NOTES FROM THE FIELD

Ten years since the crises in Syria: lessons for planetary and public health

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Climate scientists have attributed the war in Syria to persistent droughts caused by damming of rivers and growing aridity due to climate change. As result of the war, there has been widespread migration, hunger, malnutrition, and a collapse of public health systems. While many climate researchers question the direct link of climate variability to civil unrest, there is no doubt that mitigating and reversing Syria's environmental degradation, and reviving food security and public health systems will play an important role in avoiding future unrest in the region.

The first week of March 2021 marked the 10th year of the eruption of the civil war in Syria. The crisis escalated in the backdrop of the Arab Spring, a symbol of hope which could have ushered in Western-style democracy in the region. For Syria though, the events violently spiralled out of control and turned into tragedy.

Political observers diagnosed Syria's civil unrest as one which was festering for decades under President Bashar al-Assad's notoriously corrupt and inefficient regime which had implemented a series of badly timed and poorly designed socio-economic policies. Underlying these self-inflicted problems were disasters not entirely of Assad's making.

As an arid country, Syria has had a history of diverting and damming the region's rivers. There are at least 140 modern dams in Syria alone, more dams per kilometre than any country in the world.¹ Turkey, Iraq and others have also dammed their rivers, which has complicated the cross-border movement of water. To mitigate for any shortfall and seasonal fluctuation, Syrian farmers exploited groundwater. A 2010 UN report reported that the rivers Tigris, Euphrates and Jordan would completely dry out by 2040.² To make matters worse, Syria was plagued with two episodes of droughts, first a short sharp event in 1999–2001, followed by a longer and a more persistent phase of high temperatures and longer summers with very low rainfall in 2006–2010. Three successive years (2006–2008) had the worst regional drought in 40 years and led to a complete collapse of functional community-based water and land-based institutions, which precipitated violence and mass migration. This ultimately led to a total political and economic collapse.³ Droughts caused by climate change were posited as the leading cause for the crisis,⁴ and was referred to in a speech by President Barack Obama.

Some theorists contend this as largely human-made,⁵ while others attribute this to the interplay of nature and anthropogenic activity.⁶

There is no clear consensus on what is defined as a climate-attributable event or what explains tragedies such as the one in Syria. The problem exists partly due to the lack of clear operational definitions, approaches and frameworks, which differ between scientists and researchers across disciplines. Drought-induced famine, collapse and migration are non-linear processes. Drought and floods are among the most complex concepts to define in physical geography, hydrology, meteorology and other disciplines, since they involve the interplay of several variables. According to one estimate, there are an estimated 150 definitions of drought. Even the apex technical group on climate change, the Intergovernmental Panel on Climate Change, appears unsure of an operational definition: 'prolonged absence or marked deficiency of precipitation'... 'that results in water shortage for some activity or for some group' or a 'period of abnormally dry weather sufficiently prolonged for the lack of precipitation to cause a serious hydrological imbalance'.⁷

As more robust definitions and better frameworks are developed, it will become easier to determine how climatic phenomena and environmental episodes such as El Niño and La Niña have impacted historical events (droughts, floods, famines, disease outbreaks), an area which has remained contentious. Wars can provide an opportunity for natural resources to replenish and recover, but the opposite may happen as well. A few years into the war for example, the World Food Programme's reports showed that soil fertility in Syria had declined, and surface and groundwater reservoirs were no better. The deterioration of irrigation systems and soil conditions is not necessarily a reversible process, as dams and concretised embankment of canals disrupt nature's soil-moisture regime.⁸ Given the persistence of droughts in the region, one geographer has suggested using an entirely new term 'drying up', which has become a new normal for the region over the past two decades; thus, terms such as 'acute' or 'chronic drought' should be abandoned, as these are temporary and reversible conditions.⁹

As we begin the peace and reconciliation process in Syria, the environment will remain central to how we plan for the future of the region's security and stability. Ecological restoration must begin by reviving Syria's river and fragile soils. The international community must develop norms for managing global

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commons like rivers, rather than leaving them to the discretion of egotistic politicians and bickering countries. Similarly, there is a need to develop a global dashboard which anticipates, advises and prepares countries to mitigate imminent climate shocks.¹⁰ Like the COVID-19 pandemic, shocks from climate change will also need timely, careful, coordinated and calibrated response.

The impact of the war in Syria has taken a heavy toll on its people and public health systems. Life expectancy among children and adult who have survived war and violence has decreased significantly. According to the UNICEF, in the last year alone, the price of the mean food basket increased by over 230%, and at present, more than half a million children under the age of five in Syria suffer from stunting as a result of hunger and chronic malnutrition. The entire 12.4 million Syrians, whether they are in the country or in refugee camps, depend on food handouts from the global community. This is not sufficient to stem the hunger and the underlying ecological crisis will not mitigate the situation for at least a decade. Syria's already crumbling health system has been devastated beyond repair during the war, as many medical facilities have been bombed and most medical staff killed or fled. As a direct consequence of the collapse of the health system, a resurgence of preventable diseases such as measles and sporadic cases of polio have been reported in Syria. Understanding about several health indicators from within Syria and the numerous refugee camps is too limited for us to build a picture of what will be

needed to rebuild the public health infrastructure and strengthen human resources. Without a sound public health, social and physical infrastructure, Syria may never again be able to sustain a population of the size it held before the crisis.

References

- 1 Mulligan M, van Soesbergen A, Sáenz L. GOODD: a global dataset of more than 38,000 georeferenced dams. *Sci Data* 2020; 7(31): 1180–1187.
- 2 Elasha B. Mapping of climate change threats and human development impacts in the Arab Regions. New York, NY, USA: UNDP, 2010.
- 3 Trigo R, Gouveia C, Barriopedro D. The intense 2007–2009 drought in the Fertile Crescent: impacts and associated atmospheric circulation. *Agric For Meteorol* 2010; 150: 1245–1257.
- 4 Kelley C, et al. Climate change in the Fertile Crescent and implications of the recent Syrian drought. *Proc Natl Acad Sci USA* 2015; 112: 3241–3246.
- 5 Selby J, et al. Climate change and the Syrian civil war revisited. *Political Geography* 2017; 60: 232–244.
- 6 Karnieli A, et al. Was drought really the trigger behind the Syrian Civil War in 2011? *Water* 2019; 11: 1564.
- 7 International Panel on Climate Change. Climate change: synthesis report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: IPCC, 2007.
- 8 World Food Programme. Special focus: Syria. Rome, Italy: WFP, 2014. <https://documents.wfp.org/stellent/groups/public/documents/ena/wfp263930.pdf> Accessed March 2020.
- 9 Karami N. The modality of climate change in the Middle East: drought or drying up? *J Interrupted Stud* 2019; 2: 118–140.
- 10 Funk C. Ethiopia, Somalia and Kenya face devastating drought. *Nature* 2020; 586: 645–645.

Les climatologues estiment que la guerre en Syrie est due aux sécheresses persistantes causées par la construction de barrages sur les rivières et par l'aridité grandissante due au changement climatique. La guerre a été à l'origine de migrations massives, de famines, de problèmes de malnutrition et a entraîné l'effondrement des systèmes de santé publique. Alors que de nombreux chercheurs

en climatologie remettent en cause le lien direct entre variabilité climatique et instabilité civile, il ne fait aucun doute qu'en atténuant et en inversant le phénomène de détérioration de l'environnement en Syrie, ainsi qu'en restaurant la sécurité alimentaire et les systèmes de santé publique, de futurs troubles pourront être évités dans la région.