

The Geopolitical Impact of Climate Change in the Mediterranean Region

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The role of *place* in human affairs has special significance when it comes to the impacts of climate change. Shifts in temperature, precipitation, weather patterns and variability, and the incidence and seriousness of extreme events such as storms, floods and heatwaves, will differ depending on locality. Their impact will have differing but potentially profound effects on the functioning of the societies where they play out.

To an extent these shifts can already be perceived on the ground, offering unexpected surprises to those developing increasingly refined and precise climate models and projections. The sustained cold spell in much of Europe in February - March 2018 while the Arctic was 20 degrees warmer than normal is a dramatic example of what may lie ahead. But for all intents and purposes we are at the beginning of experiencing what a changing climate means. Even with immediate success in curbing greenhouse gas emissions and reducing their atmospheric levels, the physical, biological and societal effects of what has already been emitted will be increasingly felt for decades and centuries to come. In the wider Mediterranean, including coastal nations and the Mashreq countries, climate change geopolitics are determined by the region's great biophysical, socioeconomic and political diversity. It is both a major oil exporting region, exposed to the uncertain evolution of energy markets, and a region where temperatures and rainfall will change more drastically than in many other parts of the globe. And they will find their expression where political turmoil, armed conflict, deep environmental crisis

and extreme dependence on other regions for food and water already provide an extraordinarily challenging context.

Analyses of likely climate impacts are sometimes single-phenomenon and narrow, looking at one parameter at a time. In reality climate effects occur within complex and interlinked systems, where nature and environment interact with society in unpredictable and non-linear ways. Adequate policy responses must identify robust elements, relevant under a range of potential scenarios, which will protect people and build societal resilience in the mid- and long-term, while already making sense today. So far, we have seen little of deliberate and detailed policy designs with such aspirations in the region.

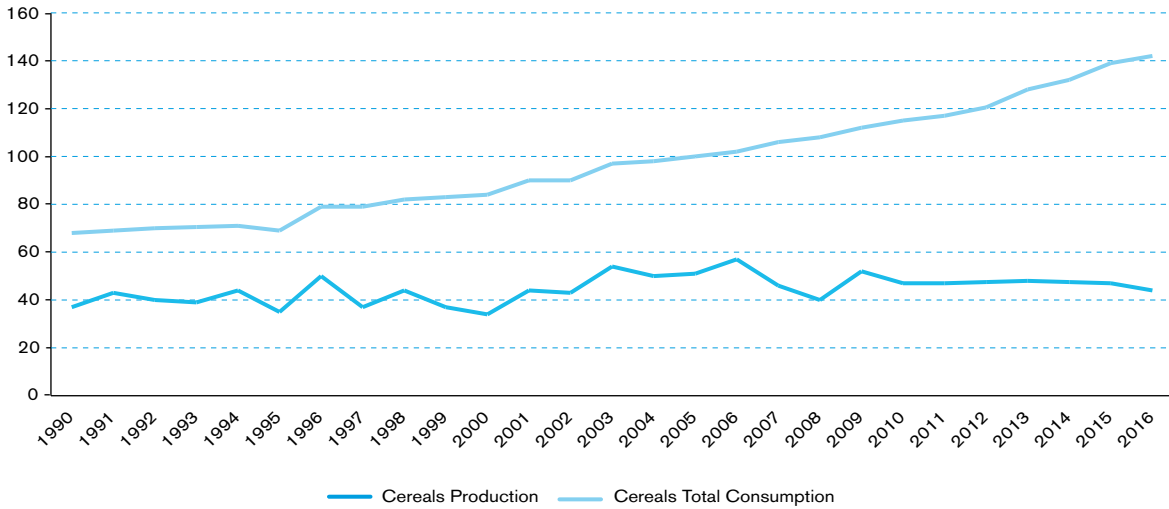
What Lies ahead?

Through recent work by regional institutions we now have access to increasingly detailed and high-resolution climate projections for the Maghreb and Mashreq sub-regions (ESCWA, 2017b), as well as for the northern shores of the Mediterranean, presenting not only climate data but also assessments of impacts in sectors such as water, agriculture and health. Projections show consistent rapid warming trends in an already hot and dry region. This means a sharp increase in the number of warm days and nights, and more days of extreme heat. A belt of low-pressure warm air would link South Asia with the western Mediterranean and a trough over the Sahara.

In a scenario where greenhouse gas emissions begin to recede mid-century, a temperature rise would become more moderate, while in the business-as-usual scenario, where emissions continue to increase, so would the number of warm days and nights. Today, the average duration of warm spells in

CHART 12

Trends in Food Production and Consumption in the Arab Region (million metric tons)



Source: World Bank

the region is 16 days. Under the more optimistic scenario, warm spells would increase to about 80–120 days with peak averages at 47 degrees C. If emissions continue unabated warm spells could reach 200 days, i.e., more than half of the year, with average peak temperatures at nearly 50 degrees C. The resulting heat stress, particularly in areas with high humidity, will make outdoor physical labour highly hazardous with severe impacts on human morbidity and mortality. Parts of the region could become uninhabitable for humans.¹

Although the region can expect a generally drying trend, projections are less certain in terms of rainfall distribution in space and time, as well as for extreme precipitation events. The most significant reduction of rainfall will occur in the western Mediterranean², in the Atlas Mountains, and in the upper Euphrates and Tigris basin (ESCWA, 2017b). Increased precipitation is projected in the south-eastern Arabian Peninsula and the Gulf region, although absolute amounts will still be low in this dry sub-region. Because of higher temperatures, evapotranspiration from surface water will increase, further reducing water availability.

Layer upon Layer of Crisis

Changes in temperatures and rainfall will express themselves within the complex natural and societal systems of the region. But that is not enough. They are superimposed on a severe water crisis (World Bank, 2017), political turmoil and a web of intersecting violent conflicts.³

Over 60% of the population in the Middle East and North Africa live in areas with high or very high surface water stress (World Bank, 2017), meaning that more surface water is used than is replenished. Water is drawn from rivers and aquifers in unsustainable volumes and fossil water is mined at high rates. Few of the countries use pricing policies and incentives to encourage good water management and judicious use of a scarce and vital resource. Most water policy measures are aimed at increasing production and output rather than ensuring efficient management and saving water. Some Gulf countries have invested heavily in desalination but more than 80% of the region's wastewater that could be used for irrigation or industrial processes becomes an untreated pollutant or, if treated, is lost.

¹ JEREMY S. PAL & Elfatih A. B. ELTAHIR "Future temperature in southwest Asia projected to exceed a threshold for human adaptability," *Nature Climate Change* volume 6, pages 197–200 (2016).

² Ramin SKIBBA "Climate change could flip Mediterranean lands to desert," *nature.com* 27 October 2016 www.nature.com/news/climate-change-could-flip-mediterranean-lands-to-desert-1.20894.

³ Joost HILTERMANN *Tackling the MENA Region's Intersecting Conflicts* International Crisis Group, 22 December 2017 www.crisisgroup.org/middle-east-north-africa/eastern-mediterranean/syria/tackling-mena-regions-intersecting-conflicts.

No country is sovereign as far as its water resources are concerned. All Middle East and North Africa countries share at least one aquifer, while some 60% of its rivers and lakes cross borders. But the resulting interdependence is not matched by corresponding agreements and plans for joint management of trans-boundary water, albeit with a few exceptions.

Increasing temperatures and reduced rainfall brought about by the changing climate further undermine the region's ability to feed itself. Food sovereignty has become an increasingly distant mirage

Growing water insecurity translates into increasing food insecurity (ESCWA, 2017a). Agricultural productivity increases have been sluggish over the past decades in the Middle East and North Africa, with Egypt as the exception. The rapidly growing population requires a steadily rising level of food imports. In 1990, there was a 30 million metric ton gap between production and consumption of cereals (see Chart 12); in 2016 it had risen to 100 million metric tons, meaning that the region imports 65% of its consumption.

With only 5% of the world's population, the region imports 25-30% of its traded food. Importing food means importing water – each ton of wheat produced in the US, a major exporter to the region, requires around 850 tonnes of water⁴. The MENA region's imports of such *virtual water* is illustrated in Map 2. Further hedging of food supplies is done through the purchase or leasing of land in other regions, where some Gulf countries are among the leading 'land importers'.⁵

Increasing temperatures and reduced rainfall brought about by the changing climate further undermine the region's ability to feed itself. Food sovereignty, often expressed as national goals, has become an increasingly distant mirage.

A Reversal of Dependencies

Through imports of food, land and water the region consequently finds itself more and more dependent on what happens elsewhere. It must rely on the stability of agroecosystems and markets in other parts of the world, and on the ability of other countries to manage and adapt to the effects of climate change in order to meet the food needs of a growing global population.

It has been something of a geopolitical truism that the world depends on stability in the MENA region to safeguard a regular supply of oil. Climate change, environmental crisis and population increase have turned dependence on its head, however, when the integrity and stability of the globe's food and water systems have become of vital interest to the MENA region. Thus, the global food crisis in 2008⁶ constituted a scare of existential proportions. A combination of high oil prices, low global food stocks and freak weather in some major grain-producing countries, probably triggered by climate change, led to skyrocketing food prices that shocked food markets in the Middle East (Woertz, 2013), particularly hitting the poor, for whom food represents a major part of a household budget. The sense of dangerous dependencies was exacerbated when export bans were issued by Russia and some other producers. Although the food crisis has not been repeated and some mitigating measures have been put in place, the global food system remains fragile, particularly as climate change increasingly affects productivity. And the region's water interdependencies remain unresolved. Its fractured state since the disastrous invasion of Iraq in 2003 was further exacerbated as the 'Arab Spring' unfolded in 2011. What the International Crisis Group recently characterized as clusters of conflicts, connected through concentric circles⁷, including Iran-Saudi tensions at an all-time high, and weak regional political institutions, together make the region exceptionally ill-equipped to address its shared natural resource challenges at a moment when climate change makes collaborative approaches imperative. As an example, efforts at re-

⁴ CRASWELL, E. et al (eds.) *Integrated Assessment of Water Resources and Global Change* Springer, 2007.

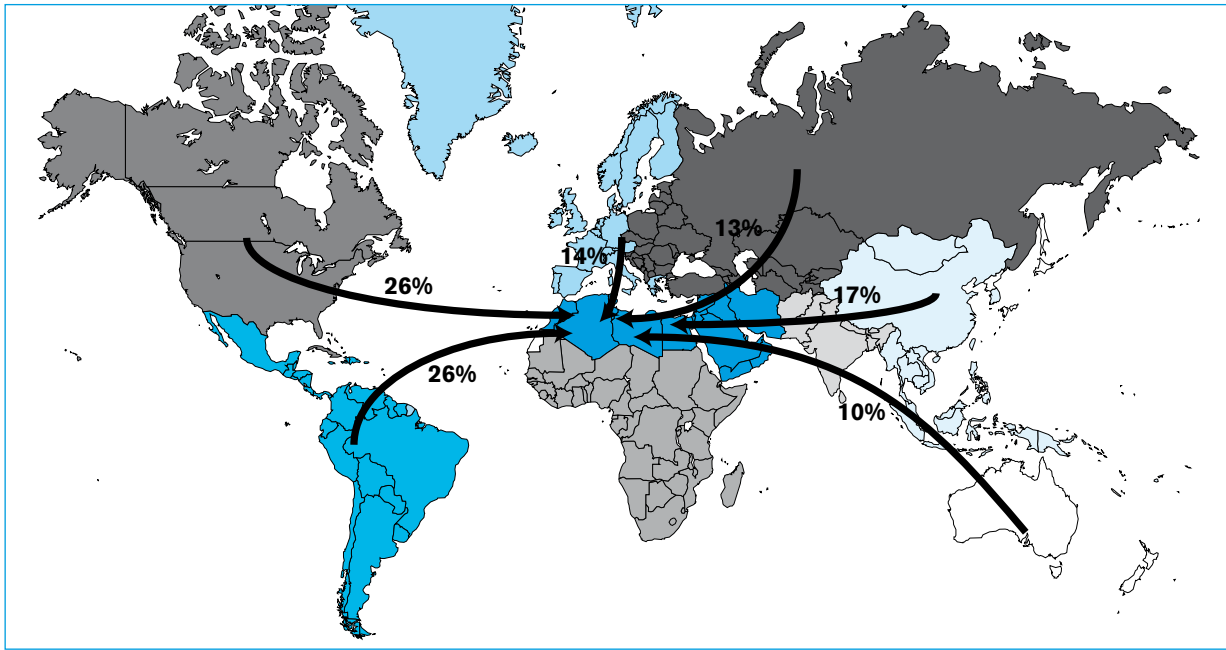
⁵ Ana SWANSON "An incredible image shows how powerful countries are buying up much of the world's land," *The Washington Post* 21 May 2015. www.washingtonpost.com/news/wonk/wp/2015/05/21/rich-countries-are-buying-up-farmland-from-poorer-ones-around-the-world/?utm_term=.5e0301fc74f5

⁶ Johan SCHARR "Weaving The Net: Climate Change, Complex Crises And Household Resilience," World Resources Institute, November 2013. <http://worldresources.org/publication/weaving-net>

⁷ HILTERMAN, *op cit*.

MAP 2

Net Virtual Water Trade with the Middle East and North Africa by World Region, 2015



Source: World Bank

solving tensions around the Euphrates and Tigris basin between Syria, Iraq and Turkey,⁸ the latter being the upstream 'riparian hegemon,' have not been successful, and are less promising than ever given the state of the conflict. Now the Basin faces a reduction in rainfall and increasing evapotranspiration, while reduced flows downstream caused by hydropower and irrigation projects in Turkey, along with sea level rise, lead to saltwater intrusion in aquifers in southern Iraq. A shared and sub-regional approach for the Euphrates-Tigris basin has never been more needed and more distant.

Climate Change and Regional Security

Much has been made of the effects in Syria of the extreme drought and subsequent displacement of farming families from rural to urban areas during the years preceding 2011. Some argued that the drought, which, with a high degree of certainty, was a climate-change-induced anomaly, was a major triggering fac-

tor behind the outbreak of violence⁹, making the Syria crisis effectively a climate conflict. Others reject this as a simplistic notion without denying that climate change played a role¹⁰. Instead, they point to the disastrous effects of the Syrian regime's agricultural policies and the removal of subsidies at the very moment of severe crisis, which led to the destitution and displacement of hundreds of thousands of rural families. Similarly, food price hikes in Egypt caused by the food crisis in 2008 may have contributed to social unrest but was clearly not the main factor behind the Egyptian chapter of the Arab Spring.

As far as the relationship between climate change and security is concerned, violent conflicts never have single causes but develop in complex, highly contextualized and often unpredictable ways, where the ability and legitimacy of local and regional institutions in finding and negotiating solutions is central. In some contexts, climate change impacts on natural resource access and livelihoods may be contributing factors in multi-causal conflict dynamics. For example, it has been pointed out that ISIS'

⁸ Nadhir AL-ANSARI "Hydro-Politics of the Tigris and Euphrates Basins," *Engineering*, 08,140-172, 2016. http://file.scirp.org/Html/8-8102551_65038.htm.

⁹ Thomas L. FRIEDMAN "The Scary Hidden Stressor," *The New York Times* 2 March, 2013 www.nytimes.com/2013/03/03/opinion/sunday/friedman-the-scary-hidden-stressor.html.

¹⁰ Francesca DE CHÂTEL "The Role of Drought and Climate Change in the Syrian Uprising: Untangling the Triggers of the Revolution," *Middle Eastern Studies* Volume 50, 2014.

recruitments were helped when worsening droughts in Sunni areas of Iraq undermined farmers' livelihoods¹¹, with no alternative income available and no relief provided by the central government.

Earlier concerns about the risk of 'water wars' due to increasing competition for transboundary water have not become reality, as river basin commissions have enabled riparian countries to negotiate solutions in everybody's interest. But the security dimension of dwindling water availability for the agricultural, industrial and domestic needs of the growing population in the Middle East and North Africa does not give room for complacency.

Prospects for Collaboration

Proposals to deal with the effects of climate change and water and food insecurity are being developed by regional institutions at a technical level, supported by multilateral actors and a few donor countries. For example, it has been suggested that food security could be strengthened and costs lowered (ESCWA, 2017a) with a regional and coordinated diversification of trading partners, shared storage facilities and joint long-term purchase arrangements. There is also an enormous untapped potential for increased intra-regional food trade between Arab countries. But these proposals are yet to be translated into national and regional policy – the attention of the political class in the region is mostly elsewhere.

Protecting the population and safeguarding development in the face of climate change requires adaptation planning by well-resourced, representative and responsive public and private institutions. This happens least in countries directly involved in conflict. The preoccupation with daily threats to security stands in the way of any considerations of longer term trends that could undermine hopes for a more stable future. This goes for individuals as well as for local and central authorities. There is only so much attention and energy that can be devoted to what lies beyond immediate needs, creating a psychological barrier even among those who have the contextual knowledge and environmental and political insights necessary for the required development of

new climate policy. It adds to the human tragedy of countries in conflict that they are also the most vulnerable to the impacts of climate change.

Concluding Remarks

The confluence of severe climate change impacts, deep environmental crisis and a web of conflicts is reason for serious concern when it comes to the future of the wider Mediterranean region. A perfect, tragic storm is already looming on the horizon. Any plans for post-conflict rehabilitation must address the emerging threats to the region's population. Sound proposals must reach the rooms where policy is made. The stewardship of natural resources must become a shared responsibility.

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¹¹ Peter SCHWARTZSTEIN "Climate Change and Water Woes Drove ISIS Recruiting in Iraq" *nationalgeographic.com* 14 November, 2017. <https://news.nationalgeographic.com/2017/11/climate-change-drought-drove-isis-terrorist-recruiting-iraq/?beta=true>.