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Water Warfare

How the Syrian Government Uses Water to Punish and Reward

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Introduction

Mythology is ripe with stories about the control of water. Ancient Greeks believed that Poseidon, the Olympian god of the Sea, could wage his trident to provide and withhold water, to create storms and floods. Poseidon used his mighty trident to retain and expand power. Once a source of ancient Greek mythology, the interconnection between water and power remains a reality today. In Southeast Asia, China has practiced coercive water diplomacy to secure its sphere of influence.[1] Water is a similarly contested resource in the Middle East and North Africa (MENA) region. Since Israel's victory over neighbouring Arab states in 1967, the Palestinian Authority has no control over its own water resources.[2] Ethiopia recently challenged Egypt and Sudan's decades-old control of the Nile by starting operations of its Grand Renaissance Dam.[3] Meanwhile, Kurdish-led Syrian Democratic Forces have accused Turkey of cutting off their access to water from the Euphrates.[4] In Yemen, the Saudi government has targeted and destroyed water infrastructure.[5] Governments have also used water distribution to punish or reward their own citizens. Libyan ruler Muammar Ghaddafi excluded Amazigh communities, whom he considered to threaten national homogeneity, from his Great Man-Made River Project. This paper focuses on the battleground of water access in Syria, and government use of water policy as a tool of power.

The text aims to provide clarity on the geopolitics and weaponization of water in Syria. The paper first explores the country's water policies under Hafez and Bashar al-Assad. The analysis then assesses the relation between water scarcity and political unrest, arguing that the Syrian government has refused to assume responsibility for mismanagement, corruption and favouritism with regards to the country's water resources. Instead, it has blamed external factors on water scarcity and weaponized water to gain power over opponents. Bashar al-Assad has used water as a tool of control at the expense of the civilian population's health and safety, and to distract from the government's own shortcomings and polish its image. The paper also questions the claim of some researchers that drought caused the 2011 uprising,[6] which may support the goals of climate activists but inadvertently reproduces Syrian government propaganda.

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[1] See Rabea Brauer and Frederick Kliem, Konrad-Adenauer-Stiftung International Reports 3/2017, "Coercive Water Diplomacy", 2017.
[2] See Marc Frings and Johannes Lutz, Konrad-Adenauer-Stiftung International Reports 3/2017, "A Breakthrough at Long Last?", 2017.
[3] See BBC, "Ethiopia starts generating power from River Nile dam", February 20, 2022.
[4] See Mohammed Hardan, Al-Monitor, "Turkey, Russia pressure SDF to restore electricity to northeast Syria", May 18, 2021.
[5] See Jeannie Sowers and Erika Weinthal, The Washington Post, "What caused Yemen's crisis?", February 22, 2021.
[6] See Colin P. Kelley, Shahrzad Mohtadi, Mark A. Cane, Richard Seager and Yochanan Kushnir, PNAS, "Climate change in the Fertile Crescent and implications of the recent Syrian drought", March 2, 2015. See Levi J. Cramer, Press Books, "1.3 The Effects of Climate Change on the Syrian Uprising".

The paper's methodology relies on a combination of secondary and primary source analysis. First, it uses literature reviews and online media, including independent outlets as well as government-supported outlets, to assess the government's narrative on water policy. The paper applies Meissner's definition of hydro politics, described as the "interaction between states, non-state actors and a host of other participants…regarding the authoritative allocation and/or use of international and national water resources".[7] To test existing research on the condition and reasons for water scarcity, primary-source research was carried out through an online survey. The survey was distributed among civilians living in government and opposition-controlled regions and over 150 respondents participated, providing a sample of local opinions. The survey, held in Arabic, included ten questions, such as accessibility and cost of water, how water availability changed between 2011 and 2021, the reasons for water scarcity and whether drought caused the 2011 uprising. Moreover, a former resident of Palmyra was interviewed on government action against opposition groups in the city in 2011 and after.

Climate in Syria

Syria's climate is Mediterranean in the country's west and arid in the southeast.[8] Most of the country's landscape is covered in desert, with forests encompassing 2% and water covering 1% of the area. By comparison, Germany is covered with water by 2.2% and by 33% with forests. Syria's landscape includes coastal plains and mountains. In most of the country, rainfall amounts to about 250 mm annually (in comparison to 787 mm per year in Germany), and less than 100 mm in the Syrian desert. The country has seven major hydrographic basins: Horan, Aleppo, Al-Jazeera, Al-Badia, Damascus, Asi-Orontes and Al-Sahel. In southern Syria, most of the wells come from an oasis of underground water that is not renewable and rely on rain and snowfall.[9] Syria's groundwater resources are scarce and have been systemically overexploited.

Over the past 100 years, the country's temperature increased by 0.8 degrees and heatwaves as well as droughts became more frequent. As a result, the north-eastern Khabur River dried up, and desertification as well as land degradation accelerated.[10] A particularly severe drought struck the country between 2006 and 2011, one of the country's worst droughts in recent history.[11] Another example for the severity of Syria's water scarcity is the decrease of the water level of the Tishreen Hammoud Dam by 5 m since December 2020.[12] In the survey conducted for this paper, the majority of over 150 respondents from across the country confirmed that while water was largely available in Syria in 2011, it was only sometimes available in 2021. One respondent from Salamiyah in the Hama Governorate noted that water is only accessible "once every 6 days". The deterioration in water availability is only likely to accelerate, as USAID has predicted that global warming caused by human interference will lead to more droughts in the future.[13]

Syrian Hydro Politics (1966-2000)

The Baath party assumed power with a coup in 1963, after which it declared all other parties to be illegal. The party promoted nationalism, socialism, militarism and pan-Arabism. The leader of the Baath party and army general Hafez al-Assad came into power after another

[7] See Robert Meissner, Rand Afrikaans University, "Water as a source of political conflict and cooperation: A comparative analysis of the situation in the Middle East and Southern Africa", 1999.
[8] See Franz Rubel and Markus Kottek, Meteorologische Zeitschrift, "Observed and projected climate shifts 1901-2100 depicted by world maps of the Köppen-Geiger climate classification", 2010.
[9] See Lebanese Center for Research and Consulting, "(تحقيق): الجفاف في سوريا... عاصفة من أربع جهات..", January 1, 2022.
[10] See Climate Centre, "Country-Level Climate Fact Sheet: Syria", 2021.
[11] Ibid.
[12] See Sawsana Mehanna, Independent Arabia, "أزمة المياه في سوريا... جفاف وعطش", February 2022.
[13] See Climate Centre, "Country-Level Climate Fact Sheet: Syria", 2021.

military coup in 1970.[14] The Baathist regime's hydro politics have been marked by overexploitation and corruption.[15] After 1966, the government began to promote irrigated agriculture as part of its socialist program to increase self-sufficiency and make food affordable for all. The regime's focus lay on the quick expansion of the agricultural sector, with an emphasis on wheat, cotton and tobacco as strategic crops, and building up food self-sufficiency at the expense of the country's groundwater resources. The state incentivized rapid production and a lack of sustainability among farmers by heavily subsidizing energy and water. Large-scale irrigation in rural areas strained groundwater resources and soil quality.[16] Syria is not alone in the decades-long promotion of intensive agricultural policies and groundwater overexploitation. In modern-day Iran, the agricultural sector consumes 92% of the country's renewable water resources per year.[17]

In the 1960s in Eastern Syria, an area in which tribal allegiances were predominant, the Euphrates Basin project was designed to extend irrigation, exclude Syrian Kurds and buy the loyalty of semi-nomadic peasants.[18] Launched in 1968, the project including the al–Thawra Dam reservoir aimed to create new irrigation areas that would increase agricultural production and generate electricity for industry and villages.[19] Moreover, "model" farming villages were erected in Kurdish areas and around 4,000 Arab families whose housing had been affected by the dam building were resettled there in 1975. The government then ordered Kurdish families living by the Turkish-Syrian border to resettle in the country's interior.[20] The Euphrates Dam Ministry created 15 state farms for the displaced, in addition to 42 colonization villages in the Kurdish area of al-Hasakah governorate. In Jazira, the Baath government supported the emergence of a class of middle-sized tribal landowners.[21]

The resettlement aimed to form an "Arab belt" with the goal to arabize a traditionally Kurdish region, to extend regime presence and control as well as to build a military cordon by the Syrian-Turkish border. Moreover, the Arab belt put a demographic buffer into place to separate the Kurdish population in Iraq, Turkey and Syria.[22] While the new Arab population received agricultural fertilizers and loans, Kurdish villages were neglected and did not benefit from subsequent agricultural gains, which caused Kurdish-Arab tensions. Although the Arab belt project ended in 1976, model villages remained in place and displaced peoples did not return. Beyond the Arab belt's creation, Arabization caused the cultural erasure of Kurdish identity through the renaming of cities, towns and villages. It is perhaps not incidental that in 2011, the year of Syria's uprising, it was a man from al-Hasakah who set himself on fire to protest against the Syrian government.[23]

By 1970, 50% of Syria's peasantry still suffered from poverty.[24] Although the Baath's irrigation project failed from an economic standpoint, it carried ideological significance and successfully tightened the party's grip on eastern Syria.[25] The Agrarian revolution as a driver

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[14] See Harvard Divinity School, "Ba'ath Party in Syria, The".
[15] See Francesca De Châtel, " Vanishing water landscapes in the Middle East: public perceptions, political narratives and traditional beliefs surrounding water and scarcity in an arid region", 2009.
[16] See Marwa Daoudy, Cambridge University Press, "The Origins of the Syrian Conflict", page 29, 2020.
[17] See Tamer Badawi, Carnegie Endowment for International Peace, "Iran's Water Problem", December 11, 2018.
[18] See Myriam Ababsa, Frontières de développement en Syrie: l'adaptation du projet Ba`thiste aux logiques tribales dans le front pionnier de la Jazîr, 2008.
[19] See Francesca De Châtel, "Vanishing water landscapes in the Middle East: public perceptions, political narratives and traditional beliefs surrounding water and scarcity in an arid region", page 103, 2009.
[20] See Azzma Aljurf, Universidade de Lisboa, "The Syrian Kurd's Right of Self-Determination in the Light of "Arab Spring"", page 23, 2019.
[21] See Myriam Ababsa, Agriculture and Reform in Syria, "Agrarian Counter-Reform in Syria (2000–2010)", page 86, 2011.
[22] See Azzma Aljurf, Universidade de Lisboa, "The Syrian Kurd's Right of Self-Determination in the Light of "Arab Spring"", page 23, 2019.
[23] See Omar Imady, Centre for Syrian Studies, "Hasan Ali Akleh – حسن علي عقلة", January 18, 2018.
[24] See Raymond Hinnebusch, Agriculture and Reform in Syria, "The Ba'th's Agrarian Revolution (1963–2000)", page 10, 2011.
[25] See Myriam Ababsa, « Frontières de développement en Syrie: l'adaptation du projet Ba`thiste aux logiques tribales dans le front pionnier de la Jazîr », 2008.

of social mobility and national wealth was part of Hafez al-Assad's Baathist campaign.[26] Self-sufficiency was in line with the Baathist party's ideology of an Arab socialism that would build national resilience; oppose imperialism and dependency on western countries. The Baath ideology of a new and socially mobile Syria appealed to peasants in the region, who were previously dependent on landowner's goodwill and tribal preferences. In his address to the nation in 1980, President Hafez al-Assad identified with peasants: "I am first and last – and of this I hope every Syrian citizen and every Arab outside of Syria will take cognizance – a peasant and the son of a peasant."[27] The statement is a reminder of the party's rural roots. The Baath thus claimed to grant "the peasant and worker their natural rights in a dignified and human life",[28] as party ideologue Michel Aflaq wrote.

Disloyalty to Assad could directly affect the availability of water, as Syria's Muslim Brotherhood learnt. The group, which became active in the country in 1946, repeatedly came into conflict with the Baath Party and assassinated government officials. In 1980, President Hafez al-Assad banned the group and introduced the death penalty for Brotherhood members. In 1982, the government launched a military operation against the Muslim Brotherhood in Hama, killing 10,000-25,000 people. During the operation, the government cut off water access[29] and oversaw the establishment of armed battalions of peasants – whose allegiance the president previously bought through expansionist agricultural policies – to put down protests in Aleppo and Hama.[30]

Water Scarcity and Political Unrest

In the 1990s, academics and policy makers predicted that future conflicts would be fought over scarce resources. Water scarcity would weaken states and intensify social tensions, eventually causing environmental and social crises as well as an increase in violence, particularly in developing countries.[31] Once countries could not agree on the division of shared water resources, inter-state conflict would follow.[32] As policy experts argued, "water is becoming a catalyst for confrontation – an issue of national security".[33] Water war theorists have predominantly used Middle East and North African countries to prove their theory, areas in which water resources are scarce. For this line of argument, Syria's droughts and subsequent civil war in 2011 became a prime example. Former US President Barack Obama cited climate change as a reason for the Syrian civil war by stating, "it's now believed that drought and crop failures and high food prices helped fuel the early unrest in Syria".[34] Syria's drought is presented as a consequence of climate change. Next, water war theorists argue that drought led to migration from the countryside to the cities. Finally, these migrants are said to have contributed to the 2011 uprising.[35]

The climate-conflict narrative is appealing to media and policy makers, as it provides a simple explanation that fits into western expectations of insecurity in the Middle East.

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[26] See Marwa Daoudy, Cambridge University Press, "The Origins of the Syrian Conflict", page 110, 2020.
[27] See Shahrzad Mohtadi, Bulletin of the Atomic Scientists, "Climate change and the Syrian uprising", August 16, 2012.
[28] See Michel Aflak, Albaath, "On Socialism".
[29] See Florien Hollander, "Water as a political tool? Water management in Syria from the advent of Hafez al-Assad to the current Syrian crisis", page 25, 2015.
[30] See Nazier Madi, European University Institute, "Cultivating a Crisis: The Political Decline of Agriculture in Syria", page 16, 2019.
[31] See Thomas Homer-Dixon, Peace and Conflict Studies Program, University of Toronto International Security, "Environmental Scarcities and Violent Conflict: Evidence from Cases", page 5, 1994.
[32] See Michael T. Klare, Foreign Affairs, "The New Geography of Conflict", 2001.
[33] See Ilan Berman and Paul Michael Wihbey, Strategic Review, "The New Water Politics Of The Middle East :: Ilan Berman", 1999.
[34] See Barack Obama, The White House, "Remarks by the President at the United States Coast Guard Academy Commencement", May 20, 2015.
[35] See Colin P. Kelley, Shahrzad Mohtadi, Mark A. Cane, Richard Seager and Yochanan Kushnir, PNAS, "Climate change in the Fertile Crescent and implications of the recent Syrian drought", March 2, 2015. See Levi J. Cramer, Press Books, "1.3 The Effects of Climate Change on the Syrian Uprising".

Popular outlets thus came to similar conclusions, arguing that water and the lack thereof is to blame for the Syrian conflict. Even public figures like Prince Charles in the UK maintained that "there is very good evidence indeed that one of the major reasons for this horror in Syria was a drought that lasted for five or six years".[36] German media have also reported about a link between climate change and the Syrian civil war, with headlines such as "drought first, then war". [37]

It is unclear why the climate-conflict narrative became so popular. Experts suspect that actors who proposed this argument hope to induce climate action.[38] On the one hand, arguing that the drought in Syria caused the uprising is an appealing explanation because it provides a simple and straightforward reason for a conflict that is in fact complex and multifaceted. This simplicity has been reproduced in popular culture, perhaps with the aim of educating children and youth about the dangers of climate change. US politician and climate activist Albert Arnold Gore Jr. gave Syria as an example of catastrophic scenarios of the future in his 2017 documentary "An Inconvenient Sequel: Truth to Power". Moreover, a comic from 2014 titled "Syria's Climate Conflict" mentioned climate change and drought as one of the triggers of the Syrian war, concluding that "Syria will remain as a warning of the devastation that can occur when tenuous political situations combine with the stresses of climate change."[39] The below image stems from the comic:

Image from "Syria's Climate Conflict" Comic

Although the drought in Syria undoubtedly exacerbated already existing problems, a number of scholars have recently challenged the argument that climate change caused the Syrian civil war.[40] Despite all the relevance and necessity of pointing out the consequences and dangers of climate change, the war in Syria is not an adequate example for this. Rather, this argument reproduces Assad's propaganda. By echoing the argument that climate change caused the conflict in Syria, popular media outlets have inadvertently played into the hands of the Syrian government.

Governmental Narrative on Climate Change

The Syrian government can draw on the climate-conflict argument to claim it was personally not responsible for the uprising.[41] It seizes every opportunity to blame external factors for the uprising, glossing over how its water policy contributed to scarcity and drought. Prior to the revolution, the regime of Bashar al-Assad even brought foreign diplomats to the country's northeast and told them that global warming caused the drought.[42] This narrative

[36] See Niraj Chokshi, Washington Post, "Prince Charles blames the Syrian war on climate change. He has a point.", November 24, 2015.
[37] See Daniel Lingenhoehl, Spektrum.de, „Wie der syrische Bürgerkrieg mit dem Klimawandel zusammenhängt", March 2, 2015.
[38] See Jadaliyya, "Marwa Daoudy, The Origins of the Syrian Conflict: Climate Change and Human Security (New Texts Out Now)", April 22, 2020.
[39] See Symbolia Magazine, "Syria's Climate Conflict", June 23, 2014.
[40] Scholars include Jan Selby, Francesca De Châtel and Marwa Daoudy, among others.
[41] See Jan Selby, MERIP, "On Blaming Climate Change for the Syrian Civil War", 29 September, 2020.
[42] Ibid.

diverts attention from how mismanagement, repression and corruption contributed to the 2011 uprising.

An analysis of government statements reveals that between 2011 and 2022, the Syrian government repeatedly blamed external factors for environmental deterioration. In 2015, the Minister for Environment Affairs Nazira Sarkis argued that "environmental deterioration is attributed to…the acts of terrorists".[43] In addition to blaming terrorism, the Deputy Minister of Local Administration and Environment claimed economic sanctions hindered Syria's efforts to protect the environment.[44] Climate change was even presented as the reason for an increase in prices, as Minister of Economy and Foreign Trade Mohammad Samer al-Khalil said prices rose by 30% in March 2021 due to climate change and the Covid-19 pandemic.[45] The governmental claims erase systemic mismanagement as a reason for environmental degradation, and attribute deterioration to internal and external factors – a so-called terrorist war on Syria that has damaged water resources and infrastructure, in addition to economic sanctions.

Having washed its hands of the matter, the government can demand financial and technical support from developed countries, as Nazira Sarkis did in 2015. Syria's government has also used discussions on resource scarcity and climate change to initiate diplomatic cooperation beyond political divides. In a meeting between Iraqi and Syrian government officials in 2021, Syria's Minister of Water Resources stressed that countries should share the damage climate change causes. The ministers proceeded to sign a joint agreement to exchange data related to the imports of the Tigris and Euphrates rivers.[46] Moreover, Syria's Minister of Agriculture and Agrarian Reform highlighted the importance of going beyond political division and enhancing cooperation between Iraq and Syria to achieve food security.[47]

In addition, statements on sustainability and climate change allow the Syrian government to present itself as legitimate within the country as well as in the international arena. While government repression of protesters and war crimes committed during the ongoing civil war means that Syria's Bashar al-Assad is not considered a legitimate head of state anymore, particularly among western politicians and governments, sustainability cooperation offers a platform for the Syrian government to present itself as interested in the common good of its people, regardless of political affiliation. Thus, the government is now cooperating with UN agencies on land and water sustainability. For instance, the Ministry of Water Resources and the United Nations Children's Fund (UNICEF) signed a joint work agreement in 2015 to implement water and sanitation projects.[48] Although considered a pariah by many, the Syrian government now receives international support to strengthen state institutions in the name of increasing water and food security.[49] By stating its concerns and initiating local projects,[50] the government can appear as a paternal entity that protects its citizens from the effects of climate change.

The narrative in governmental media outlets, which portrays the government as free of blame with regards to water scarcity, does not allow for nuances or critique of government action. One rare counter example exists, where the Syrian government used the international community's platforms for climate protection to admit some of its errors. A national communication by Syria's government to the United Nations Framework

[43] See Manal Ismael, SANA, "500 pine seedlings planted in Maaloula, Damascus countryside.", March 14, 2015.
[44] See SANA, "Syria participates in the Katowice Climate Change Conference", December 13, 2018.
[45] See SANA, "Investment opportunities in Syria are great, promising, Minister al-Khalil says", October 13, 2021.
[46] See Arab News, "Syria, Iraq sign agreement to regulate water resources between the two countries", July 17, 2021.
[47] See SANA, "Syria calls for confronting climate challenges, cross-border pandemics", February 9, 2022.
[48] See SANA, "Water Resources Ministry and UNICEF sign joint work agreement to provide drinking water for citizens", May 3, 2015.
[49] See SANA, "A Project to enable locals in Eastern Ghouta face climate changes launched", October 24, 2021.
[50] See FAO, "الفاو وصندوق المناخ الأخضر يدعمان الجمهورية العربية السورية للتكيف مع تأثير التغيرات المناخية", July 18, 2019.

Convention on Climate Change in 2010 did acknowledge that the government has played a role in the deteriorating climate, by stating that "Water availability is currently under heavy and increasing pressure, due to…the irrational use of hydrological resources".[51] The demand to live up to international standards – national communications usually comprise technically sound studies and information – may present an avenue to admit past errors and improve upon these in the future.

Weaponization of Water

Bashar al-Assad has repeatedly used water as a weapon in the course of the war that started in 2011.[52] That same year, the Assad government cut off water during the siege of Homs that lasted for three years. Moreover, the regime bombed the Ain al-Fayja Spring in 2016, the main supplier of water in Damascus and the surrounding area.[53] The government's Russian partner has also supported these activities by bombing the al-Bala'a Dam located along the Roj Plain.[54] "The Syrian regime controls water sources of all kinds, surface and groundwater, and has distributed drinking water pumping and irrigation plants in a way that enables them to cut off the Syrian cities at will, give up and starve their people", said Abdul al-Aliwi, former director of the Euphrates basin project in Raqqa province. According to al-Aliwi, following the rebel's takeover of the Raqqa and Aleppo provinces, the regime repeatedly bombed the Euphrates Dam.[55] Environmental journalist Zaher Hashem equally argued that the government pursues a policy of disrupting water resources in besieged areas.[56]

One example of water warfare by the Syrian government took place in Palmyra in 2011 and the years after. Mostly known for the occupation by the Islamic State (ISIS) later on, citizens of Palmyra were blackmailed for protesting against the government and punished with water cut offs. Palmyra used to be a city of around 2,000 residents with a majority Sunni population. As the city is located in a desert area, where water resources are not drinkable because they are salinated, the city's drinking water supply was located around 80km away. In an interview for this paper, filmmaker Daham al-Asaad spoke about his personal experience of how the Syrian government used water access against Palmyra's residents. Daham was part of the anti-government protest movement starting in 2011 and left the city in 2012. Following the start of demonstrations, Daham said the Assad government threatened to cut off the city's water access in negotiations with tribal leaders. As protests continued, water access from the oasis was cut off for a few days in April. In August 2011, water access was cut off again, this time for a few months. Speaking of Bashar al-Assad, Daham said, "when he wanted revenge, he just cut off the water".

Following water cuts, demonstrators like Daham hid in the oasis to have access to water. The oasis became a hiding place for rebels, with palm trees providing cover from regime forces. "The area needed to be dried out so the government could see the rebels", Daham said. For this reason, the regime cut off water access to the oasis after 2012, and the oasis dried out after 2013. The region's olive trees also did not survive the dry and hot temperature, which reaches around 55 degrees in summer, Daham explained. Palmyra's citizens in turn tried to filter the salinated water, with little success. Water was then smuggled into the area, Daham added. As water scarcity worsened, the elder generation put pressure on the demonstrators, who were mostly youth. "But the kids didn't listen", Daham said. As the conflict continued, the regime bombed Palmyra with Russian help and most of

[51] See Syrian Arab Republic, "Initial National Communication Of the SYRIAN ARAB REPUBLIC", April 2010.
[52] For an extensive overview of weaponization of water in Syria from the 1960s until today, see Marwa Daoudy, Cambridge University Press, "The Origins of the Syrian Conflict", 2020.
[53] See Sasapost, "حرب المياه».. التعطيش أداة الحرب الفعالة في سوريا" March 16, 2017.
[54] See Lebanese Center for Research and Consulting, "(تحقيق): الجفاف في سوريا... عاصفة من أربع جهات..", January 1, 2022.
[55] See Alaraby, "سورية: حرب مياه بين أطراف الصراع", April 18, 2021.
[56] Ibid.

the city's residents left for Homs, Idlib or Turkey. "There is no Palmyra now. It's a ghost city", Daham said.

Survey on Water Availability

To test the above findings, a survey was distributed among Syrians living in the country, asking about water availability and reasons for scarcity. To ensure even distribution of the survey across government and opposition-held areas, Konrad-Adenauer-Foundation reached out to NGOs in Syria it has cooperated with, who sent the survey to their local connections. The survey was held in Arabic and included 10 questions, such as location of the respondents, reasons for water scarcity and how water availability has changed over time. Answers varied widely depending on the respondent's location, which they indicated in the survey. 150 people took part in the survey. While respondents in opposition-controlled areas overwhelmingly blamed the Syrian government for the destruction of water infrastructure, and questioned the government's claim that it provides water to all Syrians, answers differed in regime-held regions. There, most respondents replied that they did not know what caused water scarcity. At the same time, the majority of all respondents indicated that water was not managed properly in their hometown. Moreover, 60.77% of respondents indicated that the main reason for water scarcity is mismanagement by officials.

Most questions included multiple choice options as an answer. The question "what is the main reason for water scarcity in Syria?" included a response option, which over 30 respondents used. Here, answers varied from government destruction and blame on Bashar al-Assad himself, to climate change as the main reason for a lack of water. In opposition-held areas, water access is worse than in regime-controlled areas, with one respondent naming Syria's government the number one reason for lack of water access in their hometown Al-Raqqa. 23 respondents located in opposition-held areas blamed lack of water availability on "government destruction". Another directly blamed the government of Bashar al-Assad, stating that "the government's oppression and brutality...and its deliberate neglect of the eastern region as a whole" is the main reason for scarcity.

Overall, respondents in opposition-held areas overwhelmingly disagreed with the government's claim that it provides equal water access to all Syrian citizens. The dissatisfaction with government services expressed by Syrians in opposition-held areas is not new, as the following Syrian joke suggests: An Israeli tells a Syrian that Israelis have running water, electricity, and working telephones. The Syrian replies, "Well in Syria, we've got Assad" ("assad" also means lion in Arabic). Confused, the Israeli walks away and returns a few days later. "Now we have an 'assad' too," he says to the Syrian. The latter replies, "Now you won't have running water, electricity, or working telephones."[57]

In contrast to survey respondents in rebel-held areas, most participants living in regime-controlled areas stated that they did not know whether the Syrian government provides water equally to all citizens. Their response may lead to a number of conclusions, illustrating either a lack of knowledge about other regions; deliberate ignorance of water access inequalities, or fear of repercussions for criticizing the government. Beyond providing evidence for the Assad government's weaponization of water, the survey found that water became less available between 2011 and 2021. More than half of the respondents confirmed that water was always available in 2011, and only sometimes available in 2021. Finally, 59.69% of respondents stated that drought did not cause the 2011 uprising.

[57] Lisa Wedeen, "Ambiguities of Domination", 1999, quotes Khalid Kishtainy, London: Qyartet Books, "Arab Political Humour", 1985.

Water for Image Cultivation

As water is a contested source, those that can provide it gain prestige. The Syrian government has used water since 2011 as a means to improve its image, defame opponents, and to present itself to Syrians as inclusive, efficient and indispensable. Attacks on water infrastructure, which the government has carried out itself, have been blamed on "terrorists". The government claims that terrorists are waging a water war and causing maximum damage in order to weaken the state.[58] Drinking water shortages are a direct result of terrorist sabotage according to state officials.[59] These officials have also blamed damage to agricultural and water sectors to terrorist sabotage acts. Minister of Agriculture and Agrarian Reform Ahmad al-Qadiri said in 2014 that Syrians' life will is stronger than the culture of killing adopted by terrorists who "kill and burn while we build and plant".[60] On behalf of the government, the minister promised to lead the country's reconstruction along with the Syrian army. The government calls upon the Syrian people to stand by its side, politicizing environmental action: Hama Governor Mohammad Tareq Kreishati said Syrians "plant in one hand and fight terrorism in the other to keep Syria green."[61]

By contrasting the government with terrorists, the regime of al-Assad can present itself as the only reliable security provider for Syrians. During a visit to the al-Fijeh spring near Damascus, Syrian Prime Minister Imad Khamis told journalists that government forces restored control of the spring and civilian access to water after encircling and killing terrorists from Jabhat al-Nusra and affiliated groups. These groups, he claimed, previously even polluted the water with diesel and deprived the city of 80% of its water resources.[62] These dangerous groups increase the need for protection by the Syrian Arab Army, the government claims. To counter terrorist destruction, the government argues to have worked tirelessly to restore water access for all citizens. For instance, government delegations frequently inspect water infrastructure in mediatized events, some of which are even led by the prime minister.[63] Citing the prime minister, regime outlets claimed that the government is taking "all possible measures to ensure water flow despite all challenges, whether related to terrorist attacks or natural causes".[64] The government presents itself as a sustainable, diligent and rational actor interested in optimizing the country's water use for all Syrians.

The regime also takes advantage of the symbolic power of water in the past and present. Two testimonies to the government's hold over water are the al-Thawra Dam and Baath Dam, opened in 1973 and 1986 respectively. Named after the revolution and Baath party, their names carry historic importance. In connection to the al-Thawra Dam (also known as Tabqa or Euphrates Dam), the government created Lake Assad – Syria's largest lake – in 1974. The Assad government more recently affiliated itself with the life-giving resource of water in 2015, when the Water Resources Ministry organized a theatrical music and dance performance titled "The National Epic: Snow Flower", written and directed by Louay Jamil Shana, co-presented by the Ajyal Dance Theater Group at the al-Hamra Theatre in Damascus. The performance spoke to the importance of water as a marker of prosperity and fertility.[65] The show described the history of water in Syria, from the ancient city of Ugarit to the construction of the al-Thawra or Euphrates Dam that filled Lake Assad with water. The performance thus drew a line of continuity of water management, leading to

[58] See SANA, "Workshop on management of water resources, achievement of sustainable agriculture in Syria opened", February 6, 2018.
[59] See SANA, "Minister: Reports of drop in Euphrates River water levels exaggerated", June 16, 2014.
[60] See SANA, "Afforestation campaign in Damascus Countryside on the occasion of 63rd Tree Day", December 22, 2014.
[61] See SANA, "On Tree Day, a celebration in Hayaleen Forest site in Hama countryside", December 31, 2020.
[62] See Syrian Embassy, "A Governmental Delegation Inspects Repair Works at Al-Fijeh Spring", March 10, 2017.
[63] Ibid.
[64] See SANA, "PM: 70% of water needs in Damascus provided , water amounts to Aleppo to be increased", July 18, 2015.
[65] See SANA, "Celebration marking World Water Day held in Al-Hamra Theatre in Damascus", March 23, 2015.

present day government control. On the eve of the performance, Minister of Water Resources Dr. Kamal al-Sheikh called upon Syrians to cooperate with authorities to reduce water waste, which he described as a national, religious and moral duty.[66] The performance therefore presented the government as a gatekeeper to water, a source of national wealth, which has faced many difficulties, including terrorism and drought.[67]

Water Warfare by Other Actors

Governmental opponents and terrorist groups, such as ISIS have used similar tactics to gain a competitive advantage. 15 respondents indicated "terrorism" to be the main reason for water scarcity in Syria. In February 2013, ISIS captured the al-Thawra and Tishrin dams. ISIS closed the gates of dams to flood enemy areas, cut off electricity, weaken the civilian and military groups and reek economic havoc.[68] "When ISIS militants cut off the water supply to force us to comply with them, 3,000 trees were destroyed", said Ahmed Mahmoud, who used to earn his livelihood with olive trees. He is a resident of the village Ayed Saghir which ISIS controlled until 2014.[69] According to Abdul al-Aliwi, militias exported large quantities of Syria's surface water resources, including from the Euphrates River and its three lakes and dams, with the aim of producing electricity and selling it to the Syrian government.

ISIS used water as a tool to weaken opponents, but also to garner local support. While in control of the al-Thawra Dam, ISIS diverted water to its strongholds in Iraq and Aleppo. As a consequence, the dam's water reservoir Lake Assad dropped by six meters. This affected millions of Syrians, who no longer had access to safe water resources. For the areas under its control, ISIS provided state-like services, and even increased the hourly access to electricity from five to eight hours per day.[70] Water thus functioned as one of the tools ISIS could use to build its state and present itself as a state-like entity in occupied areas. The ISIS papers that were leaked in 2014 set out the rationale driving the group's activity and military tactics.[71] ISIS continued to employ the power plant's staff and even to distribute electricity to government ruled areas in Damascus and Hama. The government in turn continued to pay for the employees' salaries.[72] This pragmatism on behalf of ISIS was partly due to the fact that the group does not have members qualified to operate a power plant.

Syria's water resources are also subject to weaponization by external actors. As an upstream state, Turkey holds power over co-riparian countries Syria and Iraq, and other regional actors. The Turkish government's Southeast Anatolia Project (GAP) increased the country's level of control over the flow of Euphrates water. Turkey repeatedly cut the Euphrates river flow rate after the Kurdish-led Syrian Democratic Forces gained control of the river's basin territory.[73] "Turkey wants to dry us up" claimed Ahmed Mahmoud, a resident of Ayed Saghir village.[74] In 2019, Turkey took control of the Alok Pumping Station in the town of Ras al-Ain. Since then, it disrupted water supplies to al-Hasakah city for at least 24 times[75] in order to weaken the Kurdish-governed autonomous administration. The pump provides around

[66] See Syria Daily News, "وزارة الموارد المائية تطلق حملة لترشيد استهلاك الماء", March 23, 2015.
[67] See Wakala News, "احتفالية بعنوان زهرة الثلج بمناسبة اليوم العالمي للمياه- فيديو", March 22, 2015.
[68] See Strategic Foresight Group, "Water and Violence", 2014.
[69] See Deutsche Welle, "الجفاف وأزمة المياه في شمال سوريا.. من المسؤول؟", December 18, 2021.
[70] See Strategic Foresight Group, "Water and Violence", 2014.
[71] See Shiv Malik, The Guardian, "The Isis papers: leaked documents show how Isis is building its state", December 7, 2015.
[72] See Strategic Foresight Group, "Water and Violence", 2014.
[73] See Andrew M. Linke and Brett Ruether, Journal of Peace Research, "Weather, wheat, and war: Security implications of climate variability for conflict in Syria", January 7, 2021.
[74] See Deutsche Welle, "الجفاف وأزمة المياه في شمال سوريا.. من المسؤول؟", December 18, 2021.
[75] See UNICEF, "Syria: Up to 1 million people at risk due to severe interruptions to Alouk Water Station", July 15, 2021.

460,000 citizens with water,[76] and its interruptions caused 38 days without water for residents.[77]

Implications and Recommendations

This paper has examined how water is used in warfare in Syria, with a focus on the country's government. Main findings include the fact that drought did not cause the 2011 uprising, and that this argument feeds into government propaganda. Nevertheless, popular media has reproduced this claim, perhaps to induce climate action. Dating back to the 1960s and 70s, the government mismanaged and overexploited national water resources to build self-sufficiency. Water gained symbolic importance for the government, which provided better access to loyal parties and has presented itself as a gatekeeper and protector of water resources vis-a-vis terrorist groups. The government has cut off water access of opponents, as described in a vivid account of a Palmyra resident, as well as by citizens of opposition-held areas. Syrians across the country agree that water resources are mismanaged, while they differ on the reasons for this. Especially citizens of opposition-held areas blame the government for water infrastructure destruction and for unequal access to water.

The twin issues of water scarcity and weaponization are likely to continue to plague Syrians in the future. The available water per capita is expected to decrease by around 50% by 2050.[78] Although the government is clearly destroying water infrastructure and cutting off access to defeat opponents, international organizations are cooperating with the Syrian government and helping to rebuild it. The international community must take into account that the Syrian government has used water as a political tool in the past, and realize that since Bashar al-Assad remains in power, he has no major incentive to change this practice. For this reason, international support should be tied to equal access to water and other basic needs. International organizations should not close their eyes in the face of continued repression through the deployment or withholding of resources. If the Syrian government continues to weaponize water access, water inequalities could become institutionalized with the help of international donors.

Moreover, a systemic national water strategy is needed, with the input of international experts on how to use Syria's remaining water most efficiently and sustainably. This will require cooperation from national and international groups and shall include countries like Turkey that have the power to supply and withhold water from Syrians. In addition, existing political, legal and economic sanctions should be expanded to penalize the weaponization of water by the Syrian government. Syrian actors who violate international law with regards to water and other life-saving resources should be excluded from international organizations and funding. International organizations should also be wary of the Syrian regime's attempts to blame its water scarcity and environmental degradation on external actors. While it is important to draw attention to the dangers of climate change and how it can exacerbate conflict, the Syrian example is not adequate for this argument, as it feeds into the Assad government's propaganda. In addition, Syria must live up to its promise of providing equal access to water for all citizens, which will be necessary for early economic recovery to be equitable. A decade of war in Syria has destroyed the country's water and irrigation infrastructure, in addition to deepening divides between groups. Water access is currently divided along lines of allegiance in the country. These sectarian and political divides will take time to heal.

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[76] See Amberin Zaman, Al-Monitor, "Turkey throttles water as pandemic looms over northeast Syria", May 7, 2020.
[77] See Klyoum, "أبناء الحسكة ينظمون وقفة احتجاجية في ساحة الرئيس حافظ الأسد ويطالبون المجتمع الدولي بوضع حد لجريمة قطع المياه", August 19, 2021.
[78] See Khaldoon A. Mourad and Ronny Berndtsson, Air, Soil and Water Research, "Syrian Water Resources between the present and the Future", 2020.

Finally, lessons learnt in Syria may prove helpful in other conflict zones of the world, where water infrastructure is a target. Since the armed conflict between Russia and Ukraine in eastern Ukraine began in 2014, the latter has faced at least 380 attacks on water infrastructure.[79] The besieged Ukrainian city of Mariupol has witnessed heavy aerial bombardment by Russia that caused water cuts.[80] Beyond water infrastructure destruction, Ukraine has struggled with low precipitation levels. Finding a response to questions such as how to restore water access across politically and ethnically divided countries like Syria and Ukraine, and how to make efficient use of water resources in arid zones, matters to victims of conflict in Europe, the Middle East and elsewhere. Their future depends on unconditional and equitable water access.

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[79] See UNICEF, "Water under fire", March 19, 2021.
[80] See Joel Gunter, BBC, "Mariupol under siege: 'We are being completely cut off'", March 3, 2022.