

Contextualising Climate Conflict

Part 1 – Effects of Climate Change on the Global South

This section will focus on the effects of anthropogenic climate change, and their concentration on the Global South. It will consider the role of the Global North in contributing to climate change before outlining why the South is geographically more vulnerable. This will then be illustrated by two examples of extreme weather induced by climate change in Syria and Nigeria respectively.

Context: Historical Emissions

Before we look at the effects of climate change, it is important first to consider its causes. This paper focuses on anthropogenic climate change caused by the human emission of greenhouse gases. As such it makes sense to consider which countries are the greatest emitters.

In 2014, China was the world's biggest emitter of greenhouse gases, responsible for 25.9% of the global total, followed by the United States which is responsible for 14.8% (CAIT Climate Data Explorer, 2017). However, looking at the raw data doesn't take into account the fact that the United States and Europe industrialised many years before China. When the historical accumulation of emissions is taken into account, the US and EU are easily the two biggest historical polluters having produced between them over half of all greenhouse gas emissions (not including land-use, land-use change and forestry) from 1850-2010 (Ekholm and Lindroos, 2015, p.11). Other countries in the Global North such as Russia and Japan have also historically emitted far more greenhouse gases than most countries in the Global South on a per-capita basis (p.13). Part 3 will examine the way in which this early industrialisation enabled countries in the North to establish exploitative colonial dominance over the South.

We can therefore conclude that, historically speaking, responsibility for the effects of climate change lies largely with the Global North.

Exposure of the Global South

The effects of climate change will not be shared evenly around the world. Climate models predict that it is countries in the Global South, who have contributed the least to climate change, which will be most exposed to its effects.

As average global temperature rises, countries in the South, particularly those in tropical areas, will see the largest increase in temperature variability (Bathiany et al., 2018). In contrast, most countries in the North will actually see a decrease in temperature variability associated with the loss of polar sea ice. This is a concern for countries in the South because increased temperature variability has consistently been linked with greater occurrence of extreme weather such as heatwaves and droughts (McCabe et al., 2008; Schär et al., 2004). Bathiany et al. explicitly highlight that 'countries with the smallest [per capita greenhouse gas] emissions tend to have the largest increases in [temperature] variability' (2018, p.7).

This injustice regarding the discrepancy between contribution towards climate change and the bearing of its effects can already be seen, as illustrated the examples of Syria and Nigeria.

Syria

In the lead up to the outbreak of the Syrian Civil War, the country was subject to a long period of drought. Many researchers argue that this drought was made more likely and more severe by the effects of anthropogenic climate change.

Hoerling et al. (2012) identify a long-term trend after about 1970 'toward drier conditions with increased drought frequency' across the Mediterranean region as a whole. Their analysis compares precipitation in the years 1971-2010 with precipitation in the years 1902-1970. Figure 1 demonstrates how this long term drying trend is most severe in the Eastern Mediterranean, including Syria. Moreover, they attribute the recent increase in drought to 'the region's sensitivity to anthropogenic greenhouse gas and aerosol forcing' – from this we can draw that Syria's increased risk of drought in recent years is attributable to man-made climate change.

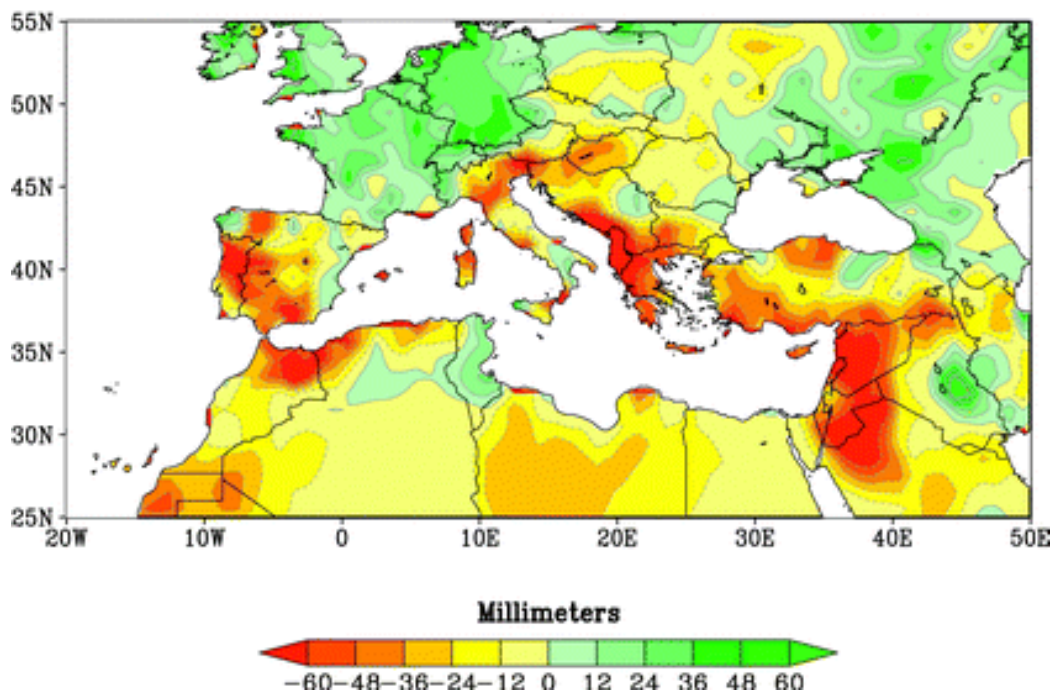


Figure 1- Observed change in cold season precipitation for the period 1971-2010 minus 1902-1970 (Hoerling et al., 2012, p. 2147)

A World Bank report in 2008 warned of the risks of climate change to the Middle East and North Africa (MENA) region, stating that 'higher temperatures and reduced precipitation will result in higher frequency and severity of droughts'. The report also cites 'water scarcity' and 'high dependency on climate-sensitive agriculture' as reasons why the region is particularly vulnerable to the effects of climate change (World Bank, 2008).

It would appear, then, that this increased risk of drought was a major cause of the rainfall shortage Syria experienced from 2006 to 2011. However, reports about the severity of the initial drought vary wildly. Gleick describes this as a 'multiseason, multiyear period of extreme

drought', in contrast to previous recorded droughts in the region which 'lasted only one season' (Gleick, 2014). One 'expert' even goes so far as to describe it 'the worst long-term drought and most severe set of crop failure since agricultural civilisation began in the Fertile Crescent many millennia ago' (quoted in Nabhan, 2010). De Châtel recognises the severity of the drought, noting particularly that 'the 2007/08 season registered as the worst regional drought in 40 years', but plays down its significance somewhat, arguing that 'it was not a sudden, catastrophic event' as some commentators have suggested (De Châtel, 2014).

The most scathing criticism of the literature surrounding the Syrian drought comes from Selby et al. (2017). They attack commentators such as Gleick who, Selby et al. argue, allegedly play up the severity of the drought in the lead up to the Syrian Civil War. They argue that none of the previous commentators have looked at rainfall data for Syria specifically, focusing instead on the much wider region of the Fertile Crescent. Selby et al. analyse rainfall data across Syria specifically and find evidence of a severe drought in northeast Syria from 2006/07 – 2008/09, but it was 'not a five-plus year drought, and did not affect the whole of Syria'. However, as we shall see, this northeast region is Syria's breadbasket region, so a severe drought here does indeed have consequences for the whole of Syria (Worth, 2010).

In summary, although the Syrian drought may not have been as widespread or long-lasting as some reports indicated, it was still relatively unprecedented and the area worst hit was one of crucial agricultural importance to the country.

Nigeria

Nigeria and its surrounding region is another area thought to have suffered from the effects of climate change in recent years. The country has been hit by a combination of rising temperatures, decreased rainfall and the drying up of surface water bodies (Akpodigaga-a and Odjugo, 2010).

Rising temperatures have already had a significant impact on Nigeria and the wider West African region. Mean air temperature in Nigeria has increased by 1.1 °C from 1901-2005, far greater than the global average increase (Akpodigaga-a and Odjugo, 2010). Moreover, in the last 30 years alone, the north of the country and neighbouring Niger have seen 'temperature increases of between 0.5 °C and 1 °C' (Werz and Hoffman, 2016). According to a special report by the United States Institute for Peace (USIP), the climate of Nigeria is likely to see 'growing shifts in temperature... throughout the twenty-first century', suggesting this problem will only worsen (Sanye, 2011).

Closely linked to this is a decline in regional rainfall. Average annual rainfall in Nigeria dropped by 81mm from 1905-2005 (Akpodigaga-a and Odjugo, 2010). The country's north, already short of rainfall, has seen a decrease of 25% in its rainfall in just 30 years (Sanye, 2011). It is not surprising that, simultaneously, drought risk in the region has also increased (Werz and Hoffman, 2016).

A combination of increased temperatures, decreased rainfall, and over irrigation has rapidly depleted water bodies, most notably Lake Chad which used to span four countries including northern Nigeria (Torelli, 2017). 25 million people rely on the lake as a water source but since 1960 its size has reduced twenty-fold (Werz and Hoffman, 2016), something attributed in part

to persistent droughts the region faced in the latter half of the twentieth century (Gao et al., 2011; Sanye, 2011). This decline in rainfall and increase in temperatures has similarly led to desertification and the encroachment of the Sahara Desert into the country (Akpodigaga and Odjugo, 2010).

In summary, gradual trends in rainfall, temperature and surface water suggest that there has been a negative impact on the climate of Nigeria, especially in North of the country. There is a general consensus that 'human factors have been proven to be responsible for... climate change' in the country (Akpodigaga-a and Odjugo, 2010, p.47; Odjugo and Ikhuria, 2003).

Part 2 – From Rural Crisis to Violence

Some sensationalised media coverage of climate conflicts implies that conflict is an inevitable result of climate change (Welch, 2015; Johnston, 2017) but this is not so. This section will look at how relatively modest climatic shifts can be transformed into rural crises that foster violence.

To first see why climate change need not necessarily lead to conflict, consider the effect of the recent prolonged drought in California, likely a result of anthropogenic global warming (Diffenbaugh et al., 2015). Aside from modest economic losses, the state has shown a great level of resilience to a prolonged period of drought (Howitt et al., 2015) and certainly hasn't experienced the famine, migration and violence seen in less developed countries.

As we have seen, countries in the Global South are most exposed to the physical effects of climate change. What is especially worrying is that these countries are, in general, less equipped to cope with the effects of such extreme weather occurrences. Dell et al. find 'substantial effects of temperature shocks [on economic growth], but only in poor countries' where 'a 1°C rise in temperature in a given year reduces economic growth by 1.3 percentage points on average' (2012, p.92). Weaker political institutions in these countries can result in lack of, or poorly managed, government intervention to deal with extreme weather, further exacerbating the effects of extreme weather as was the case in both Syria and Nigeria.

Syria

There is a growing body of research which challenges the simplistic assumption that unrest in Syria was caused directly by climate change, highlighting instead the incompetence of the al-Assad regimes (De Châtel, 2014; Fröhlich, 2016; Selby et al., 2017).

One reason to doubt how direct the link is between climate change in the region and the ensuing conflict is that neighbouring countries did not experience a similar uprising. Selby et al. (2017) point out that existing literature on the Syrian civil war fails to make use of country-specific data (p.234). Instead, it draws upon much broader regional weather patterns across the Fertile Crescent or even the entire Mediterranean Basin. Such an explanation makes it difficult to understand why such unrest would be unleashed in Syria but not in countries that experienced similar physical climatic effects.

One possible explanation of why Syria was affected so much more by climate change is that the crisis was facilitated by catastrophic government water management. Criticism of this predates the eruption of the civil war in 2011. Jessica Barnes, in 2009, wrote an article criticising the ruling Ba'ath Party for generating water scarcity by aggressively promoting irrigated crops. Unlike the country's traditional rain-fed agriculture, irrigation puts much more pressure on 'surface and groundwater resources'. The party's agrarian roots provided a 'political motive' for intensive rural development whilst a strategic and economic motive can be found in the 'government's policy choice to strive for food self-sufficiency and promote high water-demanding cotton for export' (Barnes, 2009, p.520). These policies were started by Hafez al-Assad, 'the first ruler in Syria's history of peasant origin' and were continued by his son, current President Bashar al-Assad.

Moreover, the government's response to the drought when it hit was to cancel state subsidies relied on by farmers. This in effect 'multiplied the price of diesel fuel and fertilizer overnight', meaning farmers struggled to pump water, transport food to market and fertilize crops. The effect of this price-hike 'formed a greater burden [on farmers] than the successive years of drought' (de Châtel, 2014, p.526). de Châtel goes on to describe 'two realities' under which the Syrian water sector operates: the official 'façade' of a modernizing sector facing natural constraints, and 'the reality on the ground of an inefficient, corrupt and rigid management system' (p.529).

This mismanagement of the economy and the state's resources played both a direct and an indirect role in bring about the mass protests which, following a repressive government reaction, evolved into the Syrian Civil War.

Using interviews conducted with Syrian protesters as evidence, Fröhlich (2016) cites state 'mismanagement' as a direct cause of the protests, noting that this was a more significant cause than simple 'environmental drivers'. In addition, this mismanagement contributed to internal migration as farmers from the hard-hit North-East region 'migrated to urban areas and the southern governorates in search of work' (de Châtel, 2014). Although these migrants may not have been able to initiate social unrest themselves 'for lack of reliable social networks', the increase in 'the numbers of migrants on... agricultural production sites' added to the 'decline of the social contract between the government and the population' (Fröhlich, 2016), meaning that state mismanagement had an indirect effect on social unrest via the process of internal migration.

A combination of incompetence and corruption turned what ought to have been a relatively minor drought into a national crisis.

Nigeria

Several commentators have drawn the link between climatic strains in Nigeria's Northern region, and an increase in conflict, particularly in relation to the rise of the Boko Haram Insurgency (Derby, 2017; Doukhan, 2017; Nugent, 2018). The effects of climate change on the country have exacerbated long-standing inequality between the North and South of the country brought about by reckless government policy.

One particular area of concern is Lake Chad which, as outlined above, is relied on by many as a source of crop irrigation but which has shrunk dramatically in size in recent years. 'Chronic drought' in this region has forced hardship upon farmers and eroded 'the legitimacy of state governments' (Darby, 2017). The increased competition for resources around Lake Chad has prompted conflict between farmers in the north-east region of Nigeria and nomadic herdsman in search of pastures for their livestock (Nugent, 2018). Such conflicts may 'contribute to the overall instability and fragility, thus creating more hospitable conditions for Boko Haram to mobilize support' (Nett and Rüttinger, 2016). In addition, the loss of livelihood associated with the desertification of the region drives people into crime and arms trading (Nett and Rüttinger, 2016) creating a 'ripe recruiting ground for Islamic extremism' (Darby, 2017). The climatic strains on the region have enabled Boko Haram to continue to pose a threat even in light of recent heavy defeats at the hands of the Nigerian military (Doukhan, 2017). By poisoning water sources in areas where they have been pushed back, the group have been able to exploit the scarcity of resources for strategic gain (Nett and Rüttinger, 2016).

Nevertheless, we must not overstate the significance of climate factors in the origins of conflict in Nigeria. Whilst Nigeria has experienced recent climate-related strains on its water resources as outlined above, it is still relatively rich in surface and ground water, certainly when compared to many drought-stricken African countries. Nevertheless, 'only 19% of Nigeria's population has access to safe drinking water' with almost half of people in rural areas not even having access to a basic water supply (Odume and Slaughter, 2017). Most significantly, in the North East region of the country, the region from which Nigeria's Boko Haram insurgency originate, an estimated 83% of homes lack a water supply (Gbenga-Ogundare, 2018).

The lack of safe drinking water is due less to the country's climate and more to the government's chronic mismanagement of its water resources and poor response to humanitarian issues. The USIP report referenced above claims that climatic shifts are themselves not enough to prompt conflict in Nigeria. It cites 'poor management and government supply failures, not limited availability' as the biggest causes of water shortages in the country (Sanye, 2011). With respect to Lake Chad in particular, research suggests that the shrinking of the lake was due in a large part to a massive increase in irrigation withdrawals from the lake and the rivers that flow into it, rather than sustained drought (Gao et al.).

More broadly, dissatisfaction with the effectiveness of government to deal with the country's socio-economic issues has been cited as a crucial factor in the rise of Boko Haram (Agbibo, 2013; Onuoha, 2014). Another report from the USIP cites poverty, unemployment and illiteracy among the reasons for why Boko Haram has had success radicalising young Nigerian men (Onuoha, 2014). It claims that the government must do more to 'strengthen education, job training and job creation programs' as well as provide 'aid to destitute children' (p1). In a scathing review of government effectiveness, it lambasts the government's 'high rate of corruption and neglect of citizen welfare' which it sees as causal factors for the insurgency (p7). However, this argument fails to fully capture the regional aspect of the conflict, with violence being concentrated in the country's Northern region. Agbibo (2013) explains through 'relative deprivation theory' which argues that 'violent actions flourish within a context of sustained grievances caused by relative deprivation' (p149). In this majority-

Muslim region 'unemployment and child poverty are rife', whereas the "wealthy elite throughout the country tend to be Christian" (Forest as quoted in Agbiboa, 2013, p151). Thus the regional inequality exacerbates religious tensions in the country.

In summary, the link between climatic strains and conflict in Nigeria must be seen within the context of ineffective government policy. In the short-term, it was mismanagement of water resources during times of drought which helped foster the conditions for unrest. In the long-term, it was a failure to address both absolute and relative deprivation in the North of the country which bred frustration and apathy towards the state.

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