



*Mohammed bin Rashid Al Maktoum Solar Park in Dubai, UAE (SkyMediaPro / Shutterstock)*

# Climate Priorities in the Middle East and North Africa:

## Examining Nationally Defined Contributions, Targets, and Gaps in Wealthy Versus Middle-Income States

By Taylor Luck

### Introduction

Conflict in the Middle East has once again threatened to push climate change off the top of policymakers' agendas. Seven weeks before COP28 was to convene in the United Arab Emirates (UAE) and as governments, UN agencies, policymakers, researchers, and financiers gathered in Riyadh for the UNFCCC MENA ClimateWeek to set the regional agenda ahead of global climate talks, the brutal October 7 Hamas attack on Israel sparked a devastating war in Gaza that polarized the Middle East. From COP Blue Zone protests to diplomatic huddles in delegate meeting rooms, Gaza loomed large at the Dubai COP28 that was supposed to showcase regional climate needs and ambitions.<sup>1</sup> Months after the COP struck a historic compromise on a transition away from fossil fuels and activated a loss and damage reparations fund, the conflict continued to dominate the region's capitals.<sup>2</sup>



**Wilson  
Center**



**Middle East  
Program**



**Environmental Change  
and Security Program**

The war was a reminder that, in an already fragile region where both conflict and climate stressors intertwine, addressing both dynamics is urgent for global security. It also threatened to eclipse a year in which severe climate events and stressors across the region captured headlines and firmly placed the climate crisis—for a time—as a top threat to security and prosperity Middle East and North Africa (MENA).

This Occasional Paper examines climate strategies and actions in MENA states by evaluating gaps and challenges and provides recommendations for policymakers, partners, and the international community to bolster adaptation, mitigation, and resilience efforts in a fragile region on the frontlines of climate change.

The following analysis will explore the policies adopted both by Gulf Cooperation Council (GCC) states and by comparably resource-poor lower-middle income states in the Levant and North Africa, excluding states in conflict or government collapse, such as Yemen, Syria, Libya, Lebanon, and Sudan, where divisions are preventing climate action at the policymaking and local levels. This analytical overview confirms that, while climate change is a risk multiplier, climate action can also be incorporated into de-escalation and peace-making efforts.

## Climate Change ‘Hotspot’ on the Brink

The MENA region has been designated by the UN as a climate “hotspot.”<sup>3</sup> Multiple models show the area warming at a rate twice as fast as the rest of the world.<sup>4</sup> It is set to cross the 2-degree Celsius post-industrial warming threshold by 2050 and warm by 4-5 degrees Celsius by 2100 if urgent global action is not taken to reduce greenhouse gas emissions.<sup>5</sup> This temperature increase will translate to an average of 40-50 additional extremely hot days (temperatures of 95 degrees Fahrenheit and above) in MENA countries by the end of the century.<sup>6</sup>

Already, the region is home to 14 of the 25 most water-stressed nations in the world.<sup>7</sup> MENA faces an accelerated drop in annual precipitation with dramatic consequences for countries reliant on rainfed dams and rechargeable groundwater for 60% or more of their water resources. With countries using 80% or more of their available water resources annually, the entire population of the MENA region will live in extreme high-water stress by mid-century, according to the World Resources Institute.<sup>8</sup>

Various models forecast an average 10% drop in precipitation across the region by mid-century and a 30% drop in precipitation by the century’s end.<sup>9</sup> Rising temperatures are set to increase surface-water evaporation, threatening freshwater bodies, such as the Nile and the Euphrates, and exposed dam reservoirs. Increased temperatures and a drop in rainfall are forecasted to halve freshwater availability and reduce agricultural production by 20-30% across MENA by 2050.<sup>10</sup>

In addition to encroaching desertification, GCC and North African states face rapid erosion of coastlines and rising salinity of groundwater resources in coastal areas—already being observed in Morocco, Egypt, Tunisia, Gaza, Oman, and Yemen. Aridity and a change in rainfall patterns are increasing the frequency and severity of flash floods in Libya, Sudan, Jordan, Saudi Arabia, Oman, and Egypt.<sup>11</sup>

## Drivers of Destruction and Migration

Rising temperatures do not only entail severe droughts but also more devastating storms and flooding. In September 2023, a Mediterranean cyclone hit Eastern Libya and triggered a series of failures in early warning systems, governance, and infrastructure that resulted in a dam collapse and devastating floods that swept away half the coastal city of Derna, leaving 20,000 dead and unprecedented destruction.<sup>12</sup> August once again saw deadly wildfires in Algeria and Tunisia. Once-

## Climate Priorities in the Middle East and North Africa



*Derna, Libya—September 11 2023: Derna valley dam collapse due to Storm Daniel (siraj Hisn / Shutterstock)*

in-a-generation droughts continued in Iraq, Egypt, Tunisia, Morocco, and Jordan; Tunisia enforced national water rationing for the first time in decades.

Further linking the climate crisis to global security was a 49% spike in irregular migration to Europe from North Africa via the Central Mediterranean in 2023; <sup>13</sup> arrivals originated from Egypt, Sudan, Tunisia, and sub-Saharan Africa, where conflict, resource scarcity, and economic crises were exacerbated by climate change. More than 157,000 persons attempted irregular migration via this route in 2023, up from 115,000 in 2022 and 68,000 in 2021, representing the highest level since 2016.<sup>14</sup> Drought-induced crop failure in Egypt and Tunisia deepened the food security crises already stoked by Russia's war in Ukraine, forcing greater reliance on costly imported grains for 2023 and 2024.

Although it is among the hardest-hit regions by climate change, MENA is also home to some of the world's largest fossil fuel producers. The GCC states, Iraq, and Algeria hold a combined 51.5% of the world's proven oil reserves, have among the deepest offshore natural gas fields in the world,<sup>15</sup>

and have consistently pushed back against calls for a global phaseout of fossil fuels. Perhaps counterintuitively, these oil- and gas-producing giants have recently mounted their own climate leadership bids, culminating in the UAE hosting COP28. GCC states are investing billions of dollars in ambitious climate strategies and are articulating their own vision for a net-zero carbon future where hydrocarbons are still utilized.

### **GCC States: Green Energy Transition?**

With deep-pocketed sovereign wealth funds looking to diversify their investments in the growing green and sustainability business sectors, GCC countries are embarking on grand green initiatives at home and developing technologies they claim can facilitate a region-wide green transition. As major oil and gas producers, several GCC states are refusing to abandon fossil fuel production and instead are pursuing net-zero carbon goals in a way they insist will allow them to continue producing and utilizing hydrocarbons in a sustainable, low-emissions manner.

## **Climate Priorities in the Middle East and North Africa**

In addition to ramping up solar and wind energy and carbon capture technologies, Gulf states' strategies and investments are increasingly zeroing in on so-called green hydrogen—hydrogen produced by renewable-energy-generated electricity—and blue-hydrogen—natural-gas-produced hydrogen offset by carbon capture—that can then be used in industry, transportation, construction, and, potentially, power generation. Despite it being a nascent technology, GCC states are pinning their hopes on green and blue hydrogen to power their green transitions and post-oil economies.

## UAE

As host of COP28, the UAE attracted scrutiny for appointing Sultan al-Jaber, CEO of Emirati gas and oil giant ADNOC, as the COP president.<sup>16</sup> Highlighting these tensions, ADNOC awarded a \$16.9-billion contract to develop offshore gas fields only weeks before the climate conference.<sup>17</sup> The controversy overshadowed steps the UAE has taken in the past three years to accelerate its own green transition.

*Targets:* With the formation of a Ministry of Environment and Climate Change, the UAE put climate ambitions at the heart of its cabinet. In 2023, the UAE updated its green energy strategy to nearly triple solar and wind energy generation from 5 GW currently to 14 GW by 2030.<sup>18</sup> The core of the UAE's strategy is to increase renewables and nuclear energy in its domestic energy mix from 4% to 32% by 2030, 38% by 2035, and to 44% by 2050.<sup>19</sup> The Emirates also aim to increase the percentage of electric vehicle (EV) and hybrid vehicles on the road from 4% currently to 53% by 2050 and buses from 3.2% to 60% by 2050.<sup>20</sup> The strategy also calls for reducing energy use in the construction sector by 40% and halving the amount of water used by agriculture by 2050.

*Hydrogen:* A major pillar of the UAE's green strategy is the development of green and blue hydrogen. The UAE is working to establish two hydrogen "oasis" hubs producing one million tons per annum (mtpa) of green hydrogen by 2031, up by 7.5 mtpa by 2040, and five hubs producing



*Indigenous tree cover planted by Dubai Municipality thrives in harsh desert sand dunes through a drip irrigation system in Al Qudra, Dubai, United Arab Emirates (Arnold O. A. Pinto / Shutterstock)*

## Climate Priorities in the Middle East and North Africa

15 mtpa of green and blue hydrogen by 2050.<sup>21</sup> The UAE claims that its hydrogen production will reduce domestic emissions in hard-to-abate sectors such as shipping, land and sea freight cargo, air transportation, and industry by 25% in 2031 and up to 100% by 2050.<sup>22</sup>

*Progress:* In July 2023, the UAE committed \$54 billion in investment over a seven-year period to meet its 2050 net-zero pledge.<sup>23</sup> In December 2023, the UAE inaugurated Noor 1, a 950 MW solar complex that includes the world's largest concentrated solar power system to date,<sup>24</sup> expanding the Mohammed Bin Rashid Al Maktoum Solar Park, which is set to reach a combined 3.3 GW generation by mid-2024.<sup>25</sup> As of March 2024, the UAE had 4.65 GW of renewable energy online. In 2022, the UAE's Abu Dhabi Global Market Financial System took steps towards establishing a sustainable finance regulatory body to curb corporate greenwashing.

## Saudi Arabia

Among GCC states, Saudi Arabia is pursuing perhaps the most ambitious climate strategy. Through initiatives overseen directly by Crown Prince Mohammed bin Salman, the Saudi Green Initiative (SGI) and the regional Middle East Green Initiative (MGI), the world's second-largest oil producer is attempting to put itself at the center of the Middle East's green transition.

*Targets:* Under the SGI, Saudi Arabia aims to increase renewables to its energy mix from 2% currently to 50% by 2030.<sup>26</sup> It is set to preserve 30% of its land and seas as protected reserves by 2050, and as of 2023 declared 20% of its lands as biospheres. It has set a goal of cutting 278 million tons of carbon annually (mtca) by 2030 and pledged to reach net zero carbon emissions by 2060.<sup>27</sup>

A key pillar of the SGI and MGI are the staggering goals of planting 10 billion native trees across Saudi Arabia<sup>28</sup> and 50 billion trees across the wider Middle East<sup>29</sup> to mitigate desertification,

dust storms, and flash floods that threaten the kingdom's urban centers and its economic development.<sup>30</sup> Under the MGI, Saudi Arabia also aims to provide low-carbon cooking fuel to 750 million people across the developing world and train MENA governments and actors in carbon capture technology.<sup>31</sup>

A key facilitator of Saudi Arabia's net-zero plans is carbon capture technology (processes to capture CO<sub>2</sub> emissions at the source or from the air, which are then stored underground or repurposed into products such as low-carbon synthetic fuel).<sup>32</sup> In Eastern Saudi Arabia, Aramco is developing an underground carbon capture and sequestration hub that is to store 9 million tons of CO<sub>2</sub> annually by 2027 and 44 million tons of carbon annually by 2035.<sup>33</sup> Yet with Aramco and Saudi Arabia closely guarding the science behind their carbon capture methods, questions remain over the technology's economic and environmental feasibility.<sup>34</sup>

*Hydrogen:* Like the UAE, Saudi Arabia is aggressively developing green hydrogen, which it believes can be its leading post-oil energy export. Through the establishment of the NEOM Green Hydrogen Company, it plans to transform the Red Sea coastal NEOM region into a hub for producing and exporting green hydrogen for industrial use.<sup>35</sup> The first plant is set to be online by 2026 and is to produce 1.2 million tons of green hydrogen annually, which Saudi Arabia claims will mitigate 5 million tons of carbon emissions per year.<sup>36</sup> The Kingdom's nascent green hydrogen production has attracted the interest of South Korea, Japan, and India.<sup>37</sup> At home, Saudi leadership has prioritized the use of green hydrogen in transport, cargo shipping, and industry to lower emissions. Saudi Arabia's Ministry of Energy began test runs of its first green-hydrogen-powered train in October 2023.<sup>38</sup>

*Progress:* As of late 2023, Saudi Arabia had planted a relatively modest 43.9 million indigenous trees within the kingdom from acacias to coastal mangroves.<sup>39</sup> Saudi Arabia established a regional

## Climate Priorities in the Middle East and North Africa

Sand and Dust Storm Warning Center, accredited by the World Meteorological Organization in July 2023, to monitor sand and dust storms as part of adaptation measures.<sup>40</sup> Of its planned 27.5 GW of renewable energy by 2030, the kingdom had 2.8 GW of solar energy online as of January 2024, with the country on track to add an additional 10 GW in renewables within the next two years.<sup>41</sup>

## Oman

*Targets:* As part of Oman's Vision 2040, the country aims to increase renewables' contribution to its domestic energy mix from 0% in 2020 to 20% by 2030 and 35-39% by 2040, with a heavy reliance on photovoltaic solar energy to reach net zero by 2050.<sup>42</sup> It also aims to improve its Environmental Performance Index from its current standing (116 out of 127 countries) to the top 20 by 2040.<sup>43</sup>

*Hydrogen:* Oman has staked its green transition, and the future of its economy, on becoming a global green hydrogen hub. The sultanate is eyeing renewable hydrogen, produced by solar power and exported in ammonia form, as key to this transition. Through HYDROM, a green hydrogen producing entity established in 2022 to accelerate the sector, Oman is on track to become the largest exporter of green hydrogen in the Middle East and the sixth largest globally by 2030.<sup>44</sup> Oman aims to produce 1 million tons of green hydrogen annually by 2030, 3.75 million tons by 2040, and 8.5 million tons by 2050.<sup>45</sup> The 2040 target would represent the equivalent of 80% of Oman's current LNG exports, and the 2050 goal would represent double its current gas exports.<sup>46</sup> Oman's strategy calls for using one-third of its renewable-energy-powered hydrogen production for domestic use, reducing its natural gas usage by up to 3 billion cubic meters per year, and cutting its emissions by 7 mtca, 7% of its total emissions.<sup>47</sup>

*Progress:* In 2023, Oman signed an agreement for two 500 MW solar plants to be online by 2025 and prepared for an additional three GW in solar

projects to be online by 2029. Oman has reserved 1,500 square kilometers of land for its renewable hydrogen project's first phase with plans to reserve up to 50,000 square kilometers, 16% of Oman's land mass, for solar and wind generation plants to power both Oman's green hydrogen hubs and domestic power use.<sup>48</sup> As part of its first phase, five firms at Oman's Duqm Special Economic Zone are preparing solar energy plants to power the production of 750,000 tons of annual green hydrogen and other sustainable industrial products.<sup>49</sup>

## Qatar

*Targets:* Qatar has pledged to reduce greenhouse gas emissions by 25% by 2030.<sup>50</sup> Qatar's National Climate Change Strategy and Sustainability Strategy aims to lower emissions by 25%, achieve a 60% reduction in groundwater use, increase the use of recycled wastewater by 100%, and preserve 25% of its lands as protected nature reserves by 2030.<sup>51</sup>

*Progress:* Construction is underway on Qatar's first large-scale solar plant, an 800 MW PV plant that, once operational, would provide 10% of Qatar's peak load electricity needs.

## Energy Transition vs Green Transition

GCC states use the term *green transition* to describe what are more accurately *energy transitions*, despite the fact these transitions do not necessarily represent a shift to low-carbon alternatives or the abandonment of fossil fuel production and use. Three strategic goals are driving GCC states' green energy ambitions: securing an independent, low-cost energy source for future economic growth; freeing up fossil fuels for sale abroad to fund economic diversification away from gas and oil; and dominance of the post-oil energy market.

The focus on energy has led to an underinvestment in climate-resilient infrastructure, mitigation, water management, and food security. Adaptation, seen as less bankable with unclear economic returns

## Climate Priorities in the Middle East and North Africa



*COP28 President Sultan al-Jaber listens to speakers during a plenary session at the COP28 U.N. Climate Summit, Wednesday, Dec. 13, 2023, in Dubai, United Arab Emirates (Kamran Jebreili / AP Photo)*

by multiple development banks and investors, is receiving little to no attention from GCC states, who view climate investments through the prism of expanding their non-oil private sector. Even water desalination and water use, critical to GCC economies, has received little attention from energy-focused policymakers.

Climate experts question whether GCC green energy drives will prolong fossil fuel markets. Climate progress from the GCC will hinge on how green their “green” energy transition is and how much renewables will factor into their hydrogen production. The terminology used in GCC green hydrogen plans is vague on how much of their produced hydrogen will be truly “green hydrogen,” hydrogen whose electrolysis production is powered completely by renewables, or “blue hydrogen,” hydrogen produced through a steam methane process which emits greenhouse gasses into the atmosphere that is then captured from the air. Blue hydrogen can only be considered carbon neutral if effective 100% carbon capture and storage is implemented—yet carbon capture technologies touted by Saudi Arabia remain unproven at scale.

Saudi Arabia, the UAE, and Oman each are competing to become global hubs of hydrogen production—a competition that is now drawing a large share of private and public investment into “green projects.” The GCC states’ hydrogen focus threatens to influence the climate priorities of neighboring states. In its first cross-border hydrogen project, Masdar, a green energy company in the UAE, reached an agreement with Egypt to establish a two GW green hydrogen production plant near the Suez Canal in 2022.<sup>52</sup> In December 2023, Masdar inked an MOU with Jordan to explore the feasibility of constructing a green hydrogen production plant in the kingdom.<sup>53</sup> Yet with the economic feasibility of scaled-up green and blue hydrogen still unproven, it remains unclear whether the global demand for the energy resource can sustain multiple GCC and MENA production hubs.

### **The GCC in Climate Negotiations**

GCC states maintain that the Paris Accords apply only to the reduction of emissions, not the reduction of fossil fuels. GCC officials view calls to “phase out” or “phase down” fossil fuels as an additional, unreasonable condition not within

## **Climate Priorities in the Middle East and North Africa**

the text of the accords that would rob their economies of their lifeblood, pointing out similar stipulations are not placed on the agricultural sector, the second largest emitter of greenhouse gasses.<sup>54</sup> GCC states claim they can continue hydrocarbon production and utilization in low-carbon ways. Saudi Arabia is framing this approach as the Circular Carbon Economy, under which a combination of carbon capture technology, green hydrogen, and carbon offset by afforestation would allow GCC states to continue hydrocarbon production and utilization without, they claim, adding carbon to the atmosphere.<sup>55</sup>

GCC states continue to present a united front in climate negotiations shaping both the language and global commitments around the transition away from fossil fuels. Lower-middle income MENA states, many of whom rely on the GCC for both direct aid and the remittances of expatriate workers, fall in line with the GCC position in climate talks and UNFCCC processes and have done so at each COP since 2015.<sup>56</sup> At COP28, Gulf states rejected draft texts including the “phase down” or “phase out” of fossil fuels and suggested text calling for the phasing down of “unabated” fossil fuels or reducing the “consumption and production of fossil fuels in a just, orderly and equitable manner”—both allowing continued hydrocarbon production and utilization with carbon capture and offsets.<sup>57</sup> Under pressure and media scrutiny, the UAE struck a compromise in the final COP28 text, which committed nations to “transitioning away from fossil fuels”—viewed by GCC states as a palatable outcome as it lacks a firm sunset date for hydrocarbons and does not impose conditions on their energy transitions.

### **Levant and North Africa: Large Goals, Limited Means**

Lower-middle income states in the Levant and North Africa stand at the frontlines of drought, higher temperatures, and coastal erosion. Yet

the MENA states most vulnerable to climate change are among the least equipped to adapt and mitigate its impacts. Several states have nevertheless embarked on strategies to improve sustainability and resilience to adapt to a changing climate, boost dwindling water supplies, and overhaul infrastructure—even as mounting external debts and currency crises restrict their policy options. Despite these challenges, middle income states have outlined ambitious Nationally Determined Contributions (NDCs), national climate plans to cut emissions and boost adaptation as required by the Paris Accords.

### **Egypt**

*Targets:* In 2020, Egypt launched the National Climate Change Strategy outlining several broad goals by 2050, including boosting renewables and clean energy to its electricity mix from the current 4.4% up to 42% by 2035,<sup>58</sup> a target it now aims to reach by 2030.<sup>59</sup> The strategy envisions a series of solar and bioenergy plants in addition to small-scale decentralized waste, bioenergy, and solar adoption at the industry and household levels.<sup>60</sup> Egypt’s strategy also calls for incentives for citizens to switch to EVs, enhancing energy efficiency in the industrial and residential sectors, climate-resilient infrastructure, and expanding green spaces. Egypt’s Vision 2030 outlines a scaling-up of seawater desalination and wastewater reuse for irrigation.<sup>61</sup>

Another key pillar of Egypt’s climate approach is promoting local green banking and green credit lines, in addition to innovative financing mechanisms to fund adaptation measures such as green bonds. Such financing is critical in a country that faces a shortage of foreign currency reserves and is dependent on international bailouts.

*Progress:* Despite its economic difficulties, in 2020 Egypt became the first country in the MENA region to issue a sovereign green bond for \$750 million at a 5.25% interest rate.<sup>62</sup> Of the bond, \$346.7 million went to clean transportation initiatives, including

## **Climate Priorities in the Middle East and North Africa**



the Cairo monorail, and \$403.2 million funded 14 sustainable water and wastewater management projects.<sup>63</sup> Out of recognition of the interconnected challenges of food security, water, and climate, Egypt launched the Nexus of Water, Food, and Energy program (NWFE) in 2022, a platform to funnel donor funds and financing to national climate adaptation and clean energy projects. As of November 2023, the platform mobilized \$2.18 billion in private financing for solar and wind energy projects in addition to \$1.35 billion in mixed financing for the water sector and \$3.35 billion for agriculture and food security.<sup>64</sup> In July 2023, Egypt and Masdar agreed on a 10 GW wind farm in Egypt that, when completed, would reduce the country's carbon emissions by 9%.<sup>65</sup>

## Jordan

*Targets:* The 2022 Jordan Economic Modernization Vision placed green, sustainable growth at the core of Jordan's strategy to grow its economy and create up to 100,000 jobs per year over a decade.<sup>66</sup> Climate-smart agriculture, green cities, net-zero public transportation, and improved water efficiency are at the heart of the plan.

Jordan's 2023-2040 National Water Strategy calls for boosting the kingdom's water efficiency and cutting down its water-loss rate due to leakage and theft from 50% currently to 25% by 2040.<sup>67</sup> It aims to increase the use of reclaimed wastewater in irrigation from 30% in 2023 to 50-60% by 2040.<sup>68</sup>

*Progress:* Jordan surpassed its goal of 10% of renewables in its energy mix by 2020, a deadline originally set in 2007.<sup>69</sup> As of 2023, solar and wind energy account for 27% of the kingdom's electricity.<sup>70</sup> Due to its progress, in October 2023, Jordan announced it would raise its goal of 30% renewables by 2030<sup>71</sup> to up to 50% renewables by the end of this decade.<sup>72</sup> In 2023, Jordan's Ministry of Energy began providing interest-free loans to farmers to install solar systems.<sup>73</sup>

## Morocco

*Targets:* In 2009, Morocco set out to make renewables 42% of its electricity mix by 2020. Although it fell short of this goal, Morocco achieved 38.3% renewables of installed capacity: 13.48% wind, 7.82% solar, and 16.70% hydroelectricity.<sup>74</sup> Morocco has revised its energy



Nassim Koudia El Bayda wind farm in Morocco (Nicolas\_photo / Shutterstock)

## Climate Priorities in the Middle East and North Africa

goals to reach 52% renewables by 2030: 20% solar, 20% wind, and 12% hydropower.<sup>75</sup> Despite the growing capacity, as of 2023, renewables accounted for 20% of total electricity generation, while Morocco relied on coal and natural gas for 80% of its electricity production.<sup>76</sup> A parallel strategy aims to bolster energy efficiency to reduce energy consumption by 15%. In 2021, Morocco updated its Paris Accord-mandated Nationally Determined Contributions (NDCs) to raise its emission reduction target from 42% to 45.5%.<sup>77</sup> Morocco outlined strategies to boost adaptation and resilience in its 2019 Morocco Climate Change Policy.<sup>78</sup> In December 2023, Morocco announced a Low-Carbon Strategy to reach net-zero by 2050 through ramping up renewable energy, establishing green hydrogen production, and building smart cities.<sup>79</sup>

*Progress:* By cutting some of its oil subsidies to fund solar, Morocco was able to expedite its renewable drive. As of January 2024, the country remains heavily reliant on coal, which accounts for 37% of its energy mix.<sup>80</sup> In December 2023, on the sidelines of COP28, Morocco announced it was joining the Powering Past Coal Alliance and committing the kingdom to phasing out coal use.<sup>81</sup>

## Tunisia

*Targets:* Tunisia revised its NDCs to reduce carbon emissions by 45% by 2030.<sup>82</sup> Tunisia's cross-cutting mitigation and adaptation strategy calls for increased energy efficiency, boosting renewables, afforestation, natural disaster preparedness and resilience projects in coastal zones, increased use of treated wastewater, and improved ground water management.



COP28 Green Zone, Dubai, UAE (Alexander Farley / Wilson Center)

## Climate Priorities in the Middle East and North Africa

*Progress:* Tunisia has led the way by appointing young Tunisians to its negotiation team, providing the country with an inclusive, forward-looking approach to climate talks. However, political upheaval from 2021 to 2023 has disrupted Tunisia's progress on its NDCs. Tunisia has estimated that implementing its mitigation and adaptation strategy will require \$19.3 billion in financing from 2021 to 2030, \$11.1 billion of which would come from international support.<sup>83</sup> Facing inflation, currency reserve shortages, and potential insolvency, the Tunisian government has been unable to allocate resources or access international financing to carry out mitigation and adaptation projects as of March 2024,<sup>84</sup> despite the potential for such projects to alleviate poverty and lessen the socioeconomic impact of climate change.

## Iraq

*Targets:* Iraq's first NDC, submitted in 2021, envisions 15% reduction in emissions by 2030, the equivalent of 90 mtca, and for renewables to account for one-third of its energy mix by 2030 through the addition of 12 GW of renewables.<sup>85</sup> It comes as the country faces a 13 GW electricity deficit at peak demand and relies on imported gas and electricity from Iran and its GCC neighbors.<sup>86</sup> Its planned adaptation measures include water harvesting and utilizing digital technology to monitor, control, and manage groundwater aquifers. It also calls for renewable-energy-powered seawater desalination and the construction of new dams to increase water resources.<sup>87</sup>

*Progress:* Despite high solar potential and intense energy needs, as of January 2024 solar and wind account for around 1% of Iraq's energy mix.<sup>88</sup> Iraq is in advanced talks TotalEnergies<sup>89</sup> and UAE's Masdar<sup>90</sup> for the construction of multiple one-gigawatt solar energy plants across the country. In 2022, Iraq's Central Bank allocated \$750 million in low and near-zero interest loans for households and private companies to adopt solar energy.<sup>91</sup> A

20-year strategy to rehabilitate water resources, the Strategy for Water and Land Resources of Iraq, which outlined \$175 billion in investments in the water sector, was shelved after budgetary crises.<sup>92</sup> The ISIS insurgency and the COVID-19 pandemic also prevented it from securing needed public financing.<sup>93</sup>

## Struggling to Bridge the Financing Gap

Financing for water, adaptation, and resilience projects are lacking across the MENA region. Multiple Arab governments report a lack of staff equipped with climate finance grant-writing skills or technical knowledge to submit applications for green and adaptation climate funds or international climate finance facilities.<sup>94</sup> The Green Climate Fund and other financiers report that dozens of eligible climate-related MENA projects have failed to apply for available climate financing, particularly in water and adaptation.<sup>95</sup>

Experts say MENA governments are inadvertently disqualifying dozens of eligible projects for climate finance by failing to emphasize climate components in planning stages.<sup>96</sup> MENA states continue to rely on familiar yet costlier financing outlets such as the World Bank and donor governments due to existing working relationships. GCC states rely on sovereign wealth funds tied directly to gas and oil sales to fund their green transition. There remains a lack of outlets for financing for cross-border, regional projects in adaptation, resilience, or mitigation.

The top challenge cited by lower-middle income MENA states in pursuing climate action, adaptation, and resilience is mounting external debt. Sovereign debt accumulated over a decade of heavy borrowing from international institutions to weather instability starting from the Arab Spring in 2011, which was then exacerbated by ISIS in the mid-2010s and finally by the COVID-19 pandemic, and is now severely constricting policy options. By the final quarter of 2023, debt-to-GDP ratios stood

## Climate Priorities in the Middle East and North Africa

at 56.7% for Morocco, 84.8% for Tunisia, 99% for Jordan,<sup>97</sup> and 88.09% for Egypt. To avoid default, several states are pursuing austerity measures as they borrow from lenders at higher rates to pay off previous loans, leaving fewer resources for climate action. Lower-middle-income states struggle to take on even concessional financing.

This has trapped several MENA states in a debt-food-climate trilemma; as higher temperatures, dwindling water resources, and coastal erosion affect agricultural production, states are forced to import more food at higher costs, driving up borrowing at less favorable rates due to existing debt loads. This cycle leaves few available funds to improve water management, boost food security, or adapt agriculture, as government revenues are diverted to either importing food or paying off debt.

Water and environment officials report financial restrictions affecting their ability to carry out maintenance of ageing dams,<sup>98</sup> leaving communities more vulnerable to extreme weather events. Meanwhile, several MENA states continue unsustainable, costly high-carbon-footprint subsidies that mask the true cost and scarcity of resources, reinforcing unsustainable consumption trends. Yet, these subsidies also serve vulnerable households, which have come to rely on subsidized water, electricity, and cooking gas,<sup>99</sup> making policymakers in Jordan, Egypt, Tunisia, and Morocco less willing to lift them.

## **Conclusion: MENA's Adaptation Challenge**

GCC and middle-income MENA states' focus on green energy as the core of their national climate strategies has come at the expense of adaptation, resilience, mitigation, water management, and deforestation—areas that exhibit glaring gaps with few clear commitments. The green-energy focus is being reinforced by lending institutions, which view green energy as a lower-risk investment with

clear financial returns. Without quantifiable near-term economic benefits and with higher risk, badly needed adaptation and resilience projects, such as water infrastructure management or flood-resilient urban planning, remain neglected by both MENA policymakers and financiers.

Furthermore, the MENA region has insufficient drought and severe weather monitoring and early warning systems and little coordination among national meteorology departments, according to the UN.<sup>100</sup> Prior to the Derna floods, Libya's meteorological department reported chronic staff shortages and poorly functioning IT systems;<sup>101</sup> their warnings to the Eastern government and Libyan National Army went unheeded.<sup>102</sup> Calls by the World Meteorology Organization and the Council of Arab Ministers for Meteorology and Climate Affairs to upgrade national infrastructure and establish data-sharing platforms have gone unfulfilled.

The UN reports insufficient Multi-Hazard Early Warning Systems (MHEWS) to communicate potential incoming hazardous weather to local communities and governments: only Jordan, Iraq, Lebanon, Egypt, the UAE, and Bahrain report to have any MHEWS in place.<sup>103</sup> According to the UN, MENA is home to three countries reporting a "basic" MHEWS and three countries with "medium" level systems; not a single Arab county had a "full" MHEWS in place as of late 2023.<sup>104</sup>

Also missing among MENA states are strategies for managing and safeguarding groundwater resources. This is despite the fact MENA states rely on aquifers and wells for around half of their water and irrigation needs—a rate increasing amidst a drop in precipitation.<sup>105</sup>

Another challenge is the state centralization of climate action. Local communities are overlooked by centralized decision-making and national strategies that favor grand megaprojects over local initiatives. Local governments report they are not involved in climate discussions and strategies

## **Climate Priorities in the Middle East and North Africa**

despite the impacts on their communities and local knowledge they can provide to better tailor climate strategies. Another common challenge cited by MENA decision-makers, experts, advocates, academics, and journalists is a lack of access to climate data, particularly in Arabic, leaving actors heavily reliant on international organizations, Western governments, and UN organizations for climate data, modelling, and projections.

## **Conflict and Cooperation**

Lastly, conflict continues to undermine climate action and resource management in several MENA states, even as climate change emerges as a major source of insecurity and instability. The 2023-2024 Israel-Hamas War upended normalization efforts between Israel and Saudi Arabia that could pave the way for increased investment and technology transfer in adaptive agriculture, desalination, and afforestation.<sup>106</sup> Popular outrage over the killing of Gazan civilians led to a freeze in public cooperation between Abraham Accords signees and Israel.<sup>107</sup>

Jordan announced the indefinite delay of the Jordan-Israel-UAE Green Blue Deal, putting in doubt the future of a solar-for-water swap under which Jordan would supply Israel with 600 MW of solar energy in return for 200 million cubic meters of desalinated water.<sup>108</sup> Distrust between Israel and Jordan had led to the collapse of what was envisioned in 2013 as a Jordanian-Israeli Red Sea to Dead Sea water conveyance project to boost desalinated water resources and reverse the depletion of the Dead Sea. Jordan took further steps in 2023 and 2024 to pursue its own, costlier national water conveyance project<sup>109</sup> amid Israeli government threats to suspend treaty-bound water sales over its stance on the conflict.<sup>110</sup>

Meanwhile, civil war between the Sudanese Armed Forces and the Rapid Support Forces upended climate adaptation and resilience efforts in Sudan. Post-Derna floods, divisions among militias in Libya that had prevented the installation of Early Warning

Systems continued to prevent a climate-sustainable reconstruction. In Syria and Yemen, civil war persists as the countries confront historic droughts, dwindling water resources, and widespread crop failure due to higher temperatures.

## **Recommendations**

### **Improve Access to Green Financing**

Providing training and capacity-building to MENA governments and local actors in climate finance grant-writing can go a long way in unlocking access to existing green climate funds. Partners should engage with MENA policymakers on infrastructure, water, and energy projects at the planning stages to ensure eligibility for existing green climate facilities and raise institutional awareness on eligibility of adaptation, resilience, and water projects.

### **Debt-for-Climate Swaps**

To tackle the debt-climate-poverty nexus facing several lower-middle income MENA states, international partners should explore debt-for-adaptation and debt-for-resilience swaps. Building on the 2020 Seychelles climate-for-debt swap, partners should work with the IMF and World Bank to facilitate partial loan forgiveness in return for in-kind national public funding for adaptation and resilience projects in water, adaptation, infrastructure, community resilience, early monitoring systems, and severe weather preparation. One small-scale model is a 2023 debt-swap agreement between Germany and Egypt, which saw 54 million euros redirected to Egypt's green energy transition.

### **Empower Local Governments and Actors**

International organizations and allies should engage and empower municipalities, village councils, and local actors to become climate change-makers. Support can include capacity-building, training, and financing for local projects

## **Climate Priorities in the Middle East and North Africa**

and solutions through local governments rather than solely through the central state governments. As part of this empowerment, partners can facilitate national- and local-level policymakers and stakeholders' access to up-to-date climate data, projections, and modelling in Arabic. Boosting efforts would be the development of a regional, open MENA climate data-sharing platform, using the Regional Initiative for the Assessment of Climate Change Impact on Water Resources and Socio-Economic Vulnerability in the Arab Region as a potential model.

### Early Warning Systems

An urgent need is technical support, capacity building, and financing for national and regional multi-hazard early warning systems. International partners should assist MENA states and national meteorological departments in accessing programs and financing through the UN and World Meteorological Organization's Early Warning Systems For All Initiative. Partners can encourage cooperation among national MENA meteorological departments, facilitate the work of existing forums such as the Arab Climate Outlook Forum, and build capacity of local monitors to widen their scope to include infrastructure risks.

### Incorporate Climate into Conflict Resolution and Reconstruction

International partners, policymakers and climate actors should recognize the role conflict plays in delaying and derailing climate action in the MENA region. Unresolved disputes should no longer be treated as a separate security or development issue. Policymakers must try and turn conflict from a climate action spoiler into a facilitator for sustainable change through the concepts of environmental peace-making, green recovery, and green reconstruction. Diplomats should incorporate climate adaptation, resilience, infrastructure, and water management into future post-conflict reconstruction in Gaza and

Yemen and just resource-sharing into political solutions and reunification efforts in Sudan, Libya, and Syria.

### Make Climate Central to the Abraham Accords

Joint climate projects should be used to revive the Abraham Accords, institutionalized as a top priority in the Negev Forum process and incorporated into any further Arab-Israeli normalization agreements. Water, adaptation, and food security projects can be utilized as a facilitator for rapprochement and confidence-building measures between Israel and the Palestinian Authority, as well as between Israel and other Arab states.

---

Opinions expressed in Wilson Center publications and events are those of the authors and speakers and do not represent the views of the Wilson Center.



**Taylor Luck** is a Middle East-based journalist and analyst. His writing focuses on climate, security, Arab foreign policy, governance, Jordan, Palestinian politics and US-Gulf relations. He currently serves

as Middle East correspondent at *The Christian Science Monitor*. During his 17-year-career based in the Levant and the Gulf, his work has also appeared in *The Washington Post* and *The Guardian*, among other publications. He appears as a regular commentator in international and Jordanian media outlets. He was a 2023 inaugural Moment Institute Middle East Fellow.

## Climate Priorities in the Middle East and North Africa

## Endnotes

- 1 Luck, T. (2023, December 5). *In Gaza's Shadow, a Climate Summit on War and Peace*. The Christian Science Monitor. <https://www.csmonitor.com/Environment/2023/1205/In-Gaza-s-shadow-a-climate-summit-on-war-and-peace>
- 2 Interviews. Jordanian, Saudi and Emirati officials. (2024, January and February).
- 3 UNFCCC – UN Climate Change News. (2023, October 8). *MENA Climate Week 2023: Driving Regional Action on Climate Change*. <https://unfccc.int/news/mena-climate-week-2023-driving-regional-action-on-climate-change>
- 4 Zittis, G, et al. (2022, September). *Climate Change and Weather Extremes in the Eastern Mediterranean and Middle East*. Reviews of Geophysics- American Geophysical Union AGU. <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2021RG000762>
- 5 Ibid
- 6 Zittis, G, et al. (2021, March). *Business as Usual Will Lead to Super and Ultra-Extreme Heatwaves in the Middle East and North Africa*. Nature Portfolio- npj Climate and Atmospheric Science. <https://www.nature.com/articles/s41612-021-00178-7>
- 7 World Resources Institute. *Aqueduct Water Risk Atlas*. <https://www.wri.org/aqueduct>
- 8 World Resources Institute. (2023, August 16). *25 Countries, Housing One-Quarter of the Population, Face Extremely High Water Stress*. <https://www.wri.org/insights/highest-water-stressed-countries>
- 9 UNESCWA. (2017). *RICCAR Arab Climate Change Report*. [https://www.unescwa.org/sites/default/files/pubs/pdf/riccar-main-report-2017-english\\_0.pdf](https://www.unescwa.org/sites/default/files/pubs/pdf/riccar-main-report-2017-english_0.pdf)
- 10 Ibid
- 11 Ibid
- 12 Luck, T. (2023, September 14). *Floods, Fire, Failure: North Africa's Climate and Governance Crises*. The Christian Science Monitor. <https://www.csmonitor.com/World/Middle-East/2023/0914/Floods-fires-failure-North-Africa-s-climate-and-governance-crises>
- 13 FRONTEX. (2024, January 26). *Significant Rise in Irregular Border Crossings in 2023*. <https://www.frontex.europa.eu/media-centre/news/news-release/significant-rise-in-irregular-border-crossings-in-2023-highest-since-2016-C0gGpm>
- 14 Ibid
- 15 OPEC. (2022). Data Graph. [https://www.opec.org/opec\\_web/en/data\\_graphs/330.htm](https://www.opec.org/opec_web/en/data_graphs/330.htm)
- 16 AP. (2023, November 29). *Emirati-Designated COP28 Leader Forcefully Denies Report UAE Wanted to Seek Oil Deals in Summit*. <https://apnews.com/article/cop28-dubai-sultan-aljaber-oil-gas-f943abb672a3f3f88b0cede1dfb26ba8>
- 17 Benny, J. (2023, October 5). *Adnoc Awards Contracts Worth About \$17 Billion for Hail and Ghasha Offshore Project*. The National. <https://www.thenationalnews.com/business/energy/2023/10/05/adnoc-awards-contracts-worth-about-17-billion-for-hail-and-ghasha-offshore-project/>
- 18 UAE Ministry of Energy and Infrastructure. (2023, July). *UAE Energy Strategy 2050- Updated*. <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/environment-and-energy/uae-energy-strategy-2050>
- 19 Ibid
- 20 Ibid
- 21 Ibid
- 22 UAE Ministry of Energy and Infrastructure. (2023, July). *National Hydrogen Strategy*. <https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/environment-and-energy/national-hydrogen-strategy>
- 23 Abu Omar, A. (2023, July 3). *UAE Plans to Invest \$54 Billion in Renewables in Net Zero Push*. Bloomberg. <https://www.bloomberg.com/news/articles/2023-07-03/uae-plans-to-invest-54-billion-in-renewables-in-net-zero-push>
- 24 ACWA Power. (2023). <https://acwapower.com/en/projects/noor-energy-1/>
- 25 Dubai Electricity and Water Authority. (2024). <https://www.dewa.gov.ae/en/about-us/strategic-initiatives/mbr-solar-park>
- 26 Saudi Green Initiative. (2023). *Saudi Arabia announces 300% increase in installed renewables capacity*. <https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-announces-300-increase-in-installed-renewables-capacity-439-million-trees-planted-since-launch-of-saudi-green-initiative/#:~:text=The%20Kingdom%20aims%20to%20achieve,of%20liquid%20fuel%20currently%20used.>

## Climate Priorities in the Middle East and North Africa

- 27 Ibid
- 28 Saudi Green Initiative. (2023). *How do you plant 10bn trees? SGI outlines greening roadmap*. <https://www.greeninitiatives.gov.sa/knowledge-hub/how-do-you-plant-10bn-trees/>
- 29 Middle East Green Initiative. (2022). *MGI Target: Plant 50 billion trees across the Middle East*. <https://www.greeninitiatives.gov.sa/about-mgi/mgi-targets/planting-trees/>
- 30 Luck, T. (2023, May 23). *Can the Oil Industry Address Climate Change? Saudi Arabia Says Yes*. The Christian Science Monitor. <https://www.csmonitor.com/World/Middle-East/2023/0523/Can-the-oil-industry-help-address-climate-change-Saudi-Arabia-says-yes>
- 31 Ibid
- 32 Ibid
- 33 Reuters. (2022, November 11). *Saudi Aramco Signs agreement to establish Carbon Capture and Storage Hub*. <https://www.reuters.com/business/energy/saudi-aramco-energy-ministry-sign-agreement-establish-carbon-capture-storage-hub-2022-11-10/>
- 34 Institute for Energy Economics and Financial Analysis. (2024). *Fact Sheet: Carbon Capture and Storage has a poor track record*. <https://ieefa.org/resources/fact-sheet-carbon-capture-and-storage-ccs-has-poor-track-record>
- 35 Luck, T. (2023, May 23). *Can the Oil Industry Address Climate Change? Saudi Arabia Says Yes*. The Christian Science Monitor. <https://www.csmonitor.com/World/Middle-East/2023/0523/Can-the-oil-industry-help-address-climate-change-Saudi-Arabia-says-yes>
- 36 NEOM Green Hydrogen Company. (2023). <https://nghc.com/about/>
- 37 Interviews. Saudi Ministry of Energy.
- 38 Interviews. Saudi Ministry of Energy, Riyadh Saudi Arabia. (2024, October 11).
- 39 Saudi Green Initiative. (2023, December 4). *SGI Forum Update*. <https://www.greeninitiatives.gov.sa/knowledge-hub/saudi-arabia-announces-300-increase-in-installed-renewables-capacity-439-million-trees-planted-since-launch-of-saudi-green-initiative/>
- 40 Saudi Press Agency. (2023, July 9). *WMO Gives Accreditation to Sand and Dust Storm Warning Regional Center*. <https://www.spa.gov.sa/w1933770>
- 41 Ibid
- 42 Oman Vision 2040 Implementation Follow-Up Unit. (2021, January). *Oman Vision 2040*. <https://www.oman2040.om/oman2040?lang=en>
- 43 Ibid
- 44 International Energy Agency. (2023, June). *Renewable Hydrogen from Oman: A Producer Economy in Transition*. <https://iea.blob.core.windows.net/assets/338820b9-702a-48bd-b732-b0a43cda641b/RenewableHydrogenfromOman.pdf>
- 45 Ibid
- 46 Ibid
- 47 Ibid
- 48 Ibid
- 49 Government of Oman. Duqm Special Economic Zone. <https://duqm.gov.om/>
- 50 Qatar Ministry of Environment and Climate Change. (2022). *National Environment and Climate Change Strategy 2030*. <https://envsustainability.mecc.gov.qa/en>
- 51 Ibid
- 52 Reuters. (2022, November 16). *Masdar-led Consortium Signs Deal to Develop Suez Canal Green Hydrogen Project*. <https://www.reuters.com/business/cop/masdar-led-consortium-signs-deal-develop-suez-canal-green-hydrogen-project-2022-11-16/>
- 53 Masdar. (2023, December 5). *Masdar Signs Agreements for 1GW Wind Farm and Potential Green Hydrogen Plant in Jordan*. <https://masdar.ae/en/news/newsroom/masdar-signs-agreements-for-1gw-wind-and-potential-green-hydrogen-plant-in-jordan>
- 54 Interview with Khalid Al Mehad, Saudi Arabia's Chief Climate Negotiator. (2023, March).
- 55 KAPSARC. (2023, May). *Circular Carbon Economy Index*. <https://www.kapsarc.org/research/projects/the-circular-carbon-economy-index/>

## Climate Priorities in the Middle East and North Africa



- 56 Interviews. Backgrounders with Tunisian, Jordanian and Egyptian COP delegates. (2022, 2023).
- 57 Luck, T. (2023, December 11). *Fossil Fuels: Is a Breakthrough Within Reach at COP28?* The Christian Science Monitor. <https://www.csmonitor.com/Environment/2023/1211/Fossil-fuels-Is-a-breakthrough-within-reach-at-COP28>
- 58 Egypt Ministry of Environment. (2020). *Egypt National Climate Change Strategy 2050*. <https://www.eeaa.gov.eg/Uploads/Topics/Files/20221206130720583.pdf>
- 59 Zgheib, N. (2022, November 11). Egypt's NWE energy pillar gathers international support. European Bank for Reconstruction and Development. <https://www.ebrd.com/news/2022/egypts-nwe-energy-pillar-gathers-international-support.html>
- 60 Egypt Ministry of Environment (2022).
- 61 Ibid
- 62 World Bank. (2022, March 15). *Supporting Egypt's Inaugural Green Bond Issuance*. <https://www.worldbank.org/en/news/feature/2022/03/02/supporting-egypt-s-inaugural-green-bond-issuance>
- 63 Egypt Ministry of Finance. (2021). Egypt Sovereign Green Bond Allocation & Impact Report. <https://assets.mof.gov.eg/files/a3362b50-574c-11ec-9145-6f33c8bd6a26.pdf>
- 64 Egypt Ministry of International Cooperation. (2023, November). *NWE Egypt's Nexus of Water, Food & Energy- From Pledges to Implementation: Progress Report 1*. <https://mmd-moic.s3.eu-west-1.amazonaws.com/files/English%20Spread%20-%20NWE%20Report%202023.pdf>
- 65 Benny, J. (2023, June 7). *UAE and Egypt Sign Agreement to Advance \$10bn Wind Project*. The National. <https://www.thenationalnews.com/climate/cop27/2022/11/08/uae-and-egypt-to-build-one-of-worlds-largest-wind-farms/>
- 66 Jordan Economic Modernization Vision. (2022). <https://www.jordanvision.jo/img/vision-en.pdf>
- 67 Jordan Ministry of Water and Irrigation. (2023). *National Water Strategy 2023-2040*. [https://www.mwi.gov.jo/EBV4.0/Root\\_Storage/AR/EB\\_Ticker/National\\_Water\\_Strategy\\_2023-2040\\_Summary-English\\_-ver2.pdf](https://www.mwi.gov.jo/EBV4.0/Root_Storage/AR/EB_Ticker/National_Water_Strategy_2023-2040_Summary-English_-ver2.pdf)
- 68 Ibid
- 69 Jordan Ministry of Energy. (2007, December). Updated Maser Strategy of Energy Sector in Jordan (2007-2020). Page 20. [https://www.memr.gov.jo/EBV4.0/Root\\_Storage/EN/EB\\_Info\\_Page/energystrategy.pdf](https://www.memr.gov.jo/EBV4.0/Root_Storage/EN/EB_Info_Page/energystrategy.pdf)
- 70 UNDP/Regional Center for Renewable Energy and Energy Efficiency. (2023, September 20). *Arab Future Energy Index 2023*. <https://www.undp.org/arab-states/publications/arab-future-energy-index-2023> [https://www.undp.org/sites/g/files/zskgke326/files/2023-09/final\\_afex\\_2023\\_18-9-2023.pdf](https://www.undp.org/sites/g/files/zskgke326/files/2023-09/final_afex_2023_18-9-2023.pdf)
- 71 Reuters. (2023, October 3). "Jordan Plans to Raise Renewable Targets by Year-End or Early 2024." <https://www.reuters.com/business/energy/jordan-plans-raise-renewable-targets-by-year-end-or-early-2024-2023-10-03/>
- 72 Jordan Times. (2023, May 4). "Jordan strives for 50 per cent electricity generation from renewables — official." *The Jordan Times*. [https://jordantimes.com/news/local/jordan-strives-50-cent-electricity-generation-renewables-%E2%80%94-official#google\\_vignette](https://jordantimes.com/news/local/jordan-strives-50-cent-electricity-generation-renewables-%E2%80%94-official#google_vignette)
- 73 Jordan Renewable Energy and Energy Efficiency Fund. (2020). [https://jreeef.memr.gov.jo/EN/ListDetails/programs\\_Agricultural\\_sector/1090/1](https://jreeef.memr.gov.jo/EN/ListDetails/programs_Agricultural_sector/1090/1)
- 74 Morocco Ministry of Energy, Mining, Water, and the Environment. (2010, September). National Energy and Energy Efficiency Plan. [https://www.amee.ma/sites/default/files/inline-files/LA\\_NOUVELLE\\_STRATEGIE\\_ENERGETIQUE\\_NATIONALE.pdf](https://www.amee.ma/sites/default/files/inline-files/LA_NOUVELLE_STRATEGIE_ENERGETIQUE_NATIONALE.pdf)
- 75 Morocco Ministry of Energy and Mines. (2019). *National Climate Plan 2020-2030*. <https://www.umi.ac.ma/wp-content/uploads/2020/11/ODD-13-A8-Plan-climat-national-horizon-2030.pdf>
- 76 International Renewable Energy Agency. (2023, August 8). Energy Profile: Morocco. [https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical\\_Profiles/Africa/Morocco\\_Africa\\_RE\\_SP.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Africa/Morocco_Africa_RE_SP.pdf)
- 77 Government of Morocco. (2021, June). *National Determined Contribution- Updated*. [https://unfccc.int/sites/default/files/NDC/2022-06/Moroccan%20updated%20NDC%202021%20\\_Fr.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/Moroccan%20updated%20NDC%202021%20_Fr.pdf)
- 78 Government of Morocco. (2019). *Morocco Climate Change Policy*. <https://www.umi.ac.ma/wp-content/uploads/2020/11/ODD-13-A8-Plan-climat-national-horizon-2030.pdf>
- 79 UNEP. (2023, December 12). *Morocco Launches its National Low Carbon Strategy 2050*. <https://www.unep.org/ndc/news-and-stories/story/morocco-launches-its-national-low-carbon-strategy-2050-roadmap-net-zero>

## Climate Priorities in the Middle East and North Africa

- 80 Morocco Ministry of Energy and Mines. 2023. <https://www.mem.gov.ma/ar/Pages/secteur.aspx?e=2>
- 81 Reuters. (2023, December 8). *Morocco Joins International Campaign to Phase Out Coal*. <https://www.reuters.com/sustainability/climate-energy/morocco-joins-international-campaign-phase-out-coal-2023-12-08/>
- 82 Government of Tunisia. (2021, October). *Updated Nationally Determined Contribution*. <https://unfccc.int/sites/default/files/NDC/2022-08/CDN%20-%20Updated%20-english%20version.pdf>
- 83 Ibid
- 84 Tunisia Ministry of Environment (2022).
- 85 Iraq Ministry of Environment. (2021, October). *Nationally Determined Contribution*. <https://unfccc.int/sites/default/files/NDC/2022-06/Iraq%20NDC%20Document.docx>
- 86 Al Maleki, Y. (2023, June 30). *Iraq Resorts to Stopgap Measures as Summer Power Demand Kicks In*. Middle East Economic Survey. <https://www.mees.com/2023/6/30/power-water/iraq-resorts-to-stopgap-measures-as-summer-power-demand-kicks-in-de28a600-1740-11ee-952a-43de1b95a835>
- 87 Iraq Ministry of Environment. (2021, October).
- 88 International Renewable Energy Agency. (2022). *Iraq Energy Profile*. [https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical\\_Profiles/Middle%20East/Iraq\\_Middle%20East\\_RE\\_SP.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Middle%20East/Iraq_Middle%20East_RE_SP.pdf)
- 89 TotalEnergies. (2023, April 5). *Agreement Between Iraq and TotalEnergies*. <https://totalenergies.com/media/news/press-releases/iraq-agreement-between-iraq-and-totalenergies>
- 90 Masdar. (2021, October 7). *Masdar Signs Agreement to Develop Solar Projects in Republic of Iraq*. <https://masdar.ae/en/news/newsroom/masdar-signs-agreement-to-develop-solar-projects-in-republic-of-iraq-with-a-total-capacity-of-1-gw>
- 91 Mahmoud, S. (2023, November 29). *Transformative Solar Power Projects Eases Financial Burden on Iraqi Families*. The National. <https://www.thenationalnews.com/mena/iraq/2023/11/29/transformative-solar-power-projects-eases-financial-burden-on-iraqi-families/>
- 92 World Bank Group. (2022, November). *Iraq: Country Climate and Development Report*. <https://iraq.un.org/sites/default/files/remote-resources/2b95ca075eb07cc5b753ef1a9d504037.pdf>
- 93 Ibid
- 94 Interviews. Jordanian, Iraqi, and Palestinian environment officials in Riyadh. (2023, October).
- 95 Panel: Middle East North Africa Climate Week; Interview with Green Climate Fund officials (2023, October).
- 96 Ibid
- 97 UN ESCWA. (2023, December). *Survey of Economic and Social Developments in the Arab Region 2022-23*. [https://publications.unescwa.org/2024/escwa-survey-2024/sdgs/pdf/en/2301805E\\_Survey-of-Economic-and-Social-Developments-in-the-Arab-Region-2022-2023-E-Web.pdf](https://publications.unescwa.org/2024/escwa-survey-2024/sdgs/pdf/en/2301805E_Survey-of-Economic-and-Social-Developments-in-the-Arab-Region-2022-2023-E-Web.pdf)
- 98 Interviews. Backgrounders with Jordanian, Iraqi and Tunisian water officials. (2023, October).
- 99 Abdulkarim, N. (2019). *Subsidies on Basic Goods in the Arab Region*. Arab NGO Network for Development. [https://annd.org/uploads/publications/Subsidies\\_on\\_Basic\\_Goods\\_in\\_the\\_Arab\\_Region\\_-\\_Dr\\_Naser\\_Abdelkarim\\_EN.pdf](https://annd.org/uploads/publications/Subsidies_on_Basic_Goods_in_the_Arab_Region_-_Dr_Naser_Abdelkarim_EN.pdf)
- 100 World Meteorological Organization. (2023). *Early Warnings For All: the UN Global Early Warning Initiative for the Implementation of Climate Adaptation- Executive Action Plan 2023-2027*. PP 10-12. <https://www.preventionweb.net/media/84612/download>
- 101 World Meteorological Organization. (2023, September 14). *Libya Floods Show Need for Multi-Hazard Early Warnings, Unified Response*. <https://wmo.int/media/news/libya-floods-show-need-multi-hazard-early-warnings-unified-response>
- 102 Luck, T. (2023, September 14). *Floods, Fire, Failure: North Africa's Climate and Governance Crises*. The Christian Science Monitor. <https://www.csmonitor.com/World/Middle-East/2023/0914/Floods-fires-failure-North-Africa-s-climate-and-governance-crises>
- 103 UNDRR/World Meteorological Organization. (2023, December 5). *Global Status of Multi-Hazard Early Warning Systems*. <https://wmo.int/publication-series/global-status-of-multi-hazard-early-warning-systems-2023>
- 104 Ibid
- 105 World Bank Group. (2018). *Beyond Scarcity: Water Security in the Middle East and North Africa*. Pg. xxxiii. <https://openknowledge.worldbank.org/bitstreams/841665fd-2028-578d-bfff-86a1a4d4c392/download>

## Climate Priorities in the Middle East and North Africa

- 106 Interviews. Backgrounder with Emirati and Saudi officials. (2023, November and December).
- 107 Said, S. (2023, November 4). *Bahrain Suspends Economic Ties with Israel, Recalls Ambassador*. The Wall Street Journal. <https://www.wsj.com/livecoverage/israel-hamas-war-gaza-strip-2023-11-02/card/bahrain-suspends-economic-ties-with-israel-recalls-ambassador-parliament-says-EbweFZRc5UR0nBLJLO06>
- 108 The Jordan Times. (2023, November 17). *Jordan Will Not Sign Water-for-Energy Deal with Israel- Safadi*. <https://jordantimes.com/news/local/jordan-will-not-sign-water-energy-deal-israel-%E2%80%94safadi>
- 109 European Investment Bank. (2024, December 4). *COP28: Jordan: EUR 100 Million EIB Backing to Tackle Water Scarcity Through Desalination and Conveyance Project*. <https://www.eib.org/en/press/all/2023-495-eur-100-million-eib-backing-to-tackle-water-scarcity-in-jordan-through-desalination-and-conveyance-project>
- 110 Oweis, K. (2023, May 1). *Jordan Plans Multi-Billion Aqaba to Amman Desalination Project Amid Water Crisis*. The National. <https://www.thenationalnews.com/mena/2023/04/30/jordan-plans-multi-billion-dollar-aqaba-to-amman-desalination-project-amid-water-crisis/>



**Wilson  
Center**








**Middle East  
Program**








**Environmental Change  
and Security Program**

Woodrow Wilson International Center for Scholars  
One Woodrow Wilson Plaza  
1300 Pennsylvania Avenue NW  
Washington, DC 20004-3027






### **The Wilson Center**

-  [wilsoncenter.org](https://wilsoncenter.org)
-  [woodrowwilsoncenter](https://www.facebook.com/woodrowwilsoncenter)
-  [@TheWilsonCenter](https://twitter.com/TheWilsonCenter)
-  [@thewilsoncenter](https://www.instagram.com/thewilsoncenter)
-  [The Wilson Center](https://www.linkedin.com/company/the-wilson-center)

### **Middle East Program**

-  [wilsoncenter.org/program/middle-east-program](https://wilsoncenter.org/program/middle-east-program)
-  [WilsonCenterMEP](https://www.facebook.com/WilsonCenterMEP)
-  [@WilsonCenterMEP](https://twitter.com/WilsonCenterMEP)
-  [@wilsoncentermep](https://www.instagram.com/wilsoncentermep)
-  [wilson-center-middle-east-program](https://www.linkedin.com/company/wilson-center-middle-east-program)

### **Environmental Change and Security Program**

-  [wilsoncenter.org/ecsp](https://wilsoncenter.org/ecsp)
-  [ecsp@wilsoncenter.org](mailto:ecsp@wilsoncenter.org)
-  [ecspwwc](https://www.facebook.com/ecspwwc)
-  [@newsecuritybeat](https://twitter.com/newsecuritybeat)
-  [@newsecuritybeat](https://www.instagram.com/newsecuritybeat)