

# A Tougher Climate in the Eastern Mediterranean: Policy directions in the context of climate change and regional crisis

Elizabeth Sellwood

RE-IMAGINING THE EASTERN MEDITERRANEAN SERIES: PCC REPORT 1/2018

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Policy directions in the context  
of climate change and regional crisis

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**Report 1/2018**

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## FOREWORD

**T**he Report Series aims to explore the Eastern Mediterranean as a distinct geopolitical space in the context of global and regional transitions. It conceptualizes the Eastern Mediterranean's new geopolitical identity both historically and theoretically and looks at its security and politico-economic prospects. At the same time, it tracks the main challenges that regional states face, and attempts to re-imagine the patterns of conflict and cooperation by examining the potential of regionalism and inter-state cooperation in various sectors. In doing so, the series makes recommendations about the way forward in addressing important obstacles to further regional cooperation and with regard to the strategy that could be followed towards designing a viable and sustainable regionalism project in the Eastern Mediterranean. The series begins with the conceptualization of the Eastern Mediterranean as a region and the specific sector of the environment as an entry point to discussing a more expanded regional cooperation. It then moves to other policy sectors and matters pertaining to the Eastern Mediterranean state policies and interests as well as to the role of greater powers.

**Dr. Harry Tzimitras**  
*Director, PRIO Cyprus Centre*

# INTRODUCTION

In February 2018, UN Secretary-General Antonio Guterres described the Middle East region as an “authentic quagmire,”<sup>1</sup> riven by interconnected fault lines: between Israelis and Palestinians; between Sunni and Shia; and along divisions created by the Cold War. It would, Guterres argued, no longer be possible to deal with each dimension separately: the situation had degenerated into a Gordian knot, all aspects of which – with the exception of Iraq – “are getting worse.”<sup>2</sup>

The countries of the Eastern Mediterranean – Turkey, Syria, Lebanon, Israel, Palestine, Jordan, Egypt and Cyprus – form the western edge of this turbulent region. Their geographical position makes them a particular focus of European, US and Russian interest. Governments and societies are under pressure from the political, economic and security impacts of regional conflicts, including displacement, interruption of trade routes, and the spread of extremism. The region’s “unique deficit”<sup>3</sup> in peace and security architecture leaves it vulnerable to further escalation.

The Eastern Mediterranean could do without a threat multiplier. Unfortunately, this region has also been identified as a climate change hot spot, where the effects of rising greenhouse gas emissions will be experienced much faster than the global mean rate. Temperatures are expected to escalate, impacting human welfare and food production; and in a region already “notorious for fresh water scarcity,”<sup>4</sup> at least 10-20 percent further drying is expected by mid-

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1 UN Secretary-General Antonio Guterres, address to the opening ceremony of the Munich Security Conference, 16 February 2018.

2 *ibid.*

3 For a thorough recent analysis of this problem, see Michael Wahid Hanna and Thanassis Cambanis, *Order from Ashes*, The Century Foundation/Brookings, 18 January 2018.

4 J. Lelieveld (2011), Climate change and impacts in the Eastern Mediterranean and the Middle East, A regional climate assessment by the Cyprus Institute, CIMME Report, Nicosia. [https://www.cyi.ac.cy/images/Cyl\\_Publications/EEWRCDDownloads/CIMMEReport.pdf](https://www.cyi.ac.cy/images/Cyl_Publications/EEWRCDDownloads/CIMMEReport.pdf). The World Bank also notes that “Increased surface water stress due to climate change will occur in countries facing politically and environmentally fragile situations. Projections suggest that Iraq, Lebanon, Jordan, Morocco, and Syria will all experience significantly increased water stress driven by climate change.” *Beyond Scarcity*, World Bank, Washington DC, 2017, p. xlii.



century.<sup>5</sup> Economic losses from climate-related water scarcity are forecast,<sup>6</sup> as are increases in airborne pollution and extreme weather events.<sup>7</sup>

But which specific threats will be “multiplied,” in a region already wracked by instability? This paper seeks to summarise the state of the Eastern Mediterranean climate-security debate, as viewed by officials and analysts serving regional governments, international institutions and research institutes. Drawing on seventy interviews undertaken between February and July 2018, it seeks to identify how, and to what extent, climate change is regarded as a factor contributing to deepening the insecurity of this fragile region. It also seeks to identify policies and frameworks that might help regional states and their international partners to understand and prepare for the political and security consequences of climate change.

## Understanding the political and security impacts of climate change

Although climate scientists are able to provide high-resolution forecasts for the whole Eastern Mediterranean region, and thus to project detailed changes to temperature and precipitation patterns,<sup>8</sup> forecasting the political and security consequences of these changes is proving far more difficult. Joshua Busby notes that after fifteen years of empirical research, the connections between climate change and security remain “complex, contingent, and not fully understood.”<sup>9</sup> Another leading scholar, Halvard Buhaug, notes that while “climate variability and change may well influence the dynamics of interaction (including violent contention) between societal actors,”<sup>10</sup> it is not possible, on the basis of existing research, to demonstrate a direct and general climate-conflict link: such an effect will occur always “in conjunction and sometimes interaction with other prevalent conflict drivers and always be shaped by the specific context.”<sup>11</sup>

Comparative work on the climate-security nexus in the Middle East also highlights the importance of understanding geopolitical settings and the relations between affected constituencies. Eran Feitelson and Amit Tubi have studied the interaction between “geopolitical

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<sup>5</sup> *ibid.*

<sup>6</sup> See, for example, *World Bank Group Middle East and North Africa Climate Action Plan 2016-20*, which highlights how populations and economies in this region are highly exposed to the impacts of climate change.

<sup>7</sup> Lelieveld (2011), *op cit.*

<sup>8</sup> The MENA-CORDEX initiative, for example, provides high-resolution climate projections for the whole Eastern Mediterranean and Middle East region and is able to forecast detailed changes to temperature, precipitation patterns and air quality to the end of the century. See *High resolution climate projections for the eastern Mediterranean, Middle East and North Africa: the MENA Cordex Initiative*, presentation by Hadjinicolaou et al., Cyprus Institute, 2015.

<sup>9</sup> ‘Climate and Security: Bridging the Policy-Academic Gap,’ Joshua Busby, 15 May 2018, <https://blogs.prio.org/ClimateAndConflict/2018/05/climate-and-security-bridging-the-policy-academic-gap/>

<sup>10</sup> Halvard Buhaug, Climate Change and Conflict: Taking Stock, *Peace Econ Peace Sci Publ Pol 2016*; 22(4): 331–338.

<sup>11</sup> *ibid.*

relations, internal power relations and subsequent policies [to] explain the extent to which droughts may lead to conflict.” Developing their theory via examination of the cases of the Jordan and the Euphrates River basins, Feitelson and Tubi observe that the 2007-10 drought had profoundly different impacts on the affected states —Turkey, Syria, Iraq, Jordan, Israel, and the occupied Palestinian territory (oPt). Several factors determined outcomes, perhaps the most important of which was “the degree to which the upper riparian states were willing to adjust their behavior in light of the circumstances created by the drought.”<sup>12</sup> Feitelson and Tubi conclude – consistent with other global research – that “climate change might lead to conflict only in specific geopolitical and internal settings,” and that the phenomenon “should be studied concurrently with the internal settings within the potentially affected parties and the relations between them.”<sup>13</sup>

Researchers working on the climate-conflict nexus now seek to identify indirect and conditional pathways between climate change and insecurity. While such work is “still nascent,”<sup>14</sup> five such pathways at the frontier of research<sup>15</sup> focus on agricultural production and food prices, economic growth, migration, disasters, and international and domestic institutions.<sup>16</sup> In the Eastern Mediterranean and Middle East, the potential of economic shock to trigger political change has already been widely recognized: rising world food prices, combined with sustained drought,<sup>17</sup> are considered major factors triggering the Arab uprisings in 2010-11.<sup>18</sup> But analytical work on the region also demonstrates how difficult it is

<sup>12</sup> ‘A main driver or an intermediate variable? Climate change, water and security in the Middle East’, Eran Feitelson and Amit Tubi, *Global Environmental Change* 44 (2017): 39–48.

<sup>13</sup> “The extent to which droughts become disasters depends on their effects on people and the environment. These are a function of the physical settings and the adaptive capacity of those societies (Wilhite and Buchanan-Smith, 2005). However, the degree to which these effects result in conflicts (or promote cooperation) are a function also of the geopolitical settings and the internal structures, power relations and institutions (the internal settings).” ‘A main driver or an intermediate variable? Climate change, water and security in the Middle East’, Eran Feitelson and Amit Tubi, *Global Environmental Change* 44 (2017): 39–48.

<sup>14</sup> Joshua Busby, ‘The State of the Field in Climate and Security’, PRIO Blog Post, 19 March 2018, available at <https://blogs.prio.org/ClimateAndConflict/2018/03/the-state-of-the-field-in-climate-and-security/>

<sup>15</sup> *ibid.*

<sup>16</sup> “In most of these accounts, climate hazards or variability affect the likelihood of conflict either through the effects on livelihoods, state capacity, and/or inter-group tensions. In some accounts, extreme weather or variability lowers the rewards to agriculture and/or other livelihoods and makes rebellion or violence more attractive. These same processes can also deprive states of tax revenue and undermine their capacity to suppress violence and provide public goods. They can also exacerbate tensions between groups.” Busby, March 2018, *op cit.*

<sup>17</sup> Eklund and Thompson show that the Syrian government’s agricultural practices rendered farmers particularly vulnerable to the effects of drought, whereas farmers in Turkey were able to adapt with support from the government and private sector. L. Eklund and D. Thompson, 2017. ‘Differences in resource management affects drought vulnerability across the borders between Iraq, Syria, and Turkey’. *Ecology and Society* 22 (4 ):9. <https://doi.org/10.5751/ES-09179-220409>.

<sup>18</sup> See, for example, *The Arab Spring and Climate Change*, Caitlin E. Werrell and Francesco Femia (eds), Center for American Progress, Stimson Center and the Center for Climate and Security, Washington DC, February 2013.

to predict whether climate-related factors will lead to social and political conflicts, and whether such conflicts will turn violent – even when one is looking directly for them.<sup>19</sup>

One theme that emerges from otherwise ambiguous research findings on the climate-security nexus is the “primacy of politics”<sup>20</sup>: the importance, in assessing whether tensions (climate-related or otherwise) will degenerate into security crises, of a solid understanding of the political context in which the climate stresses are occurring. Policy makers need to formulate responses to climate-related tensions on the basis of sound, up-to-date political analysis.<sup>21</sup> This is a major challenge in a region in which domestic politics and inter-state relations are changing quickly, and are profoundly influenced both by regional developments and by international involvement in ongoing conflicts. Bureaucracies also tend to separate “political, peace and security” issues conceptually and administratively from “developmental” issues such as water resources availability, agriculture and environment, which further impede political analysis of climate-related tensions.<sup>22</sup>

### Framework of analysis

This project seeks to fill a perceived gap in political analysis of the climate-security nexus in the Eastern Mediterranean, providing a “snapshot” of regional opinion on this issue taken during the spring and early summer of 2018.

Following a review of the literature and consultations with international experts, the author undertook a series of interviews during field visits to the states of the Eastern Mediterranean – Turkey, Lebanon, Israel, Palestine, Jordan, Egypt and Cyprus – between February and July 2018. She sought a range of opinions about climate security risks: interviewees included the officials of regional, foreign affairs and water ministries who handle transboundary water relations with regional neighbours; environment advisers and officials, who must elevate environmental considerations within governments, often in competition

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<sup>19</sup> In October 2008 and January-February 2009, Oli Brown and Alec Crawford conducted extensive field research into climate change and the risk of violent conflict in the Middle East. While they identified a number of potential security risks arising from the phenomenon, Brown subsequently commented that he and Crawford had not identified the role that drought would play in prompting civil unrest in Syria – a linkage that was drawn by several analysts *after* the outbreak of the conflict in 2011. To be fair, very few of the hundreds of seasoned analysts of the Middle East region foresaw the Arab uprisings, in Syria or elsewhere; fewer still foresaw the relevance of climate factors. See O. Brown and C. Crawford, *Rising Temperatures, Rising Tensions: Climate change and the risk of violent conflict in the Middle East*, International Institute for Sustainable Development, 2009.

<sup>20</sup> The United Nations Security Council has also emphasized “the primacy of politics,” which “should be the hallmark of the approach of the United Nations to the resolution of conflict, including through mediation, good offices, the monitoring of ceasefires, assistance to the implementation of peace accords.” Presidential Statement, 14 May 2018, S/PRST/2018/10, available at: <https://www.un.org/press/en/2018/sc13334.doc.htm>

<sup>21</sup> “The purpose of political analysis is not only to help us understand conflicts and crises more clearly but also to provide a basis for advice, policies, and, ultimately, action. It is through solid analysis that you can come up with solid policy.” *The Political Adviser’s Handbook*, Fredrik Wesslau, Folke Bernadotte Academy, 2013, p.28.

<sup>22</sup> Author interviews with development practitioners, diplomats and international officials, Beirut, Amman, Jerusalem, Ankara, Cairo, March-May 2018.

with other political and fiscal priorities; development practitioners; and those responsible for forward planning and “horizon scanning” from a national security perspective. Former ministers of energy, environment and foreign affairs were also consulted.

Of approximately seventy individuals interviewed for this project, the majority were nationals of regional states, although officials of multilateral organisations and international analysts were also among the interviewees. Interviews were not conducted in Syria, although research into the role of the drought in sparking unrest in Syria provides important background to this project.

The author deliberately refrained from offering a definition of “security” upfront;<sup>23</sup> instead, she provided background information to the interviewee about the growing international consensus that climate change poses security risks,<sup>24</sup> and asked whether and how this might apply in the interviewee’s country or region. Interviews were tailored to each interlocutor, and explicit use of the term “security” was avoided where use of the word might itself inhibit frank discussion.

This report is a time- and resource-limited attempt to capture the state of the debate in a dynamic region. It is a one-off, in a context in which the evolution of political relationships in response to climate change really needs to be monitored over time. It nonetheless represents a political analysis “dry run”: an effort not only to understand how a varied set of regional actors view climate-related security threats, but also to demonstrate the kind of outputs that political analysts could deliver were they tasked specifically with understanding and reporting on climate-security issues in the Eastern Mediterranean region.

## The Eastern Mediterranean as a geopolitical space

International and scholarly interest in the Eastern Mediterranean as a sub-region is growing, not least because recent international crises have exposed it as a “geostrategic fault line” between Europe and the Middle East.<sup>25</sup> Successive inter-related crises, including the war in Syria, the 2015 refugee influx into Europe, and ongoing conflicts between Israel and the Palestinians have demonstrated that Europe cannot isolate itself from its neighbours to the

<sup>23</sup> A useful recent definition of “environmental security,” provided by the Scientific and Technical Advisory Panel which advises the Global Environment Facility, is “a bundle of issues which involves the role that the environment and natural resources can play in peace and security, including environmental causes and drivers of conflict, environmental impacts of conflict, environmental recovery, and post-conflict peacebuilding. The scope of security and insecurity is by no means limited to violent conflict or its absence but includes the roots of sustainable livelihoods, health, and well-being.” B.D. Ratner, *Environmental security: dimensions and priorities*. Scientific and Technical Advisory Panel to the Global Environment Facility. Washington, DC, June 2018.

<sup>24</sup> The European Union Council Conclusions on Climate Diplomacy of 26 February 2018 provides a useful example of the international positions on climate change and security, which are becoming increasingly frequent both in that context and at the UN.

<sup>25</sup> *Restoring the Eastern Mediterranean as a US Strategic Anchor*, Jon Alterman et al., CSIS, May 2018.

southeast. The politics of the region are marked by deep, longstanding divisions – between Lebanon and Israel, between Israel and the Palestinians, between Turkey and Cyprus. The “institutional guardrails”<sup>26</sup> that help to contain and resolve crises in other regions are almost entirely absent.

The Eastern Mediterranean picture is not entirely gloomy. Analysts have also seen recent signs of hope, including fragile reconciliation between Israel and Turkey, tripartite summits between the leaders of Egypt, Cyprus and Greece, and the increased security and economic ties between Israel and Egypt.<sup>27</sup> Eastern Mediterranean societies share many aspects of their culture and heritage, a factor that can facilitate cooperation – at least at the substate level (between private sector actors,<sup>28</sup> civil society groups, and mayors or local government officials).

Governments in the Eastern Mediterranean exhibit major differences in institutional capacity. These differences, together with relationships with regional neighbours, affect states’ capacities to deal with new challenges, including climate change.<sup>29</sup> States with strong institutions are able to predict threats, and can devise and implement timely measures that reduce social vulnerability, thus reducing climate-related security risks. States or entities which, for whatever reason, lack control over their natural resources are far less able to predict, plan for and manage climate change and its socio-economic impacts.<sup>30</sup>

At the risk of generalization, it is possible to divide the states included in this study into three broad groups. Israel and Turkey face major political challenges, but they have substantial institutional capacity and have demonstrated an ability to manage natural resources. The Republic of Cyprus also falls into this category, with the caveat that it does not control all of its territory. Lebanon, Egypt and Jordan form the second group: they have weaker institutions, lower human development indicators, and a correspondingly lower resource

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<sup>26</sup> In an article on the geopolitical implications of climate change, Joshua Busby notes that “Violence is far from inevitable, but tensions over water within and between countries will create new flash points in regions where other resources are scarce and institutional guardrails are weak or missing.” “Why Climate Change Matters More Than Anything Else”, *Foreign Affairs*, July/August 2018.

<sup>27</sup> *The Eastern Mediterranean: New dynamics and potential for cooperation*, N. Goren (Ed.), M. Asseburg, T. Dokos, E. Eiran, G. Mitchell, P. Tsakonas, JOINT POLICY STUDY published by the European Institute of the Mediterranean, March 2018, p.7.

<sup>28</sup> Author interview with director of private enterprise operating in several Mediterranean states, May 2018.

<sup>29</sup> “The extent to which droughts become disasters depends on their effects on people and the environment. These are a function of the physical settings and the adaptive capacity of those societies (Wilhite and Buchanan-Smith, 2005). However, the degree to which these effects result in conflicts (or promote cooperation) are a function also of the geopolitical settings and the internal structures, power relations and institutions (the internal settings).” “A main driver or an intermediate variable? Climate change, water and security in the Middle East”, Eran Feitelson and Amit Tubi, *Global Environmental Change* 44 (2017): 39–48.

<sup>30</sup> See, for example, the *Climate Change Adaptation Strategy and Programme of Action for the Palestinian Authority (2010)*, which states that “the continuing Israeli occupation fosters a wide range of maladaptive policies and practices (e.g., subsidised water-intensive livestock farming by settlers and the destruction of Palestinian olive groves) that frustrate the development of Palestinian resilience to climate hazards. In both the West Bank (and especially the Gaza Strip), the enforced coping strategies of Palestinians as a result of access and movement restrictions are incompatible with the effective delivery of human development goals.” Available at: [http://eprints.lse.ac.uk/30777/1/PA-UNDP\\_climate\\_change.pdf](http://eprints.lse.ac.uk/30777/1/PA-UNDP_climate_change.pdf)

planning and management capability. Entities which lack the attributes of sovereignty form a third group: the Palestinian Authority is administratively weak and unable to exercise sovereign control over Palestinian territory; and in northern Cyprus, the self-proclaimed "Turkish Republic of Northern Cyprus" is recognized only by Turkey and lacks both institutional capacity and international legal status.

This is the political and institutional context within which officials, development practitioners and analysts interviewed for this project were asked to consider the consequences of climate change in the Eastern Mediterranean.

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## CLIMATE CHANGE CONSEQUENCES IN THE EASTERN MEDITERRANEAN

The political and security risks relating to climate change in the Eastern Mediterranean, as described by interviewees, can be divided into four broad categories: i) physical (human) insecurity affecting the citizens of regional states; ii) domestic political instability; iii) inter-state tensions arising from the disintegration or failure of *de facto* or *de jure* arrangements to share transboundary water sources; and iv) increased migration, with political implications beyond the region.

Interviewees described threats to the physical security or livelihoods of individuals and communities from water shortages, storm surges, flooding and heat waves – with water scarcity being the most prominent cause for concern. Crop failures, sea level rise and changes to marine and terrestrial ecosystems are expected to impact regional economies, and may lead to extensive migration from affected areas.

Within regional states, tensions between governments and stakeholders are expected to arise as a consequence of government-imposed restrictions on the use of scarce resources, and when implementation of adaptation or mitigation policies requires governments to challenge stakeholders with a vested interest in the *status quo*. Refugee populations in Turkey, Jordan and Lebanon may also contribute to resource conflicts and social divisions.

At the regional level, interviewees raised concern about the possibility of inter-state tensions, potentially leading to threats to international peace and security, arising from the disintegration or failure of *de facto* or *de jure* arrangements to share transboundary water sources. While inter-state tensions relating to transboundary watercourses are not a new phenomenon, climate change, combined with rapid population growth and urbanization, will intensify competition over such shared water resources – particularly in the absence of rapid improvements in water management. Changes in regional and international relationships contribute to heightening this risk.

Climate change in the Eastern Mediterranean could also have significant political and security consequences beyond the region. People currently living in Eastern Mediterranean states may migrate within national borders to escape the effects of climate change, or decide to head north into Europe: the networks to carry them are already in place. The Syria crisis has already demonstrated the potential of refugee flows to affect politics and security policy in Europe.

Examples of these categories of climate security risk are described in the sections below.

## Domestic consequences: physical impacts, resource competition, political resistance

Individuals and communities will be exposed to physical danger if their governments do not take action to prepare for climate-related risks.<sup>31</sup> More frequent extreme weather events have already been noted by the Turkish meteorological service,<sup>32</sup> and interviewees voiced concern about their impact in Turkey's major cities. In Egypt, coastal flooding has damaged the northern coastal highway hundreds of metres inland, and resulted in loss of life in Alexandria. The Egyptian government notes an "increase in frequency and severity of storm surges" over the past seven years, adding that the "continuation of rising seas, sinking lands, and more frequent and intense storms is a necessary inference from the review of recent trends and future climate change forecasts."<sup>33</sup>

Heatwaves, airborne pollution and vector-borne diseases are likely to threaten human health.<sup>34</sup> Summer temperatures could rise to 47°C by mid-century, and reach nearly 50°C by 2100. Climate scientists have warned that "If these projected high temperatures become reality, part of the region may become uninhabitable for some species, including humans," a situation which could "exacerbate humanitarian hardship and contribute to migration."<sup>35</sup> Temperature changes and acute water scarcity will also have a substantial impact on regional economies,<sup>36</sup> affecting agriculture, fisheries and tourism.<sup>37</sup>

To adapt successfully to climate change, states and societies must adjust the way they use critical resources: water, food and energy. Adaptation inevitably generates tensions, winners

31 Interviewees expressed concern that infrastructure in Turkey's major cities was not adequate to cope with such events, particularly in light of rapid growth in urban populations. Author interviews in Istanbul and Ankara, 7-8 May 2018.

32 See, for example, *A case study for an Unprecedented Storm in Turkey*, Levent Yalcin, Turkish State Meteorological Service, 2012.

33 *Enhancing Climate Change Adaptation in the North Coast and Nile Delta Regions in Egypt*. Annex VI (b) – Environmental and Social Management Framework, Green Climate Fund Funding Proposal, Republic of Egypt Ministry of Water Resources and Irrigation, September 2017.

34 In Egypt, increased particulate matter concentrations and heat stress could result in approximately 2,000 to 5,000 more deaths per year by 2060. *Potential Impacts of Climate Change on the Egyptian Economy*, report prepared by UNDP, Cairo, 2013, Abstract.

35 'Strongly increasing heat extremes in the Middle East and North Africa (MENA) in the 21st century', J. Lelieveld, Y. Proestos, P. Hadjinicolaou, M. Tanarhte, E. Tyrllis & G. Zittis, *Climatic Change*, 2016, DOI 10.1007/s10584-016-1665-6.

36 In Turkey, for example, climate change "is expected to lead to increasingly negative impacts on water and soil resources and rural development that are vital for food production and food safety. For example, in the Gediz and the Greater Menderes Basins in the Aegean coastline, a 50% reduction in surface waters is expected towards the end of this century, leading to severe water shortages in agriculture, settlement areas and industry." *Turkey's national climate change adaptation strategy and action plan 2011-23*, Ankara, 2012, p.6.

37 The Cyprus Institute notes that the increasing number of hot days and decreasing soil moisture will lead to reduced agricultural yields. Furthermore, "Marine ecosystems and commercially viable fish stocks will be affected by decreasing nutrient availability and an overall deterioration of marine food webs. With the Mediterranean attaining conditions more similar to tropical or subtropical oceans, we will see an enhanced influx of tropical marine species with as yet poorly known effects on existing marine ecosystems." *Climate Change and Impact*, summary, available at <https://www.cyi.ac.cy/index.php/eeewrc/eeewrc-research-projects/climate-change-and-impact.html>.



and losers.<sup>38</sup> In light of the stresses they already face, the states of the Eastern Mediterranean will be challenged to manage this complex process; yet they have no time to lose. Delays in adaptation may lead to domestic resources crises.

In the absence of effective monitoring and coordinated implementation of policies to reduce demand, states may be forced into sudden restrictions in resource use. An example from Egypt serves to illustrate this point: in April 2018, the government initiated a crackdown on cultivation of a prized water-intensive rice crop in the Nile Delta. This led to demonstrations by farmers, who (despite official restrictions) had been growing this crop for many years.

The Egyptian government explained the crackdown with reference to the breakdown of negotiations over the Grand Ethiopian Renaissance Dam (GERD), warning that any potential reduction in the Nile flow could lead to political instability.<sup>39</sup> Regardless of the GERD<sup>40</sup> question – which had not at the time affected the flow of the Nile – sea level rise<sup>41</sup> and climate-related reductions in the water supply, combined with higher temperatures, are projected to have devastating impacts on agricultural productivity in the Delta.<sup>42</sup>

The Nile Delta region accounts for more than half of Egypt's economic activity through agriculture, industry and fisheries. It contributes a fifth of Egypt's total agricultural GDP and 30 percent of national employment.<sup>43</sup> To protect the area and its economy, the government will need to develop new infrastructure and ensure major reform of agricultural practices, notably relating to irrigation.

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<sup>38</sup> For a brief summary of the dilemmas, see 'Adaptation trade-offs: Climate change adaptation initiatives need better planning to meet their targets', editorial, *NATURE Climate Change*, Vol 5, November 2015, [www.nature.com/natureclimatechange](http://www.nature.com/natureclimatechange).

<sup>39</sup> "Irrigation Minister Mohamed Abdel Aty told Reuters the situation posed a big threat to crops, livelihoods and even political stability if efforts to coordinate fail. "Imagine to what extent these people will become vulnerable," he said." 'Egypt's rice farmers see rough times downstream of new Nile mega-dam,' Reuters, 23 April 2018, retrieved at <https://www.reuters.com/article/us-egypt-rice-insight/egypts-rice-farmers-see-rough-times-downstream-of-new-nile-mega-dam-idUSKBN1HU100>

<sup>40</sup> The Grand Ethiopian Renaissance Dam is discussed in greater depth below. For a summary of the many questions raised by the GERD issue, see Zeray Yihdego, Alistair Rieu-Clarke & Ana Elisa Cascão (2016), 'How has the Grand Ethiopian Renaissance Dam changed the legal, political, economic and scientific dynamics in the Nile Basin?', *Water International*, 41 :4, 503-511.

<sup>41</sup> In its Fourth Assessment Report, the IPCC identified the Nile Delta as one the world's three "extreme" vulnerability hotspots under climate change conditions (IPCC, 2007). See Fourth Assessment Report, *Climate Change 2007: Impacts, Adaptation and Vulnerability*, [https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4\\_wg2\\_full\\_report.pdf](https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf).

<sup>42</sup> Reductions in water availability may lead to a 17 percent fall in agricultural output in 2030 and a 47 percent reduction in 2060. UNDP also estimates that 4.2 percent of Nile Delta agricultural lands and 260-280,000 dwellings could be lost by 2030 unless the government takes prompt action to protect areas vulnerable to sea level rise. *Potential Impacts of Climate Change on the Egyptian Economy*, report prepared by UNDP, Cairo, 2013.

<sup>43</sup> Figures from *Enhancing Climate Change Adaptation in the North Coast and Nile Delta Regions in Egypt. Annex VI (b) – Environmental and Social Management Framework*, Green Climate Fund Funding Proposal, Republic of Egypt Ministry of Water Resources and Irrigation, September 2017.

Environment experts in Egypt doubt government's capacity to implement a reform programme on the scale required to address the challenges ahead.<sup>44</sup> One interviewee in Cairo, who has followed the government's agricultural planning process closely, hoped that the GERD crisis might have a silver lining, kick-starting genuine reform.<sup>45</sup> More likely, however, is a continuation of the current approach until water scarcity becomes acute. Large-scale, abrupt efforts to shift agricultural practices could then spark a backlash – particularly if the communities concerned have received no prior information and support, or been offered viable alternatives.

States may delay implementing critical adaptation or mitigation measures, fearing backlash from large or powerful constituencies. Jordan has not yet taken sufficient measures to address acute water scarcity.<sup>46</sup> Measures to increase water supply via the Red Sea Dead Sea project are moving slowly, if at all, and are subject to political interruptions and financial constraints.<sup>47</sup> Jordan is considering an alternative desalination plan that does not require intensive cooperation with Israel; but this would necessitate substantial new energy inputs<sup>48</sup> and infrastructure, and will take time. Meanwhile, in the absence of accurate information about aquifer levels, water scarcity could reach a critical point,<sup>49</sup> with severe consequences for human security and state-society relations.

Despite this looming water crisis, fear of domestic political backlash constrains government action to reduce water demand. Government efforts to address water wastage and theft (estimated at 65 litres per capita per day) have been met with resistance, and in some cases

<sup>44</sup> Based on the assessments of international and Egyptian officials working on environment and agricultural issues: author interviews in Cairo, 24-26 April 2018.

<sup>45</sup> Author interview, Cairo, 25 April 2018.

<sup>46</sup> "Jordan is facing an acute water crisis: the combination of long-term reduction in rainfall, declining groundwater levels, and regional conflict and immigration have pushed per capita water availability down from 3600m<sup>3</sup>/year in 1946 to 135m<sup>3</sup>/year in the present, so that Jordan is now far below the 500m<sup>3</sup>/year level of absolute scarcity." 'Increasing drought in Jordan: Climate change and cascading Syrian land-use impacts on reducing transboundary flow', Deepthi Rajsekhar and Steven M. Gorelick, *Science Advances*, 30 Aug 2017: Vol. 3, no. 8.

<sup>47</sup> See, for details, Hussam Hussein, 'Jordan-Israel Tensions Threaten to Derail Water-Sharing Project', IAI, 2018. Also author interviews with Jordan, Ministry of Water and Irrigation, 15 March 2018. According to ministry officials, Jordan is considering various water supply options including drilling to aquifers at a depth of 1300-1500m, which would be highly costly.

<sup>48</sup> Jordan imports 95 percent of its energy, at a cost of one-fifth of its GDP. The energy sector is heavily indebted. A decision to construct a desalination plant near Aqaba to increase water supply may influence the debate about the desirability of nuclear power capabilities. For a discussion about nuclear developments in the Middle East, see Shaul Shay, *The Sunni Arab Countries Going Nuclear*, IDC Herzliya Institute for Policy and Strategy, February 2018.

<sup>49</sup> According to senior officials in the Jordanian Ministry of Water and Irrigation, Jordan has severely over-abstracted from aquifers (author interview, Amman, 15 March 2018). The World Bank warns that "overabstraction may reach a critical point where fossil aquifers are depleted and where renewable aquifers are drawn down to the point that abstraction is no longer economically feasible. When aquifers are close to depletion, water quality deteriorates to the point of rendering the water unsuitable for human consumption. It is difficult to predict when aquifers may become compromised, given the large uncertainties in total groundwater storage." *Beyond Scarcity*, Summary, p.xxx.

with violence.<sup>50</sup> And although the World Bank has set out policy options, including targeting of price changes and public information campaigns,<sup>51</sup> the Jordanian government also continues to subsidise water: ending this subsidy is considered a political step too far, particularly in the wake of public anger over austerity, which led to large public demonstrations and the removal of the Prime Minister in early June 2018.<sup>52</sup>

Concern about the response from affected communities also appears to be delaying government action to prepare for sea level rise Egypt. Although the Government has begun to warn international partners that climate change could lead to both mass migration and radicalization in affected areas,<sup>53</sup> it has in some cases discouraged efforts to inform domestic stakeholders of the risks.<sup>54</sup> Interviewees explained that the government sought to restrict dissemination of “bad news,” which could prompt rapid migration of most severely affected communities and discourage investment in coastal areas. Knowledge of climate issues remains restricted to a small elite.<sup>55</sup>

Evidence of interest groups impeding adaptation and mitigation is evident in Lebanon and Turkey, where relationships between political elites and powerful businesses slow the transition to renewable energy. In Lebanon, the “generator mafia” has for decades blocked the restructuring of the Lebanese energy sector, leading to a dismal combination of high energy costs, poor service provision, and air pollution.<sup>56</sup> When a local power company, Electricité de Zahlé, tried to restructure the power system, generator owners blocked the streets, shot at the company’s transformers, and threatened its chief executive. The Zahlé reform effort was ultimately successful, and led to a local increase in the use of renewables;<sup>57</sup>

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<sup>50</sup> For details, see *A guidance note for SDG implementation in Jordan: Water, Energy and Climate Change*, Lara Nasser, WANA Institute and Friedrich Ebert Stiftung, November 2017, esp. pp. 27 ff.

<sup>51</sup> *Beyond Scarcity*, p. xlviii.

<sup>52</sup> In interviews with the author in March 2018, Jordanian officials and former ministers raised concern about the political impact of austerity. The bread subsidy had already been ended in early 2018 but further such steps were considered politically risky.

<sup>53</sup> For example, the Minister of Water and Irrigation, Mohamed Abdel Aty, reportedly warned the US Ambassador, the EU representative and others present at an American Chamber of Commerce meeting in March 2018 of the threat of migration and radicalization posed by climate change. Interview with international official, Cairo, 24 April 2018.

<sup>54</sup> Author interviews with Egyptian environmentalists, Cairo, 24-25 April 2018.

<sup>55</sup> Key documents, including the 2013 UNDP analysis of expected economic impacts of climate change on Egypt, have not been translated into Arabic; interviewees suggested that this was a deliberate decision, in light of the alarming projections and their implications.

<sup>56</sup> See, for example, ‘Restructuring the power sector in Lebanon’, World Bank, available at <http://www.worldbank.org/en/results/2014/04/15/restructuring-the-power-sector-in-lebanon>

<sup>57</sup> “EDZ was able to push hundreds of smaller generators out of business... 24-hour power has made Zahle the only town in Lebanon where a national law allowing net metering—an arrangement whereby individual solar panel owners essentially sell power back to the grid—can take real effect.” ‘Can Green Energy Beat Lebanon’s ‘Generator Mafias?’’, Alex Dziadosz, Bloomberg news, 26 February 2018.

but efforts at a national scale would be likely to meet heavy resistance.<sup>58</sup> In Turkey, policy changes could ease the transition to renewables, but interviewees argued that to make these changes the government would need to confront fossil fuel magnates and the coal lobby.<sup>59</sup> Domestic political tensions may increase around this issue, particularly in a polarized environment in which environmental issues have previously provided a focus of anti-government protests.<sup>60</sup>

Environmentalists in Cyprus note that while water scarcity is driving farmers to seek new sources of income, development of golf courses and extensive construction of swimming pools continue – a trend they attribute to the close links between developers and powerful political actors.<sup>61</sup>

Two additional factors are likely to contribute further to domestic tensions in the context of climate change. First, intensifying resource competition is likely to add to tensions between refugee communities and their hosts.<sup>62</sup> Refugee populations already constitute a major resource challenge for states in this region: Turkey hosts over 3.5 million refugees – the world's largest refugee population – of whom more than 90 per cent live in urban and peri-urban areas. Lebanon currently hosts just under a million, and Jordan has 730,000 refugees.<sup>63</sup> In the Bekaa Valley, Lebanon, the refugee influx was the most-cited explanation for social conflicts over water.<sup>64</sup>

A second factor is the lack of political freedom and openness to public discussion in several regional states. In contexts in which public discussion of controversial issues is restricted, stakeholders lack access to information about climate change impacts.<sup>65</sup> This could contribute to future tensions: people who do not understand the rationale for inconvenient adaptation measures may be more likely to resist them.

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58 UN ESCWA has also analysed barriers to change in Lebanon's energy sector. Financial and cultural issues play a role: EDL is heavily indebted, discouraging investors; and "On the cultural level, and because of the various instabilities Lebanon has undergone throughout its history, the Lebanese people have become hesitant about large investments; they prefer to pay less in the short term, even if it implies paying more in the longer term." *Case Study on Policy Reforms to Promote Renewable Energy in Lebanon*, UNESCWA, Beirut, 2017.

59 Author interviews with analysts, officials and private company executive in Istanbul and Ankara and by telephone, May–June 2018.

60 The most prominent recent such protest occurred in Gezi Park, Istanbul, in summer 2013. For a discussion of the evolution and political significance of the protests, see Ayşem Mert (2016): 'The trees in Gezi Park: environmental policy as the focus of democratic protests', *Journal of Environmental Policy & Planning*, DOI: 10.1080/1523908X.2016.1202106.

61 Author interviews with analysts, Nicosia, June 2018.

62 For a discussion of tensions between host country citizens and refugee communities in the region, see, for example, Alexandra Francis, *Jordan's refugee crisis*, Carnegie Endowment for International Peace, 2015; *Turkey's Syrian Refugees: Defusing Metropolitan Tensions*, International Crisis Group Report 248, 29 January 2018.

63 Figures from UNHCR documents, retrieved May 2018.

64 Preliminary results of research by the Issam Fares Institute, American University of Beirut, "Predisposition to water conflict in the Bekaa, Lebanon", 2018. Full results forthcoming.

65 Author interviews with civil society activists and international officials, Cairo, 24 April 2018.

## Transboundary watercourses and regional insecurity

Warnings about water wars in this region are decades, if not centuries, old.<sup>66</sup> Three factors now contribute to increasing the likelihood of inter-state tension over transboundary waters. The first is acute water scarcity, which has been driven by rapid population growth and urbanization, unaccompanied by sufficient improvements in water management.<sup>67</sup> Second, climate change is already affecting precipitation patterns and temperatures, and is expected to further reduce the flow of rivers and the recharge of aquifers during the coming decades. A third factor is regional political turmoil, which has shifted inter-state relationships and the regional balance of power, rendering some transboundary water arrangements highly unpredictable.

The first two factors – increased demand-driven water scarcity, accompanied by climate change – have been documented comprehensively by organisations with deep technical knowledge of the region. The figures are worrying:

- Jordan is the fourth most water-scarce country in the world. Per capita water availability is down from 3600m<sup>3</sup>/year in 1946 to 135m<sup>3</sup>/year, far below the 500m<sup>3</sup>/year level of ‘absolute scarcity’.<sup>68</sup>
- Lebanon’s water resources are already strained by the refugee influx, and by rising demand; it is poorly prepared for projected reductions in surface water, with very low storage capacity (6 percent of total resources, compared to the MENA average of 85 percent) and deficient supply networks.<sup>69</sup>
- Over 38 percent of Israel’s 1780 million cubic metres (mcm) of natural renewable water flows into the country from neighbouring states with whom it has no diplomatic relations: 310 mcm from Lebanon, and 375 mcm from Syria. A further 345mcm flows into Israel from the West Bank, which Israel occupies.<sup>70</sup> Israel is increasingly reliant on unconventional water sources.

<sup>66</sup> For a summary of the literature, see Aysegül Kibaroglu (2017): ‘State-of-the-art review of transboundary water governance in the Euphrates–Tigris river basin’, *International Journal of Water Resources Development*, p. 8. See also, for example, John Bulloch and Adel Darwish, *Water Wars: Coming Conflicts in the Middle East*, London: Victor Gollancz, 1993; and the Bible, quoted by Joost Hiltermann, keynote speech for the World Water Week, Stockholm, 28 August 2016.

<sup>67</sup> *Beyond Scarcity*.

<sup>68</sup> Stanford Jordan Water Project: <https://pangea.stanford.edu/researchgroups/jordan/about>.

<sup>69</sup> One indicator of the deficient infrastructure is the fact that at present, 92 percent of Lebanon’s sewage runs untreated into watercourses and the sea. *Beyond Scarcity*, Lebanon case [ref].

<sup>70</sup> “Total internal renewable water resources are estimated at 750 million m<sup>3</sup>/year (Table 3). About 250 million m<sup>3</sup> is surface water and 500 million m<sup>3</sup> groundwater and the overlap between surface water and groundwater is considered to be negligible. Surface water entering the country is estimated at 305 million m<sup>3</sup>/year, of which 160 million m<sup>3</sup> from Lebanon (including 138 million m<sup>3</sup> from Hasbani), 125 million m<sup>3</sup> from the Syrian Arab Republic, and 20 million m<sup>3</sup> from the West Bank. Groundwater entering the country is estimated at 725 million m<sup>3</sup>/year, of which 325 million m<sup>3</sup> from the West Bank, 250 million m<sup>3</sup> from the Syrian Arab Republic (Dan Springs) and 150 million m<sup>3</sup> from Lebanon (Lake Hulah). The total renewable water resources are thus 1 780 million m<sup>3</sup>/year, of which 92 percent is considered to be exploitable. About 25 million m<sup>3</sup>/year of groundwater flow from the country to the Gaza Strip.” FAO, Aquastat database, available at: [http://www.fao.org/nr/water/aquastat/countries\\_regions/ISR/](http://www.fao.org/nr/water/aquastat/countries_regions/ISR/)

- Freshwater resources in the West Bank and Gaza are being overexploited. Water overabstraction and pollution mean that the coastal aquifer is undergoing irreversible damage, which may make its waters unsafe by 2020.<sup>71</sup>
- Egypt's dependency ratio is one of the world's highest: 96.9 percent of renewable water resources flow into the country from neighbouring countries. Egypt had 700 m<sup>3</sup>/year/capita renewable water resources in 2014, but with population growth this is expected to drop below the 500m<sup>3</sup> threshold of absolute water scarcity by 2030.<sup>72</sup>
- Turkish regions that are already water-stressed, including the Aegean coastline and southeast, are expected to experience further reductions in water supply.<sup>73</sup>
- Cyprus rainfall has fallen for the last three decades; by mid-century, additional reductions of 10-15 percent are anticipated, creating a need for new desalination plants.<sup>74</sup> A tenth of the Republic of Cyprus's electricity supply is already consumed by desalination.

The fragmentation of regional political relationships, combined with an absence of agreed mechanisms for mediating disputes, adds another level of unpredictability and potential for escalation. Political turmoil has shaken up regional power balances. Changing political dynamics between regional states may encourage upstream riparians to take risks. The absence of de-escalation mechanisms – or indeed of diplomatic relations between some states – increases the likelihood that tensions will degenerate into conflict.<sup>75</sup>

Arguably the most pressing transboundary water issue in this region is the dispute over the Nile. The idea of a dam on the Blue Nile is decades old: a dam site currently being constructed by Ethiopia, which when completed will provide 6000MW of hydroelectric power, was first identified by the United States Bureau of Reclamation in the late 1950s.<sup>76</sup> Ethiopia conducted surveys of the site in 2009, and completed a design for the dam the following year – but announced its decision to build the dam only in March 2011, a moment in which Egypt

<sup>71</sup> *Gaza Ten Years Later*, United Nations Country Team in the occupied Palestinian territory, 2017.

<sup>72</sup> FAO, Aquastat Egypt, available at: [http://www.fao.org/nr/water/aquastat/countries\\_regions/EGY/](http://www.fao.org/nr/water/aquastat/countries_regions/EGY/)

<sup>73</sup> "Different RCM-forced scenario simulations indicate substantial decreases in mean annual discharge for the Euphrates and Tigris Rivers by the end of the century, ranging from 19–58%... As the basin is considered water-stressed and the region is strongly influenced by water-scarcity events, these unfavorable changes may potentially increase water disputes among the basin countries." Projected river discharge in the Euphrates-Tigris Basin from a hydrological discharge model forced with RCM and GCM outputs', Deniz Bozkurt, Stefan Hagemann and Omer Lutfi Sen, *Climate Research*, January 2015. See also *Turkey's national climate change adaptation strategy and action plan 2011-23*, Ankara, 2012, p.6.

<sup>74</sup> Cyprus Institute, "Climate Change and Impact" summary, available at <https://www.cyi.ac.cy>.

<sup>75</sup> "Violence is far from inevitable, but tensions over water within and between countries will create new flash points in regions where other resources are scarce and institutional guardrails are weak or missing." Joshua Busby, 'Warming World-Why Climate Change Matters More Than Anything Else', *Foreign Affairs*, July/August 2018 Issue.

<sup>76</sup> 'Nile River's Basin Dispute: Perspectives of the Grand Ethiopian Renaissance Dam (GERD)', Yohannes Yihdego, Alamgir Khalil & Hilmi S. Sale, *Global Journal of Human-Social Science: B Geography, Geo-Sciences, Environmental Science & Disaster Management*, Volume 17 Issue 2 Version 1.0 Year 2017.

was singularly ill-equipped to respond. Since then, despite successive rounds of negotiations and the establishment of numerous technical committees, Nile riparians have reached no agreement over how to share the waters. Ethiopia has, meanwhile, almost completed construction. The key issue now is how quickly it will fill the reservoir: a decision to fill it within three years (as Ethiopia reportedly wishes) could have devastating consequences for Egypt, notably on its agricultural sector and its capacity to generate power.<sup>77</sup>

The GERD crisis is truly multidimensional, not solely related to climate change. Nile riparians have long called for a comprehensive basin-wide agreement to replace the 1959 Nile Waters Agreement between Egypt and Sudan, and in the 1990s they established a process towards developing new technical, legal and institutional mechanisms for common utilization of the Nile waters.<sup>78</sup> While this process has not yielded a new comprehensive agreement, political efforts continue.<sup>79</sup> But Ethiopia may have been encouraged towards unilateral steps in part because of the limited progress to date of these multilateral efforts to date of these multilateral efforts.

The GERD initiative is, for Ethiopia, a symbol of the country's economic ambitions: it has been funded by Ethiopians at a cost of USD 4.8 billion, with China separately funding electricity infrastructure projects costing about USD 1.8 billion.<sup>80</sup> The GERD project also presents some clear opportunities for downstream Sudan, including a reduction in flooding and lower sediments, which will increase the lifespan of its own dams.<sup>81</sup> But for many in

<sup>77</sup> "Sources at Egypt's irrigation ministry have estimated the loss of 1 billion cubic meters (1.3 billion cubic yards) of water would affect 1 million people and lead to the loss of 200,000 acres of farmland. On that basis, "if [the dam is] filled in 3 years it might destroy 51 percent of Egypt's farmland, if in 6 years it will destroy 17 percent," said Ashraf el Attal, chief executive of Dubai-based commodities trader Fortuna and an expert on Egypt's grain trade." "Ethiopian mega-dam causes stir in Egypt-Ethiopia relations," Eric Knecht and Maha El Dahan, Reuters, April 23, 2018.

<sup>78</sup> "The main focus of current efforts centers around the Nile Basin Initiative ("NBI"), although other informal cooperation among riparian countries of the Nile River Basin existed earlier. The NBI was launched in February 1999 by the water ministers of the countries that share the river—Egypt, Sudan, Ethiopia, Uganda, Kenya, Tanzania, Burundi, Rwanda, the Democratic Republic of Congo, and Eritrea (which participates as an "observer"). The NBI 'seeks to develop the river in a cooperative manner, share substantial socioeconomic benefits, and promote regional peace and security' and to 'provide[...] an institutional mechanism, a shared vision, and a set of agreed policy guidelines to provide a basin-wide framework for cooperative action.'" International Waters Governance website, <http://www.internationalwatersgovernance.com/nile-river-basin-initiative.html>

<sup>79</sup> In "the mid-1990s [...] all Nile countries established two multilateral cooperative tracks—the Nile Basin Initiative (technical track) and the negotiations for a Cooperative Framework Agreement (a legal/political track). Since 2007, however, differences in perceptions over the meaning of 'water security' have derailed the ongoing multilateral cooperation process. In spite, and because, of this, all Nile countries continue to search for solutions; the first-ever Nile Basin Heads of State Summit in June 2017 is an example of the current level of political commitment to seeking compromises on ways forward." "Nile Basin: Toward a New Era of Regional Cooperation," Ana Elisa Cascão, *The Cairo Review*, 30 April 2018.

<sup>80</sup> "The total estimated cost of the GERD project [...] is US\$ 4.8 Billion [...] The Government of Ethiopia has indicated to self-manage all the costs of the project. For this purpose bonds were issued targeting Ethiopians both inside and abroad. Chinese banks funded the turbines and associated electrical equipment for the hydel power plants at the cost of US\$ 1.8 Billion." "Nile River's Basin Dispute: Perspectives of the Grand Ethiopian Renaissance Dam (GERD)," Yohannes Yihdego, Alamgir Khalil & Hilmi S. Sale, op cit.

<sup>81</sup> *ibid.*

Egypt, the dam represents a major threat to the country's economy and to national security,<sup>82</sup> as well as to the notion that the Nile is an "Egyptian birthright".<sup>83</sup>

Analysts describe Ethiopia's construction of the GERD as evidence of the "new order" emerging in the region,<sup>84</sup> and argue that it has exposed longer-term Egyptian foreign and domestic policy weaknesses, including a failure to articulate and execute a national security strategy in line with shifting circumstances and interests.<sup>85</sup> Several potential frameworks have been proposed to promote transboundary water cooperation along the Nile;<sup>86</sup> but if Egypt cannot, at this late stage, pull off the complex diplomatic feat required to secure agreement with upstream riparians, an acute water crisis may hit – potentially affecting a huge proportion of Egypt's population<sup>87</sup> – while the state is simultaneously grappling with other major structural, political and security challenges.

Climate change and shifting regional political relationships will also impact water relations in the Euphrates and Tigris basin (ET basin). Although the ET basin is one of 25 river basins in Turkey, it accounts for nearly one-third of the country's surface water resources and one-fifth of its irrigable land.<sup>88</sup> According to climate forecasts, higher temperatures and reduced precipitation will lead to substantial decreases in mean annual discharge for the Euphrates and Tigris Rivers by the end of the century, ranging from 19–58 percent.<sup>89</sup> Approximately 90 percent of the Euphrates flow and 46 percent of the Tigris flow originate in Turkey: this reduction would have major consequences both for Turkey and for the downstream riparians, Syria and Iraq.

<sup>82</sup> "In spite of [...] new economic realities, in Egypt the Nile is still perceived as a national security issue, and upstream developments are considered threats to the current water utilization patterns." Nile Basin: Toward a New Era of Regional Cooperation', Ana Elisa Cascão, *The Cairo Review*, 30 April 2018.

<sup>83</sup> 'Nile River's Basin Dispute: Perspectives of the Grand Ethiopian Renaissance Dam (GERD)', Yohannes Yihdego, Alamgir Khalil & Hilmi S. Sale, *Global Journal of Human-Social Science: B Geography, Geo-Sciences, Environmental Science & Disaster Management*, Volume 17 Issue 2 Version 1.0 Year 2017.

<sup>84</sup> "It's very much a game changer, a new order is beginning in the whole region now." Rawia Tawfik, an Egyptian academic working in Germany, quoted by Alastair Leithead, BBC, 24 February 2018.

<sup>85</sup> Omar Nasef argues that the episode has exposed "a structural problem in the Egyptian foreign policy establishment: the absence of institutional checks... against an individual leader's inclinations." Omar Nasef, *Egyptian National Security as told by the Nile*, The Century Foundation, 1 August 2016. See also Richard Conniff, *The Vanishing Nile: A great river faces a multitude of threats*, *Yale Environment* 360, 6 April 2017.

<sup>86</sup> See, for example, 'How to Share Water Along the Nile', John H. Lienhard And Kenneth M. Strzepek, *New York Times*, 28 September 2015, <https://www.nytimes.com/2015/09/29/opinion/how-to-share-water-along-the-nile.html>, and 'Nile Basin: Toward a New Era of Regional Cooperation', Ana Elisa Cascão, *The Cairo Review*, 30 April 2018.

<sup>87</sup> According to the Egyptian Minister of Water Resources and Irrigation, Mohamed Abdel Aty, "If the water that's coming to Egypt reduced by 2 percent we would lose about 200,000 acres of land. One acre at least makes one family survive. A family in Egypt is average family size about five persons. So this means about one million will be jobless. It is an international security issue." The 'water war' brewing over the new River Nile dam, BBC news, Alastair Leithead, 24 February 2018.

<sup>88</sup> Aysegül Kibaroğlu, 'Euphrates-Tigris river basin: Water management as conflict prevention', *Orients - Deutsche Zeitschrift für Politik und Wirtschaft des Orients*, January 2017.

<sup>89</sup> 'Projected river discharge in the Euphrates-Tigris Basin from a hydrological discharge model forced with RCM and GCM outputs', Deniz Bozkurt, Stefan Hagemann and Omer Lutfi Sen, *Climate Research*, January 2015.



Disagreements over the sharing of the Euphrates and Tigris rivers span several decades. Successive efforts by Iraq, Syria and Turkey – either trilaterally or bilaterally – to establish joint mechanisms to resolve transboundary water disputes have not yielded any sustained outcomes, not least because higher level political crises have interrupted such processes.<sup>90</sup> In the summer of 2018, Iraq was facing an acute water crisis, caused by a number of factors including the construction over several decades of upstream infrastructure in Iran, Syria and Turkey, and poor water management within Iraq. The Government of Iraq managed via intensive diplomatic engagement to secure Turkey’s agreement to postponement of the filling of the Ilisu dam on the Tigris. But despite Turkey’s apparent willingness at present to adjust its plans in light of the immediate needs of its downstream neighbours, there remains no fundamental agreement between Iraq, Syria and Turkey about what constitutes an equitable sharing of the waters.<sup>91</sup>

Turkey’s longstanding positions suggest that in case of a sustained reduction in availability of surface water, it would prioritise its own domestic requirements. Turkey does not accept downstream riparians’ claims to rights over the water,<sup>92</sup> and it is not a signatory to the UN Watercourses Convention.<sup>93</sup> Turkey has also made massive investments in the ET basin: its regional development project, the GAP (Güneydoğu Anadolu Projesi), covers over 10 percent of Turkey “in both territory and population terms” and includes 22 dams, 19 hydraulic power plants, and irrigation investments covering 1.8 million hectares of land.<sup>94</sup> Turkey will endeavor to maintain these operations, and is not afraid of pursuing an assertive foreign policy. As one interviewee put it bluntly: “If Turkey thinks it needs the water, it will keep it.”<sup>95</sup>

<sup>90</sup> Aysegül Kibaroglu & Sezin Iba Gürsoy argue that “the change in the nature of bilateral relations from bad to good, thereby involving various cooperative initiatives, is more closely and intimately linked to the change in the overall political relations, with decisions being made at the highest levels of the political authorities on each side. It cannot be denied, therefore, that the overarching and chronic problem of confrontational political relations in the region has long had a negative effect on the development of transboundary water cooperation.” Aysegül Kibaroglu & Sezin Iba Gürsoy (2015) ‘Water–energy–food nexus in a transboundary context: the Euphrates–Tigris river basin as a case study’, *Water International*, 40:5–6, 824–838, DOI: 10.1080/02508060.2015.1078577

<sup>91</sup> “Turkey has several ideas designed to ease the water shortage. It proposes installing water meters on both sides of the border to determine how much water is released to the Euphrates and Tigris. Turkey has offered to pay for the meters. Ankara also proposes joint projects to improve and develop irrigation systems and setting up joint mechanisms for water management. But one basic problem is what constitutes a ‘fair’ share. Turkey classifies the Euphrates and Tigris rivers as ‘water crossing the border’ and proposes sharing according to a formula of ‘just and according to needs’. Iraq and Syria prefer to use the classification ‘international waters,’ and they want equal shares. The three parties don’t have an international accord they can rely on, as Turkey has not signed the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses.” Turkey, Iraq trade blame as concern rises over low water’, Fehim Tastekin, Al-Monitor, 28 June 2018: <http://www.al-monitor.com/pulse/originals/2018/06/turkey-iraq-ilisu-dam-water-crisis.html#ixzz5MqJT0eC>

<sup>92</sup> Turkey contends, *inter alia*, that it “does not have abundant water resources to be allocated to meet the needs of the other Middle Eastern countries.” Water issues between Turkey, Syria and Iraq, a study by the Turkish Ministry of Foreign Affairs, Department of Regional and Transboundary Waters, available at: <http://sam.gov.tr/wp-content/uploads/2012/01/WATER-ISSUES-BETWEEN-TURKEY-SYRIA-AND-IRAQ.pdf>

<sup>93</sup> For a summary of the Convention, including its general principles, see UN Watercourses Convention Online User’s Guide, <http://www.unwatercoursesconvention.org/the-convention/>

<sup>94</sup> Republic of Turkey Ministry for Development, Southeastern Anatolia Project Regional Development Administration, “The Southeast Anatolia Project (GAP)”, <http://www.gap.gov.tr/en/what-s-gap-page-1.html>, downloaded 21 May 2018.

<sup>95</sup> Author interview with Turkish analyst of regional security and foreign affairs, Istanbul, 8 May 2018.

Persistent regional instability further damages prospects for achieving a stable, cooperative arrangement for water management in the ET basin. Aysegül Kibaroglu, who has tracked water relations (including successive diplomatic crises) between Turkey, Iraq and Syria, points out that high-level political tensions prevented technocrats from implementing the 2008-09 series of bilateral memoranda of understanding.<sup>96</sup> The “Syrian civil war and the deterioration of the bilateral political relations between any pair of the riparians constitute a highly unfavourable environment for realizing good water governance,”<sup>97</sup> she warns. “The severe 2008 drought in the basin served as a warning for what could happen in this area in the future.”<sup>98</sup>

The Jordan River is a third major transboundary system in this region, shared by five riparians: Lebanon, Syria, Jordan, Israel and Palestine. Efforts to promote cooperation over the Jordan date back almost to Israel’s founding in 1948, but have reached an advanced stage only in the case of Israel and Jordan.<sup>99</sup> Israel and Lebanon have no formal relations – although a de-escalation mechanism between the two exists via the United Nations Interim Force in Lebanon (UNIFIL), and the peacekeeping operation mediated a dispute over the Waziri Spring (a tributary to the Jordan) in 2002.<sup>100</sup> There are currently no water negotiations under way between Israel and Syria. Water is an issue for final status negotiations between Israel and the Palestinian Liberation Organisation; such negotiations are stalled, however, and there is no sign of their resumption.

Jordan accuses both Israel and Syria of building excessive infrastructure, which has reduced flows in the Jordan River and led to the shrinkage of the Dead Sea and intrusion of salt into agricultural lands in the Jordan valley.<sup>101</sup> Jordanian officials were clear, however, that

<sup>96</sup> Kibaroglu argues that “the overarching problem of deteriorating political relations in the region has a counter-effect on the development of transboundary water cooperation. As political will faded away, particularly in Turkish-Syrian relations, technocratic and diplomatic bureaucracies have encountered serious difficulties in implementing the new water MoUs. They are closely linked to decision-making at the highest level.” Aysegül Kibaroglu, ‘Euphrates-Tigris river basin: Water management as conflict prevention’, *Orients - Deutsche Zeitschrift für Politik und Wirtschaft des Orients*, January 2017.

<sup>97</sup> Aysegül Kibaroglu ‘State-of-the-art review of transboundary water governance in the Euphrates-Tigris river basin’, *International Journal of Water Resources Development*, 2017.

<sup>98</sup> Aysegül Kibaroglu, ‘Euphrates-Tigris river basin: Water management as conflict prevention’, *Orient*, January 2017, p.21.

<sup>99</sup> The Jordan River is covered extensively in a detailed Annex to the 1994 Jordan-Israel Peace Agreement, which sets out allocations to which both countries are entitled to the Jordan, the Yarmouk, and to the Wadi Araba/Arava aquifer. For details see ‘The Jordan River Basin’ in Anton Earle, Ala Elisa Cascao, Stina Hansson, Anders Jagerskog, Ashok Swain, Joachim Ojendal, *Transboundary Water Management and the Climate Change Debate*, Earthscan, 2015, Chapter 3, pp. 45-65.

<sup>100</sup> Lebanese officials spoke of conscious effort not to withdraw too much water from Waziri spring as part of the broader effort to maintain the calm along the Blue Line, Author interviews, Beirut, 6-7 March 2018. Lebanon’s consent to Israel’s dominance of the Jordan Valley has been described as “veiled consent”. See ‘Transboundary water interaction III: contest and compliance’, Mark Zeitoun, Ana Elisa Cascao, Jeroen Warner, Naho Mirumachi, Nathaniel Matthews, Filippo Menga, Rebecca Farnum, *International Environmental Agreements* (2017) 17:271–294.

<sup>101</sup> “The Israeli side also holds responsibility for degradation, as well as the Syrian side, by establishing an excessive number of dams - instead of 26, now 46 dams and 55 wells. This has led to a drying up of the Yarmouk River.” EcoPeace welcomes Eng. Saad Abu Hammour, speech by the Secretary General of Jordan Valley Authority.

their most serious water problem relates to Syria. Syria's withdrawals from the Yarmouk increased after 1987 (apparently in response to developments in the Jordan-Israel relationship) and, according to Jordanian officials, have diminished still further since the beginning of the Syria war.<sup>102</sup> One of the Jordanian government's biggest current problems in this regard is the lack of a responsible authority with whom it can deal on the other side of the border.<sup>103</sup>

Three factors suggest that Israel and Jordan will continue to cooperate over water, even while the River Jordan's flow continues to diminish. The first is the mutual commitment of the Israeli and Jordanian security and foreign policy establishments to continue cooperation, on the basis of their assessment that cooperation serves their respective national interests.<sup>104</sup> Second, the existence of a long-running technical mechanism for cooperation (operated by water authorities) helps the parties to overcome obstacles. Third, Israel has an ability to stave off Jordan's water crisis by selling water from unconventional sources (including desalinated water), and Jordan appears willing to take advantage of this offer.<sup>105</sup>

In contrast to the Israeli-Jordanian relationship, Israel's water relations with the Palestinians are highly problematic. Water is a final status issue and the arrangements currently in place, established as part of the Oslo accords, were intended as temporary. Cooperation between Israelis and Palestinians appeared to have improved with revival of the Joint Water Committee in January 2017; however, progress is slow, and analysts have highlighted numerous ways in which the Committee's work has, in practice, supported Israeli water requirements (including those of Israeli settlements) over those of the Palestinians.<sup>106</sup> In Area C, Israeli authorities continue to apply heavy restrictions, and settlers prevent Palestinian access to springs. The UN assesses that 70 percent of communities in Area C have no water connection and rely on tankered water, at high cost; water consumption in some of these communities is as low as 20 litres per capita per day, one-fifth of the WHO recommendation.<sup>107</sup>

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<sup>102</sup> In contrast to this claim, researchers Jim Yoon, Marc F. Muller, and Steven Gorelick found evidence following the major refugee influx into Jordan in 2012 of "an unexpected, rapid increase in flow in the Yarmouk River—from Syria to the Al-Wehda reservoir on the Syria-Jordan border." See 'How the Syrian refugee crisis affected land use and shared transboundary freshwater resources,' Jim Yoon, Marc F. Muller, and Steven Gorelick, Brookings Institution, Monday, February 13, 2017.

<sup>103</sup> In spring 2018, Syrian territory north of the Yarmouk was controlled mainly by opposition forces.

<sup>104</sup> Author interviews in Amman, Jerusalem and Tel Aviv, March 2018.

<sup>105</sup> See, for example, 'EcoPeace welcomes Saad Abu Hammour', undated document, available at [http://ecopeace.org/uploads/Welcomes\\_Abu\\_Hammour.pdf](http://ecopeace.org/uploads/Welcomes_Abu_Hammour.pdf)

<sup>106</sup> The work of the Joint Water Committee and its context is described in some detail in 'A Breakthrough at Long Last? On the Revival of the Israeli-Palestinian Joint Water Committee', an international report of the Konrad Adenauer Stiftung by Marc Frings, Johannes Lutz, Oct. 18, 2017. They point out, *inter alia*, that "Although the Mountain Aquifer is fed predominantly by rainfall across the West Bank, only 14 per cent of the abstracted volume was utilised by the Palestinians in 2015 while Israel used the rest."

<sup>107</sup> Author interview, Jerusalem, 21 March 2018, and United Nations document *Area C of the West Bank: Key humanitarian concerns*, Update August 2014, UN OCHA, oPt.

The situation in Gaza is worse: the coastal aquifer on which Gazans have long relied for freshwater will, by 2020, be irreversibly damaged through over-abstraction. The impact of this will, in the UN's assessment, "be catastrophic."<sup>108</sup> Demand for water is growing: the Gaza population already exceeds 2 million, and is expected to reach 3.1 million by 2030. Without a substantial change in circumstances, Gaza will become "unliveable" within the next few years.<sup>109</sup>

There is some evidence that the Government of Israel is beginning to regard Palestinian water scarcity as a security issue for Israel, and this is contributing to a change in its overall approach to Palestinian water relations.<sup>110</sup> International actors are also seeking to address the Gaza crisis via construction of a desalination plant in Gaza. The crisis is acute, however, and changes underway may be insufficient to prevent a resource breakdown.

In Cyprus, the division of the island has exacerbated water management problems over several decades. Conflict in the 1960s and '70s destroyed water-harvesting processes; this was followed by the development of infrastructure that was not coordinated between south and north.<sup>111</sup> In response to growing water scarcity, Turkey built a pipeline from Mersin Province to northern Cyprus, which opened in 2016; this has, however, been beset by governance problems.<sup>112</sup> Climate change is likely to increase Turkish Cypriot reliance on water from Turkey, adding another layer to Ankara's influence over the Turkish Cypriot community. In the longer term, a competitive water resource management model on a small, divided island seems far from sustainable, particularly in an era of reduced water availability: climate change is expected to result in lower precipitation and higher temperatures, both in Cyprus and in the regions of Turkey bordering the Aegean coastline.<sup>113</sup>

Several other transboundary water issues have the potential to create tensions between regional states. Competition between Egypt and Libya over water resources could increase if, as planned, Egypt expands settlements into the western desert to reduce pressure on the Nile region. To supply new settlements, Egypt would extract groundwater from an aquifer

<sup>108</sup> *Gaza Ten Years Later*, United Nations Country Team in the occupied Palestinian territory, 2017.

<sup>109</sup> In a 2012 report, which reviewed indicators and trends, the UN argued that by 2020 the Gaza strip would become "unliveable". United Nations Country Team in the occupied Palestinian territory: Gaza 2020, August 2012: <http://www.unsco.org/Documents/Media/Gaza%20in%202020%20-%20a%20liveable%20place.pdf>

<sup>110</sup> See *Israeli Water Diplomacy and National Security Concerns*, Oded Eran, INSS, Gidon Bromberg and Giulia Giordano, EcoPeace Middle East, Tel Aviv, January 2018.

<sup>111</sup> For details and analysis, see Michael Mason and Rebecca Bryant, *Water technology and sustainability in north Cyprus: Climate change and the Turkey-north Cyprus water pipeline*, LSE-PRIO Cyprus Centre report 1/2017.

<sup>112</sup> *ibid.*

<sup>113</sup> As Michael Mason and Rebecca Bryant note, "water resource management is one area in which there is a growing acknowledgment that division is not sustainable. This is particularly the case with regard to management for climate change. The island's north relies on water flowing from the Troodos Mountains in the south, while several underground aquifers are shared by the two sides. This means that water management decisions or mismanagement ultimately will affect the water supply of the other side of the island, while climate change planning in a small island will be most effectively undertaken in cooperation rather than competition." *Water technology and sustainability in north Cyprus: Climate change and the Turkey-north Cyprus water pipeline*, LSE-PRIO Cyprus Centre report 1/2017.

which it shares with Libya, but which is currently little used by Egypt.<sup>114</sup> Lebanon's shared rivers could also become the focus of renewed disputes with the neighbours, as they have been in the past.<sup>115</sup>

## Wider international consequences

Climate change has substantial potential to contribute to large-scale migration within and beyond national borders, as families and communities displaced by drought, crop failure or sea level rise seek more viable and less vulnerable places to live.<sup>116</sup> As noted above, increased migration from the Eastern Mediterranean may occur – particularly from Egypt, where the livelihoods of millions living in the Nile Delta are threatened by salt ingress and sea level rise. The push towards emigration may be very high, because of demographic growth and limited economic opportunities in other sectors.<sup>117</sup>

Egyptians who make the decision to leave would be likely to head north, to Europe. Networks of smugglers who can facilitate their journeys are already in place: indeed, the lucrative smuggling industry that developed during the course of the Syria war not only enables illicit movement, but serves “as a powerful vector ... increasing and shaping the demand for irregular migration.”<sup>118</sup> Smuggling networks probably “remain entrenched in the political economies of Egypt and Libya,” and will seek continued profits through active recruitment of prospective migrants.<sup>119</sup>

The refugee and migration crisis of 2015-16 had a major effect on the politics of the European Union, contributing to a series of forced policy decisions, and to dramatic political events in several EU countries.<sup>120</sup> Egypt's population is over five times as large as that of Syria. A new influx of refugees across the Mediterranean could have significant political fallout in Europe. There is an expanding jihadist threat in Egypt, and mass migration would therefore have perceived or real consequences for European security.<sup>121</sup>

<sup>114</sup> Author interview, Cairo, 25 April 2018.

<sup>115</sup> Lebanese officials recalled past efforts by Syria, using diplomacy and infrastructure, to acquire a greater share of transboundary water resources. Lebanese officials assume, based on past experience, that in case of increased scarcity both neighbours will try to acquire Lebanon's water resources (author interviews, Beirut, 6-7 March 2018). One Israeli interviewee observed spontaneously that diverting the Litani into the River Jordan would be relatively easy, from a technical perspective (author interview, Tel Aviv, 22 March 2018).

<sup>116</sup> *Groundswell: Preparing for internal climate migration*, World Bank, Washington DC, 2018.

<sup>117</sup> Author interview with senior international official, April 2018.

<sup>118</sup> Tuesday Reitano and Mark Micallef, *Breathing Space: The impact of the EU-Turkey deal on irregular migration*, Institute for Security Studies and Global Initiative Against Transnational Organised Crime, November 2016, p.1.

<sup>119</sup> Tuesday Reitano and Peter Tinti, *Survive and advance: The economics of smuggling refugees and migrants into Europe*, ISS paper 289, November 2015, p.22.

<sup>120</sup> Alexander Betts and Paul Collier argue that the refugee crisis of 2015 created such major divisions among European Union member states that it “permanently and radically weakened” the EU, and “directly contributed to Brexit.” Betts and Collier, *Refuge: Transforming a broken refugee system*, Penguin/Random House, London, 2017, p.93.

<sup>121</sup> International Crisis Group put Egypt on its “Watchlist” for 2018, largely because of a rising jihadist threat against civilians. The conflation of political dissent with terrorism “helps drive people toward violence.” <https://www.crisisgroup.org/global/10-watch-list-2018#egypt>.

Climate-driven water and energy scarcity may also push countries in the Eastern Mediterranean to move more quickly towards acquiring civilian nuclear power capabilities, a process which is already under way in Jordan, Egypt and Turkey. While this would not necessarily have security consequences, the potential for accidents is worrying;<sup>122</sup> the development of civilian capabilities could also lead to an increase in regional tensions if it were perceived by other regional states as threatening.<sup>123</sup>

**Table 1: Potential political and security consequences of climate change**

Climate change effects and consequences in and beyond the Eastern Mediterranean	
Physical impacts	<b>Human security</b> affected by more frequent extreme weather events, flooding in coastal cities and low-lying areas, heatwaves, vector-borne diseases, air pollution.
Domestic political and economic tensions: resource competition, political resistance	<b>Regional/local economic impacts:</b> agriculture, fisheries, tourism, among other economic sectors affected by drought and sea level rise; may lead to migration from areas dependent on these sectors. <b>Resource constraints:</b> States may be forced into sudden restrictions, generating hardship and resistance from affected groups; constraints may add to tensions between refugees and host communities. <b>Adaptation creates tensions, winners and losers:</b> interest groups may resist or delay implementation.
Transboundary watercourses	The combination of <b>acute water scarcity, changes to precipitation patterns and temperatures, and shifts in regional political relationships</b> will add pressure and uncertainty to existing water-sharing arrangements. Political tensions may increase in the Nile, Jordan and Euphrates-Tigris river basins.
International consequences beyond Eastern Mediterranean	People from Eastern Mediterranean countries who are displaced by drought, crop failure, sea level rise or conflict will migrate, and many are likely to <b>seek refuge</b> in Europe. This could have substantial political consequences. Water and energy scarcity may push states towards acquisition of civilian <b>nuclear capabilities</b> , increasing the risk of a nuclear accident and possibly impacting the regional security situation.

<sup>122</sup> The Cyprus Institute conducted research into the potential impacts of an accident occurring at Turkey's proposed nuclear installation, which could render the island of Cyprus uninhabitable. Presentation to the PRIO CC/FES workshop, 12 June 2018.

<sup>123</sup> The enhanced push for civilian nuclear capabilities in the region could have security consequences. "The transition from civil nuclear power to nuclear weapons, however, is not that straightforward, although it can be argued that the technology required for peaceful purposes makes militarization easier." Shaul Shay, *The Sunni Arab Countries Going Nuclear*, February 2018, p.10.

## IS CLIMATE CHANGE RECOGNIZED AS A SECURITY ISSUE?

Officials are not always willing to share frank assessments of national security threats with researchers: what follows is therefore an interpretation based on the comments of several individuals, together with analysis of available literature.<sup>124</sup> This research paper also provides a “snapshot” of official opinions taken during spring 2018, in a dynamic region in which priorities can change quickly.<sup>125</sup> With these caveats, it is possible to make the following points about perceptions of the seriousness of climate as a security threat.

Environment and climate-related issues do not top any regional government’s security agenda. Instead – unsurprisingly – immediate conventional threats to national security remain prominent. The war in Syria continues to exert a profound impact on all neighbouring states: during spring 2018, Turkey and Israel were drawn further into the conflict, with Turkey conducting ground and air operations to take the town of Afrin and positions as far south as Idlib province, and Israel launching major air attacks, allegedly against Iranian targets. Egypt faces major challenges controlling militant operations in the Sinai, and is working with (and, according to some analysts, is increasingly reliant on) the Israeli military to control this part of its territory.<sup>126</sup> The Israeli-Palestinian conflict continues: in April-May 2018, the UN reported

<sup>124</sup> Some academic and policy literature exists, and was incorporated into the analysis: on Israel, for example, Owen Alterman wrote in 2015 that “The issue of climate change lies low on the Israeli security agenda. The media rarely reports on it and politicians discuss it infrequently, if at all. Governmental and academic panels have tackled the climate change issue, particularly for its domestic impact, but in the security arena, the issue is absent from view” (Owen Alterman, *Climate Change and Security: An Israeli Perspective*, INSS, Strategic Assessment, Volume 18, No. 2, July 2015). But it is important to note that official and popular understanding of the climate-security nexus is moving fast, so literature only a few years old may not capture the current state of the debate.

<sup>125</sup> In Egypt, for example, water scarcity achieved prominence as a national security issue during April 2018 because international negotiations over the Ethiopian dam had just collapsed; but this may not last if another security crisis occurs. Turkish analysts also reflected that concern about climate change – including the possibility of deaths from urban flooding – tended to increase immediately following extreme weather events, but interest also tended to subside relatively quickly and did not necessarily lead to government action.

<sup>126</sup> “American officials say Israel’s air campaign has played a decisive role in enabling the Egyptian armed forces to gain an upper hand against the militants. But the Israeli role is having some unexpected consequences for the region, including on Middle East peace negotiations, in part by convincing senior Israeli officials that Egypt is now dependent on them even to control its own territory.” *Secret Alliance: Israel carries out airstrikes in Egypt, with Cairo’s OK*; David D Kirkpatrick, *New York Times*, 3 February 2018.

“the worst levels of violence since 2014”<sup>127</sup>: 76 Palestinians, including 11 children, were killed by the Israel Defense Forces and over 3,000 injured by live fire and other means.<sup>128</sup> These events had significant negative repercussions across the region, and raised the spectre of yet another Gaza conflict.

States in this region also face major domestic challenges, ranging from corruption charges against the leadership to concerns about terrorism and extremism, fiscal retrenchment, unemployment, elections. The domestic stresses faced by governments in Turkey, Lebanon and Jordan have been exacerbated by the burden of hosting several million Syrian refugees. In this context, leaders are focused on stability and their own political survival, and government machineries find it hard to focus on planning for the future.

In spite of this exceptionally crowded and fraught regional agenda, the majority of interviewees noted that understanding of, and concern about, the environment and climate-related issues had increased in the recent past, including at central government level. It nonetheless remains difficult to ensure consistent focus: “How can we pitch it,” one senior diplomatic adviser asked, “when there are so many other issues on the table?”<sup>129</sup> Another international official called for coherent strategies to take the issue “to the next level” by convincing ministers of finance to prioritise this issue over other demands.<sup>130</sup>

The dispersal of responsibilities for climate-change related issues in both governmental and multilateral systems also makes it more difficult to set priorities and understand potential security risks. Although all regional states have established cross-government structures for dealing with climate change, such structures tend to operate only intermittently. Day-to-day responsibility for dealing with climate risks continues to be assigned to less powerful ministers,<sup>131</sup> or to be dispersed among several ministries. In Turkey, for example, responsibility for environmental issues is currently shared by four ministries, and the environment minister is simultaneously assigned responsibility for urbanization.<sup>132</sup> Within each ministry, policy makers must balance environmental considerations against what is sometimes described as the “hyper-developmental” approach of the ruling Justice and Development Party.

Divisions also exist within international institutions. Environment officers tend to be well informed about the risks, but they often express themselves in “developmental” language and are not often included in discussions of a political nature. Meanwhile, political officers are

<sup>127</sup> Nickolay Mladenov, United Nations Special Coordinator for the Middle East Peace Process, Briefing to the Security Council on the situation in the Middle East, 23 May 2018.

<sup>128</sup> *ibid.*

<sup>129</sup> Author interview, Beirut, 7 March 2018.

<sup>130</sup> Telephone interview with international official, 8 March 2018.

<sup>131</sup> Environment ministry officials speak of having to cajole line ministries to consider environmental and climate factors – often using the potential for international donor funding as an incentive. Author interviews, Amman, 14 March 2018.

<sup>132</sup> The Ministry for Environment and Urbanisation, the Ministry of Forestry and Water Management, the Ministry of Energy and Natural Resources, and the Ministry of Foreign Affairs all have responsibilities for aspects of environmental management.



aware that they should be following climate issues, but are preoccupied by immediate political and security crises.<sup>133</sup> In some cases, senior leaders (such as UN Resident Coordinators) are positioned to pull the pieces together.<sup>134</sup>

In contrast to the rest of the region, Israel appears *less* concerned about water scarcity as a national security issue than it was two decades ago. Control of natural water resources has long been seen as part of Israeli national security discourse.<sup>135</sup> But Israel now appears in the eyes of some senior policymakers to be less vulnerable than its regional neighbours to climate change, because it has undertaken a massive programme of research and innovation designed to “overcome many of the challenges of limited natural resources.”<sup>136</sup> This began decades ago, before the impact of climate change was understood. Israel has substantially reduced demand for water, particularly in the agricultural sector, and has also increased its fresh water supply via desalination and other unconventional sources.<sup>137</sup> Israel’s natural gas discoveries in the Mediterranean fuel large-scale desalination, which is expected to expand further. Through these innovations, Israel has – at least for now – enhanced its domestic water security.

While Israel has become richer in water, its regional neighbours – notably Jordan, but also the Palestinians – are becoming poorer as natural resources diminish. This creates “business opportunities.”<sup>138</sup> It also has consequences for regional relations:<sup>139</sup> Israel can choose to sell water to its thirsty neighbours, reinforcing mutual dependencies and supporting other aspects of Israeli policy including security cooperation, provision of export routes via the Mediterranean, and the sale of natural gas.<sup>140</sup>

<sup>133</sup> Author interviews with international officials, Jerusalem, Cairo and Ankara, March-May 2018.

<sup>134</sup> The Centre for Policy Research at the United Nations University has examined the role of Resident Coordinators in preventing violent conflict via a number of case studies. The authors concluded, *inter alia*, that “for RCs to successfully spot and seize entry points for preventive engagement they must have sound political judgment and the ability to operate politically. Several of our case studies demonstrate how the arrival of a new RC can dramatically enhance – or reduce – the RCO’s and UNCT’s prevention role. Personality, style and political acumen (or lack thereof) matter a great deal.” *What Works in UN Resident Coordinator-led Conflict Prevention: Lessons from the Field*, Sebastian von Einsiedel, 2018 United Nations University.

<sup>135</sup> Author interviews with former Israeli security officials, Jerusalem, April 2018, and *Israeli Water Diplomacy and National Security Concerns*, Oded Eran, INSS, Gidon Bromberg and Giulia Giordano, EcoPeace Middle East, January 2018.

<sup>136</sup> See ‘Climate Change: Turning challenges into opportunities’, State of Israel Ministry of Environmental Protection, September 2014.

<sup>137</sup> Israel has reduced the use of fresh water used for irrigation by more than 60 percent. Fresh water for agriculture has largely been replaced by sewage effluents (Israel reuses 72 percent, compared to 12 percent in Spain, 8 percent in Italy and 5 percent in Greece). Israel is moving towards full cost water for all sectors (including agriculture) and has increased urban water conservation through pricing, regulations, campaigns and education. Presentation by Prof Uri Shamir, Tufts University, 8 September 2010.

<sup>138</sup> Author interviews, Jerusalem, 21-22 May 2018.

<sup>139</sup> According to Ram Aviram, water is no longer viewed as a fixed, finite resource, and thus, water relations with the neighbouring countries “are no longer seen as solely a zero-sum game.” ‘Desalination as a game-changer in transboundary hydro-politics’, Ram Aviram et al., *Water Policy*, August 2014.

<sup>140</sup> The sale of natural gas to Jordan will enable Israel to initiate a USD4bn project to exploit the Leviathan gas field. Author interview with Israeli analyst, Tel Aviv, 20 March 2018.

In Jordan and the West Bank, there currently appears to be little resistance to this situation. For the Jordanian government, buying Israeli water appears to be a more constructive – or at least stabilizing – approach than confronting Israel over water rights.<sup>141</sup> Although Palestinians express concern that Israel will impose a progressively higher degree of control as their dependence on Israeli water from unconventional sources increases,<sup>142</sup> the Palestinian Authority is weak politically, and currently has few options in its water relations with Israel. The situation in Gaza is far more desperate, and more likely to erupt.

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<sup>141</sup> Author interviews with Jordanian officials, Amman, 14-15 March 2018.

<sup>142</sup> Author interviews, Ramallah, 21 March 2018.

## IMPLICATIONS FOR THE SECURITY OF THE EASTERN MEDITERRANEAN

The Eastern Mediterranean is already fragile, politically and in security terms. As in other regions, climate change is likely to reinforce and intensify pre-existing patterns of vulnerability. This is relevant both at the community level and in terms of the relationships between states.<sup>143</sup>

At the community level, fishermen living on the northern coast of Egypt and Palestinian farmers in the Jordan Valley are already struggling, and lack the capacity for adaptation to climate change. They will become especially vulnerable if, as now seems likely, their governing institutions do not provide them with the information and resources necessary for adaptation.

Climate change poses an additional challenge to governments in the Eastern Mediterranean that already exhibit institutional weaknesses: Jordan, Egypt and Lebanon, and especially the Palestinian Authority. These governments are considered fragile for a raft of other reasons.<sup>144</sup> The combination of political tensions, fiscal constraints and limited planning capabilities implies that they will delay adaptation and mitigation initiatives; this will in turn increase the likelihood of rushed implementation, maladaptation, and domestic crisis. Conflicts in any of these locations would have security consequences beyond national boundaries.

Pre-existing patterns of vulnerability are also likely to be reinforced at the inter-state level. States with the capacity to monitor changes, and to prepare diplomatic strategies and new infrastructure for the challenges ahead, may enhance their position of relative strength, even if they are negatively affected by climate change on the domestic front. Israel and probably Turkey fall into the latter category. As naturally available water resources diminish, northern

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<sup>143</sup> As Halvard Buhaug notes, drawing on global research into the climate-security nexus, changes to the physical climate may 'exert an indirect and conditional effect [...] increasing the security gap between affluent societies well able to cope with climate change and societies already suffering from violence and instability, who are unlikely to achieve successful adaptation on their own.' Halvard Buhaug, 'Climate Change and Conflict: Taking Stock', *Peace Econ Peace Sci Publ Pol* 2016; 22(4): 331–338.

<sup>144</sup> See, for example, Joost Hiltermann's article on Jordan 'How close to danger?', *New York Review of Books*, 29 March 2016; International Crisis Group watchlist 2018 on the increasing threat of jihadism in Egypt; Raphaël Lefèvre, *The Sociopolitical undercurrent of Lebanon's Salafi Militancy*, Carnegie Middle East Centre, 27 March 2018.

Cyprus will become increasingly dependent on water piped from Turkey. Egypt and Jordan, together with their eastern neighbours Syria and Iraq, have been weakened by waves of regional turmoil; they are also vulnerable because a high percentage of their available water originates outside their borders, and they rely heavily on those shared waters. The World Bank warns that climate change presents additional challenges in such situations “because transboundary agreements are often based on multiyear averages, as opposed to percentages of flows. Thus agreements can come under considerable strain when water availability deviates from historical norms.”<sup>145</sup>

Whether tensions over transboundary waters translate into hot conflicts will depend partly on the extent to which downstream countries are prepared to accept new arrangements proposed (or imposed) by increasingly powerful upstream riparians.<sup>146</sup> It seems likely that Jordan will accept and adjust, in order to maintain good relations with its neighbours. Egypt, on the other hand, seems relatively unprepared to compromise in response to Ethiopia’s initiatives on the Nile – although in mid-June 2018 signs of progress between the Ethiopian and Egyptian leaderships were emerging.<sup>147</sup> The politics of the Euphrates-Tigris basin are unpredictable, not least because of continuing uncertainties relating to Syria.<sup>148</sup>

<sup>145</sup> *Beyond Scarcity*, Executive Summary, xlv, World Bank: Washington DC, 2017.

<sup>146</sup> Recent work on hydro-diplomacy highlights the inadequacy of technical approaches, in contexts characterized by deep political divisions. An Adelphi paper on hydro-diplomacy and foreign policy states: “Transboundary basin management is frequently eclipsed by intra-basin politics, which in turn is often compounded by power asymmetries. In this context, a focus on technical solutions for shared basins is often not enough; it needs to be complemented by political engagement.” *The Rise of Hydro-Diplomacy: Strengthening foreign policy for transboundary waters*, Benjamin Pohl et al., Adelphi, Berlin, 2014. Interviewees for this project noted that “we know what to do” in technical terms to promote transboundary cooperation, “we just can’t do it in this region”, because of political constraints.

<sup>147</sup> The direction of Egyptian foreign policy was described by Michael Wahid Hanna and Daniel Benaim as follows: “Under the new presidency of Abdel Fattah el-Sisi, Cairo has gradually been formulating a new foreign policy doctrine based on ideological commitments to anti-Islamism, respect for traditional and often retrograde notions of sovereignty and non-interference, and a defiantly nationalistic reassertion of Egypt’s freedom of maneuver within the region. Taken together, they are leading Egypt away from its traditional allies and toward a more independent—and uncertain—future.” ‘Egypt First’, Michael Wahid Hanna and Daniel Benaim, *Foreign Affairs*, 8 January 2018.

<sup>148</sup> The outcome of negotiations relating to the filling of the Ilisu dam may provide an indication of Turkey’s future approach.

## DIRECTIONS FOR INTERNATIONAL POLICY

Scientific projections about the speed and scope of climate change in the Eastern Mediterranean have advanced considerably: we now know with greater certainty about the pace of climate change in this region, and the physical changes it will bring to specific locations. The potential political and security consequences of these changes are becoming increasingly evident.

Despite the availability of this information, climate change continues to be considered primarily as a longer-term developmental challenge. With the exception of those directly affected – who often lack the means to voice their concerns at central government level – the risks still appear distant. Urban elites continue to wash their cars and water their lawns. And in a context in which crises continue to accumulate,<sup>149</sup> the leaders of regional states remain focused on tackling traditional security threats. Unless climate security risks become more visible to them and their senior officials, change on the ground is likely to outpace adaptation and mitigation efforts.

Two changes could help secure the necessary shift in the pace of action to address climate-related risks: first, a concerted effort to increase the visibility of such risks might help to boost national and sub-national political leadership around the issue. Second, deeper integration of climate-related initiatives at a regional level, coordinated via a “variable geometry” of inter-state and sub-state action, might help to build momentum – especially if the unifying potential of the Mediterranean space is fully exploited.

### **Direction 1: Increase the visibility of climate- and environment-related risks**

Leaders in this region are focused on day-to-day stability and political survival; in this context, they heed issues that have an immediate impact on their ability to sustain economic growth, government revenues, and national security. Warnings about physical changes that are expected to occur “by mid-century” may not seize their attention.

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<sup>149</sup> In May 2018, a group of senior analysts reported that their main concern was a confrontation between Iran and Israel, which might start either in Syria or Lebanon and spiral out of control. “What worries you most in the Middle East this summer?” *A regular survey of experts on matters relating to Middle Eastern and North African politics and security*. Michael Young, Carnegie Middle East Centre, 23 May 2018.

A concerted effort to communicate immediate or medium-term economic consequences of climate change to regional leaders and their senior officials might bring risks into sharper focus. Several international public and private sector institutions, including Standard and Poor's,<sup>150</sup> HSBC,<sup>151</sup> the World Bank and the United Nations Development Programme, have produced detailed analyses of the economic impacts of climate change. Some of these analyses have not been circulated in local languages. Others have received little publicity.

An independent initiative to collate and communicate existing sets of climate-related economic data and forecasts, and draw out their consequences for regional states, might draw the attention of both political and private sector actors.<sup>152</sup> Leaders don't like their state being downgraded,<sup>153</sup> and may respond when presented with a set of credible figures demonstrating that their government's failure to take action to address climate risks already affects their country's ability to attract investment and create jobs.

Leaders may also be concerned about the political and security risks of climate change: international actors might therefore also consider efforts (via research and public or private discussion) to enhance the visibility of such potential risks. But a primary focus on the economic consequences of climate change may have greater potential impact than a focus on security, for two reasons: first, as discussed above, demonstrating the political or security consequences of climate change remains extremely difficult, given the number of independent variables; and second, member states of multilateral institutions would be likely to resist the production by these institutions of climate-related analyses with an explicit political and security focus.

## **Direction 2: Options for “variable geometry” regional cooperation, with the Mediterranean as a unifying focus**

The communities, cities and states of the Eastern Mediterranean face the same climate-related challenges, and would benefit immensely from sharing analyses of potential threats and possible responses. Unfortunately this region is uniquely deficient in inter-state cooperation mechanisms, so a creative approach is needed to develop this potential.

<sup>150</sup> In a 2017 report, Standard and Poor's found “717 cases where [environment and climate, E&C] concerns were relevant to the [credit] rating, and 106 cases where E&C factors – both event-driven and those occurring over a longer time horizon – resulted in a change of rating, outlook, or a CreditWatch action.” See S&P Global Ratings report, *How Environmental And Climate Risks And Opportunities Factor Into Global Corporate Ratings - An Update*, November 2017, p.1.

<sup>151</sup> HSBC, for example, produces a report for investors, which measures countries' overall vulnerability to climate change along four sets of indicators: i) physical impacts; ii) sensitivity to extreme weather events; iii) energy transition risks; and iv) a country's potential to respond to climate change, covering financial resources and national governance indicators. *Fragile Planet: scoring climate risks around the world*, Ashim Paun, Lucy Acton and Wai-Shin Chan, HSBC, March 2018.

<sup>152</sup> The Global Peace Index provides a possible model for such an effort to gather and publicise data. See *Global Peace Index 2018: measuring peace in a complex world*, [www.visionofhumanity.org](http://www.visionofhumanity.org).

<sup>153</sup> An adviser to a regional head of state, interviewed by the author, noted that the government was unable to influence or protest Standard and Poor's assessments, and that the latter had a major impact on investment in the country.

Several strands are worth exploring simultaneously to promote deeper regional cooperation around climate-related challenges: first, build upon existing inter-governmental frameworks to promote cooperation; second, promote city-to-city cooperation, or cooperation among local government institutions; and third, draw on regional and sub-regional networks of technical, academic, private sector and civil society actors.

#### **A: Build upon existing Mediterranean inter-governmental cooperation frameworks**

The cultural and geographical concept of the Mediterranean offers opportunities for cutting through the political divisions of the modern Middle East. Alliances and structures in the Middle East were, in the twentieth century, organized largely in terms of Arab and non-Arab – excluding Israel, Turkey and Iran, and without reference to other historical linkages between the inhabitants of the Mediterranean region.

During the past decade, and particularly since 2011, Arab alliances have changed and weakened; and Southern European countries have also shown a growing interest in cooperation with their littoral neighbours around energy, tourism, trade and security issues. New Mediterranean initiatives include Cyprus-Greece trilateral summits with Israel, Egypt, Jordan and Lebanon, the joint declarations of which have emphasized common cultural bonds as well as shared interests.<sup>154</sup> The Western Mediterranean 5+5 provides another example of regional cooperation at the other end of the Middle Sea.

Two institutional frameworks – the Union for the Mediterranean, and the Barcelona Convention – have the potential to promote regional cooperation around environmental issues, including climate change:

- The **Union for the Mediterranean** (UfM) provides both a forum for political dialogue and a capacity to implement projects, via its Barcelona-based Secretariat. The UfM has a role in promoting both governmental and private sector interactions. In 2014, a Ministerial Meeting of the UfM confirmed climate change as a priority area for action, and an expert group has been mandated to “provide a multilateral and multistakeholder platform for exchange of information, best practices, opportunities for crossborder cooperation” in the region.<sup>155</sup>
- The **Barcelona Convention** is an international treaty for protection of the marine environment and coastal region of the Mediterranean, which was adopted by the littoral countries in 1976 and revised in 1995. Its implementation is organized via the UN-administered **Mediterranean Action Plan** (MAP) system.

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<sup>154</sup> Eran Lerman provides an interesting analysis of options for cooperation around the Mediterranean in his book, *The Mediterranean as a Strategic Environment: learning a new geopolitical language*, Begin-Sadat Center for Strategic Studies, Tel Aviv, 2016.

<sup>155</sup> Operational Modalities of the Union for the Mediterranean Climate Change Expert Group (UfMCCCEG), 6 October 2014, available at [http://ufmsecretariat.org/wp-content/uploads/2014/10/UfMCCCEG\\_OperationalModalities.pdf](http://ufmsecretariat.org/wp-content/uploads/2014/10/UfMCCCEG_OperationalModalities.pdf)

Both these frameworks could be further developed to deepen climate action in the region. The Barcelona Convention has the unique advantage of being a legally binding framework, which has secured cooperation among its otherwise fractious Contracting Parties<sup>156</sup> for over forty years. The Mediterranean space has been a unifying focus, as has the emphasis on environmental protection. The MAP system is mandated to work on climate adaptation via a Regional Climate Change Adaptation Framework, which was adopted by its Contracting Parties in 2016. The Framework permits work further inland than the immediate coastal area.<sup>157</sup> It also specifies that “capacities and tools need to be developed for a better understanding of climate change risks,” thus offering an opportunity (so far unexploited) for conducting joint – and thus jointly owned – regional analysis.<sup>158</sup>

It is important to note the value of low-visibility intergovernmental action via these frameworks. The MAP system has accomplished cooperation in part because it provides a nominally technical process to address environmental issues of genuine common concern.<sup>159</sup> To preserve and build upon these achievements in an era of increasing climate vulnerability, it may be important to maintain the emphasis on technical cooperation – even if concern about regional security underlies aspects of the work. The MAP system also has a sub-regional dimension, which is conducive to a relatively easy focus on shared challenges and solutions.<sup>160</sup> This sub-regional aspect of intergovernmental cooperation, via the MAP or other existing frameworks, may be worth exploring further.

### ***B: Promote city-to-city and local government cooperation***

Mediterranean cities share a particular set of challenges relating to climate change. These include vulnerability to extreme weather events and sea level rise, and changes to the region’s maritime and tourist economies. These cities also share a fascinating, if turbulent, history of cosmopolitanism – of linguistic and religious coexistence, forged through centuries

<sup>156</sup> The 22 Contracting Parties to the Barcelona Convention are: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syrian Arab Republic, Tunisia, Turkey, and the European Union.

<sup>157</sup> In 2016, the Contracting Parties endorsed a Regional Climate Change Adaptation Framework, and urged its further elaboration and translation “into actions making use of existing and new strategic instruments of the MAP system.” This Framework “recognizes ... that coastal adaptation actions may be required further inland, in particular in inland watersheds.”

<sup>158</sup> *Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas*, UN Environment/MAP – United Nations Environment Programme – Mediterranean Action Plan, Athens, 2017.

<sup>159</sup> At the 20th Ordinary Meeting of the Contracting Parties to the Barcelona Convention, Tirana, Albania, 17-20 December 2017, the Head of the MAP Coordinating Unit Gaetano Leone remarked that “Among the Coordinating Unit’s less visible but no less important successes were the enhancement of its desirability as a regional partner, its attention to subregional issues and its mobilization of additional commitments to global initiatives.” *Report of the 20th Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols*, UNEP(DEPI)/MED IG.23/23, December 2017.

<sup>160</sup> Author interview with international official, Athens, 3 May 2018.



of economic and cultural exchange.<sup>161</sup> This history may form an important basis for future cooperation around shared challenges.

Cooperation between the mayors of Mediterranean cities, and between local governments in the region, might complement inter-governmental efforts to address climate-related challenges. Mayors and local officials can play important leadership roles, and often maintain close links to communities and key economic actors. Cooperation between mayors has, in the past, provided a means to overcome recognition issues;<sup>162</sup> on climate issues, this may in some areas be politically easier than cooperation between national governments. The United Cities and Local Governments<sup>163</sup> organization is already engaged in much relevant work, including work towards localization of the Sustainable Development Goals.<sup>164</sup> Efforts by the United Nations Office for Disaster Risk Reduction to enhance urban resilience to disasters may provide useful lessons in this regard.<sup>165</sup>

### **C: Draw on regional and sub-regional networks of technical, academic, private sector and civil society actors**

Regional civil society, business and scientific networks are already working to promote cooperative solutions to climate-related challenges in this region.

Youth networks have an important role to play, particularly in light of regional demographics.<sup>166</sup> The Mediterranean Youth Climate Network and the Arab Youth Climate Movement both connect young activists around climate action in the Eastern Mediterranean

<sup>161</sup> For historic analyses see, for example, *Levant: Splendour and Catastrophe on the Mediterranean*, Philip Mansel, John Murray, 2010; *Salonica, City of Ghosts: Christians, Muslims and Jews 1430-1950*, Mark Mazower, HarperCollins, 2004; Herodotus, *Histories*, Penguin Books, translation first published in 1954.

<sup>162</sup> In Cyprus, for example, the two mayors of Nicosia, Mustafa Akinci and Lellos Demetriades, cooperated in the 1970s and '80s to establish and maintain a common sewage system for the divided city. The sewage system part of the Nicosia Master Plan was awarded the 'World Habitat Award' in 1989 and the 'Aga Khan Award for Architecture' in 2007. In 2003 Akinci and Demetriades were awarded the prestigious 'Europa Nostra Medal of Honour' in recognition of their consistent and successful efforts for Nicosia and its citizens during particularly difficult times, and for the preservation of the historical and architectural environment of the Walled City. For a brief summary, see 'Akinci named in POLITICO's top 28: The Bridge Builder' SigmaLive, 7 December 2016.

<sup>163</sup> "United Cities and Local Governments (UCLG) represents and defends the interests of local governments on the world stage, regardless of the size of the communities they serve [...] It supports international cooperation between cities and their associations, and facilitates programmes, networks and partnerships to build the capacities of local governments. The organization promotes the role of women in local decision-making, and is a gateway to relevant information on local government across the world." <https://www.uclg.org/en/organisation/about>

<sup>164</sup> For details, see *Local and Regional Governments' report to the 2018 HLPF, Towards localization of the SDGs*, Global Taskforce of Local and Regional Governments, 2018, available at [https://www.uclg.org/sites/default/files/towards\\_the\\_localization\\_of\\_the\\_sdgs.pdf](https://www.uclg.org/sites/default/files/towards_the_localization_of_the_sdgs.pdf)

<sup>165</sup> Author interview with international official, July 2018. For a summary of the UNISDR "Making Cities Resilient" campaign, see <https://www.unisdr.org/we/campaign/cities>.

<sup>166</sup> In the Arab world, youth make up 30 percent of the total population. Youth in this region face major challenges, including unemployment at over twice the global average (29.73 percent, compared with 13.99 percent globally) and weak political engagement. Arab Human Development Report 2016, United Nations Development Programme, New York.

and Middle East, the former in partnership with the Union for the Mediterranean.<sup>167</sup> The Cairo Climate Talks also offers an opportunity for discussion of climate impacts in Egypt for youth and others, within a “safe space” provided by the German Embassy.<sup>168</sup> Further international efforts to support the work of such networks and expand their reach might enhance public awareness of climate and environmental issues, increase pressure on governments to take action, and create openings for relatively non-confrontational political engagement by young people.

Private companies working on climate-relevant investments such as renewable energy also provide an important perspective on policy issues. Private investors understand options for energy transition, which in many cases is accelerating (sometimes in spite of government policy) because of the falling cost of renewable energy infrastructure. Private companies are able to provide a powerful, credible critique of government policies, including analysis of how the shift to renewables could be expedited, and can contribute to the creation of new, green jobs. Longstanding Mediterranean cultural affinities are an important factor in facilitating regional business relationships.<sup>169</sup>

Scientific and academic networks also have a role to play. Such networks already exist to promote cooperation and data sharing around specific sub-regional areas of tension – the Euphrates-Tigris Initiative for Cooperation<sup>170</sup> is one example, the Arava Institute’s work is another. A National Independent Scientific Research Study Group was recently established by Egypt, Sudan and Ethiopia as part of their efforts to resolve the GERD dispute. The network of Mediterranean Experts on Climate and Environmental Change (MedECC),<sup>171</sup> which exists to make scientific information about the Mediterranean environment accessible to decision-makers, is increasing its efforts to promote interaction between those focused on the physical science and analysts of the political and security impacts of climate change. Two other networks have the potential to promote concerted action in the region: the Future Earth MENA regional hub;<sup>172</sup> and the Mediterranean branch of the UN Sustainable Development Solutions Network (UNSDSN).<sup>173</sup> The latter is led by Jeffrey Sachs, who at a recent regional Climate Change conference called for concerted action by countries in the Eastern Mediterranean and Middle East region to adapt to and mitigate the consequences of Climate Change.<sup>174</sup> Sachs’ call was reiterated shortly afterwards by the President of Cyprus, Nicos Anastasiades.

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<sup>167</sup> Author interviews with network coordinators, June 2018.

<sup>168</sup> Author interviews with Egyptian analysts, Cairo, 24 April 2018.

<sup>169</sup> Author interview with executive of Turkish-Greek renewables investment company, May 2018.

<sup>170</sup> For information, see <https://euphratestigrisinitiativeforcooperation.org>

<sup>171</sup> [www.medecc.org](http://www.medecc.org)

<sup>172</sup> <http://www.futureearth.org/mena-centre>

<sup>173</sup> [unsdsn.org](http://unsdsn.org)

<sup>174</sup> [www.climatechange2018.org](http://www.climatechange2018.org)

## CONCLUSIONS

Climate change in the Eastern Mediterranean poses a particular set of risks, both to domestic stability and to international security. Societies and economies are already being disrupted. The political and security consequences of these disruptions will not take decades to emerge: they are evident now.

Regional and international action to minimize climate-related security risks in the Eastern Mediterranean will be complicated by a number of factors. The security agenda is crowded with pressing issues, which makes it exceptionally difficult for policy makers and governments to consider longer time frames.<sup>175</sup> Domestic fragility pushes governments and donors to focus on crisis management and stabilization objectives, sometimes at the expense of longer-term developmental goals.<sup>176</sup> Longstanding political blockages, including recognition issues, prevent the application of governance instruments that have supported climate change adaptation in other contexts, such as transboundary watercourse data and information sharing mechanisms or flexible water treaties.<sup>177</sup>

Policy makers will need creativity to overcome these impediments. Although regional political leadership and coordination often seem impossible, enhanced technical efforts, combined with sub-state leadership, may offer a way forward. Some longstanding inter-governmental frameworks exclude key states; but the Mediterranean space, with its various technical and political frameworks, offers alternatives. And although opposition to government

<sup>175</sup> This may have contributed to the relative lack of climate-security analysis, which is surprising given the strategic importance of this region: despite its status as a climate change “hot spot”, the Mediterranean remains “rather underinvestigated in terms of comprehensive analyses and assessments” of the risks posed by climate change, including the potential role of climate change as a threat multiplier. *Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas*, United Nations Environment Programme / Mediterranean Action Plan (UN Environment/MAP), 2017, p.23.

<sup>176</sup> The EU’s revised European Neighbourhood Policy indicates how the European approach to the region shifted in the wake of the 2015 refugee crisis, and the attempt to balance the requirements of stability with longer term development objectives: “The ENP is a long-term engagement with the EU’s neighbours, but it also needs to take account of the most pressing needs. In the next three to five years, the most urgent challenge in many parts of the neighbourhood is stabilization [ ... ]The policy should help make partner countries places where people want to build their future, and help tackle uncontrolled movement of people.” Joint Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Review of the European Neighbourhood Policy; European Commission, Brussels, 18 November 2015.

<sup>177</sup> For examples of such practices, see *Water and Climate Diplomacy: Integrative Approaches for Adaptive Action in Transboundary River Basins*, Sabine Blumstein, Benjamin Pohl and Dennis Tänzler, Adelphi, Berlin, 2016.

policies in this region is sometimes with repression, a flexible set of intergovernmental, private sector and civil society initiatives could raise the visibility of climate security risks and apply pressure on regional governments to address them.

Fortunately, there are many examples of good practice to build on in the Eastern Mediterranean region. Pushing climate change up the political agenda through development of existing networks and frameworks could help to generate faster adaptation and mitigation efforts, which in turn would reduce the vulnerability of societies to the political and security risks highlighted in this paper. Speed is crucial, because changes are already evident and few states have the institutional capacity to expedite implementation of new initiatives. But efforts to raise the profile of climate change and enhance cooperation also need to be performed with sensitivity, mindful of the political realities within which regional governments operate. The space for open political cooperation – especially around issues described as security-related – is narrowing rather than growing.

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The Eastern Mediterranean region has suffered successive inter-related crises, and could do without a “threat multiplier”. Unfortunately, this region has also been identified as a climate change hot spot, where the effects of rising green house gas emissions will be experienced much faster than the global mean rate. Temperatures are expected to escalate, impacting human welfare and food production. Fresh water scarcity is expected to intensify, with at least 10-20 percent further drying expected by mid-century.

This project seeks to fill a perceived gap in political analysis of the climate-security nexus in the Eastern Mediterranean. Drawing on seventy interviews with regional experts and officials, the author explains how the effects of climate change could interact with the region’s complex political and social structures. A further deterioration in regional security may occur unless prompt, effective steps are taken to address climate-related risks.

The cultural and geographical concept of the Mediterranean offers opportunities for cutting through the political divisions of the modern Middle East. This paper concludes with policy proposals to increase the visibility of climate risks, and to integrate climate-related initiatives via a “variable geometry” of inter-state and sub-state action. These proposals might help to build momentum around climate action – especially if the unifying potential of the Mediterranean space is fully exploited.

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