

# The Geopolitical Impact of Climate Change in the Mediterranean Region: Climate Change as a Trigger of Conflict and Migration

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## Geopolitics in the Mediterranean Region

Historically, the Mediterranean region has been a hotspot of geopolitical conflicts. Since ancient times, its unique geographical landscape at the intersection of three continents has connected and separated the spheres of influence of major powers in Europe, Africa and Asia. Its civilizations became models for hegemonic power projections elsewhere. In the World Wars the Mediterranean became a battleground, and during the Cold War a zone of conflict between the superpowers and their allies, drawing the region's riparian states into numerous violent conflicts. Securitization continued after the East-West conflict and into the 21st century with its complex geopolitical landscapes and transformations, connecting multiple scales, actors and dimensions of security.

Over the past three decades, the Mediterranean Sea became the playground for numerous conflicts, including the Israeli-Arab-Palestinian conflict; tensions between Turkey and Greece; political instability in the Arab Spring; armed conflicts in Iraq, Libya, Syria, Yemen and in the Balkan states; terrorist acts perpetrated by al-Qaeda, Islamic State and other non-state actors; refugee movements; and divisions between the Global North and South. In complex crisis constellations many state and non-state actors interact, involving Israel, Syria and Turkey as resident nations; aspirants for regional hegemony (Iran, Qatar and Saudi Arabia); and external powers, including the US, China, Russia, NATO and the European Union (Ehteshami et al., 2017). Competition around the Mediterranean Sea poses the danger of spillover

into neighbouring regions in Europe, the Sahel and western, central and southern Asia.

Among the security challenges, energy, climate change, environmental degradation, resource scarcity, population growth and development are often seen as soft security issues that can aggravate and accumulate into hard security threats, possibly driving instability and violent conflict. Increasingly, climate change is a connector and multiplier of risks, interwoven with the region's geopolitical dimensions, including natural disasters, water and food shortages, energy transformation, human migration, conflict and cooperation.

## Climate Vulnerability and Risks

The Mediterranean (southern Europe, North Africa and the Middle East) is one of the most vulnerable regions to climate risks. Hot, dry summers and cool, humid winters are typical for much of the region. In North Africa an average temperature rise of 2 to 3°C is expected by the middle of the century, particularly in mountainous regions, although more moderate in coastal areas. Annual precipitation is likely to decrease (except mid-winter), together with shifting cyclone patterns, leading to drier conditions and reduced groundwater replenishment (Schilling et al., 2020). The region is exposed to droughts, heat waves, wildfires and other weather extremes, and the degradation of water, soil and food. Deserts, rivers and coastal zones, rural and urban areas as well as economic, social and political stability are all affected. Vulnerable sectors are agriculture, forestry, fishery, tourism, health, electricity and other vital infrastructures (Cramer et al., 2018). The loss of human livelihoods and development opportunities can trigger forced migration and violent conflict. Due to low per

capita income, knowledge, technology and unequal distribution, MENA countries are generally more vulnerable compared to Europe and are less able to adapt and mitigate conflict (Schilling et al., 2020).

### Weather Extremes and Sea Level Rise

Weather extremes in the Mediterranean include heat waves, heavy rainfall, coastal flooding, storms and sea level rise, and affect millions of people. Social consequences include the destruction of infrastructure, threat to health, life and livelihood, the impairment of human security and social stability. The risk of natural disasters is increasing throughout the area, in particular in the Middle East. About two thirds of these took place in southern Europe, and more than half were hydrological disasters such as floods and landslides, which accounted for nearly 80% of all reported natural disasters in North Africa (Kerssenbrock, 2019). Due to improved early warning systems, forecasting and evacuation, fewer people were severely affected by natural disasters. While a number of studies question causality, others show that vulnerability to natural disasters depends on adaptive capacities to cope with the consequences.

Coastal zones in the Mediterranean are also exposed to sea level rise and land losses, with water levels possibly increasing by one metre or more for high emission scenarios in the 21st century and affecting millions of people in low-lying areas such as the Nile River Delta. Mitigation strategies balance climate impact against the cost for coastal protection, possibly amounting to several percent of a country's Gross Domestic Product (GDP).

### Water-Food Nexus

Mediterranean (semi-)arid zones are facing water scarcity and droughts. Water shortages affect agriculture, forestry and hydropower. Most MENA countries are water stressed or water scarce, which will increase with global warming and affect precipitation, glaciers, land degradation, desertification and food production. Together with a projected population growth, access to safe drinking water and green water for agriculture will likely decline. Agriculture is the biggest consumer of water. In Egypt, most water

for agriculture comes from the Nile, while other countries in the region mostly rely on precipitation, making the region sensitive to its decline. To prevent the depletion of groundwater, extraction should not exceed replenishment. The imbalance between water demand and supply, and the confrontation between key political actors exacerbate the water crisis.

## Increasingly, climate change is a connector and multiplier of risks, interwoven with the region's geopolitical dimensions

Despite technical progress, Mediterranean food security is in decline due to human activity, such as deforestation and overgrazing, land clearance and intensification, soil salinization and desertification, non-sustainable irrigation and ecosystem degradation (Cramer et al., 2018). Despite agricultural policies, technical advances and resource efficiency, self-sufficiency in food is restrained by high population growth, soil exploitation and local environmental problems. The growing food demand, under the combined pressure of climate change and urbanization, increases dependency on food imports and food prices. Together with lower oil revenues and international land speculations, this may threaten rural populations and lead to regional food crises that destabilize fragile states. There are substantial differences in food security between southern Europe, which adapts more easily to climate change, and North Africa where agricultural land is heavily exploited and limited by the Sahara. Climate change will likely decrease agricultural output due to reduced water availability, heat stress and population growth, making the region sensitive to food imports.

### From Fossil Fuels to Renewable Energy Sources

Energy is a contentious geopolitical issue in MENA, which is rich in fossil fuel resources. These constitute a major source of income, at the cost of a strong dependence on exports from this region. Growing energy demands are putting pressure on energy

sustainability, economic development, social stability and human security. Dependence on oil and natural gas has contributed to violent conflicts, which absorb resources for military purposes, undermine democracy and cause environmental damage. Part of countries' revenues are used to ensure access to water (e.g. through desalination plants) and food imports (virtual water), which drive the water-energy-food nexus. In the coming decades, the region's fossil reserves will be nearly exhausted.

Nuclear power in the Mediterranean has so far been limited to a few countries in southern Europe and has not found strong support in MENA, despite the existence of several nuclear programmes. In this conflict-prone region the potential use of nuclear energy for military purposes has increased threat perceptions and played a role in conflict, as in the case of Iraq and Iran. While MENA's fossil fuels are major drivers of global climate change, nuclear power has been described as a low-carbon energy alternative, at the cost of a growing nuclear proliferation risk.

The Mediterranean region is also rich in renewable energy resources, including hydropower, bioenergy and wind, solar and geothermal energy in southern Europe, and high levels of solar energy and some wind power potential in MENA. Strong cooperation on energy security could help to establish long-term stability in the entire region, substantially reducing carbon emissions. About a decade ago, a concept for energy cooperation between Europe and MENA emerged with the Desertec vision, which envisages renewable energy systems around the Mediterranean connected by an electric power grid for direct current transmission, offering multiple benefits in energy and climate security, as well as development and employment opportunities (Scheffran/Brauch, 2014). Transformation from fossil to renewable energy would attract income, foreign investments and technology sharing. However, the hurdles multiplied in the wake of the Arab Spring in 2011 and the destabilization it sparked. In a cooperative environment, the region offers great potential for a low-carbon energy transition.

### **Human Migration and Forced Displacement**

Various push and pull factors are behind the migration pressure from MENA countries to Europe or other regions. Differences in incomes and development be-

tween southern Europe and MENA are drivers for human migration across the Mediterranean Sea. A lack of water and food adds to the impoverishment and pushes people to move from rural areas to cities, or to go abroad. North Africa is both a migration destination and transit region, amplified by population pressures from the Sahel. Environmental and climate change, together with low water availability and agricultural productivity, as well as economic and demographic changes contribute to migration. With rising temperatures, it may become more difficult to maintain living standards and development opportunities for a growing population. Public statements, policy debates and the research literature have identified environmental migration as a key security issue, intensifying social unrest, competition on farmland, housing, wood, water, employment and social services, which could potentially increase the likelihood of conflict in transit and target regions (Scheffran/Brauch, 2014).

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In the past decade, millions of people migrated in MENA, from Syria, Yemen, Afghanistan and Iraq to the Sahel, driven by mixed motives: violent conflict, population growth, economic problems, rural-urban mobility, resource depletion and climate change. When these movements reached Europe in 2015, across the Mediterranean Sea and the Balkan route, the European Union was unable to jointly manage this situation. In the emerging "refugee crisis," anti-migration movements provoked tensions across Europe. Media coverage of boat people and refugees reinforced threat perceptions and the securitization of migration. While Frontex expanded the "defence" of and against refugees, differences escalated between nationalist governments and NGOs trying to save the lives of migrants at risk. These developments framed the debate on environmental and climate migration in the wake of the 2015 Paris Agreement and beyond.

## Environmental Conflict and Climate Security Risks

The linkages between natural resource scarcity, environmental degradation, social stress and violent conflicts are complex, indirect and controversial. Generally, environmental and climate change are contributing but rarely dominant factors in armed conflict within and between nations. More likely are communal violence or conflicts between farmers and pastoralists. When climate change is a stressor for weather extremes or shortages in natural resources such as water, food and energy, it can threaten the operation of critical supply networks and infrastructure for health and wealth, provoke production losses, price increases and financial crises, and trigger migration and conflict. In the Mediterranean, the high vulnerability to global warming is a risk and crisis multiplier, connected to other problem areas through multiple linkages, including environmental factors (pollution, desertification, water scarcity, food insecurity), economic and social problems (unemployment, financial crash, recession, unequal wealth, social divisions, hunger, poverty), demographics (population growth, ethnic diversity, migration, urbanization) and political issues (marginalization, inequality, regime instability, riots and violence).

In the most affected regional hotspots, climate, political and socio-economic security challenges come together pushing countries to critical thresholds of state fragility, forced displacement and violent conflict. Destabilization in one part of the Mediterranean affects stability in other parts. High vulnerabilities and limited adaptive capacities of North African countries increase the probability of climate – conflict linkages through agricultural production and the food–water–energy nexus. Climate change is expected to diminish agricultural production and increase food insecurity, leading to protests against the government. Droughts are found to increase the likelihood of violence for groups dependent on agriculture and experiencing political exclusion, especially in very poor countries. Morocco's agriculture is vulnerable to climate change but less so to related environmental conflicts. Algeria, Egypt and Libya have an elevated conflict risk because they have all experienced recent violent conflicts. Egypt and its capital Cairo are highly vulnerable to the impacts of climate change, like water scarcity, land degradation

and agricultural losses. Demographic pressures of a doubling population may intensify land and water competition.

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Whether climate-induced weather extremes will trigger or intensify violent conflicts has been the subject of scientific debate, with mixed results. A correlation between temporal frequencies of armed conflicts and severe natural disasters (based on 696 natural disasters from the EM-DAT database and 80 intra- and inter-state armed conflicts since 1945 in 18 countries in the Mediterranean region from the Uppsala Conflict Data Programme) finds an approximate 50% probability that a conflict outbreak was preceded by a natural disaster, especially within three years (Keressenbrock, 2019). Causalities are unclear, only in the Middle East is there a significant correlation between income and conflict risk after a natural disaster. Low income, ethnic diversity or disaster intensity do not create a significantly higher conflict risk after natural disasters. Only droughts had a clear influence on conflict risk, combined with water scarcity and rising food prices. There are large regional differences between southern Europe, North Africa and the Middle East regarding adaptation and conflict resolution capacities.

## Water Security and Conflict

Water scarcity has raised strategic concerns in MENA's arid and semi-arid zones. In many cases, water resources are facing transboundary water disputes, often coinciding with land disputes. Water stress in MENA countries could overstretch their ability for sustainable water and peaceful crisis management, leading to overexploitation, destabilization

and violence. Hydrological matters and water scarcity can contribute to social instability, violent conflict, ethnic clashes or border tensions, although to date they have not been the cause of interstate wars, but rather water agreements and cooperation projects. Competition over shared water resources has been observed for the Nile, Euphrates, Tigris and Jordan rivers. An important water source for Israel, Palestine, Syria, Jordan and Lebanon is the Jordan River Basin, where intense conflicts break out over water access and distribution, and the available water is not shared in a fair and equitable manner due to an imbalance of power. While the Joint Water Committee guarantees equal water distribution, Israel consumes considerably more water per person than the Palestine population and holds veto rights over their water development. Water resources and claims to the rights to their use are a source of political tension between Turkey, the Kurdish people, Syria and Iraq as downstream riparians. For Syria the Euphrates river is the most important water source, for Iraq it is the Tigris. Both are concerned about Turkish control over their respective vital waterways. Climate change may likely make water sharing more complicated and disputes more difficult to resolve (Kerssenbrock, 2019).

### Feeling under threat, Egypt has, in turn, threatened Ethiopia in order to prevent or delay filling of the Ethiopian Grand Renaissance Dam

Algeria, Egypt and Libya suffered from recent conflicts, and some see potential instability in the combination of water and climate change in North Africa. Twenty-four violent conflicts were recorded between 2008 and 2017, mainly driven by political motives. Egypt depends on the Nile River for 95 per cent of its water consumption and claims its right over Nile water. Increasing water demands by upstream countries like Ethiopia and emancipation from Egypt's dominance bear a conflict potential. Feeling under threat, Egypt has, in turn, threatened Ethiopia in order to prevent or delay filling of the Ethiopian Grand Renaissance Dam. The impacts of climate change on the Nile River Basin are as yet uncertain. Initia-

tives have suggested agreements to regulate water distribution in the Nile Basin to avoid outbreaks of violence.

### The Arab Spring: Tipping into Crisis

In the Arab Spring a series of protests and riots emerged in 2011, from Tunisia to Libya, Egypt, Syria and other MENA countries, spread by electronic media and social networks. Several studies argued that the political crisis was aggravated by climate change due to extreme weather events, in particular drought and crop failure in China (the world's largest wheat consumer and producer) and Russia (Egypt's largest wheat supplier), which led to sudden food shortages on markets worldwide. Increasing wheat demands and close ties among geographically distant regions triggered rising global wheat prices, together with other drivers, such as oil prices, bio-energy use and stock market speculations. This particularly hit the MENA region as a major wheat importer, causing financial hardships for people on low incomes. In a population with long-term dissatisfaction over government failures, "bread riots" triggered political unrest across the region (Werrell/Femia, 2013). This illustrates how beyond a certain tipping point, a compound event can lead to a chain of cascading events, which in an interconnected world can affect international stability and geopolitical issues with transregional effects. Even if climate change had only a "small" part to play, it could have been a risk multiplier in an already tense political situation, which cannot simply be attributed to one single cause. Various consequences emerged from the Arab Spring, including new political ideas, the fall of autocratic regimes, the region's destabilization, refugee movements, civil wars in Libya, Syria and Yemen, new terrorist groups and interventions from external powers. It changed the geopolitical landscape in many ways, connecting Iraq, Iran, the Persian Gulf and international actors such as the US, Russia, China and the EU more closely to the region.

### Civil War in Syria

In the years before the rebellion in Syria (2007 to 2009) a long drought period hit the Fertile Crescent,



with repeated crop failures, soil infertility and cattle deaths. Between 2002 and 2008, Syria's water resources shrank by half, in addition to a long-term overuse of groundwater. The share of agriculture in the annual GDP dropped from 25 to 17% in 2008, doubling food prices and forcing Syria to import large amounts of wheat. Farmers were heavily dependent on rain irrigation and sensitive to extreme weather conditions, droughts and rainfall variability. Severe environmental conditions were aggravated by poor management and governance, such as government cuts in addition to increased fuel prices. More than a million people were driven out of agriculture and displaced from rural to urban areas, although there is disagreement surrounding the figures. Modernization, liberalization, rural exodus and the slow integration of former agricultural workers had already left their mark on both rural and urban areas in Syria. Cities there have been growing since the 2000s, becoming breeding grounds for political unrest, aggravated by the refugees from the war in Iraq, thus linking these two hot-spots. Socio-political and demographic factors include patronage networks and the "youth bulge" (population under 25 years of age), which has shaped Syria like it has other Middle Eastern societies.

Environmental change added to other conflict drivers such as economic, social and demographic conditions, governmental failure and dissatisfaction with Assad, as well as the US invasion of Iraq in 2003, the Arab Spring in 2011 and the emergence of the "Islamic State." There is disagreement in the literature as to whether climate change has been a dominant driver of the war in Syria (Ide et al. 2018). Some studies argue that the drought had a catalytic effect on the Syrian conflict, triggering protest and a political chain reaction. Others doubt that climate change was a main reason for conflict escalation. Whatever the climate contribution, the Syrian civil war became a battleground of regional and external powers and destabilized the region, displacing millions into neighbouring countries and abroad.

### **Policy, Governance and Cooperation in the Mediterranean**

Geopolitical consequences of climate change in the Mediterranean need to be addressed within the region's complex human-environment interactions.

Different levels of vulnerability depend on climate exposure and sensitivity, as well as adaptive capacities, cooperative policies and institutional mechanisms. The challenge is to prevent climate change before its adverse impacts overwhelm adaptive capacities, weaken institutions and dissolve states.

More developed countries might benefit from their advanced economies, technical capabilities and political institutions to manage climate stress, resource scarcity and weather extremes, along with their associated risks and conflicts. MENA countries usually have higher vulnerability, lower adaptive capacity, more conflicts and weaker institutions, as well as considerable potential for low-carbon solar energy and land resources. To bridge the asymmetries requires collaborative efforts between Europe and MENA that overcome the hurdles and build long-term structures across the Mediterranean Sea.

**The challenge is to prevent climate change before its adverse impacts overwhelm adaptive capacities, weaken institutions and dissolve states. However, the Mediterranean region suffers from a lack of cooperation**

However, the Mediterranean region suffers from a lack of cooperation. One of the obstacles is the securitization of policy fields, including climate change, based on divergent notions of security and a lack of understanding of the Mediterranean as a shared space. Both complicate desecuritization attempts and common approaches to contain cycles of risk, violence and conflict and initiate a transition towards cooperation, resilience and sustainability. It would be in the general interest of riparian countries to stabilize the Mediterranean region and establish economic-technical capabilities and socio-political ties to mitigate climate change and strengthen adaptation, thereby minimizing impacts and inequalities. Multilateral cooperative approaches would help to contain violent conflict, as compared to unilateral geopolitical ambitions and interventions.

## Unlike in the 1990s, the EU today is no longer a key actor in the region and needs to balance its policies and interests against the influence of external and regional powers

Unlike in the 1990s, the EU today is no longer a key actor in the region and needs to balance its policies and interests against the influence of external and regional powers (Ehteshami et al., 2017). Migration has been a major driver for European initiatives, which have used Frontex to handle migrants as a border issue. Several dialogues coexist, with little interaction between them, at the Euromed, NATO and OSCE levels. Multi-issue regimes among Mediterranean riparians are the Barcelona Declaration of 1995, which established a Euro-Mediterranean Partnership, and its successor, the Union for the Mediterranean, which has suffered a growing number of crises (Scheffran/Brauch, 2014). A way forward may be to widen the Euro-Med contact group to facilitate the discussion of certain issues of common concern (e.g. migration and health, energy and water security, climate and environmental protection, employment, terrorism). This could include key powers from outside of the Mediterranean (the US, Russia, China, Iran, Saudi Arabia) in a multilateral dialogue to identify cooperative pathways in North-South or South-South frameworks (Ehteshami et al., 2017). However, in a world with increasing geopolitical competition this is unlikely.

Climate risk reduction and mitigation or water security and renewable energies offer possible tracks for environmental and sustainable peace building. Pathfinders could be non-governmental initiatives such as the Desertec Industrial Initiative or the Climate Correction Project, which use mutual

synergies in a positive nexus between energy, water and food, to overcome the negative nexus between climate change, violent conflict and forced migration.

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