



All is not well: The urgency of water governance in southern Syria

ARK Special Report

Executive Summary

Years of state water mismanagement and prolonged conflict have laid the grounds for a serious public health and environmental crisis in southern Syria. As the region's water distribution infrastructure lies dormant, rendered useless by sustained electricity cuts, residents have largely turned to private wells, many of them haphazardly dug, to fill their drinking water needs. This has led to a drastic increase in water prices and several outbreaks of water-borne diseases, both of which will increase as a growing population of Internally Displaced Persons (IDP) pressures the existing infrastructure.

Historical Context

Southern Syria's current water crisis has its roots in decades of official resource mismanagement, with regime officials both unable and unwilling to regulate unsystematic exploitation of what had been abundant groundwater reserves. High precipitation rates had historically maintained healthy water levels in the Yarmouk basin, a 7,000 square kilometre groundwater reserve that straddles the border between Syria and Jordan and has provided most of the region's water¹. With its fertile and absorbent soil, Dar'a Province in particular became known as "the breadbasket of Damascus" in the country's early days of independence². Agriculture occupied such a prime place in the region's planning calculus that most of the region's water infrastructure was originally built for irrigation. As the region's urban population began to grow, however, private and public initiatives sought to adapt existing pumps and pipelines to a new demographic landscape.

¹ UN-ESCWA and BGR (United Nations Economic and Social Commission for Western Asia; Bundesanstalt für Geowissenschaften und Rohstoffe); *Inventory of Shared Water Resources in Western Asia*; Beirut; 2013.

² Khoury, Philip; "A Reinterpretation of the Great Syrian Revolt"; *Arab Civilization: Challenges and Responses*; pp. 256; 1988.

A European researcher living in Syria in 2001 recalled meeting with a high-level water regulator in Damascus. Throughout the meeting, citizens shuttled in and out of his office, quickly getting approval to dig their own personal wells with almost no official interrogation. When the researcher asked why the approval process seemed so easy, the official replied, “They’ll dig whether or not we give them approval. At least this way we know where some of the new wells are³.” This attitude reflects gaps in official influence over the water sector that, ten years later, would exacerbate an already serious humanitarian crisis.

Before the onset of the crisis, well-digging permits were easily obtained. As one regime official said at the time: “They’ll dig whether or not we give them approval. At least this way we know where some of the new wells are.”

Before the outbreak of the Syrian conflict in 2011, about 90 percent of the country’s water was used for agriculture, with 80 percent of that irrigating fields through flooding, one of the most inefficient methods of doing so⁴. Because this system relied on a network of small, privately owned wells, its growth was naturally rapid and unregulated. A surge in cheap digging machinery, as well as a severe drought from 2006-2010 led to a 40% increase in the number of wells between 1999-2010, around half of which were built without official approval⁵. As residents withdrew water for their land without assessing the impact on the environment, aquifers around the country began to significantly deplete. In the country’s northeast provinces, areas with consistently low rainfall to begin with, waves of farmers abandoned their land and sought work in places further west, including the Damascus suburbs, and the country’s south.

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Pressured both by agricultural overdraw and a rapidly-growing population of urban economic migrants, southern Syria’s water networks began to show serious strain before 2011. A 2007 article noted that the hourly flow through Muzeireb Dam had decreased by nearly two-thirds since 1980⁶. Pointing to a rapid growth in the number of unmarked wells, water officials in the area expressed concern about

the future water needs of Dar’a city, quickly growing with new economic migrants from the east. By 2010, media mentions of the issue had grown more urgent and officials began openly mentioning small private wells as measures that would alleviate, rather than worsen, Dar’a Province’s precarious water situation⁷.

By the beginning of 2011, decades of water mismanagement had left southern Syria in a volatile position. While the Syrian government allowed journalists to visit drought-stricken

³ Interview with Francesca De Chatel, 08 February 2016

⁴ De Chatel, Francesca; “The Role of Drought and Climate Change in the Syrian Uprising: Untangling the Triggers of the Revolution”; *Middle Eastern Studies*; 2014.

⁵ Ibid.

⁶ “Muzeireb Lake’s Flow: From 1454 Litres Per Second to 450”; *Dar’a News*; 23 July 2007.

⁷ “Warnings of a Decrease”, Hawrani net, 2010

villages in the eastern provinces of Hasakeh and Deir Al-Zour, it completely restricted access to Dar'a City⁸. Though southern Syria avoided the worst effects of Syria's long drought, failures in water management on a national level placed population stresses on it that would culminate in the outbreak of protests in March of that year.



Figure 1. A pre-war picture of Muzeireb Lake in Dar'a Province. Dar'a province is water-rich, and its aquifers once provided drinking water for not just Dar'a, but also neighbouring Sweida province. However, prolonged electricity cuts have rendered pumping infrastructure in the region inactive.

Deteriorating Public Infrastructure

In early 2011, the average household in southern Syria spent 5 USD per month for unlimited access to potable drinking water through a centrally-administered pipe system. Five years into the Syrian conflict, much of this infrastructure has been rendered useless by chronic electricity shortages, and what central pumps do run have spread waterborne diseases by distributing improperly filtered water through rapidly deteriorating pipes.

Water engineers from the area and coordinators of aid distribution networks describe a gradual deterioration in the infrastructure built to distribute southern Syria's water. As opposition forces mounted a series of successful southern offensives against key regime positions in 2014-5, they assumed governance and service provision positions whose responsibilities the regime prevented them from fulfilling. Prime among these services was the provision of electricity, as the vast majority of power plants remained under regime control. Electric lines, however, continued to carry power into opposition-held areas, a situation that the regime has repeatedly exploited for its own ends.

In a November, 2015 survey conducted by ARK with 786 residents of southern Syria, 49% of respondents reported receiving electricity from the regime, with the remainder saying that "no one" provides them with the service⁹. The regime has used this clear monopoly over the provision of electricity, most of it running south from the central grid in Damascus¹⁰, to showcase the opposition's inability to effectively govern the areas it controls. In the wake of

⁸ De Chatel Francesca; "The Role...".

⁹ ARK Group; "Local Councils and Service Provision Networks in Southern Syria"; February 2016.

¹⁰ Interview with a Syrian aid coordinator; 19 January 2016.

the Summer, 2015 “Southern Storm” offensive, power cuts to opposition-held areas served to reinforce the military defeats suffered by the Southern Front (SF) and reinforced public awareness of the ways in which the SF has failed its perceived mandate to fill the gap left by the absence of a centralised state.

While water distribution equipment remains in place across opposition-controlled areas in southern Syria, the regime’s tight rationing of the electricity it provides to opposition-held areas has made the sustained use of pre-existing municipal water infrastructure nearly impossible. An outline of available Dar’a province water sources obtained from a high-ranking opposition engineer listed 14 of the 17 sources in the province as severely underperforming because of sustained electricity cuts, with all of the documented wells combined providing water to less than one fifth of the area’s residents¹¹.

Interviews with a wide range of southern Syrian residents, ranging from teachers and Civil Defence volunteers to the heads of NGOs, show a serious decay in the functionality of public water infrastructure. Residents describe week-long breaks in the availability of tap water¹² and have no confidence in the potability of the water that does emerge.

Residents of southern Syria view the few repairs that have been attempted on public water infrastructure with heavy suspicion. In two high-profile repairs, workers affiliated with the Syrian Arab Red Crescent (SARC) refurbished water lines extending from Muzeireb to the town of Tal Za’tar. While regime-sympathetic media described the September and December 2015 efforts as essential repairs on infrastructure heavily damaged by fighting¹³, many in the region see SARC as a direct extension of the regime¹⁴ and therefore discounted these measures as cosmetic fixes aimed only at maintaining a basic flow of water to a small number of towns outside of opposition control¹⁵. Other NGOs have mounted efforts to repair officially-recognized wells, but the informal water market continues to pressure residents from both the public health and financial fronts.

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The Privatisation of Public Works

While public water infrastructure remains structurally intact across southern Syria, sporadic service brought on by electricity cutoffs and a lack of regular maintenance have driven as much as 70% of the area’s residents away from using tap water in their daily lives¹⁶. With this gap in publicly-available water resources, many have turned to private sources to fill their household needs, building upon a quickly-growing and unregulated market of private wells

¹¹ “Summary of Water Distribution to Residential Areas”; Dar’a Provincial Council; January 2016.

¹² Interview with a Dar’a Province resident; 18 January 2016.

¹³ “Red Crescent Repairs Muzeireb Water Line”; *Syria Breaking News*; 12 December, 2015.

¹⁴ Interview with a Syrian Activist; 15 January 2016.

¹⁵ Interview with a Dar’a Province water engineer; 02 February 2016.

¹⁶ Ibid.

and water tankers that has its roots in the pre-conflict period. In the years leading up to 2011, this type of private water drilling caused manifest environmental damage, putting stress on groundwater sources and altering the chemistry of the water supplied. In the absence of coordinating bodies to provide even nominal supervision of this process, and coupled with all the stress factors of armed conflict, the emergence of private wells as the primary source of southern Syria's drinking water could seriously compound the already-substantial humanitarian difficulties that the region faces.



Figure 2. Workers with the religious charity “Youth for Syria” conduct maintenance on a well recently dug in Syria’s Eastern Ghouta, in the suburbs of Damascus. Uncoordinated digging of wells by humanitarian actors in response to both water shortages and price gouging have placed pressure on groundwater resources and are also posing major public health risks.

In the space of a few years, a parallel water network has sprung up in southern Syria, incorporating technology and infrastructure that was never designed to provide potable drinking water into a patchwork of providers that only exacerbates the economic and public health pressures faced by residents of the region. Residents have partly filled the available gap in centrally-pumped water by continuing to expand irrigation wells on their own land, distributing the water through a network of tanker trucks previously used to siphon and transport irrigation water¹⁷. In northern Dar’*a* province alone, residents report that twenty new major wells have been dug in the last two years¹⁸. Estimates of the number of people who have come to rely on this

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¹⁷ Interview with Francesca De Chatel; 08 February 2016.

¹⁸ Interview with a Syrian Civil Defense volunteer; 01 February 2016.

informal distribution network range from 70%¹⁹ to 80%²⁰ of the area's residents, pointing to a near-total breakdown in the water infrastructure's ability to operate dependently. While most Syrians saw receiving water from tanker trucks as unthinkable before the start of the conflict²¹, it has now become the norm.

This new, unregulated, and anarchic market has left consumers in dire straits. While access to potable water cost around 5 USD per month before 2011, tanker trucks charge anywhere between 2 and 10 USD per litre²², prices far out of the range of many of the region's residents. Furthermore, without any enforceable purity or filtration standards, public health has clearly suffered. In the western town of Al Shajarah alone, with a prewar population of around 6,500, medical facilities have recorded at least 80 deaths from water-borne illnesses in the past six months²³. As IDPs mass on the Jordanian border, pressure on this fragile network will only continue to mount.

Conclusion

Southern Syria's water infrastructure stands severely degraded by years of conflict, and its groundwater reserves have suffered heavily from decades of overexploitation. As a result, the region's inhabitants have begun to feel the economic and public health effects of this deteriorating situation. While large-scale water relief and emergency filtering initiatives require a substantial financial commitment and rely on the dynamics of a precarious security situation, small grants that empower water coordination efforts are a low-cost, low-footprint programming option that could have a wide impact on southern Syria's water landscape. Local governance actors and community stakeholders have the existing infrastructure to implement such programming and stand motivated to take any action that could improve their public reputation. While a comprehensive solution to this pressing problem may be far away, community-based programmes aimed at leveraging existing social networks could mitigate its worst effects.

¹⁹ Interview with a Dar'a Province water engineer; 02 February 2016.

²⁰ Interview with a Syrian aid coordinator; 27 January 2016.

²¹ Interview with Francesca De Chatel; 08 February 2016.

²² Ibid.

²³ Al Hawrani, Muhannad; "Polluted Water Poisons Civilians in Dar'a Province"; Al Quds Al Arabi; 24 January 2016.

ARK is a consultancy company specialising in the provision of policy-relevant research and the design and management of conflict prevention and transformation programmes to prevent and mitigate instability and promote positive social change and development. For more information about ARK or this paper, please contact: reports@arkgroupdmcc.com.

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