

ISSUE BRIEF

# Water Dispute Escalating between Iran and Afghanistan

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Iran and Afghanistan have no major territorial disputes, unlike Afghanistan and Pakistan or Pakistan and India. However, a festering disagreement over allocation of water from the Helmand River is threatening their relationship as each side suffers from droughts, climate change, and the lack of proper water management.

Both countries have continued to build dams and dig wells without environmental surveys, diverted the flow of water, and planted crops not suitable for the changing climate. Without better management and international help, there are likely to be escalating crises. Improving and clarifying existing agreements is also vital.

The United States once played a critical role in mediating water disputes between Iran and Afghanistan. It is in the interest of the United States, which is striving to shore up the Afghan government and the region at large, to help resolve disagreements between Iran and Afghanistan over the Helmand and other shared rivers.

## Historical context

Disputes over water between Iran and Afghanistan date to the 1870s when Afghanistan was under British control. A British officer drew the Iran-Afghan border along the main branch of the Helmand River. In 1939, the Iranian government of Reza Shah Pahlavi and Mohammad Zahir Shah's Afghanistan government signed a treaty on sharing the river's waters, but the Afghans failed to ratify it.

In 1948, another attempt to resolve the dispute began in Washington. Based on an American suggestion, a three-person commission was selected by Iran and Afghanistan to investigate the issue and recommend a settlement. On February 28, 1951, the Helmand River Delta Commission presented its report, recommending that Iran's share of the Helmand waters amount to twenty-two cubic meters per second. Iran, however,

The Atlantic Council **Future of Iran Initiative** aims to galvanize the international community—led by the United States with its global allies and partners—to increase the Joint Comprehensive Plan of Action's chances for success and build on its model for conflict resolution. The Initiative also seeks to promote a deeper understanding of Iran to inform US policymakers as they formulate new approaches to the Islamic Republic.

rejected the report, asking for a larger share.<sup>1</sup> A long period of renegotiation ensued. Asadollah Alam, the Shah's minister of court, wrote in his diaries in 1969 that Afghanistan had offered to provide more water, if Iran would give Afghanistan improved access to the Iranian ports at Chabahar and Bandar Abbas, as well as development assistance.<sup>2</sup>

Four years later, in 1973, Iranian Prime Minister Amir Abbas Hoveida and Afghan Prime Minister Mohammad Musa Shafiq signed an accord that accepted the flow of water into Iran at twenty-two cubic meters per second with an option for Iran to purchase an additional four cubic meters per second in "normal" water years.<sup>3</sup>

In return, Iran agreed to allow the ports of Bandar Abbas and Chabahar to be available to Afghanistan without preconditions. However, this agreement was neither ratified nor fully implemented due to the political developments in both countries including a 1973 coup in Afghanistan, the 1979 Iranian revolution, the Soviet occupation of Afghanistan that same year, and finally the rise of the Taliban in 1995.

### Irrigation canals and dams

Successive Afghan governments have sought to bolster agriculture by constructing irrigation canals and dams in the Helmand Valley. Germany and Japan each worked to reconstruct ancient canals for Afghanistan in the 1930s, but their work ended in the aftermath of their defeat in World War II. The Afghan government brought in the US firm of Morrison-Knudsen in 1946 to build irrigation systems and roads in the southern Helmand-Arghandab valleys.

This project was financed with US aid. Half-way through rehabilitating old canals, Morrison-Knudsen suggested that to make the best use of the renovated water, a storage dam and reservoir should be built. In an effort to keep costs down, the work was done without first conducting surveys, which turned out to be a "fatal weakness" of the project according to a

subsequent study by the US Agency for International Development.<sup>4</sup>

The 44.2-meter (145 feet) Arghandab Dam, 18 miles northeast of Kandahar, was completed in 1952 with a storage capacity of 388,000 acre-feet of water. A few months later, in April 1953, the Kajaki Dam, seventy-two miles upstream from Lashkar Gah, was also finished. It created the most important water reservoir in Afghanistan and was built with the objective of providing electricity, water for irrigation, and flood control.

As with the Arghandab Dam, appropriate soil and topography studies were not conducted, even though a 1950 United Nations report had cast doubt on the economic soundness of the project and predicted negative environmental effects in the lower valley, including waterlogging and salinization downstream from the dam.<sup>5</sup>

The impact of the Kajaki Dam has been mixed, since it increased water flow to Iran during the dry season but reduced the flood waters on which pastoralists depend for fertilization.<sup>6</sup> Nevertheless, it is obvious that without the 1973 agreement, the situation would have been much more complicated.

Afghanistan's water supply is derived from rain and melting glaciers. Three out of five of the country's major rivers flow into neighboring countries. The Helmand is one of two that flow into Iran; the other is the Hari River. Two-thirds of Afghanistan's water capacity of seventy-five billion cubic meters is surface water and the country has the capability to use only 25 to 30 percent of its river water flow.

The Helmand is the longest river in Afghanistan, constituting over 40 percent of Afghanistan's surface water. With 95 percent of the Helmand located in Afghanistan, it is a critical source of livelihood for the

1 Office of the Historian, Bureau of Public Affairs, "Foreign Relations of the United States, 1950, The Near East, South Asia, Africa," Vol. V, Department of State, <https://history.state.gov/historicaldocuments/frus1950v05/d824>.

2 Alinaghi Alikhani, ed., *The Shah and I* (London: I. B. Tauris & Co. Ltd., 1991).

3 The Afghan-Iranian Helmand-River Water Treaty, [http://internationalwaterlaw.org/documents/regionaldocs/1973\\_Helmand\\_River\\_Water\\_Treaty-Afghanistan-Iran.pdf](http://internationalwaterlaw.org/documents/regionaldocs/1973_Helmand_River_Water_Treaty-Afghanistan-Iran.pdf).

4 A.I.D. Evaluation Special Study No. 18, The Helmand Valley Project in Afghanistan, US Agency for International Development, December 1983, [http://pdf.usaid.gov/pdf\\_docs/Pnaal028.pdf](http://pdf.usaid.gov/pdf_docs/Pnaal028.pdf).

5 John W. Whitney, "Geology, Water, and Wind in the Lower Helmand Basin, Southern Afghanistan," Scientific Investigations Report 2006-5182, US Geological Survey, US Department of the Interior, 2006, [http://pubs.usgs.gov/sir/2006/5182/pdf/SIRO6-5182\\_508.pdf](http://pubs.usgs.gov/sir/2006/5182/pdf/SIRO6-5182_508.pdf).

6 Erika Weinthal, Jessica Troell, and Mikiyasu Nakayama, *Water and Post-Conflict Peacebuilding*, 2014 <http://environmentalpeacebuilding.org/publications/books/water-and-post-conflict-peacebuilding/>.



Image credit: Google Maps.

country's southern and southwestern provinces. This has made the Helmand a national issue that seems to have become increasingly difficult for any Afghan government to resolve. For Iran, Helmand water is also becoming a national issue. In fact, all of Iran's post-1979 governments have maintained the same basic position on the dispute with Afghanistan over water.<sup>7</sup>

### The Hamouns

The Hamouns are transboundary wetlands on the Iran-Afghan border made up of three lakes: Hamoun-e Helmand, which is entirely in Iran, Hamoun-e Sabari on the border, and Hamoun-e Puzak, almost entirely inside Afghanistan. The three lakes are linked and fed by water from the Helmand River.

Historical evidence indicates the presence of ancient civilizations on the shores of the Hamoun lakes for

<sup>7</sup> Morad Veisi, journalist and former instructor of military and politics, interview with the author.

more than 5,000 years.<sup>8</sup> The Hamouns have a special and significant place in ancient Persian literature and in the Avesta, the religious book of Zoroastrianism.

These lakes and wetlands once supported great plant and animal diversity in the Sistan Basin. However, the combination of drought and water diversion for irrigation, including dykes and water diversion for irrigation, including dykes and four reservoirs Iran built in the province of Sistan-Baluchistan, have diverted water away from the Hamouns. A serious impact resulted from the introduction, in 1983, of an alien species of fish into the lake by the Iranian Fisheries Company;<sup>9</sup> The fish devoured almost all of the reeds in the wetlands.

<sup>8</sup> John Weier, "From Wetland to Wasteland," *Earth Observatory*, December 13, 2002, <http://earthobservatory.nasa.gov/Features/hamoun/>.

<sup>9</sup> United Nations Development Programme I. R. Iran, "Restoration and Sustainable Use of the Shared Sistan Basin: A Baseline Situation Analysis," February 2005, <http://www.undp.org/content/dam/iran/docs/News/2014/March%202014/Towards%20a%20solution%20for%20Iran's%20dying%20wetlands/Hamoun%20>

On the Afghan side, dams and canals for irrigation schemes in the provinces of Helmand, Nimrooz, and Kandahar also contributed to lowered lake water levels.<sup>10</sup> As a result, the Hamoun lakes have nearly disappeared, along with the birds and fish on which the local population once depended for its livelihood. The situation was further aggravated when the Taliban government of Afghanistan blocked the Kajaki Dam and choked off water to Iran from 1998-2001, a period that also included one of the region's worst droughts.

Dust storms from the dried Hamoun lakes are considered among the worst in Southwest Asia and have caused a serious public health crisis in Iran.<sup>11</sup> The region's economy has also been gravely impacted, as thousands of villagers left their homes and moved to cities to have a better chance of survival.<sup>12</sup> The deteriorating economic situation, unemployment, and the loss of income from agriculture in both countries has led to more drug trafficking in the Hamoun region, with all the attendant ill effects on Afghan and Iranian societies.<sup>13</sup>

While a similar crisis impacting Lake Urumiyeh in Iran's northwest has received massive media coverage, the story of the Hamouns' fate is relatively new to many Iranians and the international community.<sup>14</sup>

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## Water as Leverage

Iran has accused Afghanistan of making the Helmand river into a political tool.<sup>15</sup> Some in Afghanistan, where there is already a backlash against Iran over its treatment of Afghan refugees and forced repatriation of migrants, suggest that Iran is using the issue of Afghan refugees in Iran as a countermeasure to put pressure on Afghanistan, and Afghanistan could, in turn, use water as leverage to pressure Iran for improvements in its treatment of Afghan refugees.<sup>16</sup> According to Mohsen Milani, executive director of the Center for Strategic and Diplomatic Studies at the University of South Florida, "there could be a popular backlash against Afghans in Iran if there is a perception that Kabul is blackmailing Tehran."<sup>17</sup>

Najeeb Fahim, director of International Treaties and Conventions at the Afghan Ministry of Foreign Affairs and an expert on the legal aspects of Afghanistan's transboundary waters, rejected Iranian media claims that Afghanistan does not respect Iran's water rights. "In the last 40 years Iran has taken several times more water than stipulated by the water treaty between the two countries," he said recently.<sup>18</sup>

The issue has become a major focus of bilateral relations. In October 2015, Iranian Foreign Minister

Mohammad Javad Zarif was asked in a parliamentary session to press the Afghans for more water and "to devote more time and attention to the issue of Hamouns." Zarif in turn promised that his ministry "will do everything to ensure that the Hamouns' water rights are upheld." He went on to say that "the issue is

Wetland/Hamoun%20Wetland%20Base-line%20Situation%20Analysis%202005.pdf.

10 Ibid.

11 Abbas Miri, Hassan Ahmadi, Ahmad Ghanbari, and Alireza Moghaddamnia, "Dust Storms Impacts on Air Pollution and Public Health under Hot and Dry Climate," *International Journal of Energy and Environment*, Issue 2, Volume 1, 2007, <http://www.naun.org/main/NAUN/energyenvironment/ee-18.pdf>; A. Rashki, D.G. Kaskaoutis, C.J.deW. Rautenbach, P.G. Eriksson, M. Qiang, P. Gupta, "Dust storms and their horizontal dust loading in the Sistan region, Iran," 2007, [http://www.dspace.up.ac.za/bitstream/handle/2263/19147/Rashki\\_Dust\(2012\).pdf?sequence=1](http://www.dspace.up.ac.za/bitstream/handle/2263/19147/Rashki_Dust(2012).pdf?sequence=1).

12 Fatemeh Aman, "Iran-Afghan Differences over Helmand River Threaten Both Countries," *Atlantic Council Iran Insight blog*, March 17, 2016, <http://www.atlanticcouncil.org/blogs/iraninsight/iran-afghan-differences-over-helmand-river-threaten-both-countries>

13 Iran's Presidential Center for Innovation and Technology Cooperation, "United States' Support for Building Two Dams on the Helmand's Main Branches," <http://www.citc.ir/?fkey-id=&siteid=1&pageid=134&newsview=1054>.

14 Arash Karami, "Iran's Third Largest Lake Near Death," *Iran Pulse*, October 3, 2013, <http://iranpulse.al-monitor.com/index.php/2013/10/2946/irans-third-largest-lake-near-death/>; Gary Lewis, "Saving the imperiled Hamouns of eastern Iran," *Al-Monitor*, January 31, 2014, <http://www.al-monitor.com/pulse/originals/2014/01/hamouns-east-iran.html>.

nals/2014/01/hamouns-east-iran.html.

15 Iran's Presidential Center for Innovation and Technology Cooperation, "United States' Support for Building Two Dams on the Helmand's Main Branches," <http://www.citc.ir/?fkey-id=&siteid=1&pageid=134&newsview=1054>.

16 "Salma Dam Ready to be Operational but with Uncertain Future," *Afghanistan Today*, 2015, <http://www.afghanistan-today.org/fa/articles/business/2129/>.

17 Mohsen Milani, executive director of the Center for Strategic and Diplomatic Studies at the University of South Florida, interview with the author, July 2016.

18 Najeeb Fahim, director of International Treaties and Conventions at the Afghan Ministry of Foreign Affairs, interview with author, July 2016.

not at all political, adding “restoring the Hamouns can benefit everybody.”<sup>19</sup> Zarif added that “all cooperation and agreements with Afghanistan currently depend on this issue.”<sup>20</sup>

Ongoing discussions since then have not resulted in a breakthrough. On May 23, 2016, this issue was discussed by Iranian Supreme Leader Ali Khamenei and Afghan President Ashraf Ghani in Tehran.<sup>21</sup> Khamenei called for an expedited solution to Afghanistan-Iran boundary water, and Ghani promised expert sessions on common use of trans-boundary rivers “in coming weeks.”<sup>22</sup>

### Iranian agricultural practices

In March 2016, the Director General of Sistan Baluchistan Province for Environmental Protection Saeid Mahmoudi told the *Shargh Daily* about a plan to take down dykes along the Afghan-Iran border.<sup>23</sup> Ahmad-Ali Keykhan, deputy for Natural Resources and Biodiversity at Iran’s Department of Environment, said the plan is for “removing border dykes completely.”<sup>24</sup>

For too long, Iran has focused on the development of agricultural land without considering its impact on the Hamoun wetlands. The Director of the Iranian Wetlands Conservation Project Mohsen Soleimani has said that instead of just bargaining for more water from Afghanistan, discussions “should have been based on protecting the ecosystem and retrieving Hamoun as a live ecosystem.”<sup>25</sup>

### Other dams

Iran shares the Hari River basin with Turkmenistan. In 2004, the two countries built a dam over the river that provides drinking water, irrigation, and hydroelectric

power. Both countries have expressed concern about another dam on the river, the Afghan-India Friendship or Salma Dam, which has just been inaugurated in Chishti Sharif in Afghanistan’s Herat province.

Initially anticipated to be operational by 2011, the Salma Dam faced many setbacks as insurgents intensified attacks around the construction site. Dozens of engineers were targeted, and many Afghan security personnel reportedly were killed. At the inauguration ceremony in June, Indian Prime Minister Narendra Modi described the project, for which India contributed \$300 million as well as hundreds of engineers and expertise, as India’s gift to Afghanistan and lauded the dam as the right path for the region in the twenty-first century. Afghan President Ghani meanwhile defended his country’s right to capture Afghan waters and irrigate Afghan lands.<sup>26</sup>

Intended as a reservoir for drinking water and irrigation, the dam can hold 640 million cubic meters of water, generate 42 megawatts of electricity, and irrigate 80,000 hectares. It is designed to make Afghanistan—which currently imports nearly 80 percent of its electricity from neighboring countries—self-sufficient.

While building this dam, Afghans watched neighbors Iran and Turkmenistan with concern. There have long been suspicions that Iran was attempting to delay completion of the project by providing support to local Taliban. An Afghan commander protecting the dam referred to Iran’s “interference” with the process, accusing “some circles in Iran” of desiring to blow up the dam, which will significantly reduce their share of the river’s water.<sup>27</sup> Shah Hussain Murtazawi, a deputy spokesman for the Afghan president, commented, “the Salma Dam was constructed despite the efforts made by the enemy to disrupt it.”<sup>28</sup>

According to Ali Ahmad Osmani, Afghan minister of Energy and Water,<sup>29</sup> the dam will affect only 30 percent of the Hari River basin. While insisting that Afghanistan recognizes its neighbors’ water rights based on

19 “Zarif Left Majlis Fully Achieved,” *Donya-e Eqtesad Daily*, 2016, (Reporting on the parliament’s session attended also by Foreign Minister, Javad Zarif,) <http://donya-e-eqtesad.com/SiteKhan/951717>.

20 Ibid.

21 Leader of the Revolution [Supreme Leader Ayatollah Ali Khamenei]: “Afghanistan’s Progress is Iran’s Progress,” *Press TV*, 2016, <http://www.presstv.ir/Detail/Fa/2016/05/23/467071/Iran-Supreme-leader-Ayatollah-Khamenei-Afghanistan-Ashraf-Ghani>.

22 Ibid.

23 Sadra Mohaghegh, “Iran’s Share of water Irrigating Poppy Crops,” *Shargh Daily*, 2016, <http://goo.gl/8UblrW>.

24 “Department of Environment: Border Dykes Should be Brought Down,” *Islamic Republic News Agency*, 2015, <http://www.irna.ir/fa/News/81653208/>.

25 Sadra Mohaghegh, “Iran’s Share of water Irrigating Poppy Crops,” *Shargh Daily*, 2016, <http://goo.gl/8UblrW>.

26 Ashraf Ghani, “Afghans Wishes Came true,” RFE/RL, Afghanistan Service, 2016, <http://da.azadiradio.com/a/27779442.html>.

27 RFE/RL, Afghanistan Service, “Rashidi: Some Circles in Iran Want to Explode Salma Dam,” 2015, <http://da.azadiradio.com/a/27406575.html>.

28 Hussein Sirat, “How Will Afghanistan provide Security for Large Economic Projects?” *Deutsche Welle*, <http://goo.gl/vq3MxM>.

29 Ali Ahmad Osmani, Afghan Minister of Energy and Water, Interview with Afghanistan’s Ariana TV, <https://www.youtube.com/watch?v=S4ALwGVKifo>.



international conventions and treaties, he rejected their objections to the dam as something that “could stain the relationship between the two countries.”

An animation published recently by Afghanistan’s Ministry of Water and Energy shows the ministry’s vision for water management. It describes water resources and management as the foundation of economic development and growth. But what stands out is the mindset shaping the ministry’s vision for water management, which seems to be that only dam construction is the key to wealth and prosperity.<sup>30</sup>

Another major issue for Iran is the construction of the Kamal Khan Dam on the lower Helmand River in Afghanistan’s Nimroz province. According to the 1973 treaty, Helmand water is measured at Kamal Khan Dam and shared between Iran and Afghanistan. Removing water from the river system upstream, from the historical point of measurement at Kamal Khan Dam, is expected to complicate the water situation even more.<sup>31</sup>

Zarif said in October 2015 that the Kamal Khan Dam project would “severely” affect Iran’s share of water from the Helmand and the amount that flows into Sistan Baluchistan,<sup>32</sup> an assessment that Afghans reject. Basir Azimi, a spokesman for the Ministry of Energy and Water, said that completion of the third phase of the Kamal Khan Dam would resolve the dispute by “clarifying water sharing between the two countries.”<sup>33</sup> He described the project as a “win-win” situation for both countries, adding, “this way Iran will secure its rights and Afghanistan will manage the water and

introduce organization into water usage.<sup>34</sup>” According to Azimi, measuring Iran’s water share at this location (only one hundred kilometers from Iran) will guarantee that the water flows into Iran without being wasted.

### Urgent need for better water management in Afghanistan

Despite a heavy flow of international aid into Afghanistan since a US-led coalition overthrew the Taliban in late 2001, the country has failed to establish an efficient system of water storage and management.

A total of eight million hectares of Afghanistan’s land is fertile, but only two million are cultivated.<sup>35</sup> Additionally, due to chronic droughts, land fertility has dropped by 30 percent compared to the 1970s.<sup>36</sup>

Inadequate water infrastructure has thwarted economic growth. A better water management system is thus key to economic revitalization. However, deteriorating security, especially in the southern portion of the country, as well as reduced international aid in recent years, are major impediments to achieving this goal.

### More dams are not the answer

**“Dams will not bring water to people, but bring bread to some companies.”<sup>37</sup>**

- Fatemeh Zafarnejad, expert on sustainable development

Afghan President Ghani announced recently that his government plans to build up to twenty-one additional dams across the country this year.<sup>38</sup> Iranians, who have also rushed to build dams in the last few decades, have learned the hard way that these projects often only make their water problems worse.

Ranked third globally in terms of the number of dams it constructs, Iran has found that without doing prior feasibility and impact analyses, dams can

30 An animation published by Afghanistan’s Ministry of Water and Energy, 2016, “The enemy won’t let us build water dams,” the animation reads as dam site workers get gunned down. The next scene presents the prosperity that water management would bring to people. As the dam construction gets completed, the ministry vows, “We will not be deterred,” <https://www.facebook.com/MatiBaig/videos/vb.650122411676874/1157185454303898/?type=2&theater>.

31 Alex Dehgan, Laura Jean Palmer-Moloney, and Mehdi Mirzaee, “Water security and scarcity: Potential destabilization in western Afghanistan and Iranian Sistan and Baluchestan due to trans-boundary water conflicts,” Environmental Law Institute and United Nations Environment Programme, October 2014, [http://environmentalpeacebuilding.org/assets/Documents/Library-Item\\_000\\_Doc\\_937.pdf](http://environmentalpeacebuilding.org/assets/Documents/Library-Item_000_Doc_937.pdf).

32 Iran-Afghanistan talks focused on Helmand water right, *Mehr News Agency*, 2016, <http://en.mehrnews.com/news/111377/iran-afghanistan-talks-focused-on-helmand-water-right>.

33 “Afghanistan Will Allow Flow of Water Based on 1973 Agreement,” *Islamic Republic News Agency (IRNA)* interview with Abdul Basir Azimi, an engineer at Afghanistan’s ministry of water and energy, 2016, <http://www.irna.ir/fa/News/82065800/>.

34 Ibid.

35 “Only 27 percent of Afghanistan’s Agricultural Land Receive Water,” *Kabul News*, 2016, <http://kabulnews.af/dari/index.php/afghanistan/3843--8-----27----->.

36 Hussein Sirat, “Ghani: We Will Build 21 Dams in Afghanistan,” *Deutsche Welle*, 2016, <http://goo.gl/u6epQU>.

37 Shekoofeh Habibzadeh, “Dam Building Mafia Acts More Powerful Than Any Order,” *Shargh Daily*, 2015, <http://goo.gl/ZnYc38>.

38 President Ghani Meets Experts, Website of Afghanistan’s Ministry of Energy, Ministry of Energy and Water, <http://mew.gov.af/fa/news/61013>.

cause reduced land productivity and leave whole communities without access to water.<sup>39</sup> Continuation of dam construction “will turn Earth into a desert,” according to Fatemeh Zafarnejad, an Iranian expert on sustainable development.<sup>40</sup> The United Nations has labeled water scarcity the most severe “human security” challenge in Iran today.<sup>41</sup>

Beyond over-construction of dams, Iran is depleting its water resources rapidly through drilling. There are an estimated 650,000 wells in the country.

Nonetheless, Iran has shown no sign of slowing down. Iran’s Deputy Minister of Energy for Water and Wastewater Rahim Meidani announced last year a \$250 million project with Russia to explore for water over one thousand meters underground.<sup>42</sup> Experts criticized the idea of bringing in Russians, who don’t have a stellar record of completing projects in Iran, and called the plan the result of “lack of knowledge of the authorities.”<sup>43</sup>

There is also the controversial issue of transferring water from coastal areas to drought-stricken provinces, a project started during the tenure of former President Mahmoud Ahmadinejad. In March 2016, President Hassan Rouhani, during a trip to Yazd province, announced a \$400 million project to transfer water there from the Sea of Oman and the Persian Gulf.<sup>44</sup> Experts have argued that this is neither economically nor environmentally sound.

39 Sinead Lehane, “The Iranian Water Crisis,” *Future Directions*, February 27, 2014, <http://www.futuredirections.org.au/publication/the-iranian-water-crisis/>.

40 Japan, UNDP join Iranian environmental project, *Iran Daily*, 2016, <http://www.iran-daily.com/News/1890.html>.

41 Farming reforms offer hope for Iran’s water crisis, United Nation, 2014, <https://www.un.org.ir/index.php/about-us-uniran/un-offices-in-iran/item/2412-3-8-2014-farming-reforms-offer-hope-for-iran-s-water-crisis>.

42 “Russia Explores Water in Iran’s Deserts,” *Iranian Students’ News Agency* (ISNA), 2015, <http://goo.gl/Th15uK>.

43 “Assigning Foreigners to Explore Water in Iran criticized,” *Fars News Agency*, 2015, <http://www.farsnews.com/13940804000780>.

44 The *Islamic Republic of Iran Broadcasting (IRIB)*, “Persian Gulf and Oman Sea’s Water to Reach Yazd and Kerman,” 2016, <http://goo.gl/wTygSQ>.

## Changing crops

It is critical for both Afghanistan and Iran to revamp their agricultural practices and choose crops that don’t require much water. The cultivation of rice in Iran’s arid Khuzistan province<sup>45</sup> and corn in Kohkiluyeh and Boyer-Ahmad province,<sup>46</sup> for example, is creating more harm than benefit. Water-heavy agricultural crops such as rice and corn use 90 percent of Iran’s water but yield only 15 percent of the nation’s GDP.<sup>47</sup>

Domestic use of water in Iran is about 70 percent more than the global average.<sup>48</sup> For a country struggling with a lack of fresh water, the average daily water usage of 66 gallons per person is extremely high.<sup>49</sup>

According to Deputy Minister Meidani, 87 percent of Iran’s water resources are “under threat of destruction.”<sup>50</sup> “This cannot be justified by climate change and drought alone,” he said. “Even before the impact of climate change in Iran became visible, ground water tables were dropping in Iran’s plains.”<sup>51</sup>

## Water shortages and poppies

Drought is increasingly driving farmers in Afghanistan to switch to poppy cultivation, which requires much less water than other crops and is also more lucrative. For

many years, Afghanistan has been the world’s largest opium producer, and Iran has been the main transit

The United Nations has labeled water scarcity the most severe “human security” challenge in Iran today.

45 “Khuzestan’s Indigenous Forgotten Crop Must Replace Sugarcane Farming,” *Iranian Students’ News Agency (ISNA)*, 2015, <http://goo.gl/85t3de>.

46 “Because of Water Shortage, Watermelon Cultivation Will be stopped,” *Khabar Online*, 2016, <http://www.khabaronline.ir/detail/546502/provinces/ko>.

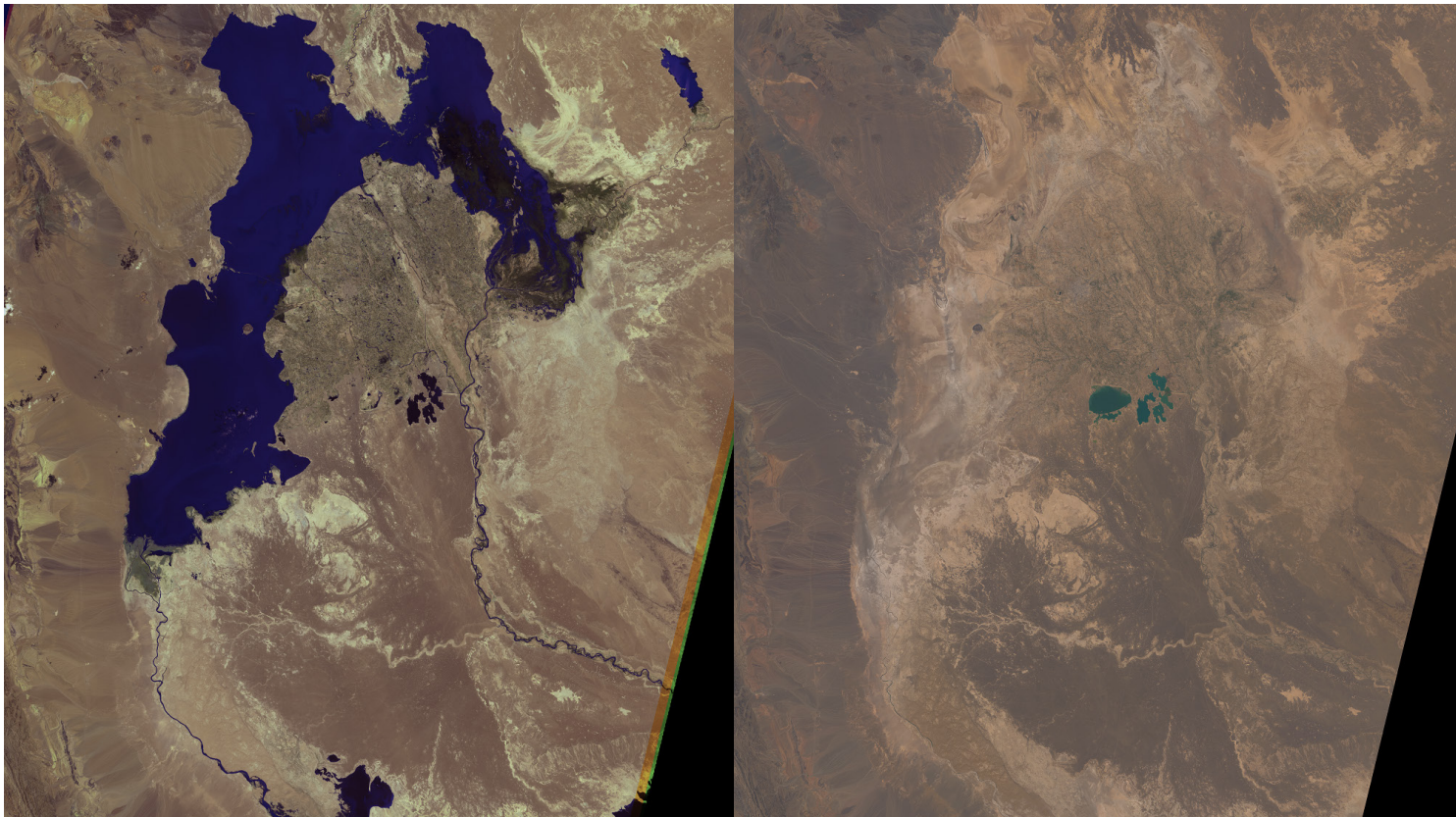
47 Scott Peterson, “In Thirsty Iran, a Hunt for Solutions to a Shrinking Salt Lake,” *Christian Science Monitor*, March 22, 2015, <http://www.csmonitor.com/World/Middle-East/2015/0322/In-thirsty-Iran-a-hunt-for-solutions-to-a-shrinking-salt-lake-video>.

48 Barbara Slavin, “Iran Faces Environmental Crisis,” *Al-Monitor*, 2013, <http://www.al-monitor.com/pulse/originals/2013/08/environment-pollution-iran-water.html#ixzz4EJVbxY77>.

49 Jason Rezaian, “Iran’s water crisis the product of decades of bad planning,” *Washington Post*, 2014 [https://www.washingtonpost.com/world/middle\\_east/irans-water-crisis-the-product-of-decades-of-bad-planning/2014/07/01/c050d2d9-aeeb-4ea1-90cc-54cef6d8dd10\\_story.html](https://www.washingtonpost.com/world/middle_east/irans-water-crisis-the-product-of-decades-of-bad-planning/2014/07/01/c050d2d9-aeeb-4ea1-90cc-54cef6d8dd10_story.html).

50 Water Reservoirs in Some Parts of the Country Are Completely salty, *Mehr News Agency*, 2016, <http://goo.gl/BdoAog>.

51 Ibid.



Hamoun lakes and wetlands in 1998 (left) and 2013 (right). A combination of drought and water diversion has caused Hamoun to nearly disappear. *Photo credit:* US Department of the Interior US Geological Survey.

route for Afghan opium to Central Asia and Europe. This problem has aggravated Iran's number one social problem, opiate addiction.

Iran has devoted enormous resources to fighting drug trafficking, but the smugglers always find new ways to move their drugs through the country.<sup>52</sup> The crisis has increased Iranian resentment toward Afghans; Iranians accuse Afghans of "wasting Iran's share of water" on poppy cultivation<sup>53</sup> and letting water flow to Iran only in times of floods.<sup>54</sup>

Ahmad Aghebatbekheir, a manager at the Sistan Baluchistan water company, claims that Iran has not

been given a fair share of Helmand River water in the last sixteen years.<sup>55</sup> Iranians further complain that Afghans are cultivating the upper Helmand land and thus using Iran's share.<sup>56</sup> Afghans respond that Iran is taking more water than that to which it is entitled.<sup>57</sup>

Sometimes, tension over water takes a toll on Afghan refugees who get blamed for water shortages, especially in times of heightened public outrage over crimes attributed to Afghans.<sup>58</sup> A parliament representative from the city of Torbat-e Heydarieh, in Iran's Khorasan Province, said recently, "We have close to 4 million Afghans in Iran. If each person uses daily

52 Fatemeh Aman, "Traffickers Find Novel Ways of Smuggling Drugs into Iran from Afghanistan," *Atlantic Council Iran Insight blog*, April 29, 2016, (<http://www.atlanticcouncil.org/blogs/iraninsight/traffickers-find-novel-ways-of-smuggling-drugs-into-iran-from-afghanistan>).

53 *Mehr News Agency*, "Sistanis' Shaky Rights Facing Sand Storms," 2014, <http://goo.gl/rFy5Ep>.

54 *Tashim News Agency*, "Latest on The Situation of [Iran's] Share of Hirmand River, 2015, <http://goo.gl/zalwgo>.

55 Hirmand's Flood Possibility, *ISNA*, 2016, <http://goo.gl/zK2lqc>.

56 "United States' Support for Building Two Dams on the Helmand's Main Branches," Iranian Presidential Center for Innovation and Technology Cooperation, 2016, <http://www.citc.ir/?fkey-id=&siteid=1&pageid=134&newsview=1054>.

57 We Are Delusional About Water, Interview with Najeeb Fahim, 2016, <http://8am.af/1395/03/29/afghanistan-problem-water-interview/>.

58 Hamid Mafi, journalist, interview with the author.



100 liters [of water], the Afghans living in Iran use 400 million liters.”<sup>59</sup>

Some Iranians even blame the West for alleged efforts to manipulate Iran’s climate using sophisticated technologies.<sup>60</sup> Ahmadinejad himself accused European countries of using unspecified technologies to prevent rain clouds from reaching some countries in the region including Iran.<sup>61</sup>

Experts reject these bizarre claims. Geographer Parviz Kardavani noted that “if countries like the United States had the power to create drought in a country like Iran, they would control their own storms!”<sup>62</sup>

Most experts say that writing a completely new water treaty between Iran and Afghanistan is not feasible and that it would be better to revise the 1973 agreement. Many Afghans reject the idea, arguing that Iran and Afghanistan can cooperate to develop scientific models and conduct research toward finding a mutually acceptable solution within the existing legal structure. “However, reviewing the treaty is neither practical nor possible,” says Najeeb Fahim.<sup>63</sup>

Unfortunately, and largely for political reasons, both sides have failed to inform their publics properly and have fed them biased information despite the urgent need to improve water management and infrastructure, as well as their understanding of the impact of climate change. The public needs to appreciate what is at stake, but officials seem more interested in a blame game than a fact-based approach.<sup>64</sup> In this environment, there’s little chance that even a comprehensive new treaty could resolve the issue.

59 Interview with Said Kamali, Parliament Representative, “45 Percent of Hari Rud Water Belongs to Iran,” *Iranian Labor News Agency*, 2016, <http://goo.gl/LMJAUr>.

60 Interview with Seyed Hassan Mousavi, Vice-President & Head of Iran’s Cultural Heritage, “Ahmadinejad’s Deputy: I Am Suspicious of the Drought in Southern Part of the Country,” 2012, Entekhab website, <http://goo.gl/ebkAms>.

61 Samuel Blackstone, Iranian President Ahmadinejad Blames Enemies for Destroying Iran’s Rain Clouds, September 11, 2012, <http://www.businessinsider.com/ahmadinejad-says-enemies-are-destroying-rain-clouds-2012>.

62 Interview with “‘Father of Iran’s Deserts,’” *Fars News Agency*, 2012, <http://www.farsnews.com/newstext.php?nn=13910427001086>.

63 Najeeb Fahim, director of International Treaties and Conventions at the Afghan Ministry of Foreign Affairs, interview with the author, Kabul, 2016.

64 Barbara Slavin, “Iran Faces Environmental Crisis,” *Al-Monitor*, August 16, 2013, <http://www.al-monitor.com/pulse/originals/2013/08/environment-pollution-iran-water.html#ixzz4EJwN-ABto>.

Sustainable development is directly linked to efficient water management. One of Afghanistan’s missed opportunities during the peak of international aid was to pass an effective water law, and Afghan management institutions remain highly ineffective. The lack of a database of natural resources is another major challenge. Decisions regarding the construction of new wells for domestic water use or irrigation are often made quickly and without a comprehensive plan.<sup>65</sup>

Without proper water management, the impact of climate change will be even more severe. However, by managing existing water resources better, Afghanistan could irrigate more agricultural land. To achieve this goal, Afghanistan’s government “should convince its neighbors that if there is more water originating inside Afghanistan, they will have access to more water,” asserts Noor Ahmad Akhundzadah, head of the Department of Natural Resources, University of Kabul.<sup>66</sup> According to Samim Hoshmand, an expert with the Afghan National Environmental Protection Agency, “water management is not just a technical and scientific issue.” Afghanistan should reach agreements with its neighbors and expedite efforts in this regard, he says.<sup>67</sup>

## Cooperation between Iran and Afghanistan

The neighbors must be convinced that a sustainable solution is one that takes into account the interests of both sides. Without such a perspective, progress is impossible. In January 2016, during a visit to Tehran, Afghan Chief Executive Abdullah Abdullah and his Iranian counterpart issued a memorandum expressing concerns about the ecosystem of Gowd-i Zerrah,<sup>68</sup> the lowest part of the Sistan Basin, and Hamoun and agreed that experts from both countries and “relevant international organizations” should look into the issue.<sup>69</sup> It remains to be seen if this is the beginning of

65 Fatemeh Aman, “Afghan Water Infrastructure Threatens Iran, Regional Stability,” *Al-Monitor*, January 7, 2013, <http://www.al-monitor.com/pulse/originals/2013/01/afghanwatershortageiran-pakistan.html>.

66 Maryam Hosseini, “Relation Between Water and Employment,” interview with Noor Ahmad Akhundzadah, Head of the Department of Natural Resources, University of Kabul, 2016 <http://8am.af/1395/01/08/occupation-environment-afghanistan/>.

67 Samim Hoshmand, Environment Watch Afghanistan, <http://8am.af/1395/01/08/occupation-environment-afghanistan/>.

68 Occasional outflows from Hamoun lakes are carried back into Afghanistan to the basin’s end, the Godzareh depression in Afghanistan.

69 “Iran and Afghanistan Official Statement,” 2016, <http://af.farsnews.com/allnews/news/13941016001628>.

a rational approach to the problem that moves away from blame-game politics.

## Conclusion

Water is a regional issue with international implications as it directly relates to regional security. While the problem is fundamentally of a technical nature, the unfortunate politicization of the problem has complicated the situation. The focus should be on combining efforts toward a balanced and practical solution. Regional cooperation with international support is needed to help Iran and Afghanistan deal with this existential problem. Investment in infrastructure and implementation of a science-based management system for water resources is of utmost importance.

Technical subject matter experts on both sides, aided by international institutions, should study the problem and come up with practical solutions. Prudent and visionary politicians should identify the convergence of interest in each country. It is vital that both sides communicate at the level of political leaders, as well as scientific, academic, and civil societies. The countries' leaders should understand that the problems of the Helmand River and Hamoun lakes are not purely domestic issues, but a regional challenge that can only be resolved collectively.

Protecting the environment and natural resources is a relatively new priority for these countries. Public awareness is vital for a successful environmental policy, and therefore Iranians and Afghans should

know that the environmental impact of any economic project will not be limited to one country. Lack of economic consideration and uncontrolled usage of water, especially transboundary waters, could intensify tensions. Iran needs to adapt its irrigation and agricultural crops to its share of water. Joint projects are very important for both countries as this would ease competition.

It is very important that both sides express their expectations openly and communicate effectively. To this end, it is essential to expand communications channels at the deputy ministerial level. Progress cannot be made without properly managed joint projects between Iran and Afghanistan, as well as investment in improving the water management systems of both countries. Rehabilitation programs to retrieve wetlands also require international financial assistance. Partnerships with institutions such as United Nations Development Program and the Global Environment Facility can bring critical scientific expertise to these projects.

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