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Climate change and the Syrian civil war revisited

Jan Selby [a, *], Omar S. Dahi [b], Christiane Fröhlich [c, d], Mike Hulme [e]

[a] Department of International Relations, University of Sussex, Brighton, BN1 9QN, UK
[b] School of Critical Social Inquiry, Hampshire College, 893 West Street, Amherst, MA 01002, USA
[c] Center for Earth System Research and Sustainability (CEN), University of Hamburg, Grindelberg 7-9, 20144 Hamburg, Germany
[d] Institute for Peace Research and Security Policy (IFSH), University of Hamburg, Beim Schlump 83, 20144 Hamburg, Germany
[e] Department of Geography, King's College London, Strand, London, WC2R 2LS, UK

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1. Introduction

In the view of many Western policymakers and commentators, the Syrian civil war was caused, in part, by anthropogenic climate change. Former US President Barack Obama claimed that climate change-related drought 'helped fuel the early unrest in Syria, which descended into civil war' (Obama, 2015); former Secretary of State John Kerry argued that 'it's not a coincidence that immediately prior to the civil war in Syria, the country experienced its worst drought on record' (Kerry, 2015); erstwhile Democratic presidential candidates Martin O'Malley and Bernie Sanders have claimed similarly (Democracy Now!, 2015; Schulman, 2015); and in the UK, Prince Charles has 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' (Mills, 2015). International organisations (e.g. the World Bank: Verme et al., 2016: p. 33), leading NGOs (e.g. Friends of the Earth: Bennett, 2015), official governmental and intergovernmental reports (e.g. Adelphi et al., 2015; King et al., 2015), defence think tanks (e.g. CNA Military Advisory Board, 2014: pp. 13–14), academics (e.g. Cole, 2015; Malm, 2016), activists (e.g. Brand, 2015) and commentators of various political persuasions (e.g. Box & Klein, 2015; Friedman, 2012, 2013) – all have argued similarly.

For its advocates, this Syria-climate change thesis is powerful not so much for its own sake, but because it illustrates the chaos that may ensue as greenhouse gas emissions rise. Climate change, runs the common policy refrain, is a 'threat multiplier' (CNA Military Advisory Board, 2007: p. 44) which will cause 'more drought, more famine, more mass displacement – all of which will fuel more conflict for decades' (Obama, 2009). The Syria case appears to confirm this, showing that the conflict effects of climate change are already with us, and lending extra credibility to warnings of future climate-driven instability. The Syria example, in turn, has potentially important policy implications, especially for the ways in which political, military and development institutions might prepare for and adapt to the changing global climate. The Syria-climate change link has been widely invoked, for example, in discussions about Europe's migrant and refugee crisis, with European Commission President Jean-Claude Juncker (2015) identifying climate change as one of the 'root causes' of the new migration, others suggesting that those displaced Syrians arriving in Europe are 'climate migrants' and 'climate refugees' (e.g. Baker, 2015; Dinshaw, 2015b), and still others arguing that the numbers currently arriving in Europe will inevitably rise as the planet warms (e.g. Hockenos, 2015; O'Hagan, 2015).

For all this, there is good reason for caution about the Syria-climate change thesis. Until a few years ago, the 2003–05 war in Darfur was widely identified by Western commentators and policymakers as climate change-related – and even as the 'first climate war' (e.g. Mazo, 2010: pp. 73–86; Welzer, 2012: pp. 61–5) – with UN Secretary General Ban Ki Moon going so far as to claim that 'the Darfur conflict began as an ecological crisis, arising in part from climate change' (Ki Moon, 2007). But such claims have since been discredited, with critics finding among other things that Darfur's war neither occurred during nor was directly preceded by drought (Kevane & Gray, 2008); that there existed no solid evidence linking the Sahelian drought to anthropogenic climate change, in fact possibly the opposite (Dong & Sutton, 2015); and that claims like those of the UN Secretary General misrepresented the political and economic causes, and the essentially counter-insurgency character, of the Darfur war (Verhoeven, 2011; Selby and Hoffmann, 2014a). More broadly, there is no consensus within the growing field of

* Corresponding author.
E-mail addresses: j.selby@sussex.ac.uk (J. Selby), odahi@hampshire.edu (O.S. Dahi), christiane.froehlich@uni-hamburg.de (C. Fröhlich), Mike.hulme@kcl.ac.uk (M. Hulme).

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climate-conflict studies on whether violence and civil conflict are in any way related to climatic variables. Although some studies have identified such linkages (e.g. Hendrix & Salehyan, 2012; Hsiang et al., 2011), others have concluded to the contrary (e.g. Buhaug, 2010; Theisen et al., 2011/12) – as scientific reviews of the field have repeatedly shown (see esp. Field et al., 2014: ch. 12; Gleditsch & Nordås, 2014; also Selby, 2014). Historically, moreover, public and policy discourse on the security and geopolitical implications of climate change has been well ahead of, and often at variance with, the available scientific evidence (Nordås & Gleditsch, 2007; Selby and Hoffmann, 2014b). Given this background, it cannot be just assumed that the Syria-climate conflict story is valid: further critical scrutiny is required.

This paper seeks to provide this, offering a systematic interrogation of the claimed links between anthropogenic climate change and the Syrian civil war. We start by summarising the evidence for this thesis before turning, in the main body of the article, to the three principal sub-theses which inform it: that anthropogenic emissions of greenhouse gases contributed to Syria's drought; that this drought led to large-scale migration; and that this drought-related migration was an important factor in Syria's early unrest. Each of these sub-theses we find to be seriously flawed; and on this basis we conclude that there exists no convincing evidence that climate change contributed to the onset of Syria's civil war and that, unless new evidence emerges, the Syria case does not support 'threat multiplier' views of the impacts of climate change.

2. The Syria-climate conflict thesis

Three separate studies provide the underpinning evidence for the Syria-climate conflict thesis: (1) a two page briefing document by Francesco Femia and Caitlin Werrell of the Center for Climate and Security in Washington DC (Femia & Werrell, 2012) which, despite its brevity, was the primary reference point for proponents of the thesis up until 2015 (see e.g. Friedman, 2012; Quinn & Roche, 2014); this briefing has subsequently been extended and published in peer-reviewed form (Werrell et al., 2015); (2) a peer-reviewed article by Peter Gleick, one of the foremost scholars of water issues worldwide (Gleick, 2014); and (3) a further peer-reviewed article by Colin Kelley and colleagues, mostly earth scientists at the universities of California and Columbia (Kelley et al., 2015). All three studies cover similar territory, and turn to many of the same sources. The latter study stands out, however, in having been published in the *Proceedings of the National Academy of Sciences*, and in being the only one of the three studies to deploy climate modelling. Its finding that climate change is 'implicated' in the onset of Syria's civil war was immediately and extensively reported, in outlets ranging from *Nature* (Zastrow, 2015) to the *Daily Mail* (Gray, 2015) – indeed it is already one of the top ten most media-cited climate change studies of recent years (McSweeny, 2015) – such that it has now become the standard reference point for all claims and reports on the subject. A further article by Francesca De Châtel (2014) is sometimes also cited in support of Syria-climate conflict arguments, but is overall quite critical of them and provides little backing for the claims made by Femia and Werrell, Gleick or Kelley et al. (hereafter FGK), let alone for subsequent political statements and media reportage on the subject.

All three studies, and most other discussions of the subject, in essence advance a three-step argument about the role of anthropogenic climate change in the Syrian civil war: firstly, that anthropogenic emissions were, or may have been, a contributory to the severe late 2000s drought experienced in Syria; second, that this drought led to large-scale internal migration; and third, that these internal migrants were an important contributory factor in the 2011 unrest which spiralled into Syria's civil war. It is sometimes also claimed that increases in the price of wheat resulting from climate change-related droughts in China and Russia were a contributory factor to the Arab spring, in Syria included (e.g. Sternberg, 2013) – but this 'externalist thesis' has received much less attention from commentators and policymakers, and is not discussed further here.

Before considering the various specific arguments made within these works, we need first to be clear what is meant when it is claimed that climate change and drought 'helped fuel' or 'sparked' or 'contributed to' or 'is implicated in' Syria's civil war. It needs emphasising, to begin with, that despite the odd extreme statement – such as the assertion that 'the Syria war began because of climate change' by the head of a leading political risk consultancy (Channel 4, 2015) – no one seriously believes that climate change and drought were the sole causes of Syria's civil war. Therefore simply pointing to the existence of other causes – of which there were of course many – does not invalidate the Syria-climate conflict thesis. Even allowing for this, however, four distinct causal claims could be and have been made about the role of climatic factors in the onset of Syria's civil war: (1) that they were the *final* cause or *spark* of conflict, as for instance in Friedman's rhetorical suggestion that 'if a drought is bad enough it can help push an already stressed society to the breaking point. Is that what happened in Syria?' (Showtime, 2014); (2) that they were the *primary* causal factor, as for instance in Al Gore's claim that climate change provides 'the underlying story of what caused the gates of hell to open in Syria' (Dinshaw, 2015a); (3) that they were a *significant* contributory factor; and (4) that they were a contributory factor of *unknown or unspecified significance*. All four types of causal claim can be found in the literature, even sometimes with a single report or study. For instance, Kelley et al. (2015: pp. 3241–2) simultaneously suggest that Syria's drought 'had a catalytic effect' in sparking unrest; that this drought may have been a 'primary factor' behind the civil war; alternatively, that it may have been a 'substantial factor', or may have 'contributed to the conflict'; and that climate change is 'implicated in' Syria's civil war. These claims are all subtly different.

For the purposes of our analysis here, such slippages also make it difficult to know by what standard the Syria-climate conflict thesis should be evaluated. Any critique of claim types 1, 2 and 3 would be vulnerable to the counter that claim type 4, and therefore the entire Syria-climate conflict thesis, continues to hold. Yet conversely, it is impossible to demonstrate that climate change *was not a factor at all* in the onset of Syria's civil war, since claims of this type (claim type 4) are essentially unfalsifiable. Given this, instead of asking whether climate change was *actually* a causal factor, of whatever significance, in the Syrian civil war, our approach is to examine the quality of the *evidence* that has thus far been marshalled in support of this causal thesis. More specifically we ask: *is there clear and reliable evidence that climate change-related drought in Syria was a contributory factor in the onset of the country's civil war?*; and, *if and where yes, was it as significant a contributory factor as is claimed in the existing academic and expert literature?* We ask these questions in relation to both the overall Syria-climate conflict thesis, and each of its sub-theses. These questions place the burden of proof on the existing literature to demonstrate the existence of clear linkages between climate change, internal drought and Syria's civil war – rather than on us to undertake the impossible task of demonstrating their non-existence – whilst also leaving open the possibility that stronger evidence may at some point emerge.

In practice, this leads us to ask several types of question of the existing literature: about the accuracy of its data claims (e.g. was Syria's drought the most severe on record?); about geographical location and scale (e.g. was there a spatial correspondence between most drought-affected areas and areas of highest out-migration?); about temporality (e.g. to what extent did migration levels during