

Chapter 5: Drought in the Middle East – Contrasting Fortunes in Syria and Lebanon

We have here pointed to a connected path running from human interference with climate to severe drought to agricultural collapse and mass human migration. This path runs through a landscape of vulnerability to drought that encompasses government policies promoting unsustainable agricultural practices, and the failure of the government to address the suffering of a displaced population. Our thesis that drought contributed to the conflict in Syria draws support from recent literature establishing a statistical link between climate and conflict.

– *Colin P. Kelley et al. 2015*¹

Amongst other things it shows that there is no clear and reliable evidence that anthropogenic climate change was a factor in Syria's pre-civil war drought; that this drought did not cause anywhere near the scale of migration that is often alleged; and that there exists no solid evidence that drought migration pressures in Syria contributed to civil war onset.

– *Jan Selby et al. 2017*²

In March 2011, Syria descended into a civil war that in its first five years claimed 400,000 lives.³ As researchers tried to understand the circumstances that led up to the civil war, a number of them surfaced a multi-year severe drought that undermined agricultural conditions which, in turn, led to large-scale population movements that ultimately contributed to protests and ensuing violence.⁴ Other scholars have disputed those links, identifying water mismanagement, repression, and other government policies that they believe were the primary drivers of the war.⁵

¹ Kelley et al. 2015, 3245.

² Selby et al. 2017a, 232.

³ CNN 2019.

⁴ Kelley et al. 2015; Gleick 2014; Femia and Werrell 2012; Werrell and Femia 2013; Werrell, Femia, and Sternberg 2015. This sequence was captured vividly in comic strip form by Quinn and Roche 2014.

⁵ Selby et al. 2017a; Fröhlich 2016; Châtel 2014. The back and forth has led to a vigorous exchange between those dismissive of the links between climate factors and conflict and those supportive of those connections. Kelley et al. 2017; Gleick 2017; Hendrix 2017b; Hendrix 2017a; Werrell and Femia 2017.

Debates about the relative importance of different factors in the lead up to the Syrian civil war are likely unproductive, as they similarly were when Alex de Waal and Thomas Homer-Dixon debated the causal contribution of climate change to the onset of civil war in Darfur, Sudan in the mid-2000s.⁶ Such debates replicate the problem Marc Levy identified in his critique of the environmental security literature of the 1990s.⁷ By taking a single country and exploring whether climate drivers were associated with the civil war, scholars have not been able to explain why climate exposure led to conflict in that instance but not others. Here is where comparative case studies can have value. As in the discussion between de Waal and Homer-Dixon, the debate quickly descended into a discussion of relative causal weight for which qualitative methods are not especially well-suited.⁸

As in the last chapter, droughts do not lead to humanitarian emergencies in all situations, nor do they always lead to civil war. If drought did in fact contribute to the Syrian civil war, we have to isolate the conditions that facilitated the violence alongside the drought. To do that, we need a comparable case that is enough alike to the Syrian case to be plausible but that failed to have a civil war in the wake of severe drought. While there are no perfect comparison cases, the neighboring state of Lebanon offers some comparability, in terms of the kind of climate, agricultural conditions, and some similar cultural and linguistic characteristics.

⁶ Homer-Dixon 2007; de Waal 2007.

⁷ Levy 1995.

⁸ George and Bennett 2005, 25; Bennett 2016, 36.

Lebanon experienced a severe drought around the same time as Syria. Lebanon has known civil war in its not too distant past – from 1975 to 1990 – and has had something of a fragile peace since. A fifteen-year occupation by Syria came to an end in 2005 in the wake of the assassination of prime minister Rafic Hariri. Israel carried out bombing raids on Lebanon to pursue Hezbollah in July 2006. More than a million refugees poured into Lebanon in the midst of the Syrian civil war that started in 2011, coming to comprise about 20% of the country's population.⁹ And still, Lebanon did not experience another civil war. By the end of 2019, Lebanon was teetering on the verge of political revolution but without the kind of violence that buffeted Syria. If drought in fact was a catalyst for the Syrian civil war, why has Lebanon not experienced one of its own?

The first section of this chapter provides an overview of the criteria for case selection and reviews the cases covered and how these relate to my theoretical expectations. The second section contrasts the Syria and Lebanon experiences with each other to show why Lebanon avoided Syria's fate. This section reviews hazard exposure and presents data on capacity, inclusion, and assistance. The third section puts the pieces together in a synthetic narrative of why Syria and Lebanon experienced different outcomes after droughts. The fourth section explores alternative explanations.

⁹ Government of the Netherlands 2019, 5.

Expectations and Case Selection

Before outlining the rationale for comparing Syria and Lebanon, it is worth exploring claims made in the debate over existing accounts of climate and the Syrian civil war. A number of scholars, advocates, and journalists have argued that climate change is one of the causal factors that led to the Syrian civil war. While these narratives of the genesis of the civil war highlight other factors including the brutal repression by the Assad regime, they highlight the role played by climate change. They focus on the effect of a multi-year drought that roughly started around 2006, which contributed to major declines in agricultural production, reduced rural livelihoods, and led to a significant exodus from rural areas to urban areas. In the telling of this climate-conflict narrative, those migrants in turn stressed urban locations, adding to pressures for employment and services that, in turn, served as a source of resentment and recruitment for rebel movements when the conflict began in 2011.

Kelley and Gleick have captured the academic version of this narrative, though arguably their contribution is stronger on the physical science of the drought.¹⁰ Werrell and Femia from the Center for Climate and Security have provided a quasi-academic, think tank version of the narrative, connecting the drought to security outcomes.¹¹ This causal story has been re-told in documentaries such as *The Age of Consequences* and *Years of Living Dangerously*, the latter with

¹⁰ Gleick 2014; Kelley et al. 2015.

¹¹ Werrell, Femia, and Sternberg 2015; Werrell and Femia 2013; Femia and Werrell 2012. See also this account from former U.S. diplomat Polk 2013b.

claims made by journalist Tom Friedman where he interviews rebel combatants who claim to be former farmers whose livelihoods were affected by the drought.¹²

The factual basis of the claims have been disputed by other social scientists, namely a paper by Selby et al. that disputes (1) the claim that anthropogenic climate change can clearly be ascribed as the cause of the drought, (2) that the drought caused migration on the scale that others have claimed, and (3) that the drought-related migration can be credibly claimed to have a influential role in the onset of the Syrian civil war.¹³ de Châtel also downplayed the importance of climate change as a causal factor in the Syrian civil war, focusing on water mismanagement and the removal of fuel subsidies as more important drivers of problems in Syria's agricultural sector.¹⁴ Fröhlich disputed the notion that climate migrants were heavily involved in the protests against the Syrian regime.¹⁵

Much of the debate between Selby and Kelley and Gleick rests on semantic and methodological disagreements over the meaning of cause and how to ascribe relative causal weight in case studies. Selby et al. concede that climate change could have been a factor in the civil war but then write:

it is worth reflecting on what Gleick and Kelley et al. mean when they insist that climate change was a contributory factor to the uprising. Does this mean that climate change-related drought was one of a small handful of factors behind Syria's descent into civil war; or that it was one amongst a thousand, or even a million, others? Is their claim that climate change was a significant factor behind the uprising; or that it was a frankly trivial one? We do not know.¹⁶

¹² Friedman 2013.

¹³ Selby et al. 2017a.

¹⁴ Châtel 2014.

¹⁵ Fröhlich 2016. Gleick, Kelley, and others vigorously responded to the Selby et al. critique with their own claims about weaknesses in the Selby et al. piece and the strength of their claims. Kelley et al. 2017; Gleick 2017; Hendrix 2017b; Selby et al. 2017a; Hendrix 2017a; Werrell and Femia 2017.

¹⁶ Selby et al. 2017b, 253.

Gleick responds that they disagree over the relative importance of climate drivers:

They try to parse the difference between whether something is a “significant” cause or a “contributory” factor and judge based on “significance.” The difficulty in this approach is that “significant” is a meaningless term without quantification, but the authors do not attempt to quantify it... At the same time, the authors regularly suggest that they agree that there was some non-zero role or link among these factors. If the only real complaint is a disagreement about the relative contribution of the many, complex factors involved, that is a far simpler and more justifiable paper.¹⁷

As noted already, I am reminded of the similar debate between Alex de Waal and Thomas Homer-Dixon over the Darfur civil war in the early 2000s which then-United Nations Secretary General Ban Ki-Moon labeled as the first climate war in a provocative op-ed in the *Washington Post*.¹⁸ In an exchange, de Waal and Homer-Dixon vigorously debated climate change’s importance. De Waal downplayed climate factors as important, suggesting that political factors were far more important drivers.¹⁹ Homer-Dixon for his part disputed that qualitative case studies can get at relative causal weight, particularly for complex causal mechanisms with feedback loops.²⁰ In his view, the test is whether one can plausibly tell the story of a conflict without the climate hazard. If one cannot, then you have to include it as part of the causal analysis. The problem has as much to do with the slipperiness of the causal language we use. By cause, do we mean the factor that was the tinder or trigger that precipitated an event? Or, do we mean as part of the background conditions or trends that made a particular outcome more likely?

¹⁷ Gleick 2017, 249.

¹⁸ Ki-Moon 2007.

¹⁹ de Waal 2007.

²⁰ Homer-Dixon 2007.

Scholars are not always careful in these distinctions. Indeed, Selby et al. pointed out four different possible uses of causal analysis by scholars and commentators of the Syria case: (1) as the final spark for the conflict, (2) the primary causal factor (3) that climate was a significant contributory factor, and (4) a causal factor of unknown or unspecified causal weight.²¹ They argue the claim that climate change had no role in the onset of the conflict is itself unfalsifiable so they attempt, instead, to evaluate the robustness of the evidence for the claims of a connection along the causal chain from drought to conflict, namely (1) that the areas affected by drought were the same ones that were sources of out-migration (2) that there was a significant spike in out-migration after the drought compared to normal migration patterns (3) and that claims for redress of grievances were related to the drought²² Here, Selby et al. raise legitimate concerns about the strength of the evidence connecting each piece of the causal chain.

The Selby critique does not dispute that there was a major drought that affected parts of Syria, namely the northeast, but faults the other studies for exaggerated claims about the long-term secular decline in rainfall in the region and our ability to detect an anthropogenic climate change signal in claims of attribution about the drought. Kelley's claims of long-term drying are not so central to the argument.²³ Most other scholars see the 2006-2010 period drought as the trigger for the conflict, rather than a long-term background condition. Even if one disputed

²¹ Selby et al. 2017a, 234.

²² Ibid.

²³ There is other evidence supporting related claims. Hoerling et al. found since 1902 that 10 of the 12 driest winters in the Mediterranean occurred between 1990-2010. Climate change was thought responsible for about half of that drying. Hoerling et al. 2012, 2146–2147.

the long-term drying trend, there is still evidence of a severe drought which could have acted as the trigger. As I argued in the previous chapter, whether Syria's drought was attributable to anthropogenic climate change is also less important than the presence of a drought itself.²⁴ Scholars are looking to proxies for the expected effects of future climate change on security outcomes. If climate change is expected to yield more extreme droughts in the region in the future, which is what scientists expect, then the 2006-2010 drought is a useful case, even if some dispute the clarity of the climate signal in that particular drought.²⁵

Hendrix, in reflecting on the climate connections to the Syrian civil war, makes some additional observations on causal pathways. He problematizes the process of causal inference in single cases. He argues that our conjectures about causality in case studies often assume certain factors are necessary conditions, but the more appropriate way to think about causality is probabilistic: "That is, climate shocks are probabilistically causal in the sense that they make something more likely. They are not deterministically causal in the sense that they are wholly responsible for the outcome." He goes further to note that "That is, the evidence is stronger in the aggregate than as evident in any individual case."²⁶ As a largely quantitative social scientist, Hendrix's bet is that we can identify the central tendencies of causation from hundreds of cases, but it is perhaps a fool's errand to try to single out the causal role in individual cases:

²⁴ Again, there is evidence that the drought of the severity and duration of the Syrian drought was made twice as likely because of climate change. Kelley et al. 2015, 3241.

²⁵ Regional climate models project higher average temperatures, lower rainfall, days of extreme temperatures, and longer drought periods. Government of the Netherlands 2019, 4.

²⁶ Hendrix 2017a.

When this evidence is marshalled to explain any particular event, however, it often takes on the air of a necessary condition - if but for the climate shock, the event would not have occurred. This claim is almost always impossible to substantiate and invites significant criticism - to wit, the exchange here.²⁷

I agree that the lengthier and more complex causal chain between climate hazards and conflict outcomes complicates the ascription of a causal role to climate hazards. In humanitarian emergencies, it is easier to say but for the cyclone or even slow onset droughts, large numbers of people would not have been at risk of death. That said, I am more persuaded that careful process tracing of the causal sequence can identify the causal centrality of the climate hazard. Following the work of George and Bennett, Collier, and Mahoney on process tracing, I remain convinced that we can isolate the micro-processes connecting cause and effect in individual cases.²⁸

While some of Selby et al.'s specific claims and counter-claims are worthy of further exploration, all of these accounts focus on Syria. Paired cases with other countries that also experienced drought but no civil war are absent.²⁹ Hendrix, in his response to Selby and the original article, argued that the case underscored the need for more contingent causal claims in the literature on climate and security: "Even if and when climate matters, it matters in a specific political, social, and economic context that must be taken into account."³⁰ Paired cases can help identify the scope conditions for causal claims. But, what are the possible comparisons?

Feitelson and Tubi use the comparative case method to compare two river basins in the Middle East – the Euphrates (which includes Syria, Turkey, and Iraq)

²⁷ Homer-Dixon 2007.

²⁸ George and Bennett 2005; Mahoney 2012; Bennett 2010.

²⁹ For a corrective, see Feitelson and Tubi 2017.

³⁰ Hendrix 2017b, 251.

and the lower Jordan River (which includes Israel, Jordan, and Palestinians on the West Bank). They ultimately highlight differences in the societal response to drought between the basins to explain why outcomes in the Euphrates basin were worse. Both basins were affected by drought in this period, but this case selection has its own challenges. Even though drought effects transcend traditional political boundaries, the river basins themselves are not political actors so the basin as a unit of analysis is a challenging one to evaluate differences in societal response. Moreover, the drought effects on production do not appear all that comparable, which may be a function of policies and societal responses of different actors. As they note, the structure of regional economies (with Israel being a post-industrial state with desalinization capacity) made states in the region very different from each other in terms of their vulnerability to drought effects.³¹

As Selby et al. noted, both northern Iraq and southeastern Turkey were also affected by the same drought.³² However, both countries were already experiencing conflict at the time of the drought, making comparison with Syria's civil war onset problematic.³³ Are there other cases that are potentially a better fit? In his comment on the Selby et al. piece and wider discussion Hendrix identifies some possible cases, "The drought that affected Syria also affected neighboring Jordan, Lebanon and Cyprus, yet widespread violence did not occur there."³⁴ I use these observations

³¹ Feitelson and Tubi 2017.

³² Selby et al. 2017a, 234.

³³ Iraq was in the throes of an on-going civil conflict that grew out of the U.S. invasion in 2003. Turkey has long had an insurgency in the southeast of the country in the Kurdish region which was heavily affected by the drought.

³⁴ Hendrix 2017b, 251.

as the point of departure for case selection, ultimately taking the Syria and Lebanon cases as paired cases.

If the stylized narrative of Syria's civil war is correct, then we need a country with a comparable agriculture community to have been affected by drought, with concomitant losses in agricultural production. Lebanon and possibly Jordan may be suitable, albeit imperfect comparison cases for Syria.

Comparing countries from outside the region might be problematic because of very different agro-ecological conditions. Levant countries such as Syria, Lebanon, and Jordan may share a similar climate at the intersection of the humid Mediterranean and the arid Arabian desert, though there still may be significant climatic differences between them. According to the World Bank, Syria's average annual precipitation is 252 mm/year, placing the country 155th in the world. Lebanon for its part is wetter, reaching 661mm/year (for a rank of 114th) while Jordan is drier with 111 mm/year (a rank of 168).³⁵ However, when we compare wider fresh water resources which would include flows from rivers, differences between Lebanon and Syria are less stark. In the period 2007, the per capita resources available in Lebanon were 1,102 m³ per person per year compared to 855.7 m³ in Syria and only 151.3 m³ in Jordan.³⁶ That puts Lebanon just above and Syria just below the threshold of 1000 cubic meters per person per year for water scarcity.³⁷

³⁵ Verner et al. 2018, 38.

³⁶ Food and Agriculture Organization 2019a.

³⁷ Fanack Water 2019.

Even countries that share similar climates might be different in other respects such as the size of their territory and their population, the degree of urbanization, and their dependence on agriculture. In 2007, the last data point for which the World Bank provides data for Syria, the country's GDP per capita in current dollars was \$2032 compared to \$2735 in Jordan and \$5217 in Lebanon.³⁸ Syria is a much larger country than both Lebanon and Jordan (184,000 square km compared to 10,000 and 89,000 square kilometers) and was far less urbanized (55.6%) than either Lebanon (87%) or Jordan (84%).³⁹ In 2008, Lebanon had a much smaller population than Syria – 4.1 million to 20.3 million – but its proportion of the population employed in agriculture was similar to Syria – 13.5% in Lebanon compared to 17.5% in Syria. Jordan, for its part, only had 3.9% of its workforce employed in agriculture.⁴⁰ In 2007, Syria's dependence on agriculture, forestry, and fishing, as a share of GDP, was also greater (19.5%) than Lebanon (4.9%) or Jordan (2.5%).⁴¹

If we think that the economic dislocation of bad harvests set in motion a chain of events that led to the Syrian civil war, the comparison case should have an agricultural sector sizable enough that an unhappy farming class could have stoked a protest movement, a rebellion, or, at the very least, been part of internal population movements of sufficient size to trigger domestic contestation between groups over resources. Given the small size of the agriculture sector in Jordan, it is

³⁸ World Bank 2019d.

³⁹ Verner et al. 2018, 38.

⁴⁰ World Bank 2019c; World Bank 2019e. Other data sources suggest Lebanon's share of agricultural employment in 2008 (2.97%) was more similar to Jordan's (3.57%) than Syria (14.53%). Roser 2013.

⁴¹ World Bank 2019b.

less clear that these conditions are met. Lebanon looks like a more plausible comparison case, though other data sources suggest Lebanon's agricultural employment was not dissimilar to Jordan's. While no case comparisons are perfect, Syria and Lebanon, which were together carved out of the Ottoman Empire and then later cleaved by France into separate polities, are perhaps the best cases for comparison.

Here, we need to show that both countries faced severe droughts. Unlike the chapters on humanitarian emergencies, we also have the more difficult task of showing the lengthier causal chain connecting drought in Syria to civil war and interventions that attenuated that chain in Lebanon. For Syria, that requires connecting the drought to a deterioration in agricultural production and incomes, and, in turn, other steps that might speak to the motivations for political violence and the inability of the Syria state to stem said violence. On the inability side, that would intersect with the Syrian state's incapacity and/or unwillingness to respond effectively to the drought. The Syrian state's failed response to the drought could, in turn, feed the motivations for discontent, including farmers' protests and population movements that further inflamed societal cleavages.

For Lebanon, I should find differences in state capacity and political inclusion from Syria which should help explain why the country did not experience conflict after the droughts that began in 2007-2010. Though droughts created problems and pressures for the populace to demand redress through protest, I expect to see that the Lebanese government provided the public with avenues to express their grievances through the political process. At the same time, I should be able to show

the government was more responsive to these complaints and more effective in its redress of farmers' concerns. In other words, Lebanon had both a more inclusive and capable government, even as it was increasingly tested with the flow of Syrian refugees in to its territory in the wake of the civil war next door. We should also find evidence of foreign finance helping both Lebanese and refugees alike to help dampen the risks of conflict as Lebanon, particularly after 2011 when Syrians migrated en masse fleeing violence.

Table 1: Syria and Lebanon

Country	Hazard Events	Capacity	Institutions	International Assistance	Outcomes
Syria	Droughts 2006-2010	Intermediate capacity → Diminished capacity (2007)	Exclusive	Limited access	Civil war 2011-
Lebanon	Droughts 2006-2009	Intermediate capacity	Somewhat inclusive	Broad-based aid delivery	Protest activity but no civil war

Syria and Lebanon

Syria experienced a devastating civil war in 2011 while Lebanon, despite often being on the verge of political breakdown, has, as of late 2019, yet to descend again in to civil war. If, as I argued in chapter 2, the project of sustaining peace in countries is largely a function of elite bargains about representation and equitable service delivery, we should find evidence to suggest that the Syria state did not have either means or motive to service the drought-stricken communities affected by the 2011 drought, either in areas affected by the drought, mostly in the east of the country, or in the towns and cities many Syrians migrated to after their livelihoods as farmers became untenable.

Lebanon, by contrast, with its elaborate power sharing agreements had both incentive and capability to respond to the droughts, to ensure that farming groups in the Bekaa valley affected by the droughts of 2007/8, 2010, and 2014 did not experience large-scale suffering, discrimination, which, in turn, might endanger the fragile peace that the country enjoyed.

To support this argument, *First*, I need to show that both countries experienced drought. *Second*, I should be able to show differences in state capacity in Syria and Lebanon, though I am less certain that this is central to the differences in outcomes between the two cases. *Third*, I should be able to show that Lebanon had more political inclusion than Syria, what I take to be the key difference between the government structures. *Fourth*, to the extent that both countries relied on international aid in the midst of their on-going droughts, my expectation is that Lebanon, given its more inclusive government, would ensure that resources were shared equitably.

Beyond these general expectations, there are more specific ones. In Syria's case, I should be able to show that the impact could not or was not diminished with irrigation to prevent large declines in agriculture. Moreover, I should find those production declines were not offset with satisfactory compensatory mechanisms to ensure farmers' livelihoods were not drastically reduced. In Lebanon's case, I should be able to show either irrigation-based interventions to prevent large-scale production declines and/or compensation mechanisms to help farmers maintain living standards. Lebanon, given its relative wealth, could have self-financed these interventions or been able to channel international assistance to support farmers.

In Syria's case, different pathways could have led the country down a path to civil war. For the drought to have contributed to civil war, the declines in farmers' income should have also caused sufficient hardship that they became more likely to participate in rebel activity in situ. Alternatively, they may have migrated to other cities where they became recruitable by would-be rebels because of low living standards. Another possible explanation is that migrant populations could have competed with urban populations in their new locations over housing, jobs, and services, making those new sites more subject to political protests that could have escalated into violence.

This explanation does not depend on the migrants themselves having joined the protests or rebel movements in mass numbers. One critique from Fröhlich, based on limited interviews with Syrian refugees, is that there is no evidence linking migrants to having taken part in the initial protests that kicked off the uprising in Syria. Their own precarious standing in new urban areas could have made them less likely to participate in protests and/or violence, but their presence may have led to dissatisfaction from existing residents.⁴² This conjecture is consistent with Salehyan and Gleditsch's work on how migration can lead to inter-group conflict between incumbent populations and migrants (particularly if incumbents respond negatively to newcomers), but this observation is also consistent with the climate and security literature that has noted migrants themselves may be less likely to engage in protest

⁴² Koubi 2017, 201; Koubi 2019, 374.

given their own vulnerability to reprisals from host communities if they engage in political protests.⁴³

Lebanon, given its high urbanization, might have been more at risk of domestic unrest than Syria through another mechanism, the price of food. Drought domestically and internationally could have had an impact on food prices, thus triggering domestic protests. Indeed, the role of increased international food prices has been mooted as one of the primary drivers of the Arab Spring and the emergence of protest politics in Egypt and other North African countries.⁴⁴ Smith showed countries often insulate their populations from the pass through effects of international food increases, but that where there are domestic food price increases, protests are more likely.⁴⁵ Similarly, Hendrix and Haggard demonstrated that democracies and anocracies are more likely to experience protests in the wake of food prices increases, as authoritarian governments are more likely to fear urban unrest as a threat to regime stability and seek to buy off through subsidies and other measures. With more electoral competition in democracies and anocracies, those regimes have to be more responsive to rural constituents, where food subsidies for urban consumers might come at their expense.⁴⁶ Lebanon is an interesting case with a Polity IV score of 6, the threshold between an open anocracy and a democracy, suggesting it might have been vulnerable to food-related protest activities that could have escalated into something more given the fragility of the regime.⁴⁷

⁴³ Salehyan and Gleditsch 2006; Raleigh, Jordan, and Salehyan 2008; Linke et al. 2018.

⁴⁴ Lagi, Bertrand, and Bar-Yam 2011.

⁴⁵ Smith 2014.

⁴⁶ Hendrix and Haggard 2015; Hendrix 2013.

⁴⁷ An anocracy is a mixed regime with democratic and authoritarian features. Syria, for its part, was a -8 in the period 2008-2012 before become fully authoritarian -10 in 2013. Center for Systemic Peace 2018.

This set of explanations captures the motivations for participating in rebel movements but another -- not mutually exclusive explanation -- for the violence in Syria would be the effects of output declines on state capacity itself by decreasing available tax revenue from agriculture. These effects would make it harder for the state to provide essential services to the farmers and/or suppress violence. Such declines in state capacity may very well predate the drought and largely be a function of other social and economic changes that make it harder for the state to afford service delivery or to suppress violence.⁴⁸

It may be difficult to disentangle the effects of the drought itself on state capacity and a longer-run deterioration in capacity wrought by mismanagement. As discussed in more detail, some Syria scholars, for example, identify the roots of the government's problems with respect to agriculture and water management to earlier decisions to pursue food self-sufficiency in water intensive crops such as wheat that could only be sustained with irrigation, which itself was dependent upon fuel subsidies for pumping. When the government removed such subsidies, production collapsed, hastening a further decline in the agricultural sector.⁴⁹ I return to these themes in subsequent sections.

What follows is an attempt to document evidence that supports my expectations for hazard exposure, state capacity, inclusion, and foreign assistance. As in previous chapters, I draw on area studies experts and existing scholarly narratives of the two countries' divergent trajectories.

⁴⁸ Koubi 2017, 201; Koubi 2019, 374.

⁴⁹ Châtel 2014.

Evidence of Hazard Exposure

The point of departure for understanding the two cases begins with a justification for the claim that the two countries experienced severe droughts in similar time frames. In the case of Syria and Lebanon, the droughts were more directly overlapping temporally than the experience of Somalia and Ethiopia documented in the previous chapter.

As I argued in that chapter, there is no universal definition of what constitutes a drought. Some scholars look to rainfall measures for evidence of drought, while others see temperature as a better metric given some challenges of data quality. Some indicators of drought combine information derived from rainfall, temperature, and soil conditions to identify drought periods. Given that we are mostly interested in the impacts on the agricultural sector, it makes sense, as in the last chapter, to identify the impacts of climatic conditions on agriculture, suggesting that growing season conditions matter most.⁵⁰

For both countries, it is easy enough to establish growing season droughts in the period 2006-2010 as well a longer history of rainfall and temperature deviations. As in the previous chapter, I use the rainfall and temperature data from the Climate Research Unit (CRU) at the University of East Anglia. In its climate portal, the World Bank aggregated this station-level data up to the national level to provide monthly means dating back to 1901.⁵¹ I calculated the deviation from growing season rainfall and temperature levels for the main crop, wheat, on a

⁵⁰ This again is inspired by the work of von Uexkull et al. 2016 on growing season droughts. I also use Smith 2014 for the methodology of deviations from rolling 20-year monthly mean rainfall and temperature.

⁵¹ World Bank Undated.

rolling basis for the previous 20 years, extending the analysis back to the 1970s. For both countries, the monthly mean is based on rainfall totals for October-May based on the Food and Agriculture Organization's (FAO) crop calendar.⁵²

For rainfall, that means comparing the monthly rainfall totals for October to the previous twenty Octobers and doing the same for each month between October and May. I then calculate the cumulative deviation for the entire period to show how different the total amount of rain was for that growing season compared to what farmers consider to be normal, for which a twenty year backward time horizon seems reasonable. For temperature, I use the average difference rather than total deviation from normal temperature levels since temperature does not cumulate in the same way as precipitation. I use both rainfall and temperature mostly to check to see if there are years when rainfall levels were not too far below normal levels, but we might see high temperatures creating water stress for crops that might show up in yield declines. As Kelley et al. note, "what matters for crops is soil moisture, which is influenced by temperature as well as rainfall."⁵³ As in the previous chapter, I complement such national level data with subnational portraits of agriculture stress for drought periods of interest using maps from the FAO.

Before presenting that rainfall data, it is worth noting that the challenges of water access for agriculture and other uses become more urgent when accompanied by other changes and problems such as rapid population growth and management of groundwater resources.⁵⁴ In Syria's case, the country's population grew

⁵² FAO 2019a; FAO 2019b.

⁵³ Kelley et al. 2017, 246.

⁵⁴ Null and Risi 2016, 26; Adelphi 2015.

dramatically from nearly 9 million in 1980 to almost 20 million by 2007. The country was also host to some 1 million Iraqi refugees between 2003-2007.⁵⁵ Other severe droughts had buffeted Syria in the 1990s. Syria was also affected by upstream diversion of water by Turkey's construction of dams. Gleick shows the average annual flows of the Euphrates at Jarabulus just down from the Turkish-Syria border declined from about 1000 cubic meters per second between 1937-1989 to about 650 m³ per second between 1990-2010.⁵⁶ Thus, the amount of water availability per capita declined from 744 cubic meters per capita in 1982 to 363 m³.⁵⁷ Such problems are magnified when water is mismanaged, directed towards water-intensive crops such as cotton and wheat, or where irrigation techniques such as flood irrigation use more water than is needed.⁵⁸ This makes it challenging to distinguish climate and environmental stress from population and resource management. Other scholars such as Kahl bundle such dynamics under the broader label of demographic and environmental stress.⁵⁹ While these were important background conditions that shaped the wider resource envelope, there was still a marked decline in rainfall during this period that had a major impact on agricultural production.

For rainfall, the CRU data shows that 2006-2009 were all below normal growing season rainfall years in Syria, with 2008 being 123mm below normal for the growing season, the country's worst drought since 1973. While the 2006-2009

⁵⁵ World Bank 2019e.

⁵⁶ Gleick 2017, 334.

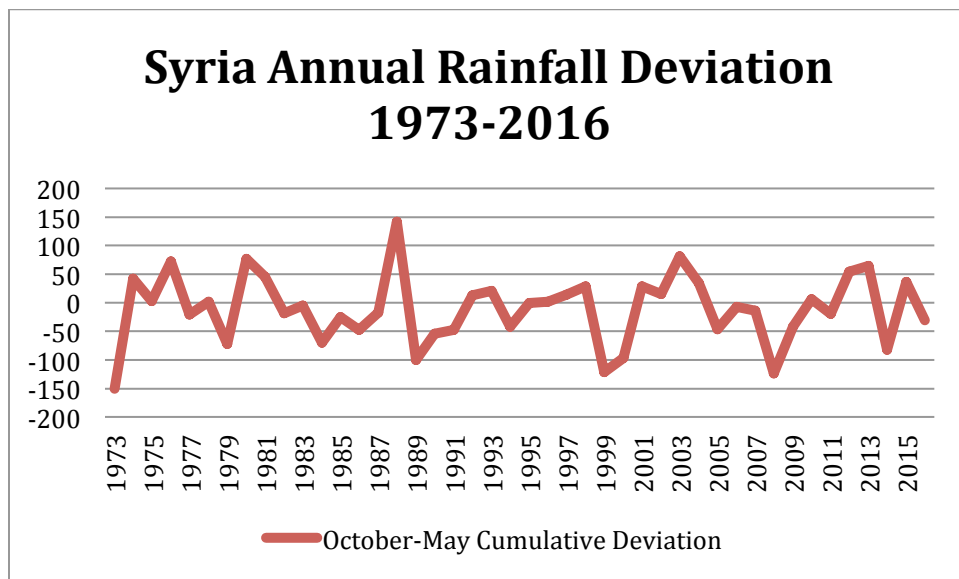
⁵⁷ Ritchie and Roser 2017.

⁵⁸ The New Humanitarian 2010.

⁵⁹ Kahl 2006.

drought is the most severe since 1973, it is not the only multi-year drought over the last 40 years, as 1982-1987 was also a dry period, if not by the same magnitude. Any explanation for why drought contributed to civil war in the contemporary period 2006-2009 ought to be able to explain why another multi-year drought did not result in a similar outcome, arguably when the country's workforce was even more employed in agriculture, with about 30% of the workforce employed in agriculture in 1984 (see Figure 1).⁶⁰

Figure 1: Syria Growing Season Rainfall Deviations 1973-2016

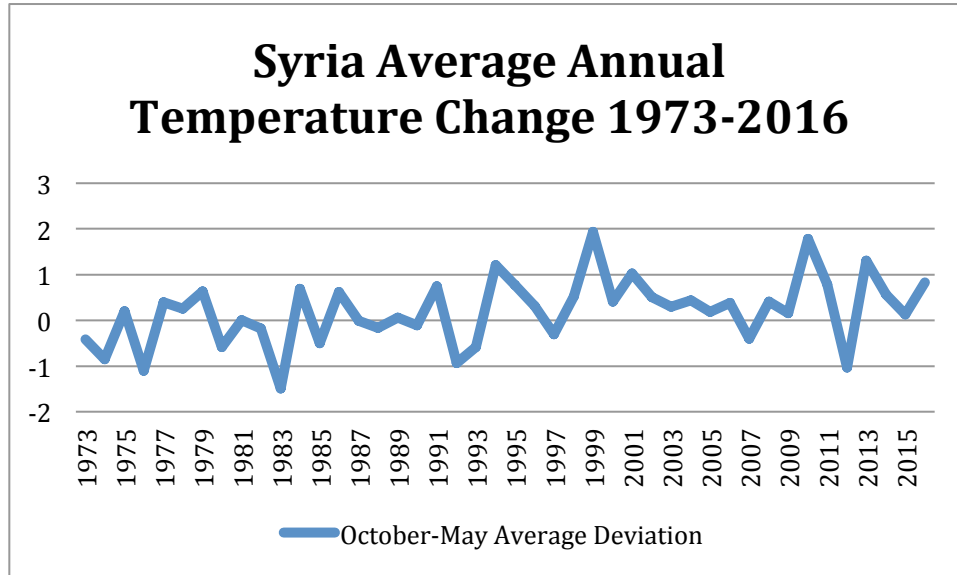


Source: Author's calculations using CRU data

Even as rainfall returned to normal levels in 2010, the temperature data show that 2010 was the second hottest year since 1973 with the average growing season deviation in temperature nearly 2 degrees Celsius above normal (see Figure 2).

⁶⁰ Library of Congress 1988.

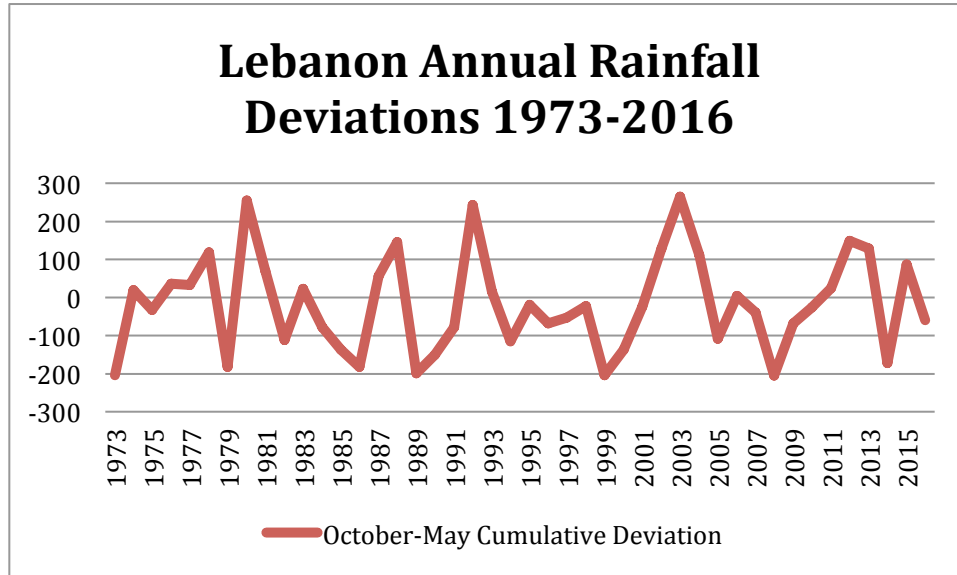
Figure 2: Syria Average Growing Season Temperature Change 1973-2016



Source: Author's calculations using CRU data

In Lebanon's case, between 2007 and 2010, the country experienced four continuous years of below normal rainfall, with 2008 being 200mm below the average growing season rainfall for the previous twenty years. That was the largest negative deviation in rainfall since 1973, though Lebanon has experienced a number of severe single-year droughts over the years including 1979, 1986, 1989, and 1999 (see Figure 3).

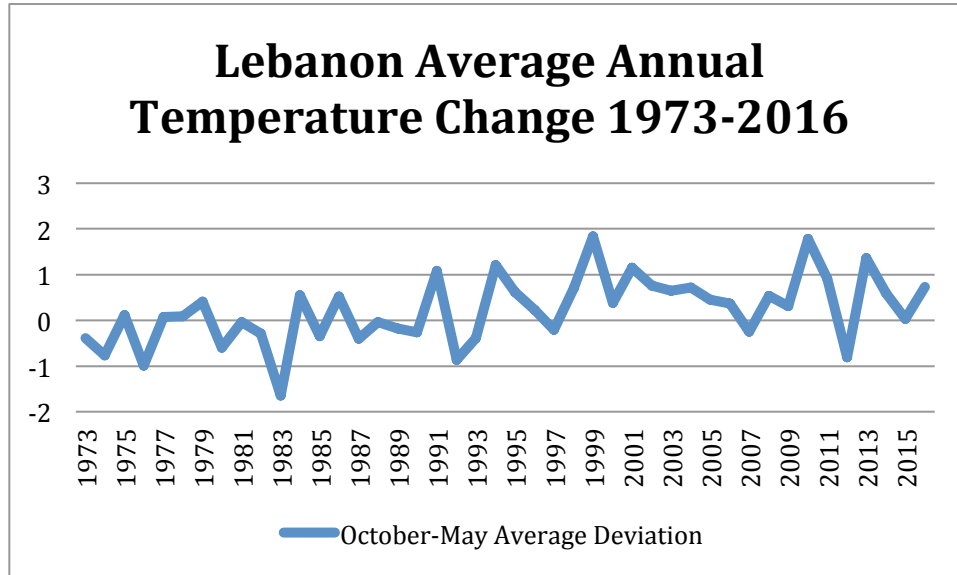
Figure 3: Lebanon Growing Season Rainfall Deviations 1973-2016



Source: Author's calculations using CRU data

The World Bank has identified both 2010 and 2014 as significant drought years, though the rainfall deviation for 2010 – negative 25 mm for the growing season – is not nearly as severe as 2008. However, when we look to large temperature deviations, 2010 was an especially hot year when growing season temperatures averaged nearly two degrees Celsius above normal (see Figure 4).

Figure 4: Lebanon Average Growing Season Temperature Change 1973-2016



Source: Author's calculations using CRU data

Kelley et al. put the drought into context: “Before the Syrian uprising that began in 2011, the greater Fertile Crescent experienced the most severe drought in the instrumental record.”⁶¹ In a subsequent piece, Kelley et al. anchored the drought in the region’s wider history: “And, if instrumental data, model results and theory are not enough, an analysis of a new gridded tree ring dataset of winter/spring surface moisture availability for all of Europe, North Africa and the Middle East (Cook et al. Science Advances, 2015) concluded that 1998-2012 was the driest 15-year period in the Levant in the last 900 years.”⁶² This drought and the drying of the region, they argued, was rooted in anthropogenic climate change: “Analyses of observations and model simulations indicate that a drought of the severity and duration of the recent Syrian drought, which is implicated in the current conflict, has

⁶¹ Kelley et al. 2015, 3241.

⁶² Kelley et al. 2017, 246.

become more than twice as likely as a consequence of human interference in the climate system.”⁶³

Even if the period 2006-2010 was a major drought episode in both countries, the effects were unequally distributed within Syria and Lebanon. We can see the geographic distribution of drought effects by looking at the most intense drought year of 2008 and FAO maps of agricultural stress.⁶⁴ In Syria’s case, severe agriculture stress – where more than 85% of agricultural land experienced drought conditions – extended throughout much of the north of the country in 2008, affecting Hasaka province in the far northeast, Ar Raqqa in the central northeast, and a portion of Aleppo province in the northwest. Small pockets of drought affected other provinces, including the adjoining provinces of Hama and Homs in the center of the country as well as three southern provinces Dar’a (where early protests against the regime occurred), Damascus, and As-Sweida (see Figure 5).⁶⁵ About 75% of the country’s wheat production was historically grown in the northeast of the country.⁶⁶

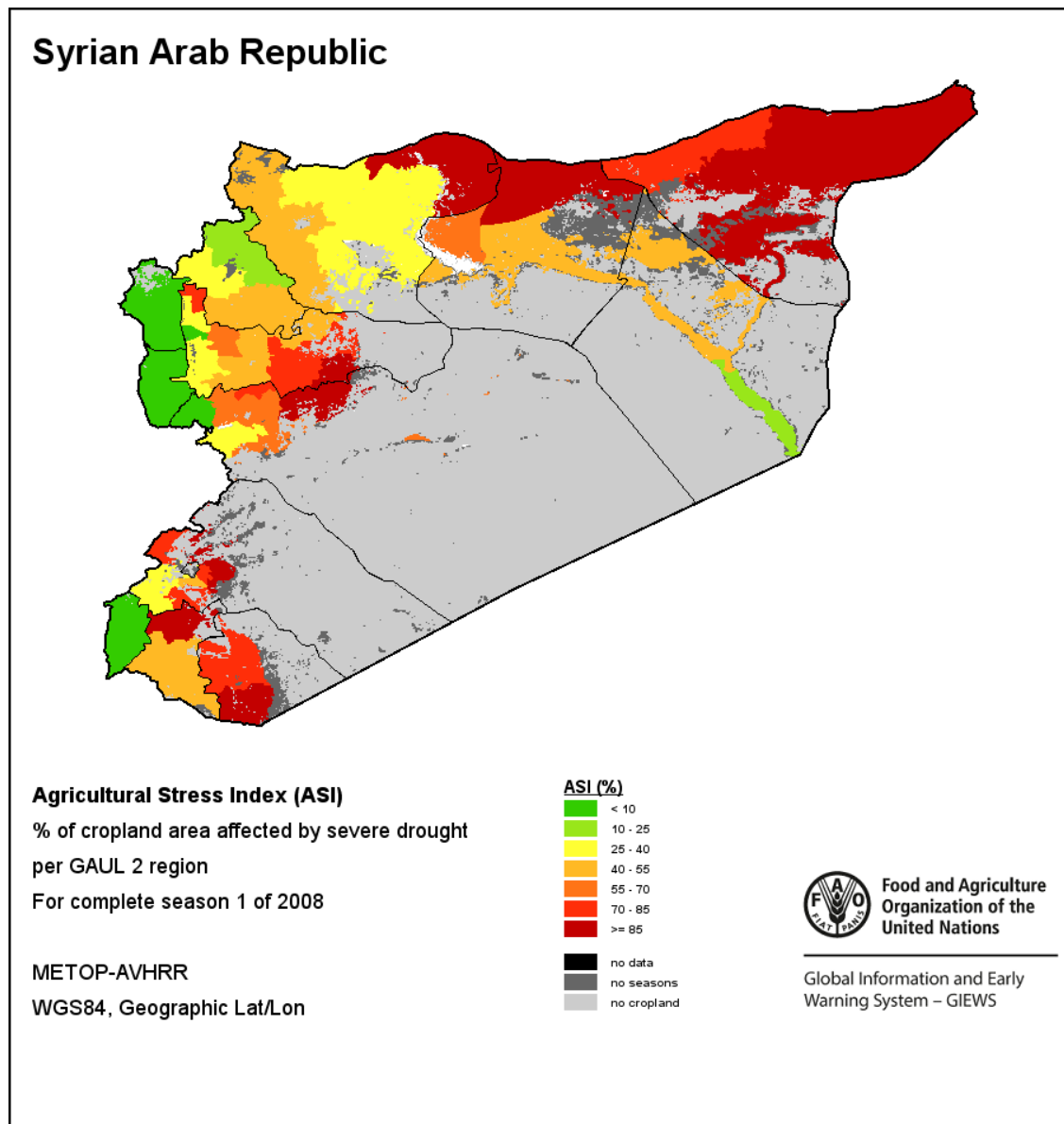
⁶³ Kelley et al. 2015, 3241. Gleick summarized additional science on the likely warming and drying of the Middle East. Gleick 2014.

⁶⁴ The FAO defines this indicator in terms of the extent of cropland affected by drought over the entire crop season: “The Annual ASI depicts the percentage of arable land, within an administrative area, that has been affected by drought conditions over the entire cropping season.” It is based on the Vegetative Health Index and looks at the duration and intensity of crop cycle stress over the growing season. Food and Agriculture Organization 2019b.

⁶⁵ Food and Agriculture Organization 2019d.

⁶⁶ USDA 2008.

Figure 5: Agricultural Stress in Syria in 2008



Source: Food and Agricultural Organization

The areas affected by the drought in the northeast of the country included the heavily Kurdish regions of Hasaka province and the northern part of Aleppo province bordering Turkey. The city of Al Hasakah located centrally in that province is also where a large concentration of Syrians Christians lived. The drought also

affected Druze populations concentrated in the south of the country in Dar'a and As-Sweida provinces. In the center of the country, the drought primarily affected Sunni dominated regions in Homs province.⁶⁷ The rural areas affected by the drought – particularly in the northeast of the country – tended to be the poorest parts of the country. In 2007, average annual per capita expenditures in the rural northeast were less than half -- 2051 Syrian Lira – of their coastal urban compatriots (where the average was 4339 Syrian). Between 2004 and 2007, the country experienced improved equality between regions but a deterioration in incomes in both urban and rural areas and in most regions of the country.⁶⁸

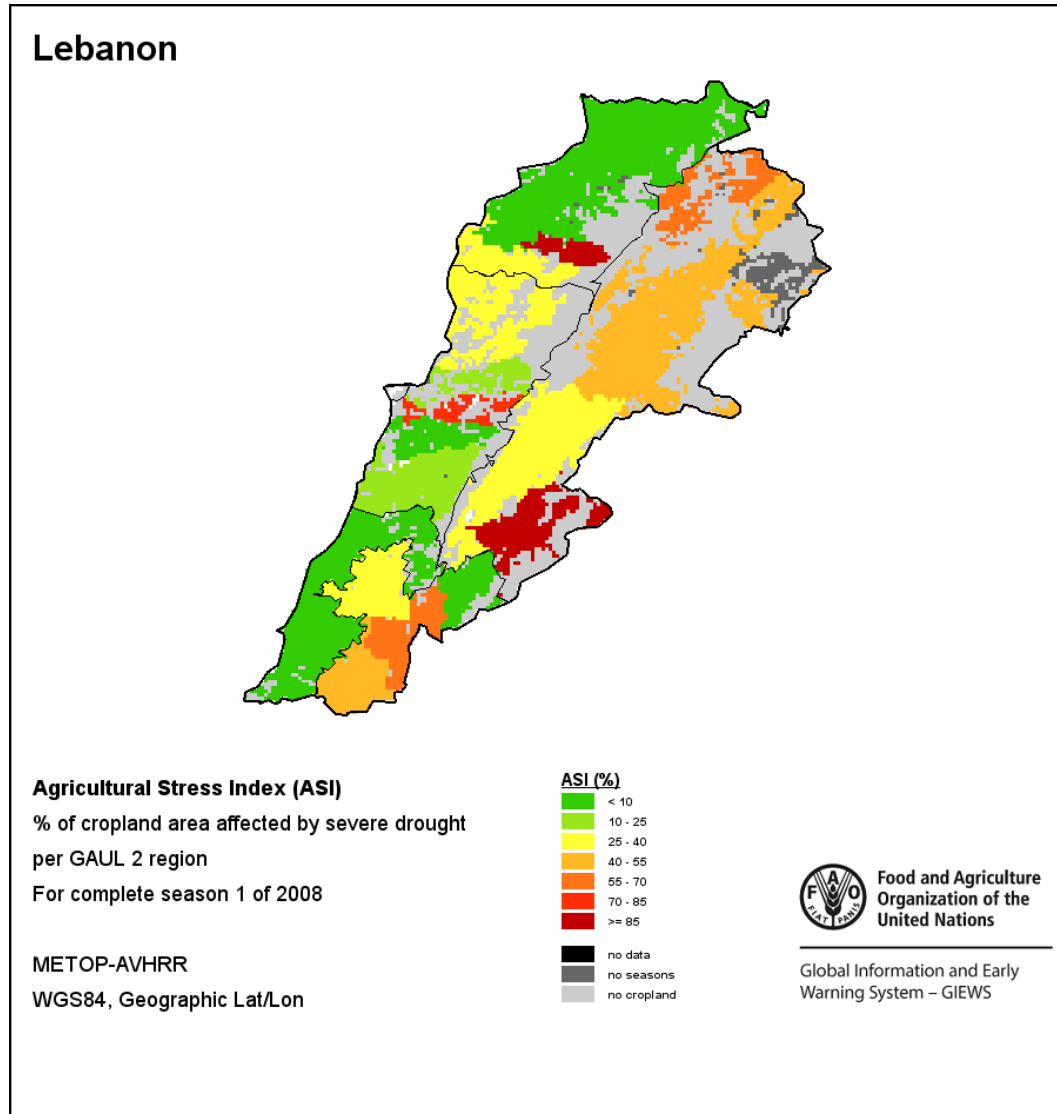
In Lebanon's case, the drought in 2008 affected mostly the agricultural rich lands of Bekaa governorate in the east of the country, especially the southern district of Rachaya, where more than 85% of the agricultural land was affected throughout, and Nabatiye, a governorate in the far south of the country. Pockets of severe drought were also found in other governorates – Mount Lebanon and North (see Figure 6).⁶⁹

⁶⁷ Locations of ethnic groups are derived from Wucherpfennig et al. 2010.

⁶⁸ Abu-Ismaïl, Abdel-Gadir, and El-Laithy 2011, 24.

⁶⁹ Food and Agriculture Organization 2019c.

Figure 6: Agricultural Stress in Lebanon in 2008



Source: Food and Agricultural Organization

As mentioned, the Bekaa Valley, running north to south in the east of the country, is Lebanon's primary agriculture region and was greatly affected by the 2008 drought. The southern part of the country is mostly small farmers while the North and Bekaa Valley farmers are mostly large commercial farmers.⁷⁰ Hezbollah has a particularly strong presence in the far south and the far north of the valley in

⁷⁰ World Bank 2010.

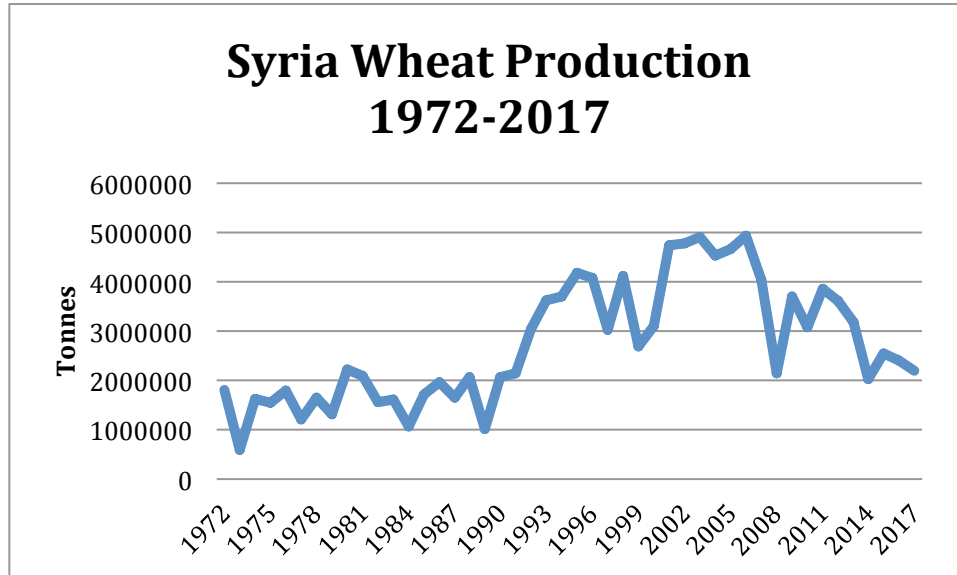
Shia-dominated areas. The south was an especially rich target of Israeli sorties in the 2006 military campaign. The central part of the Bekaa Valley would become the main recipient of Syria refugees after the onset of the 2011 war. Rural regions in Lebanon tend to be poorer than urban areas. In 2004-2005, about 18% of the North was estimated to be extremely poor, with 12% and 11% in the South and Bekaa Valley respectively, compared to the national average of 8% and less than 1% in Beirut.⁷¹

The effects of the drought show up in agricultural production declines in both countries. Both Lebanon and Syria still overwhelmingly rely on rainfed agriculture, though irrigation was more available in both countries than either Ethiopia or Somalia. About 20% of Lebanon's agricultural land was irrigated in 2007 compared to 9.8% in Syria, though about half wheat production in both countries was irrigated.⁷² While irrigation might have compensated for some of the water shortfalls from lower rainfall totals, the drought should still show up in production declines of major crops, given the limited penetration of irrigation, particularly among smallholders. In 2008, Syria's wheat production in tonnes was nearly 60% below production in 2006. While production subsequently rebounded, it remained more than 20% below the peak level even before the further dramatic decline after the civil war commenced (see Figure 7).

⁷¹ UNDP 2007.

⁷² World Bank 2019a. Wheat statistic for Lebanon from Verner et al. 2018, 25. Wheat irrigation statistic of 45% from USDA 2008.

Figure 7: Wheat Production in Syria 1972-2017



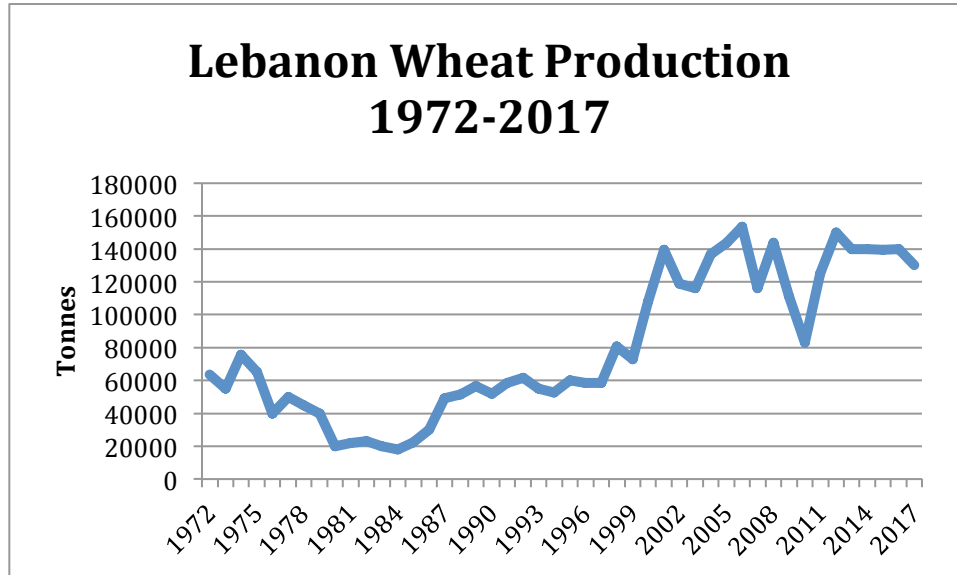
Source: Food and Agriculture Organization

In Lebanon's case, production declines show up in multiple years. Production peaked in 2006, with production in 2007 down 25% of that peak before rebounding in 2008 to 93% of 2006 levels. Wheat production in 2009 was 72% of peak levels before bottoming out in 2010 at 54% of peak 2006 production (see Figure 8). Wheat is especially sensitive to temperature spikes, with a 1 degree Celsius increase contributing to a 13% reduction in production.⁷³ Recall that temperatures in 2010 were nearly 1.8 C above normal. The World Bank writes that the 2010 drought was the significant drought year in the Lebanon context with a combination of drought, temperature, and fire leading to declines of wheat production by as much as 83%.⁷⁴

⁷³ Verner et al. 2018, 25.

⁷⁴ Ashwill et al. 2013, 57.

Figure 8: Wheat Production in Lebanon 1972-2017



Source: Food and Agriculture Organization

At this stage, we have evidence of a severe drought that affected both countries, with wheat production in both experiencing a significant decline. What effect did the drought have on livelihoods? Here, a variety of policy interventions—from support for irrigation, income and food support, food for work, insurance mechanisms, assistance for asset rebuilding and recover—could have protected people from harm. Nonetheless, there should be evidence of distress in both countries beyond production declines in terms of income declines, food insecurity, and/or livestock deaths that would have triggered demands for a policy response.

In terms of Syria, some data points have been reported even by those more skeptical of the links between climate and conflict. de Châtel notes that “According to several UN assessments between 2008 and 2011, 1.3 million people were affected

by the drought, with 800,000 people ‘severely affected’.”⁷⁵ That assessment found 80% of those severely affected were living on bread and sugared tea, only good enough for about 50% of dietary needs.⁷⁶ Fröhlich cites other impacts: “Herders in the Northeast lost 85% of their livestock, affecting 1.3 million people. In 2009, according to the UN, more than 800,000 Syrians had lost their livelihoods.”⁷⁷ One 2011 estimate for the UN International Strategy for Disaster Reduction suggested the drought was the worst in 40 years, causing a tributary of the Euphrates –al-Khabour – to dry up, with wheat production in non-irrigated areas declining by 82%. The report suggested nationally that total livestock levels dropped from 21 million pre-drought to 14-16 million afterwards.⁷⁸ A May 2008 U.S. Embassy cable released by Wikileaks also reported that the regime increased prices on domestically produced food in April 2008, wheat by 40%, sugarbeets by 30%, and almost a 100% increase for wheat and barley, leading to at least one food price-related protest.⁷⁹

Lebanon’s drought, which had similar effects on wheat production is not recorded as a disaster. But, food prices did increase dramatically in the 2007/2008 period, with average food prices rising 18.2 percent in 2008 alone, suggesting that the regime faced a risk of protest activity. That study suggested the government responded by re-introducing subsidies on wheat, bread and flour that had been in process of being phased out. The report noted the more significant challenges to

⁷⁵ Châtel 2014, 525.

⁷⁶ UN Office for the Coordination of Humanitarian Affairs 2009.

⁷⁷ Fröhlich 2016, 40.

⁷⁸ Erian, Katlan, and Babah 2010, 15.

⁷⁹ U.S. Embassy in Syria 2008.

food security in the country occurred later in 2014 after more than 1 million migrants from Syria flooded in to the country, particularly in southern Lebanon in the agricultural rich Bekaa Valley.⁸⁰ The implication here is that government actions may have stanching the risk of food-related protests.

At the same time, the decline in wheat production in this period could have adversely affected farmers' incomes in the way they did in Syria, potentially leading to food insecurity in rural areas, abandonment of farms, suicides, migration to urban areas, and ultimately conflict. Wheat production has been subsidized in Lebanon as a strategic priority to enhance national self-sufficiency and insulate farmers from fluctuations in global wheat prices. Lebanon still imports more than 80% of its food stuffs, including cereals.⁸¹ Given that international prices can vary widely (as they did after Russia banned grain exports in August 2010 in the wake of a drought and wildfires), the decision to subsidize production of a water-intensive crop such as wheat may make more strategic sense.⁸² Syria, as discussed further, also historically adopted a similar, even more ambitious, commitment to food self-sufficiency.

In Lebanon's case, the government through the General Directorate of Wheat and Sugar Beet Subsidy (GDSCS) plays a critical role to subsidize production by paying farmers a premium when international prices are low and through subsidized loans. Though production was below 2006 levels, one study suggested that robust international prices in 2007 and 2008 allowed farmers to sell all their wheat directly to the market without relying on state subsidies. The researchers

⁸⁰ UN Economic and Social Commission for Western Asia 2016, 10.

⁸¹ Ibid., 20.

⁸² Parfitt 2010.

noted that in 2010, however, the impact of the drought on production made farmers even more dependent on the state for support. In a survey, less than 10% of farmers were willing to continue to grow wheat without state subsidy. Here, too, the implication is that were it not for state subsidy, the situation of wheat farmers would have been much worse in the midst of the drought.⁸³ I will discuss these policies further below as we contrast the successful efforts by Lebanon to shore up both consumers' access to food and farmers' income from food sales with Syria's failed efforts to protect farmer and consumers' interests.

The differences in governance, both state capacity and inclusion, between Syria and Lebanon loom large here. Even though Lebanon has its share of governance challenges, especially as a result of misaligned incentives from its now thirty year-old power-sharing agreement, the country has managed to avoid a descent into another civil war, despite occupation from Syria and external meddling from Israel.

Evidence of State Capacity

The first dimension to evaluate is state capacity. As in the last chapter, I begin by examining broad indicators of governance from the World Bank and other sources before discussing in more detail agriculture-specific governance arrangements.

The World Bank governance measures capture different dimensions; a number of them—government effectiveness, regulatory quality, and control of

⁸³ Tawk et al. 2019, 199, 203.

corruption—may be relevant for thinking about the state’s ability to deliver services in the midst of a multi-year drought.⁸⁴ The core expectation is that Lebanon’s capacity should have been higher than Syria’s at the onset of the drought. The drought itself could have had an effect on state capacity itself in terms of resources to serve the populace and also its ability to retain a monopoly on force throughout its territory, but, as suggested earlier, it is less clear how quickly a slow-onset drought can have such a negative impact on capacity.

World Bank measures typically reflect investor evaluations of country performance and are only available back to 1996 and were only available every other year until 2002. A snapshot view of all three measures shows higher quality governance in Lebanon for all three dimensions in line with my basic expectations. Early in the drought period in 2007, Lebanon’s government effectiveness was 45 percentile rank while Syria’s was 22. On regulatory quality, the 2007 divide between Lebanon and Syria was wider with both countries scoring poorly on corruption (see Table 1).

⁸⁴ World Bank 2019f. Government effectiveness captures “perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies.” Regulatory quality captures “perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.” Control of corruption reflects “perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests.”

Table 1: Governance Indicators for Lebanon and Syria

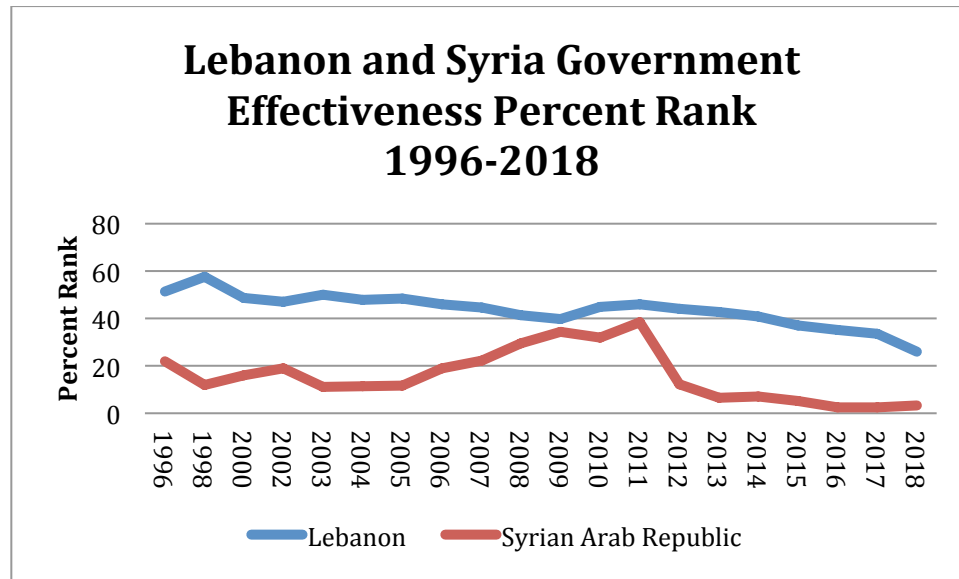
Indicator	Country	Year	Number of Sources	Governance (-2.5 to +2.5)	Percentile Rank	Standard Error
Government Effectiveness	Lebanon	1996	3	-0.13	51.37	0.17
		2007	8	-0.33	44.66	0.22
		2011	9	-0.27	45.97	0.20
	Syrian Arab Republic	1996	3	-0.80	21.86	0.17
		2007	8	-0.81	22.33	0.21
		2011	8	-0.50	38.39	0.21
Regulatory Quality	Lebanon	1996	4	-0.41	34.78	0.31
		2007	8	-0.26	46.60	0.20
		2011	10	-0.06	51.66	0.17
	Syrian Arab Republic	1996	4	-1.07	14.67	0.31
		2007	9	-1.31	8.25	0.19
		2011	8	-0.95	19.91	0.19
Control of Corruption	Lebanon	1996	4	-0.66	31.18	0.26
		2007	10	-0.89	19.42	0.17
		2011	14	-0.90	19.43	0.15
	Syrian Arab Republic	1996	4	-0.88	19.89	0.26
		2007	10	-1.10	12.14	0.16
		2011	10	-1.09	13.74	0.17

Source: World Bank Worldwide Governance Indicators

By the advent of Syria's civil war in 2011, investors' perceptions of Syria's government effectiveness and regulatory quality actually improved. The upswing in overall effectiveness is easier to observe in Figure X. The steep decline in

perceptions of effectiveness only really crystallizes in the wake of the civil war itself (see Figure 9).

Figure 9: Government Effectiveness in Lebanon and Syria 1996-2018



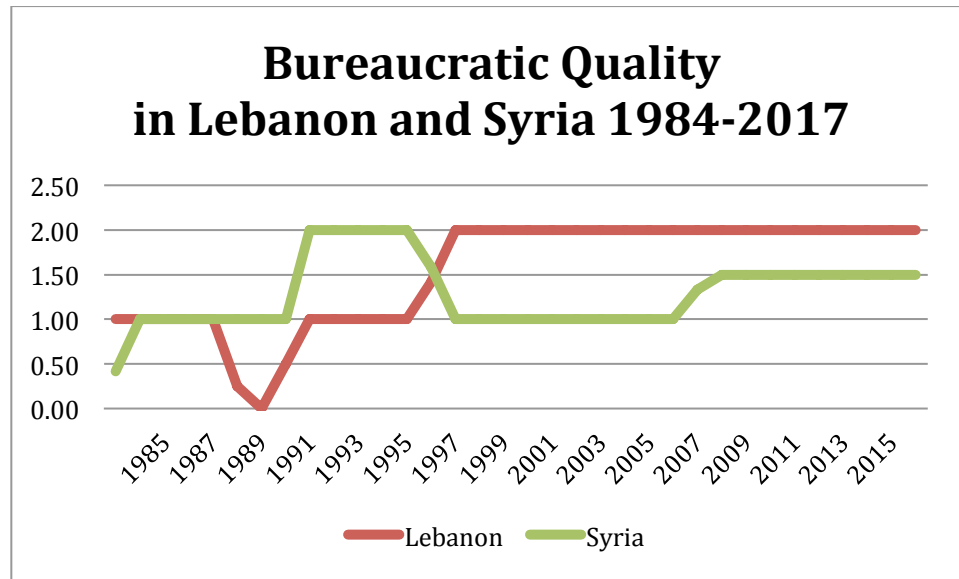
Source: World Bank Worldwide Governance Indicators

As discussed in the last chapter, the PRS group has an indicator of bureaucratic quality that dates back to 1984.⁸⁵ It too is based largely on investor perceptions. That indicator itself is a component of World Bank government effectiveness metric. Lebanon's bureaucratic quality reached its nadir in 1990, just as the country's long-running civil war ended. Bureaucratic quality in Lebanon improved throughout the 1990s, eclipsing Syria's in 1997 and remaining higher thereafter, though would experience a steady decline over time. Syria's bureaucratic

⁸⁵ Bureaucratic quality "measures institutional strength and quality of the civil service, assess how much strength and expertise bureaucrats have and how able they are to manage political alternations without drastic interruptions in government services, or policy changes. Good performers have somewhat autonomous bureaucracies, free from political pressures, and an established mechanism for recruitment and training." Kaufmann, Kraay, and Mastruzzi 2010.

quality would remain lower through the 2000s with a slight improvement in 2008 (see Figure 10).

Figure 10: Bureaucratic Quality in Lebanon and Syria 1984-2017



Source: PRS Group

On some level, these indicators confirm the expectation that Lebanon had better governance than Syria in the lead up to Syria's civil war. However, the World Bank government effectiveness indicators suggest a convergence of capabilities up in the 2000s to 2011, even after multiple years of drought, raising questions about the relevance of this indicator or the contribution of differences in state capacity to the outcomes in both countries. Here, it may be useful to think about the reputation that Bashar al-Assad enjoyed prior to his repressive response to the protests of March 2011. Assad came into office in 2000 after his father died. He established something of a reputation as an economic reformer throughout the 2000s as he sought to reorient the country on the basis more of a market economy with less

heavy-handed state intervention.⁸⁶ That reform agenda picked up in 2005, which corresponds to the renewed investor confidence in government effectiveness in the World Bank data.⁸⁷

International investors may well have judged the removal of subsidies on diesel fuel and fertilizers in 2008 to have been market-friendly and therefore a symbol of good governance. That decision on diesel fuel though had an impact on the irrigation pumping capacity of farmers in the midst of the later drought as well as their ability to get their goods to market.⁸⁸ Along with other policies, such decisions might have made the situation worse and less tenable for farmers, but it might not be reflected in foreign investors' perceptions of governance until the situation became mired in violence.

As in the last chapter, we can also look for indicators of state capacity specific to drought preparedness and response. This would include prediction and early warning systems for drought, programs to prepare for droughts and insulate the population from adverse impacts including grain storage, irrigation, insurance schemes, income, and food support. We can also evaluate the response measures the country has established to prevent malnutrition and starvation such as food-for-work schemes and food donations as well as programs to re-start agriculture such as seed, agricultural inputs, and livestock restocking programs. Because both of these countries were more reliant on irrigation than either Ethiopia or Somalia,

⁸⁶ Horn 2012; Haldevang 2017.

⁸⁷ Bennet 2005; Raphaeli 2006; Butter 2015.

⁸⁸ Châtel 2014, 527.

water management institutions that regulate and apportion irrigation are also relevant.

Here, I focus on policies of production subsidies in both countries, as these seem to be most relevant for thinking through differential state capacity. I discuss some more details in the inclusion section below.

Both countries have encouraged some measure of food production, even food self-sufficiency in Syria's case, through systems of subsidy. These can prove costly both to sustain but also if removed in haste.

Syria had an aggressive program to foster national self-sufficiency in food production dating back to the 1960s. On the water management side, this was facilitated by efforts to dam rivers and extend irrigation in the northeast of the country. On the production side, this was, as Fröhlich noted, "defined by subsidies for farm inputs and fuels, especially for strategic crops such as wheat, cotton and barley."⁸⁹

After the introduction of diesel motor pumps in the 1960, low cost credit and subsidized fuel facilitated the extension of drilling wells and pumping from the 1970s to the 1990s. Groundwater levels declined significantly. Ostensibly to control groundwater levels, the country later initiated an annual well permitting process, though this would become politicized and subject to corruption.⁹⁰ Even before the drought, water mismanagement, waste, alongside other factors had led to significant declines in water availability, by as much as half by one estimate between 2002 and

⁸⁹ Fröhlich 2016, 41.

⁹⁰ Châtel 2014, 531.

2008.⁹¹ Staff competence in this area was very low. According to de Châtel, “The majority of staff in the ministries of Agriculture and Irrigation has barely finished secondary school and only a small minority has a university degree.”⁹² What’s more, she described the institutional structure of water management “arcane” and “fragmented” with no less than 22 different ministries, councils, and directorates involved, with little coordination between them despite similar responsibilities.⁹³

Alongside this were subsidies for farmers. A 2008 World Bank assessment reviewed the country’s subsidy program and noted a variety of pressures were making it more difficult to afford, including low oil revenues. Under its Annual Agricultural Production Plan, Syria began created “agricultural stability zones” beginning in 1975 to regulate land allocations for different crops with a goal of national self-sufficiency in wheat and cotton. Those licenses to operate, in turn, were tied to access to credit, inputs, and marketing services. The state regulated the sale of strategically important crops through state-controlled companies. The state offered price subsidies for wheat, cotton, sugar, sugar beet, barley, and tobacco, though in some years international prices were higher than domestic prices, lessening the need for domestic subsidy.⁹⁴

This report suggested agricultural subsidies collectively amounted to about 4% of GDP, with diesel subsidies 2.6% of GDP, fertilizer and seed up to 0.3%, credit 0.1% (augmented by bad debts), with price subsidies to cotton growers (0.9%) and

⁹¹ Fröhlich 2016, 40.

⁹² Châtel 2014, 531.

⁹³ Ibid., 530–531.

⁹⁴ World Bank 2008.

beet farmers (0.1%) other significant subsidy items.⁹⁵ The report noted that agriculture functioned as a sort of safety net and where the low skilled, rural poor were concentrated.⁹⁶ However, this subsidy program was captured by large farming interests, though also were directed to the poorest regions of the country and did include subsidies for poor cotton laborers. The Bank's general conclusion was Syria's statist approach to agriculture and support for "strategic crops" was leaving the country ill-equipped to take advantage of more lucrative international trade opportunities, both for selling wheat abroad but also diversifying into fruits and vegetables.⁹⁷ The Bank counseled that diesel subsidy removal ought to be enacted alongside more support for strategic crops like wheat to dampen the social impacts of fuel subsidy removal.⁹⁸

Syria began a process of liberalization that would scale back subsidies. This subsidy reform agenda started in the mid-1980s but picked up in 2005, when Syria released its 10th Five Year Plan for 2006-2010. In 2008 and 2009, as the country faced its worst drought in decades, the government cancelled subsidies on diesel fuel and fertilizer, leading to immediate price hikes.⁹⁹ Such price hikes on fuel made it both harder to irrigate what little harvest they were expecting and affected production in the final weeks and increased the costs of transporting goods to market.¹⁰⁰ One reason cited for the change in policies was the size of Syria's fiscal deficit. By one account, fuel subsidies amounted to 15% of Syria's GDP. Repealing

⁹⁵ Ibid., 4, 8.

⁹⁶ Ibid., 11.

⁹⁷ Ibid., 6.

⁹⁸ Ibid., 8.

⁹⁹ Châtel 2014, 526.

¹⁰⁰ Ibid.

those subsidies apparently quadrupled fuel prices overnight in May 2008.¹⁰¹ In May 2009, the government also cut subsidies for fertilizers and prices doubled.¹⁰²

In the lead up to the drought, other choices also made it harder for the Syrian state to respond. de Châtel writes that the “the lack of social safety nets left many in the agricultural sector unable to cope.”¹⁰³ Relevant to this, in 2006, the country sold its strategic wheat reserves to capitalize on high international prices – some 1.5 million metric tons and twice as much as year before –and thus had to turn to imports two years later as the drought undermined production.¹⁰⁴ Syria had been a net exporter of wheat since the 1990s and thus were forced to import wheat in 2008 for the first time in fifteen years.¹⁰⁵

In November 2008, in a cable later released by Wikileaks, an FAO representative asked USAID, the US bilateral foreign assistance program for help with the drought. Calling the drought a “perfect storm,” the official noted that the Syrian Minister of Agriculture said “that [the] economic and social fallout from the drought was ‘beyond our capacity as a country to deal with.’”¹⁰⁶ Once the impacts on food security were recognized, the government adopted a number of measure under the 2009 drought appeal to deliver emergency food supplies to the most affected regions as well as livestock feed, seed stock, replacement livestock, and technical assistance.¹⁰⁷

¹⁰¹ Fröhlich 2016, 42.

¹⁰² Châtel 2014, 526.

¹⁰³ Ibid.

¹⁰⁴ Polk 2013a; Polk 2013b. See Wikileaks released U.S. government cable for confirmation of reserve sales. U.S. Embassy in Syria 2008.

¹⁰⁵ Châtel 2014, 527.

¹⁰⁶ Quoted in Polk 2013a.

¹⁰⁷ U.S. Embassy in Syria 2009.

As noted earlier, Lebanon subsidizes both consumption of wheat/flour/bread as well as production of wheat. Lebanon has subsidized and continues to subsidize other crops such as sugar beets and tobacco, but I focus on wheat for illustrative purposes and for which more information is available. Since the 1960's, the Lebanon has diversified its agricultural production into more high value fruit trees and vegetables for export (especially to Gulf countries), for which additional subsidies and incentives are provided, most of which are captured by large landowners.¹⁰⁸

The Lebanese government estimated that wheat subsidies cost LL129 billion between 2007 and 2011 (roughly \$85 million) on a net basis, with nearly all of the costs associated with consumer subsidies. Those subsidies were paid for with protectionist tariffs on imported cereals and other foodstuffs, foreign aid, taxes on services, and other revenue sources. There were efforts in the 2005-2006 period to scale back and reduce farmer subsidies. Because farmers were unable to sell their wheat in 2006, this policy was suspended and subsidies were restored to benefit some 1,300 farmers (less than 1% of the country's 170,000 farmers).¹⁰⁹ The 2007 and 2008 international prices were higher as before and only limited subsidies were offered. The policy of subsidy phaseout was fully reversed in 2009, with 2010 being an important year as a consequence of a variety of weather extremes, high daytime temperatures, low nighttime temperatures, as well as flooding which reduced crop yields by as much as 60%. Because production was so low, the quantity of subsidized wheat that was bought was less than 20% of what the government had

¹⁰⁸Banfield and Stamadianou 2015, 44.

¹⁰⁹ Ibid., 22.

budgeted for. The 2010 net costs were estimated to be small, only 0.01% of GDP, benefiting fewer than 700 farmers.¹¹⁰ While the number of beneficiaries was relatively low, the per person subsidies were on the order of \$6000 to \$6500, which suggests the beneficiaries were reasonably well off farmers, as mean per capita consumption in Bekaa Valley was only about \$2300 in 2004-2005.¹¹¹ If these were the kinds of local elites in the country, price supports could have served to secure their on-going goodwill to the regime in otherwise difficult production moments.

The more costly intervention was a cap on the price of bread that in the season 2007-2008 alone had a net cost of 93 billion Lebanese pounds (about \$61 million), which was more than 70% of the subsidy total over the entire period. This constituted about .21% of the country's GDP in that period and nearly 1% of primary expenditures. Between April 2007 and the early months of 2008, international wheat prices increased from \$200 per metric ton to nearly \$450 per metric ton. The government's price caps negotiated with domestic bakery syndicates had set prices at a level based on charging the bakeries about \$210 per metric ton. It is a little unclear the number of beneficiaries but given the cost outlay and the number of tons purchased—more than 240,000 — it presumably was orders of magnitude more than the number of farmers. In 2010-2011, after additional droughts domestically and internationally, another version of the subsidy policy for consumers was reinstated with net costs of 21 billion Lebanese pounds

¹¹⁰ Republic of Lebanon Ministry of Finance 2012, 7–9.

¹¹¹ This is based on consumption adjusting for regional prices differences. UNDP 2007, 5.

(\$13 million).¹¹² This suggests that the Lebanese government was more concerned about the protest potential of urban consumers than those of farmers.

In terms of quality of governance, the World Bank in 2018 evaluated Lebanon's drought response and, like Syria, noted fragmentation between multiple agencies and lack of clarity over agency roles. The report cited an undated study that said the country lacked a drought emergency plan and that these problems persisted through a 2014 drought. Core conclusions were that there was no concerted drought management effort, that the country did not prioritize drought risk management, and had no drought monitoring system.¹¹³ In 2016, a USAID project was helping fund a regional drought preparedness initiative to correct these deficiencies, but this suggests that Lebanon's capacity in this space through the mid 2010's was poor.¹¹⁴ This suggests that while capacity may have been better in Lebanon than Syria, Lebanon's drought-related governance was not especially good, though the state managed to maintain some subsidies to consumers and producers in the midst of the drought.

Thus far, I have compared state capacity in Syria and Lebanon, as *ex ante* difference between them, but it is also possible that the multi-year drought affected state capacity itself by reducing tax revenue from agriculture. While disaggregated sectoral tax receipts are not readily available, there are estimates of tax collection as a percent of GDP through 2008. Neither country collects a large share of revenue in taxes. Denmark's share, for comparison, was over 40%. Here, we observe the

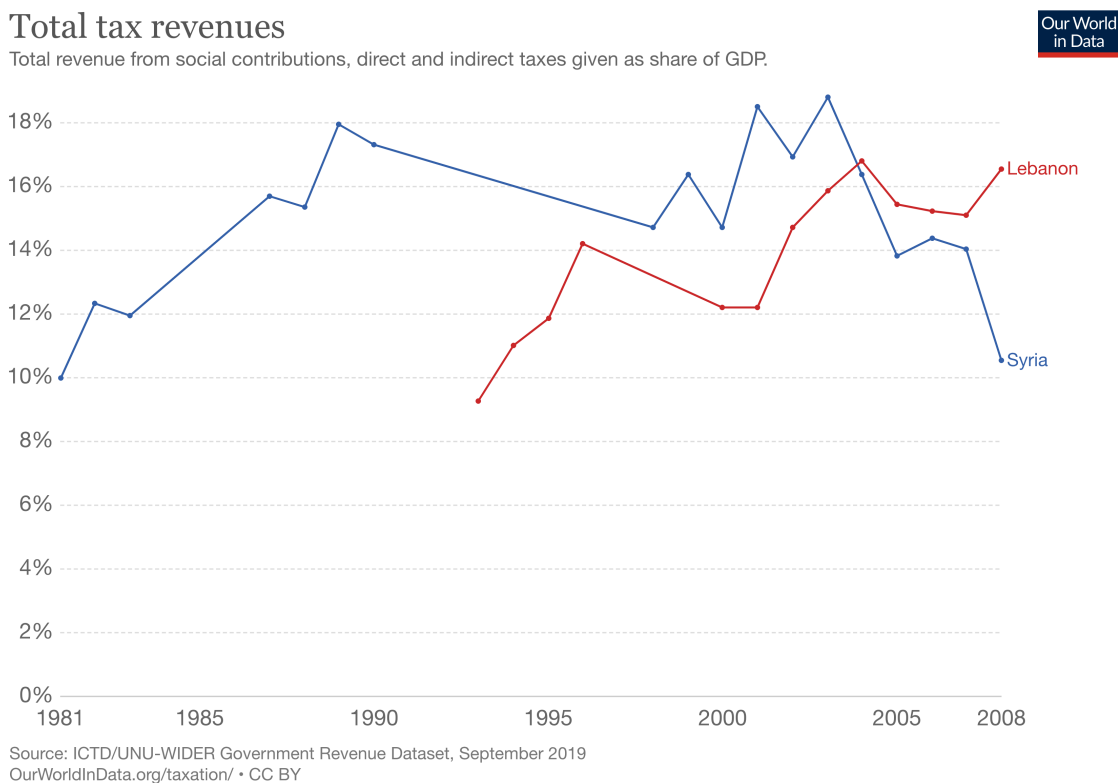
¹¹² Republic of Lebanon Ministry of Finance 2012, 17.

¹¹³ Ashwill et al. 2013, 67–68.

¹¹⁴ National Drought Mitigation Center 2016.

countries diverging in the midst of the drought with tax revenues as a share of GDP going down from 14% in 2006 in Syria to about 10.5% in 2008 while Lebanon's went up from 15.4% to 16.6%. While there may have been other reasons for poor tax collection in this period, this suggests that the drought could have had an effect on Syria's available resources, both for service delivery and suppression of dissent (see Figure 11).¹¹⁵

Figure 11: Tax Revenue as a Share of GDP



Source: ICTD/UNU-WIDER via Our World in Data

Evidence of Political Inclusion

The second relevant dimension is the degree of political inclusion, arguably the most important difference between these two countries with implications for

¹¹⁵ Ortiz-Ospina and Roser 2016.

equitable access to services and attentiveness of the governments to different constituencies. Arguably, the Syria state since 1970s has exhibited a high degree of political exclusion, rewarding the minority Alawite group that controlled the government at the expense of other groups. The Lebanese state has had elaborate power-sharing agreements in place which were reaffirmed in the wake of its fifteen civil war that end in 1990. Those carefully crafted arrangements have ensured that the variety of Lebanese stakeholders have had representation in government and a means of surfacing their concerns and claims for services, including farmers.

As a result of the UN mandate system that emerged after World War I and the partition of the Ottoman Empire, Syria and the Lebanon came to be administered by France. Lebanon boundary with Syria reflects efforts by the French to create a Maronite Christian controlled state in the 1920s.¹¹⁶ Despite French efforts to create a largely Maronite state, Syria and Lebanon are both diverse countries with a variety of ethnic and religious cleavages upon become independent in the 1940s. While both have ultimately suffered from civil wars in the modern era, Syria was nominally more stable during the latter part of the Cold War when Hafez al-Assad seized power through a series of coups and concentrated power in his presidency which lasted from 1971 until his death in 2000. Assad ruled this country in favor of his minority Alawite group, a sect of Islam that is distinct from Shia and Sunni Islam, the major source of intra-Islam cleavages. The Alawites constitute about 13% of the population in Syria and have retained dominant control of the political apparatus

¹¹⁶ Sly 2013.

since the 1970s, with major implications for patronage and political rewards that the Syria state has offered to its primary supporters.

These differences are captured in the Ethnic Power Relations dataset that, as discussed in previous chapters, charts the political representation of different ethnic groups in countries over time as governments come and go. Previous work by Bretthauer suggested that politically exclusive regimes were ones where more than 20% of the population was excluded from power.¹¹⁷ In Syria's case, the minority Alawites, as just mentioned, constitute about 13% of the country and have been the dominant partner in government since 1970. Fully 86% of other ethnic groups have been excluded from political representation ever since. The majority Sunni Arabs, which account for 65% of the population, went from being junior partners in the government from 1966-1969 to being discriminated against thereafter. Kurds, who account for 8% of the population, have been discriminated against throughout the country's history. Christians who amount to 10% of the population have been powerless under both Hafez al-Assad and his son Bashar al-Assad who assumed power in 2000. Both Kurds (8% of the population) and Druze (3%) have also been powerless.

In Lebanon's case, Shias (32%), Sunnis (20%), and Maronite Christians (16%) were all senior partners in government between 1992-2017. Druze (6%), Greek Orthodox (5%), Armenian Orthodox (4%), and Greek Catholic (3%) have all been junior partners over this timer period. Excluded populations only constituted 13% of the population. Only Arab Palestinians (10%) have been discriminated

¹¹⁷ Bretthauer 2015.

against with Armenian Catholics (1%), Protestants (1%), and Alawites (1%) being powerless. At no time from 1946 onward has Lebanon ever had more than 13% of the population excluded from power, including the lengthy period of civil war from 1975 to 1990. From 1971 to 1991, however, Shia Muslims – 32% of the population – were junior partners in government.¹¹⁸

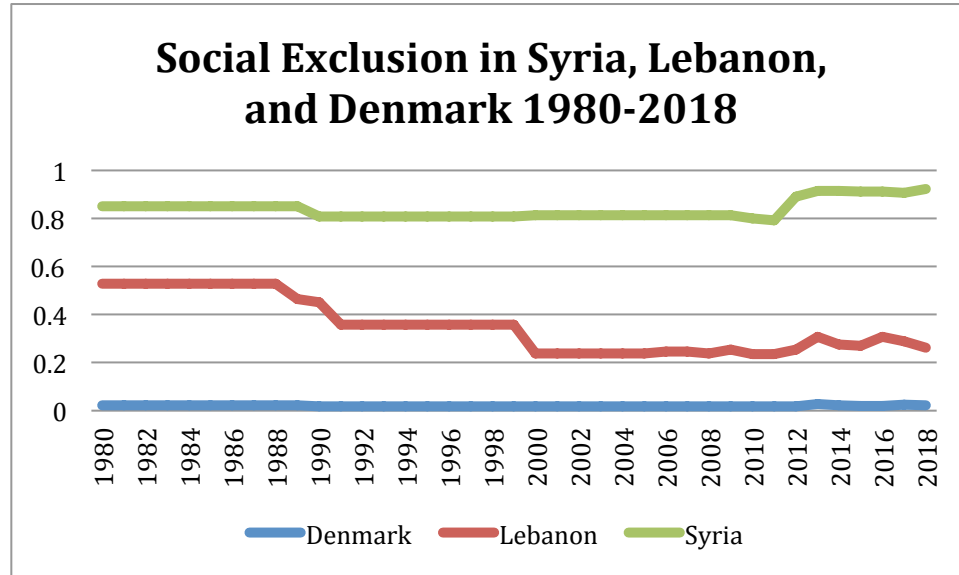
As in the last chapter, I also show the measure of social exclusion from the V-DEM dataset.¹¹⁹ Relevant for thinking about both social service provision in the lead up and in response to drought, the measure of social groups reflects the degree to which there is equality of access to public services based on other distinctions such as ethnicity, caste, language, race, and region.¹²⁰ As a contrast to both Lebanon and especially Syria, highly inclusive Denmark is also shown. Consistent with the political representation figures from the Ethnic Political Relations data, V-DEM shows Syria with consistently high social exclusion with Lebanon being more inclusive throughout and improving over time (see Figure 12).

¹¹⁸ ETH Zurich 2018. Historically, rural farmers were mostly Shia and Maronite Christians, with the Maronites somewhat better off than the Shia.

¹¹⁹ V-Dem Project 2019.

¹²⁰ Ibid., 195–198.

Figure 12: Social Exclusion in Syria, Lebanon, and Denmark



Source: V-DEM

The Assad family ruled Syria with group-based favoritism to the minority Alawite sect to which they belonged, which is mostly concentrated along the coast. Originally a poor group, the Assad family elevated this group by appointing Alawites to key positions in the security services.¹²¹ The Ba’ath coup that ultimately brought Hafez al-Assad to power in 1970 not only served to elevate a new elite built some wider legitimacy with peasants through land reform and loyalties of an emergent middle class through public sector employment from a program of nationalization. Coupled with Arab nationalism, investments in health, education, and electrification continued to build a base of support in rural areas.¹²² This process of “selective goods provision” to regime supporters included the northwestern governorate of Latakia, where $\frac{3}{4}$ of Alawites are from as well as other regions part of the Ba’athist

¹²¹Sachs 2000.

¹²² Hinnebusch 2012, 95–96.

coalition including the southern region of Hawran (which includes Dar'a, the locus for some of the first protests in March 2011), the rural areas around Aleppo, and the northeastern part of Deir al-Zor.¹²³

While some of the Sunni majority in Damascus were also beneficiaries of government favoritism, other Sunnis resented this arrangement, with rebellions by the Muslim Brotherhood in the early 1980s put down with great brutality. The regime's ability to continue this model became harder over time. The national security state, which was necessary to suppress internal dissent was expensive. Patronage jobs and subsidized food also were a drain on the public purse. As a consequence, the country's economic base deteriorated, with the state in the 1980s forced to embrace austerity, including massive public sector spending cuts. Partial privatization of state-owned import monopolies created a new class of beneficiaries who were dependent upon the regime for their wealth, with remaining social programs like subsidized food and jobs keeping a semblance of legitimacy with the middle and lower classes.¹²⁴

These contradictions accelerated when Hafez al-Assad died in 2000. His son Bashar al-Assad sought to both deepen the liberalization agenda and retain some of the social protections for the masses, through a so-called "social market" economy with reforms beginning in 2005. However, he was more dependent upon a narrower group of supporters in the Asad-Makhflouf family clan which were richly rewarded with patronage, which angered some old guard elites. The inexperienced

¹²³ De Juan and Bank 2015, 94.

¹²⁴ Hinnebusch 2012, 98.

technocrats that Assad recruited to pursue the liberalization agenda were not especially skilled since salaries for these new officials were low.¹²⁵

Despite oil revenue, the parlous state of the country's economic situation, made worse by Western isolation and sanctions because of Assad's support for Saddam Hussein, led the regime to abandon some of the social protections and subsidies it had maintained to retain legitimacy with the masses, starting with fuel subsidies and then agricultural inputs and price support.¹²⁶ Trade liberalization led to cheap imports coming into the country with small businesses badly affected. Hinnebusch describes the contours of this emergent system: "At the heart of the regime coalition were the 'crony capitalists'—the rent-seeking alliances of political brokers (led by Asad's mother's family) and the regime-supportive bourgeoisie."¹²⁷ This was the scene as the country entered into a multi-year drought in 2007.

As for Lebanon, managing sectarian divides as in Syria has always been a challenge. Since the 1860s, Lebanon's governance structure has consisted of different power-sharing agreements that have tried to maintain a delicate a balance of the country's eighteen different religious groups or confessions, some periods with more success than others.¹²⁸ Because power distribution in government is based on the historic 1932 census, no new one has been completed since then, even though groups have likely experienced differential population growth.¹²⁹

¹²⁵ Ibid., 99.

¹²⁶ Ibid., 102.

¹²⁷ Ibid., 101.

¹²⁸ Zahar 2005.

¹²⁹ Barshad 2019; Brown 2009.

In the post-independence period, the project became less tenable over time. In the 1970s, the influx of Palestinian refugees led to further cleavages between the dominant Maronite Christians and leftist groups sympathetic to the Palestinians. In 1975, disputes over efforts by the former president Chamoun to monopolize fishing rights for his Maronite community is credited as the spark for a fisherman's strike. That strike in turn, when suppressed by the government, escalated into the long-running civil war that would ultimately claim 120,000 lives.¹³⁰

In one assessment, Lebanon was post-civil war seen as carved up into a landscape of different geographies: "The civil war produced a mosaic of small territories and social spaces, in which the power of the state, and the influences of the local political elite, are relative."¹³¹ While the Taif Agreement of 1989 helped put an end to the civil war through a renewed power-sharing agreement, with Syria charged with being the main power broker in the country.¹³² Like other power-sharing agreements, it was not fully democratic and encumbered by inertia. The country at times lacked a president and had parliamentary paralysis in 2013. Since that time, the evolution of pluralism and consociationalism has successfully averted a return to violence since the end of the civil war in 1990 but just barely.¹³³

Lebanon's power-sharing agreement may have averted conflict in the contemporary era but has created its own problems, namely a legacy of log-rolling

¹³⁰ Reilly 1982.

¹³¹ Banfield and Stamadianou 2015, 23.

¹³² The Taif Agreement shifted power from the president to a Council of Ministers, provided for parliamentary, cabinet, and civil service parity between Muslims and Christians regardless of demographic trends. Bahout and Bahout 2016.

¹³³ Kota 2012; Hartzell et al. 2016. For a more pessimistic take on the semi-feudal nature of Lebanon's confessional system of parliamentary representation, see Ignatius 1983.

corruption and clientelism that has impeded service delivery and created a perception that elites are serving their own interests rather than the mass public:

Hospitals, roads, schools and other projects are distributed to favored contractors according to sectarian quotas that ensure every group benefits, regardless of necessity.”¹³⁴

A 2019 garbage crisis underscored the limits of this sectarian patronage-based mode. A previous garbage contract was apportioned to provide hundreds of million dollar contracts for two separate landfills, one to the brother of an aide to a top Sunni politician and the other to a businessman close to the senior Christian politician. Even as these elites have gotten wealthy, much trash has been instead dumped much garbage in the ocean and along the coast.

Such self-dealing by elites across different groups was a major impetus for massive popular protests in 2019 that (peacefully) toppled the prime minister.¹³⁵ But, the relative openness of the state to tolerate such protests provides a means by the society can peacefully express its grievances and seek redress. As one observer noted in 2016 as Syrian refugees tested the regime’s stability, “The Lebanese political system is definitely in need of a raft of political reforms, but the basic inclusiveness of the system remains a key bulwark at least against serious civil conflict of the kind we see in several neighboring Arab countries.”¹³⁶

Evidence of International Assistance

Both of these countries were middle-income countries and relied less on foreign aid in the contemporary era than poorer states in the international system.

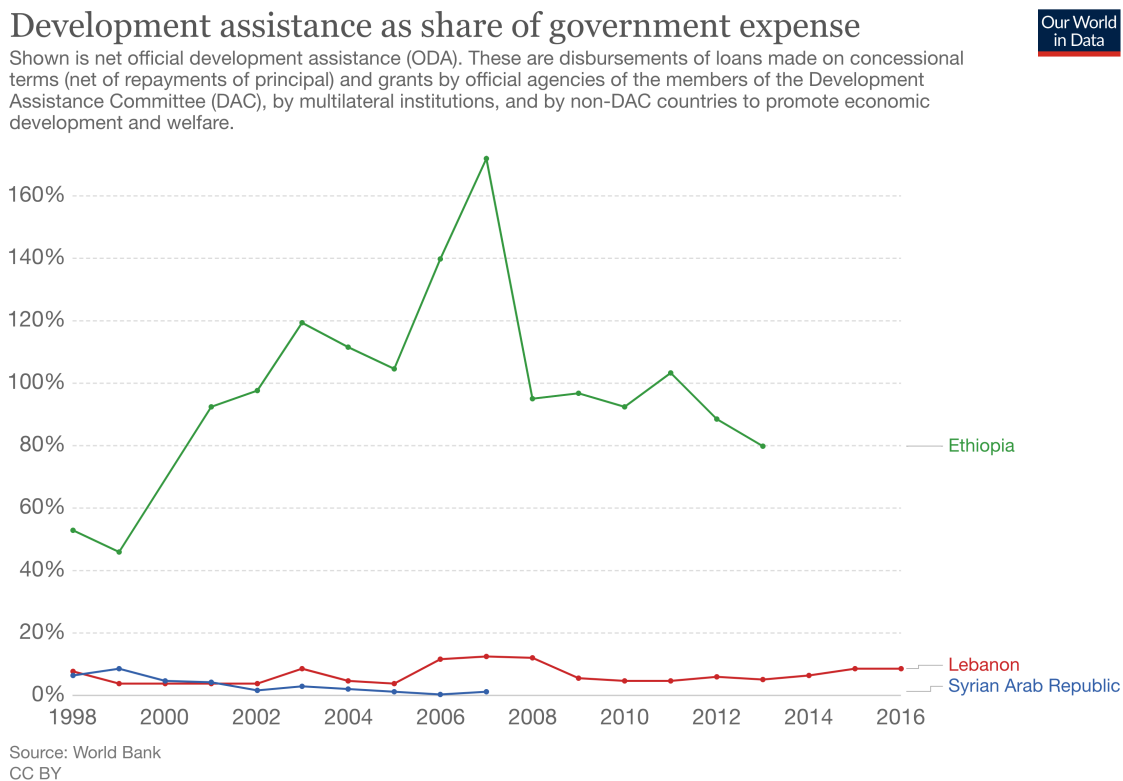
¹³⁴ Yee and Saad 2019.

¹³⁵ Ibid.

¹³⁶ Salem 2016.

Figure 11 shows aid as a percentage of government expense and shows Lebanon and Syria compared to Ethiopia, a relatively aid dependent state discussed in the previous chapter (see Figure 13).

Figure 13: Development Assistance as Share of Government Expense



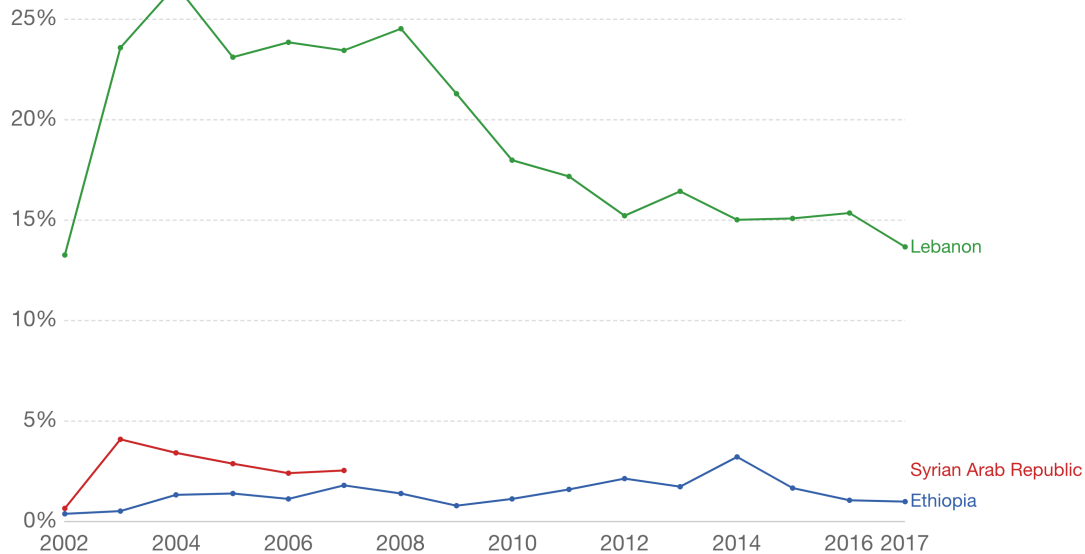
Source: World Bank via Our World in Data

That said, Lebanon has relied on its diaspora community for a relatively large share of its GDP, for more than Syria (see Figure 14 below with Ethiopia again included for comparison).

Figure 14: Personal Remittances as a Share of GDP

Personal remittances as a share of GDP

Personal remittances comprise personal transfers and compensation of employees. Personal transfers consist of all current transfers in cash or in kind made or received by resident households to or from nonresident households. Compensation of employees refers to the income of border, seasonal, and other short-term workers who are employed in an economy where they are not resident and of residents employed by nonresident entities.



Source: World Bank
CC BY

Source: World Bank via Our World in Data

Given that both countries faced severe droughts in the late 2000s, flash appeals for humanitarian assistance could have been requested from the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA). However, there were no drought-related appeals for finance for Lebanon from 2006-2011 but there were for Syria.

Syria coordinated with the UN in September 2008 and August 2009 to issue emergency drought appeals but just for the northeastern provinces of Hasaka, Raqqa, and Deir ez-Zor. No assistance was sought to aid displaced populations who had relocated to the south. Just \$5.4 million of the \$20.4 million requested in 2008

was provided by the international community, and only 1/3 of the \$43 million requested in 2009 was provided.¹³⁷

In 2006 and 2007, Lebanon did have emergency appeals for finance in the wake of Israel's 34-day military operation against Hezbollah that started in July 2006, which displaced some 700,000 people in Lebanon. UN OCHA coordinated a \$150 humanitarian appeal in 2006 with another smaller appeal of \$20 million in 2007 for on-going refugee support.¹³⁸ The first Lebanon appeal secured more than 120% of the initial funding appeal while the 2007 appeal only secured about 45% of the funding needs. While the nature of the funding appeal (refugees displaced by armed attack in Lebanon compared to drought victims in Syria) was different, the differences between the efficacy of fundraising appeals does suggest the relative isolation of Syria from the international community compared to Lebanon.

Châtel suggests the underperformance of international community support for Syria was in part because the Syrian was ambivalent about seeking international assistance and downplayed the drought's significance in its own media and to donors. Given the country's pride and self-image as self-sufficient in food production, fully acknowledging the drought was perceived as a bridge too far. Moreover, donors were not quite sure about the government's strategy. A drought management plan, started in 2000 and completed in 2006, was apparently not activated.¹³⁹

¹³⁷ Financial Tracking Service 2019b; Financial Tracking Service 2019c.

¹³⁸ Financial Tracking Service 2019a.

¹³⁹ Châtel 2014, 527–528.

Cables from the U.S. government noted that it did not contribute to the appeal in 2008, which was limited to providing aid to just 10,000 families. Bad relations between the U.S. and Syria seemed to be at the heart of the Obama administration's reluctance to support aid, though the challenges of actually delivering assistance through the World Food Program were also noted.¹⁴⁰ In 2009, the UN asked the United States to make a \$10 million contribution, which might have helped signal to other donors to make contributions of their own.¹⁴¹ The United States also did not contribute to that effort.¹⁴² A 2010 cable released by Wikileaks showed that the World Food Programme continued to have difficulty getting its funding appeals supported in 2010. Of the more than \$22 million requested in November 2010, a bit more than \$5 million had been mobilized by February, limiting the number of beneficiaries to 240,000, sixty thousand less than intended. The Obama administration had wanted to call the crisis an emergency while the Syria government was reluctant to label it as such.¹⁴³ Syria's experience as donor outcast is akin to Ethiopia in the 1980s under the Derg and Somalia in the lead up to the 2011 famine. When countries are led or substantially controlled by groups or individuals deemed untrustworthy by the international community, that can be as significant a decision as efforts by the recipient countries to block aid themselves.

¹⁴⁰ U.S. Embassy in Syria 2009.

¹⁴¹ U.S. Embassy in Syria 2010a.

¹⁴² Financial Tracking Service 2019c.

¹⁴³ U.S. Embassy in Syria 2010b.

Putting the Pieces Together

Thus far, I have shown that the countries both experienced severe droughts in the period 2006-2010 that led to major declines in agricultural production. I showed that the countries differed in state capacity and political inclusion and traced the differences in subsidy regimes and drought response in both countries. What is the sequence of events that leads from drought in both countries but to civil war in only one of them?

Here, I need to show that the drought led to population movements from affected areas in Syria to some of the southern cities like Dar'a that were the early sites for political protest against the regime. Fröhlich has disputed that northeasterners displaced by drought were in a position to protest, given their tenuous standing as migrants to the south. That claim is plausible, though even if they were not involved in dissent against the regime, that is not fatal to the climate migration connection to conflict here. The presence of large migrant populations competing for housing, jobs, and services from the Syrian regime might have triggered dissatisfaction of long-time residents, even if the migrants themselves shunned participation in the protests themselves. While drought might have surfaced as a reason for the protests themselves, it is quite possible that other drivers were the sparks for protests and ultimate violence that took place. Drought could have played an important role in either creating an underemployed population of young men who took part in the protests and later violence or by displacing a large number of people to areas where competition for work with other underemployed men created a recruitable population of fighters.

In Lebanon, the absence of violence is unobserved, but aside from the provision of subsidies to consumers and producers, there may have been crisis moments during the drought such as street protests that could have gone a different way but were resolved peacefully. Here, I focus on Syria and discuss Lebanon more fully in the alternative explanations section below.

In 2018, Ide surveyed the Syria evidence and concluded that (1) the links between climate change and the drought are plausible but not proven, (2) that there is strong evidence of the drought leading to massive loss of agricultural livelihoods but that evidence is contested, (3) as is the evidence for massive rural to urban migration, and (4) that the role of migration in intensifying grievances is plausible but limited information exists.¹⁴⁴

As he noted, there is good evidence to suggest that the drought did displace large numbers of people from the north of Syria to southern cities, but there is disagreement among scholars about the size of displacement and whether migrants themselves participated in protests.¹⁴⁵ In a November 2008 cable released by Wikileaks, the U.S. Embassy in Syria reported the fears of the UN FAO representative Abdullah bin Yehia :“Without direct assistance, Yehia predicts that most of these 15,000 small-holding farmers would be forced to depart Al Hasakah Province to seek work in larger cities in western Syria.” Yehia worried that 15,000 unskilled laborers would add to the social and economic pressures presently at play in major Syrian cities,” already burdened by Iraqi refugees, inflation, middle class

¹⁴⁴ Ide 2018.

¹⁴⁵ Nasser, Mehchy, and Abu Ismail 2013, 26; Erian, Katlan, and Babah 2010, 32; Wodon et al. 2014, 55; Abu-Ismail, Abdel-Gadir, and El-Laithy 2011, 24.

dissatisfaction, and “a perceived weakening of the social fabric and security structures.”¹⁴⁶In a 2009 report for the emergency aid appeal, the United Nations estimated the size of internal migration: “Migration figures range from 40,000 – 60,000 families. 36,000 families have reportedly migrated from Hassakeh Governorate alone.”¹⁴⁷ In 2009, that reportedly left about 60–70 per cent of villages in the governorates of Hassakeh and Deir ez-Zor.¹⁴⁸ In a June 2009 cable released by Wikileaks, the U.S. Embassy in Syria reported that some 250,000 to 300,000 had migrated out of the region according to FAO, mostly to seek casual labor in major cities like Damascus, Aleppo, and Homs as well as casual farm labor near the Jordanian border in Dar’a and As-Suwaida.¹⁴⁹ A February 2010 cable from the U.S. Embassy noted that there was some reverse migration back to the northeast as the rains had returned, but there was still immense human suffering in the region. Moreover, the cable noted it was still “taboo” to acknowledge publicly the scale of migration.¹⁵⁰

Some researchers report even higher numbers of displaced Syrians. Femia/Werrell, Gleick, and Kelley report as many 1.5 or even 2 million displaced persons as a result of the drought.¹⁵¹ Selby et al. critique this estimate as wildly out of proportion to most estimates of between 40,000 and 60,000 families, or about 300,000 people. They go on to dispute whether or not the drought was all that critical in driving even those numbers, giving existing seasonal migration from the

¹⁴⁶ U.S. Embassy in Syria 2008, 4.

¹⁴⁷ UN Office for the Coordination of Humanitarian Affairs 2009.

¹⁴⁸ Châtel 2014, 527.

¹⁴⁹ U.S. Embassy in Syria 2009.

¹⁵⁰ U.S. Embassy in Syria 2010b.

¹⁵¹ Kelley et al. 2017; Gleick 2014; Femia and Werrell 2012; Werrell, Femia, and Sternberg 2015; Werrell and Femia 2017.

region and other drivers of migration from the region such as economic liberalization.¹⁵² Ide's conclusion of the dispute is that authors of competing camps are potentially exaggerating their differences, and the discipline would be better served by acknowledging the challenges of estimating precise numbers in data-poor Syria:

In sum, the figure of up to 1.5 million refugees used by Kelley et al., but also by Femia and Werrell, Feitelson and Tubi, Gleick, and Werrell et al. is almost certainly overstated. But it is still very likely that several hundreds of thousands of additional people migrated from the drought-affected areas to the outskirts of urban centres. This number is more significant than implied by the estimates provided by Selby et al. and could have had considerable negative impacts on social service provision and resource availability.¹⁵³

The precise size of drought-related migration may not be knowable, given challenges of understanding the baseline levels of seasonal migration and other disruptions that were occurring in Syria at this time, including Iraqi refugees and the return home of Syrians after the end of the country's occupation of Lebanon.¹⁵⁴ It is difficult to disentangle the physical effects of the drought from the governance failures of response. As de Châtel concluded: "Similarly, climate change per se – to the extent that its predicted effects would already be visible – did not drive Syrians into the street in protest; it was the Syrian government's failure to adapt to changing environmental, economic and social realities."¹⁵⁵

¹⁵² Selby et al. 2017a, 238.

¹⁵³ Ide 2018, 351.

¹⁵⁴ Selby et al. 2017a, 239; Ash and Obradovich 2020, 6.

¹⁵⁵ Châtel 2014, 522. . 522

The specific magnitude of the migration may be less important than the social consequences. Were the numbers large enough to potentially trigger the kinds of problems the FAO feared, namely local contestation over resources? According to de Châtel, though there had been seasonal migration of young men in the past, this drought was so severe that whole families migrated to southern governorates, with a number settling in tent camps outside of the southern city of Dar'a,¹⁵⁶ the site of early protests against the regime in March 2011 after fifteen teenagers were imprisoned and tortured for writing anti-government graffiti.

Hinnebusch also saw the drought playing a part in Dara: "In Dera, formerly a base of the Ba'ath, where it began, the loss of work opportunities in Lebanon, corruption and drought had encouraged Salafism among unemployed youth."¹⁵⁷

Ash and Obradovich try to connect the migration within Syria through a unique data strategy. They use lights at night as a proxy for population density and show changes in light penetration between 2005 and 2010 to suggest population growth and decline. They then correlate such changes with the likelihood of protest, finding that areas in the northeast that experienced a decline in light intensity were associated with lower protest risks while Sunni Arab areas that experienced higher light intensity (and hence were recipients of displaced populations) were more likely to experience protests.¹⁵⁸ This finding complements a study by De Juan and Bank that, also using nighttime light, found both selective distribution of electricity

¹⁵⁶ Ibid., 526.

¹⁵⁷ Hinnebusch 2012, 107.

¹⁵⁸ Ash and Obradovich 2020.

to regions preferred by the regime and lower levels of violence in those areas compared to less favored areas.¹⁵⁹

While both of these studies have some bearing on the connections between drought-related migration movements and protest, Ash and Obradovich note that in their qualitative review of demands by protesters at the early stage of the uprising in March and April 2011 that the drought was not mentioned, nor were many economic demands in general, the emphasis being on freedom and calls for reduced corruption. They see this as providing some support for one of their hypothesis that people migrated to areas with similar kin and religious identities so rather than foster inter-group cooperation, migration served to accentuate the claims of the now larger identity group.¹⁶⁰ They note the presence of shared ties between sending and receiving areas in their technical appendix:

Specifically, there is evidence Syria's migrants and locals shared tribal, in addition to sectarian, connections. In particular, Syria's Sunni Arabs have a complex patchwork of kinship networks and these sometimes transcend regional boundaries (Tibi, 1990). Several tribes and tribal confederations have populations in both areas stricken by drought and those that received migrants: there are Baggara in both Aleppo and Deir ez-Zour, Fadan in Raqqqa and Aleppo's Ain al-Arab, Al-Abda in Hasakeh and Hama and Al-Harb in Hasakeh, Aleppo, Damascus and Homs (Zakariya, 1983).¹⁶¹

Their argument provides a provocative new line of potential research inquiry. On some level, it is not surprising that two to three years after the beginning of the droughts, there is no explicit mention in the protest activity in 2011, though the relative absence of economic claims is somewhat surprising. Moreover, as Selby et al. note, while Dar'a is often flagged as the first case of mass post-Arab Spring

¹⁵⁹ De Juan and Bank 2015.

¹⁶⁰

¹⁶¹ See Appendix C2 in Ash and Obradovich 2020.

protest in Syria, there were at least two other protests in Damascus as well as ongoing protests in the Kurdish region dating back to February 2011.¹⁶² As noted earlier, the U.S. embassy cables of May 2008 also signal that there was at least one food-related protest at the time but that it was quickly dispatched with water hoses: “A minority-run police state with heavy-handed internal security services, the SARG keeps a close watch on any civil unrest that could pose a threat to the regime.”¹⁶³ Nearly three years later, such demands for redress of food-related concerns may have morphed into broader calls for political reform. Thus, this work raises as many questions as it answers.

Moreover, it is also unclear which social groups were the main protagonists in anti-government activity, at least at the start. Hinnebusch writes that the early protagonists were middle-class intellectuals who reached out to Islamists and the Kurds. With the Kurds ambivalent because of offers of citizenship, many of the initial protesters were Sunnis. What protests had in common was “reaction to the neglect of areas outside the main urban areas.”¹⁶⁴

The geography of where different tribal and religious groups live in Syria is not well understood outside of Syria. The georeferenced version of the Ethnic Power Relations dataset that I consulted is based on dated ethnic maps from a 1964 GREG/Atlas Narodov Mira Dataset, though includes some updated refinements. De Juan and Bank use another dataset from Izady to generate dummy variables for Sunni and Alawite areas. They note that “To the best of our knowledge, no reliable

¹⁶² Selby et al. 2017a, 240.

¹⁶³ U.S. Embassy in Syria 2008.

¹⁶⁴ Hinnebusch 2012, 107.

data beyond rough approximations exist on the exact size and settlement areas of the various communities. Moreover, most regions of Syria have actually been ethnically and/or religiously mixed.”¹⁶⁵ They argue their results are consistent with the withdrawal of the Syrian state from service provision in towns like Dar’a:

In what was traditionally a Ba’athist stronghold and the administrative center of the Hawran governorate, local state institutions gradually withdrew from the city and the adjacent region since the 1990s, thereby weakening the previously strong patron–client ties between the regime and important local constituencies.¹⁶⁶

These two perspectives seem at odds since the former emphasizes political criteria while the latter focuses on withdrawal of the Syrian state from their history clientelism. They perhaps can be reconciled with future research which assesses the claims that migrants were of the same tribal/identity groups of receiving areas. The De Juan and Bank argument is consistent with mine that declining state capacity in an increasingly exclusive regime translated into loss of public support in the wake of the drought, even if that was not articulated as the reason for the protest activity (if Ash and Obradovich are to be believed).

Even if we have more confidence in the causal role of the drought in Syria’s 2011 uprising, do we have much clarity for why Lebanon did not experience such an outcome? Both countries possessed governance with some degree of self-serving elites and seemed poised for violence at different moments in time. In the section below on alternative explanations, I first address why Syria and Lebanon might be fundamentally different from each other and difficult to compare, before turning

¹⁶⁵ De Juan and Bank 2015, 98.

¹⁶⁶ Ibid., 101.

back to my main argument about the differential role of capacity, inclusion, and assistance.

Alternative Explanations

The strongest alternative explanation for the discrepant outcomes between the two countries is that Syria and Lebanon are different in too many important respects. Lebanon is richer, far more urbanized, and less dependent on agriculture than Syria. Indeed, the effects of the drought, though significant for wheat production, do not show up in terms of large-scale human suffering.

This line of argument suggests a couple of different possibilities, (1) that the drought was not as severe in Lebanon and (2) that the countries are different from each other in fundamental ways in terms of socio-economic development. In terms of the former, the logic of that critique would only reinforce the causal significance of physical exposure to drought. If the drought had been more severe, the logic goes, Lebanon too would have been at risk of conflict and state breakdown.

The second explanation suggests that the political differences in governance in terms of capacity and inclusion are less central to the outcome than Syria and Lebanon's divergent levels of economic development. If Lebanon had been poorer and more agriculturally dependent, would it too have succumbed to violence in this period? As suggested earlier, the regime is vulnerable to food price shocks in urban areas, and the government undertook expensive efforts in 2008 to insulate the populace from these problems. More broadly, Lebanon's situation has been precarious, both in the lead up to the drought and in its aftermath. The two countries are intertwined with the Syrian state functioning as an occupying force

until the assassination of Lebanon's prime minister in 2005 forced Syria's withdrawal. Lebanon weathered difficult protests and violence between 2006 and 2008, including an Israeli air campaign against Hezbollah in 2006 as well as violent protests in 2008 in response to the government's efforts to shut down a Hezbollah communications network. In the aftermath of Syria's civil war, Lebanon would take in more than 1 million Syrian refugees. Despite all of these developments, Lebanon has, of this writing in late 2019, not lapsed yet again into large-scale violence. While resources (both internal resources and international funding mobilized by the international community and Lebanon's diaspora) helped facilitate a more aggressive response to a variety of challenges, what would Lebanon look like if public grievances had been violently repressed throughout this period as in Syria?

Conclusion

This preceding discussion underscores that differences in governance between the two countries are important both in terms of the Lebanese state's ability to withstand and respond to the drought it faced in 2008-2010 but also other challenges such as Israel's bombing campaign of 2006 and on-going challenges from Hezbollah as well as the influx of Syrian refugees. While Lebanon's internal situation is far from perfect (and perhaps deteriorating), it is notable that Lebanon, which faced similar challenges to Syria of fragmentation in its population, did not succumb to the kinds of large-scale violence that plagued Syria in the 2010s. At the same time, the self-dealing by elites to use power-sharing arrangements that were intended to make sure all groups had a stake in Lebanon's government threatened to cleave

elites of various confessions from the mass public. That certainly has created opening for protest movements in 2019 that brought hundreds of thousands out on to the streets. This is similar to the way the Syrian protests initially evolved, as Hinnebusch argued:

The shock troops of rebellion were young, unemployed, deprived people with little stake in the status quo, widely dispersed and unknown to the government, hence quickly producing new leaders to replace those arrested or killed.¹⁶⁷

The role for leaderless mass protests is somewhat at odds with the arguments I have made about elite pacts in fostering and/or undermining stability and suggests a number of important considerations as we turn in the next chapter to why international actors might care about climate security concerns outside their own borders and what the policy agenda ought to be in a world where more regimes will be tested like Syria and Lebanon.

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¹⁶⁷ Hinnebusch 2012, 107.

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