transboundarywaters.orst.edu/>.

Pakistan Bureau of Statistics: [http://www.pbs.gov.pk/sites/default/files/tables/14.1\\_0.pdf](http://www.pbs.gov.pk/sites/default/files/tables/14.1_0.pdf).

The Ramsar Convention on Wetlands: [http://www.ramsar.org/cda/en/ramsar-documents-montreux/main/ramsar/1-31-118\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-documents-montreux/main/ramsar/1-31-118_4000_0__).

Tradingeconomics.com : [www.tradingeconomics.com](http://www.tradingeconomics.com).

Transparency International: <http://cpi.transparency.org/cpi2013/results/#myAnchor2>.

“Tehran Accused of Complicity in Growing Weapons Trade.” Institute for War and Peace Reporting, <http://www.unhcr.org/refworld/topic,45a5199f2,45deafd02,49f7ff55c,0,,AFG.html>, 20 April 2009.

Wikileaks. “Afghan Water and Energy Minister Ismail Khan on Infrastructure Priorities.” [http://www.wikileaks.org/plusd/cables/09KABUL3165\\_a.html](http://www.wikileaks.org/plusd/cables/09KABUL3165_a.html), 7 October 2009.

Wikileaks. “Afghan Government’s High Hopes For Hydropower.” [https://www.wikileaks.org/plusd/cables/09KABUL2688\\_a.html](https://www.wikileaks.org/plusd/cables/09KABUL2688_a.html), 5 September 2009.

Wikileaks. “Trans-Boundary Water Issues: Slow But Sure Progress.” [https://www.wikileaks.org/plusd/cables/10KABUL442\\_a.html](https://www.wikileaks.org/plusd/cables/10KABUL442_a.html), 4 February 2010.

Wikileaks. “FM Spanta’s Visit to Iran: Concerns Amidst Cooperation.” [http://www.wikileaks.org/plusd/cables/07KABUL1327\\_a.html](http://www.wikileaks.org/plusd/cables/07KABUL1327_a.html), 18 April 2007.

Wikileaks. “Iran Trilateral: Ahmadinejad Suggests US-Iran Reconstruction Cooperation; Afghan-Iran Water Rights Tension.” [http://www.wikileaks.org/plusd/cables/09KABUL1395\\_a.html](http://www.wikileaks.org/plusd/cables/09KABUL1395_a.html), 2 June 2009.

Wikileaks. “Afghanistan Repeats Request for Assistance on Water.” <http://wikileaks.org/cable/2009/05/09KABUL1336.html>, 9 May 2009.

Wikileaks. “Transboundary Water Issues: Slow but Sure Progress.” [https://www.wikileaks.org/plusd/cables/10KABUL442\\_a.html](https://www.wikileaks.org/plusd/cables/10KABUL442_a.html). 4 February 2010.

Wikileaks. “Major Export Project: Farahud Water Development Consultancy Contract.” [http://www.wikileaks.org/plusd/cables/1974KABUL07966\\_b.html](http://www.wikileaks.org/plusd/cables/1974KABUL07966_b.html), 22 December 1974.

World Bank indicators: <http://data.worldbank.org/indicator>.

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