



Conflict Factsheet

Water stress and political tensions in Iran

Type of conflict
Main

Intensity
2

Conflict Locality
Iran

Time
1935 –ongoing

Countries
Iran

Resources
Water



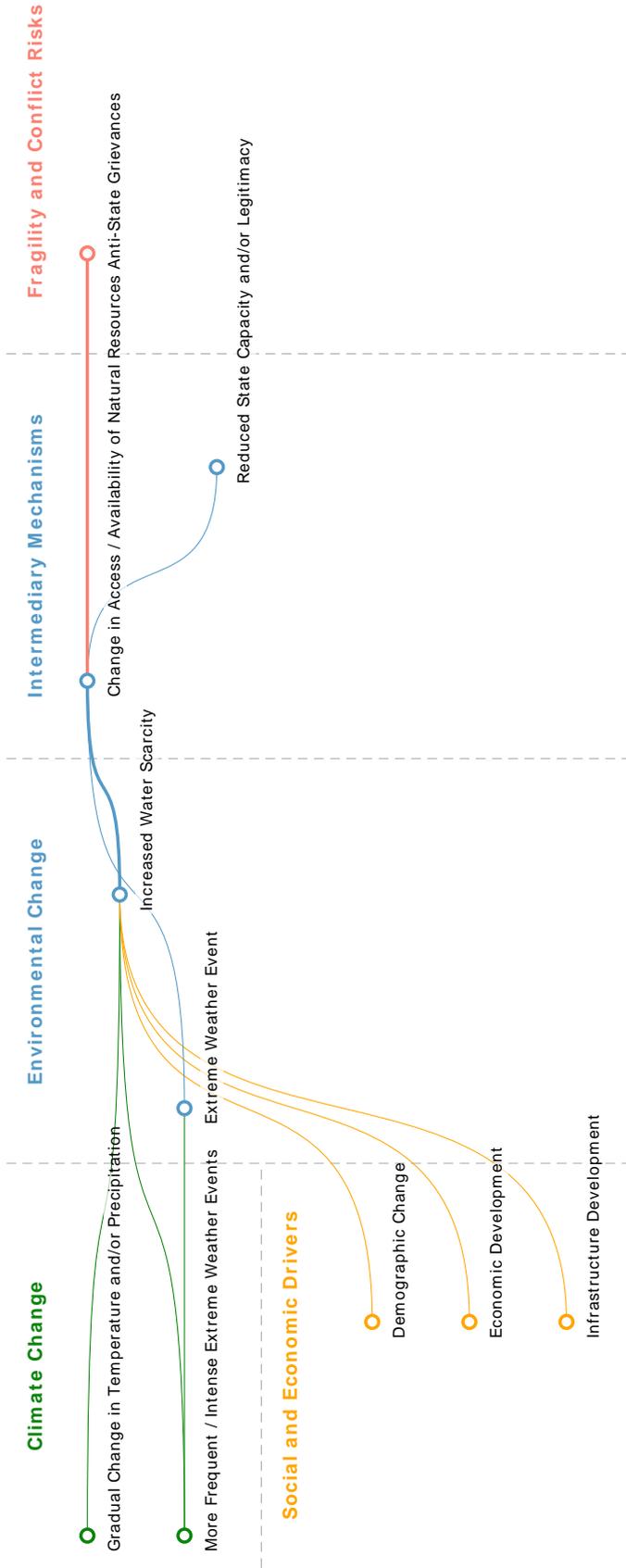
Extreme
weather
events and
disasters

Conflict Summary

Iran is facing a severe water crisis. Drought, rising water demand, degradation and mismanagement of water resources put pressure on society and feed into wider grievances and political unrest. Uncertainty about future water supply due to climate change and tensions over water between Iran and neighbouring countries further compound this situation.



Conceptual Model



Context Factors



Water

Dysfunctional Resource Management
Inadequate Infrastructure
Water-stressed Area

Eroded Social Contract



Conflict History

Iran is facing a severe water crisis. Drought, rising water demand, degradation and mismanagement of water resources put pressure on society and feed into wider grievances against the Iranian regime. Although the effects are not yet known, climate change is likely to put pressure on Iran's future water supply, this situation could be further compounded by tensions over water between Iran and neighbouring countries. Water-related conflicts have increased dramatically since 1999, when a severe drought revealed Iran's vulnerability to such extreme weather events. Resulting grievances and unrest have been straining state-citizen relations ever since (Foltz, 2002).

Pressure on water resources

Iran receives on average 376mm precipitation per year, most of which only benefits 26% of the country, mainly along the Caspian Sea and the north-western regions, and leaving other parts of the country with only sparse rainfall (about 200mm), which occurs at irregular intervals (Soltani, et al., 2012; Garshasbi, 2013).

Water scarcity in Iran is further exacerbated by growing and unsustainable water consumption. The population of Iran has grown continuously (from roughly 38.67 million in 1980 to 81.16 million in 2017), putting increasing pressure on Iran's water resources (Worlddata 2017). Development of hydroelectric dams to satisfy Iran's growing demand for electricity, agricultural intensification and evaporation due to inefficient irrigation techniques exacerbate pressure on water resources. In 2014, 132 small and large dams were under construction in Iran in addition to the 316 dams already present in the country.

Moreover, there is a lack of incentives for farmers to increase efficiency in water use, due to high water and energy subsidies. Many farmers use private wells (often without permission), which they just dig a little deeper as soon as they fall dry, resulting in a further decrease in water level. Since the Islamic revolution and, with it, the US-led embargo, the Islamic regime has stressed independence in food provision, leading to over extraction of water in Iran's agricultural sector, which accounts for 92% of the country's water consumption (National Intelligence Committee, USA, 2012). Estimates suggest that Iran has already used most of its groundwater reserves (Madani, 2014).

A legacy of water intensification and -mismanagement

Historically, water consumption in Iran has rapidly intensified following a push for water-intensive cash crops (mainly cotton) in the 1930's. During the 1960's and 1970's the country introduced land reforms, which included the development of the industrial sector in or near major urban areas. These largely ignored hydrological concerns. Giant facilities (like the Mobakareh steel mill near Esfahan) were built on desert ground despite their significant impact on scarce local water resources.

The Islamic Revolution (1979) and the Iraq-Iran-War from 1980-1988 devastated the country, which, in combination with the sanctioning of the Iranian regime by western countries and especially the US suppressed technological advancement and protracted the development of critical (water) infrastructure. As a result, water treatment remains poor in many areas. Structures are inadequate, and technology is often outdated in smaller cities and rural areas (Foltz, 2002).



Corruption is a major problem; especially in lower governmental bodies, leading to inefficient water management and sometimes arbitrary appointments of officials. In addition, water resources are sometimes diverted to serve the interests of influential politicians rather than according to societal needs (Madani, 2014; Motahari et al., 2018). Academics that denounce and fight against these problems are harassed and sometimes even arrested (Kahn, 2018).

Water crisis and political crisis

Concerns over dwindling water supply and grievances over resource mismanagement in Iran are straining state-citizen relations and fuelling existing tensions. Over the last 20 years, events of civil unrest have been linked increasingly to water-related issues. For instance, repeated protests have been witnessed around Lake Urmia west of the city of Tabris, which is seriously affected by dam construction and groundwater over-extraction. Teargas and rubber bullets were used by security forces (Azarmehr, 2011). Comparable crackdowns on water-related protests by farmers occurred in March 2018 around Esfahan and in the province of Khuzestan, following a corruption scandal around the diversion of rural water resources towards the constituencies of influential politicians (Dehghanpisheh, 2018). Protests over water have become a regular feature of the country's political landscape (e.g. see Zeit Online 2018).

Protests in the wake of the 1999 drought

Most notably, water-related grievances have been highly visible since the early 2000's, when a major drought revealed the poor condition and vulnerability of the Iranian water sector. Affecting the country from 1999 to 2001, it led to massive evacuations of villages and nation-wide water shortages. Already burdened groundwater reservoirs lost more water, leaving wells dry and preventing farmers from compensating for poor rainfall.

This highlighted serious infrastructural weaknesses and a lack of modern technology in rural areas. Moreover, available surface water was distributed unevenly due to corruption and lack of professionalism in the relevant administrations. Hundreds of thousands of farmers lost their jobs, livestock died, and millions of tons of crops were lost. Lake Hamoun, formerly the largest water body in the country, dried out completely by September 2001. Local fishermen lost their entire livelihood and whole regions were left relying only on brackish groundwater (Foltz, 2002).

Measures taken by the government such as water rationing and power cuts were met with violent demonstrations. Following this episode, which highlighted poor water management and a lack of political commitment, water issues have increasingly become a matter of public discontent and tensions in Iran (Foltz, 2002).

Regional context and possible impacts of climate change

The Iranian water crisis feeds into- and is further compounded by diplomatic tensions between the country and its neighbours with whom it shares transboundary water resources. Examples of transboundary conflicts include a dispute with Afghanistan over the Helmand River and Harirud River (see case study on [water disputes between Iran and Afghanistan](#)), conflicts about the Caspian Sea with other riparian nations, as well as around the Euphrates-Tigris system, which Iran shares with Turkey, Iraq and Syria (see case study on [conflicts in the Euphrates-Tigris Basin](#)).



Relations in other regional aquifers have, so far been largely peaceful. However, Iran's important withdrawal of groundwater resources holds potential for rising regional tensions, as the country shares numerous aquifer systems with other nations: Turkmenistan (Sarakhs aquifer), Azerbaijan (Lenkoran/Astara aquifer, Leninak/Shirak aquifer), Armenia and Turkey (Leninak/Shirak, Nakhchewan/Astara and Djibrail aquifer), Russia and Georgia (Nakhchewan/Astara and Djibrail aquifer) (Madani, K. 2014).

Climate change is an important factor to consider in this context. Experts predict climate change will have a significant effect on Iran's natural hydrological systems such as the Karkheh aquifer or the aquifers below the Iranian province of East Azerbaijan through intensifying weather events linked to the hydrologic cycle around these aquifers (Zarghami, M. et al., 2011; Jamali, S. et al., 2015). Similarly, impact assessments predict negative effects on crop production and yield if current trends in global temperatures carry on (Gohari et al., 2012). Such developments could exacerbate water related tensions, not only within Iran but also between Iran and its neighbours.

Resolution Efforts

Fully aware of the continuous and growing crisis, the Iranian government has initiated a number of countermeasures. A 'National Drought Warning and Monitoring Center' (NDWMC) and an 'Aid and Rescue Program' (2003) were established, providing emergency relief for affected people. Furthermore, Iran's 4th five-year-development plan intended to drastically increase agricultural insurance funds to insure at least 50% of Iran's crop yield (FAO, n.d.; FAO, 2014)

Increased investment in water infrastructure

The Iranian government emphasizes the development of desalination and wastewater treatment facilities, to increase the amount of available water for household consumption, industry and agriculture. These measures helped increasing the percentage of treated wastewater by 10% between March 2016 and December 2017 (Espley, 2018). Iran's metropolitan areas, in particular, are increasing their wastewater treatment potential and are seeking foreign investments. In December 2015, for example, the Tehran Province Water and Wastewater Company (TPWWC) solicited a 223 Million \$ financing commitment from Chinese investors for two wastewater treatment projects in the south of the city (Espley, 2016).

In 2015, Iran had 15 desalination plants in operation with 23 further plants in various stages of planning and construction. These are expected to increase Iran's desalination capacities by a factor of five (Gorjian & Ghobadian, 2015). Large pipelines are built to transport the newly obtained water from the coast to dry regions in Iran's southern inland. One of the biggest projects, a 428 Million \$ pipeline from the Persian Gulf to the central dry provinces of Kerman Yazd and Esfahan, is expected to be completed by 2019. However, its future is uncertain as it faces considerable opposition, especially from the Ministry of the Environment. The Ministry is sceptical about the project, which could affect the Persian Gulf's highly vulnerable ecological system, and so far no environmental impact assessment has been conducted (Tehran Times, 2018). Pursuing the project also risks igniting protests by environmental activists.

Raising awareness and promoting water saving techniques



Since 2013, Hassan Rohani's government is seen as more environmentally aware by some observers (Espley, 2017). It has not yet started any new dam projects and made efforts to bring back highly qualified Iranians from abroad to support Iran's technological development, including the modernisation of its water sector. In public TV, the frequency of public service announcements about the need to save water and how to do so in private households is increasing. Furthermore the government sponsors documentary films about natural water resources, Iran's flora and fauna and the threat of human interference to the natural environment (Laylin 2018). Measures taken under Rohani's presidency also include the Ministry of the Environment urging religious leaders to include calls for environmental awareness in their sermons (Foltz, 2002). In 2019, Iran will host its 15th International Water and Wastewater exhibition (Islamic Republic of Iran – Ministry of Energy, 2019).

International cooperation and knowledge transfer

The Iranian government encourages knowledge transfers and international cooperation and has tried in particular to use opportunities during the Joint Comprehensive Plan of Action (JCPOA) - Iran's nuclear deal - to introduce new technologies to the water sector, for example through establishing the German-Iranian Water Partnership (German Water Partnership).

Furthermore, the government encourages foreign investments and international development cooperation, such as a joint venture between the United Nation Development Program (UNDP) and the Iranian Department of Environment (DOE): The Conservation of Iranian Wetlands Program aims to work with village cooperatives and trains farmers in modern farming and irrigation techniques (Laylin, 2018). The government has published a list of 150 water and wastewater related construction projects (treatment, distribution networks) with support from foreign investors and partners (Espley, 2017).



Country Data in Comparison

Population growth

Country	Percentage change by year	Year
Iran		3.9046 1979

Water scarcity

Country	Interval	Year
Iran		4.99446 1979

Intensities & Influences



INTENSITIES

International / Geopolitical Intensity



Human Suffering



INFLUENCES

Environmental Influences



Societal Influences



Violent Conflict

Yes

Salience with nation

National

Resolution Success

Reduction in Violence

There was no reduction in violence.

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Grievance Resolution

Grievances have been partially addressed.





Entry Points for Resilience and Peace Building

Cooperation	1
<p>The Iranian government cooperates with the United Nations and other international partners to train agricultural producers in more water efficient techniques and acquire better technology for the water sector. The JCPOA has offered opportunities to introduce new technologies to the water sector, for example through establishing a German-Iranian Water Partnership</p>	
Improving infrastructure & services	3
<p>The Iranian government started a large number of water-related infrastructure projects to modernize the water sector. Many desalination facilities are built in coastal areas to increase the amount of available freshwater which is distributed to dryer inland regions through newly built pipelines. Furthermore, the government invests and encourages investments in waste water treatment facilities, especially in large metropolitan areas, such as Tehran.</p>	
Improving actionable information	1
<p>The Iranian government established the National Drought Warning and Monitoring Center to improve its capacity to rapidly respond to drought risks through early warning systems.</p>	
Coping with uncertainty	2
<p>The government has realised the growing vulnerability of the agricultural sector to extreme weather events and has therefore started to assist farmers with crop insurance among other measures.</p>	
Promoting social change	2
<p>Iranians are encouraged to save water through state-sponsored advertisement and documentary films. The environmental department is working together with the clergy to promote environmental awareness in seminars and prayers.</p>	

Resources and Materials

References with URL

[Azarmehr, P. \(2011\). The battle to save Iran's Lake Orumieh. The Guardian](#)
[Dehghanpisheh, B. \(March 28,2018\) Water crisis spurs protests in Iran. Reuters.](#)
[Espley, R. \(2016\) Irans Wasserwirtschaft vor großen Herausforderungen. German Trade and Invest.](#)
[Espley, R. \(2017\) Iran zeigt großes Interesse an Projekten mit deutschen Firmen im Wassersektor. German Trade and Invest.](#)
[Espley, R. \(2018\) Irans Wasserwirtschaft muss investieren. German Trade and Invest.](#)
[Foltz, R.C. \(2002\). Iran's Water Crisis: Cultural, Political, and Ethical Dimensions. Journal of Agricultural and Environmental Ethics, 15\(4\), pp 357-380.](#)



- [Food and Agriculture Organisation of the United Nations \(2014\). Country Fact Sheet on Food and Agriculture Trends, Iran](#)
- [Food and Agriculture Organisation of the United Nations and Government of Islamic Republic of Iran/ Ministry of Jihad-e-Agriculture \(2016\). Country Programming Framework \(CPF\) 2012-2016 for Iran's Agriculture sector.](#)
- [Garshasbi, P. \(2013\). Drought Conditions and Manangement Strategies in Iran.](#)
- [Gohari, A. et al. \(2012\). Climate change impacts on crop production in Iran's Zayandeh-Rud River Basin. Science of The Total Environment 442\(C\), pp 405-419](#)
- [Gorjian, S. and Ghobadian, B. \(2015\). Solar desalination: A sustainable solution to water crisis in Iran. Renewable and sustainable Energy Reviews 48, pp 571-584](#)
- [Jamali, S. et al. \(online 2015; in journal 2013\). Climate change impact assessment on hydrology of Karkheh Basin, Iran. Proceedings of the Institution of Civil Engineers – Water Management 166\(2\), pp 93-104](#)
- [Kahn, T. \(2018\). In Iran's water crisis, Tehran sows the seeds of its own decline. TheHill online.](#)
- [Laylin, D. \(2018\) Environmental and Wildlife Degradation in Iran. Atlantic Council.](#)
- [Madani, K. \(2014\). Water management in Iran: What is causing the looming crisis? Journal of Environmental Studies and Sciences, 4\(4\), pp 315-328.](#)
- [Motahari, F. \(2018\). Die Dürre im Iran – eine Zeitbombe. Oberbayrisches Volksblatt \(OVV\) online.](#)
- [National Intelligence Committee, USA \(2012\). Global Water Security.](#)
- [Tehran Times \(2018\). Department of Environment opposes water transfer from Persian Gulf.](#)
- [Worlddata.info \(2017\). Population Growth in Iran \[Accessed 2019-01-31\]](#)
- [Zarghami, M. et al. \(2011\). Impacts of Climate Change on Runoffs in East Azerbaijan, Iran. Global and Planetary Change 78\(3-4\), pp 137-146](#)
- [Zeit online \(2018\). Ausschreitungen bei Protesten gegen Wassermangel.](#)

Further information

<https://factbook.ecc-platform.org/conflicts/water-crisis-iran>