POLICY BRIEF
NUMBER 4 ● OCTOBER 2024
ecdpm
Adaptation Without Borders

Tackling transboundary climate risks in the Middle East and North Africa

KEY MESSAGES

- The MENA region faces heightened socio-economic vulnerability from local and transboundary climate risks, which can trigger political instability and spillover effects beyond the region.
- Governance deficits, weak regional cooperation and market integration, and substantial gaps in adaptation financing severely constrain the region's ability to adapt to transboundary climate risks.
- The international community, including Europe, is not fully equipped to manage transboundary climate risks from the MENA region. Scaling up regional adaptation finance is crucial to meet the region's large-scale needs.
- MENA countries must accelerate system-wide resilience-building against transboundary climate risks by advancing in four key areas: knowledge, diplomacy, policy coherence, and finance. This policy brief outlines various actionable strategies, including, for instance, incorporating accurate cost estimates for managing transboundary climate risks into upcoming Nationally Determined Contributions.

Introduction

Since Egypt hosted COP27 and the United Arab Emirates (UAE) hosted COP28, policy awareness about climate change — and its transboundary effects — has been increasing. Severe water scarcity, driven by rising temperatures and reduced precipitation, has long tested the resilience of MENA countries, affecting agriculture and livelihoods. Rapidly expanding coastal zones are also increasingly threatened by sea level rise, cyclones, and flooding.

The transboundary nature of climate challenges—disrupting migration, trade, financial flows, and natural resource management—poses significant regional implications. Adaptation efforts in one country may unintentionally create new risks in other countries by shifting rather than reducing vulnerabilities. These challenges are compounded by the region's socio-economic weaknesses and governance deficits, including limited decentralisation and weak civil society empowerment (Lahn and Shapland 2022; Knaepen et al. 2023; Vinke 2024).

The situation is worsened by the lack of regional cooperation and market integration, particularly in managing shared water resources, energy production, and trade and transport corridors. With more extreme climate impacts projected, the cost of inaction will be high, leaving the MENA region vulnerable to transboundary climate risks from within and beyond the region. As the MENA region is heavily dependent on food imports from outside the region, any disruptions—whether due to climate change or conflicts in supplier countries—can have severe negative repercussions for livelihoods and food security in the region (World Bank 2020; Harris et al. 2024).

Transboundary climate risks, whether originating in the MENA region or from climate impacts elsewhere, can spill over into regions with historical, social, and economic ties to MENA. For example, climate risks from the MENA region

could disrupt Europe's security, trade, and diplomatic relations, while also driving unsafe or illegal migration, potentially fueling organised crime such as human trafficking (Lahn and Shapland 2022; Knaepen et al. 2023).

Despite increasing awareness of transboundary climate risks, they remain inadequately addressed in the climate adaptation strategies of both international partners and MENA countries, leaving the region insufficiently equipped to handle these challenges. While international adaptation finance could help MENA societies reduce their vulnerability and mitigate spillover impacts, such funding has been limited despite the significant need. Although there is increasing international investment in large-scale renewable energy projects in the MENA region, these projects offer limited adaptation benefits and are often perceived as primarily serving export markets.

Given the widespread and multifaceted consequences of transboundary climate risks impacting the MENA region and its interconnected areas, this brief covers several key points. First, it examines the various transboundary climate risks affecting the region. Then, it explores why MENA countries struggle to invest adequately in systemic resilience, limiting their ability to manage these risks both regionally and domestically. The brief also assesses adaptation finance as a tool for resilience, including a case study on the limitations of European support. Finally, it offers recommendations for MENA policymakers, focusing on scaling up adaptation finance and strengthening decentralised governance systems, among other strategies.

Managing transboundary climate risks

Transboundary climate risks in the MENA region

The MENA region, a diverse and complex geographical area, stretches from Morocco in the west to Syria in the north, Iran in the east, and Yemen in the south. Home to approximately 472 million people, it has a rapidly growing young population. Conditions vary widely: some nations, such as Qatar, Kuwait, and the UAE, boast among the highest national income per capita in the world, while others, like parts of Syria, Iraq, Yemen, the Occupied Palestinian Territories, and Libya, are low-income, conflict-affected societies struggling with human displacement and extreme poverty. Meanwhile, middle-income countries like Morocco and Egypt actively pursue business opportunities in the global green transition (Lahn and Shapland 2022; Raggett and Harrison 2019).[1]

The MENA region is particularly vulnerable to the physical impacts of climate change due to its geographical location. These climate impacts can, for instance, undermine economic development, disrupt trade and security, and affect infrastructure investments (Lahn and Shapland 2022; Opitz-Stapleton et al. 2023a). This results in the region being exposed to transboundary climate risks. For instance, the high dependency of several MENA countries on food imports, particularly cereals, makes them susceptible to international food price shocks triggered by climate impacts (or conflicts) elsewhere (Knaepen 2021).

Specifically, transboundary climate risks can propagate across borders and generate risks for other countries and regions through five main pathways: biophysical, financial, trade, human-centered, and geopolitical (Benzie et al. 2016; Opitz-Stapleton et al. 2023b). Adaptation actions that enhance resilience in one country might also inadvertently create new risks for other countries if they redistribute rather than reduce vulnerabilities. Table 1 provides concrete examples from the MENA region for each pathway.

The capacity of MENA countries to adapt to climate change is constrained by complex geopolitical dynamics and pervasive political and socioeconomic challenges (Lahn and Shapland 2022; Knaepen et al. 2023). The following three sections will illustrate how the region's lack of regional cooperation, domestic governance challenges, and inadequate adaptation finance contribute to its insufficient preparedness.

A lack of regional cooperation in the MENA region

The examples in Table 1 demonstrate that addressing the diverse transboundary climate risks in the MENA region requires enhanced cooperation and management across sectors such as infrastructure, trade, and agriculture. However, the region's tendency towards 'excessive bilateralism' and lack of unified political interests hinder effective regional collaboration on climate risks. Organisations like the Union du Maghreb Arabe (UMA), designed to overcome these challenges, have struggled to make significant progress. One key factor is the ongoing instability in Libya and persistent diplomatic tensions between Morocco and Algeria, which continue to hamper regional integration (De Groof et al. 2019). Similarly, the Union for the Mediterranean (UfM) intends to provide a platform for regional cooperation on climate and energy, offering technical support and fostering dialogue among its 42 member states from Europe and the MENA region. However, it remains more of a technical body with limited political influence. This, together with a lack of harmonised data, hinders UfM's ability to comprehensively tackle transboundary adaptation challenges at a regional level (Desmidt 2021).

On a more positive note, two regional initiatives show promise. The United Nations Economic and Social Com-

mission for Western Asia (ESCWA) brings together around 20 Arab countries to address climate change and water resource management through the RICCAR Regional Knowledge Hub (UNESCWA 2024). RICCAR primarily promotes regional dialogue on water resources in the context of climate change, while also fostering collaboration and data sharing on climate adaptation across multiple sectors. Although it has been successful in facilitating regional cooperation and building the capacity of institutions, its effectiveness is sometimes limited by funding challenges and regional political tensions. Additionally, the Royal Scientific Society (RSS) of Jordan, through its Climate Change Studies Division, collaborates with Lebanon, Syria, Turkey, and Iraq to develop scientifically grounded climate solutions, with a focus on addressing transboundary climate risks. This includes efforts to build the capacities of local communities and institutions in both the public and private sectors (Interview with Senior Fellow, Anwar Gargash Diplomatic Academy, 23 July 2024; RSS Team 2019).

"Domestic governance, which encompasses a country's policies, institutions, and systems, plays a critical role in either mitigating or exacerbating vulnerabilities to transboundary climate risks."

Domestic climate governance deficits in the MENA region

Domestic governance, which encompasses a country's policies, institutions, and systems, plays a critical role in either mitigating or exacerbating vulnerabilities to transboundary climate risks. Talebian and Benzie (2023) propose several strategies for addressing these risks, including a focus on 'domestic adaptation,' which aims to

Table 1. Transboundary climate risks in the MENA region

Categories of transboundary climate risk pathways	Examples in the MENA region
Biophysical (potential risks for transboundary ecosystems, such as international river basins, oceans and the atmosphere)	Turkey's construction of dams on the Euphrates and Tigris Rivers in the 1990s and 2000s was intended to enhance water infrastructure and reduce drought vulnerability for its farmers. However, these dams also caused water shortages downstream in Syria, exacerbating drought conditions and sparking interstate tensions (Knaepen and Byiers 2017; Kim and Ferré Garcia 2024).
Financial (potential risks to international financial flows, such as foreign direct investments in major infrastructure projects)	The Desertec Initiative, launched in 2009, aimed to harness solar energy from the deserts in the MENA region to supply clean energy across the region and to Europe. Backed by foreign direct investments, including European utilities and technology firms, it envisioned large-scale solar plants and a cross-regional energy infrastructure. However, regional political instability, a lack of adequate cross-border governance and climate impacts, particularly extreme heat and desert storms, led many investors to withdraw, significantly scaling down the project (Hamouchene 2023).
Trade (potential risks to international trade, such as the import and export of climate-sensitive crops and implications for food security)	The MENA region currently imports over 50% of its food from outside and will need to either increase foreign exchange or boost domestic production to meet rising demand. The region is susceptible to food price increases caused by droughts, reduced yields, or conflicts elsewhere in the world (Lahn and Shapland 2022).
People-centred (potential risks to the cross-border movement of people, ranging from displacement to transhumance)	The Syrian war, which has displaced over 13 million people—88% of whom are either still in Syria or in neighbouring countries like Jordan, Turkey, and Lebanon—is closely linked to severe drought and compounded by a fragile state (UNHCR 2024; Kelley et al. 2015; Norman et al. 2024; Vinke 2024).
Geopolitical (potential risks from cross-border security implications or conflict, with implications for regional or global governance)	Climate change - in particular, drought - has been an indirect driver of social instability in North Africa, eventually leading to the 'Arab Spring' (Schilling et al. 2020; Scheffran 2020; Selby 2019). Jordan's water security is intrinsically linked to regional geopolitics due to its reliance on transboundary water resources. Following the recent Israeli conflict in Gaza, Jordan has proposed a Declaration of Intent with the UAE and Israel for a water-for-energy deal, notably without Palestinian involvement (El-Sharif and Muasher 2024).

"Governance deficits, such as centralised power structures, exclusion from decision-making, and inefficient resource allocation, weaken resilience-building efforts at both national and regional levels."

reduce vulnerabilities and strengthen adaptive capacity through effective risk management at the source. In this context, **how well-prepared are MENA countries' governance systems to implement adaptation strategies for managing these transboundary risks at the local or national level**? This section explores how governance deficits—such as inefficiencies in policy implementation and institutional coordination—impede adaptation efforts and ultimately heighten vulnerabilities to climate risks that extend beyond national borders.

Governance deficits, such as centralised power structures, exclusion from decision-making, and inefficient resource allocation, weaken resilience-building efforts at both national and regional levels. Many MENA countries operate under highly centralised, patronage-based systems that rely heavily on oil and gas revenues. While centralisation can streamline responses to climate impacts, it also presents challenges. These governments frequently prioritise rent-seeking behaviours over urgent climate action and tend to exclude civil society, women, youth, and other vulnerable groups from decision-making processes—groups that are often at the forefront of identifying adaptive solutions and highlighting maladaptation. In **Tunisia**, for example, the central bureaucracy is characterised by a notable lack of emphasis on adaptation and resilience-building, and NGOs have been excluded from the drafting of key climate-related government laws (Ben Youssef 2021). Combined with weaker local governance, these factors impede the effective decision-making needed to address transboundary climate risks (Lahn and Shapland 2022; Knaepen 2021).

Additional challenges in climate governance revolve around contentious water and land use issues, directly impacting income and livelihoods and thus becoming highly sensitive political topics (Houdret 2012; Desmidt 2021). In arid and semi-arid regions, conflicts over these resources often exacerbate tensions between political elites and small-scale farmers (Houdret 2012; Desmidt 2021). In several MENA countries, elite rent-seeking behaviours are evident in the promotion of water-intensive crops like citrus fruits for export, despite high food import dependency and significant underinvestment in rural areas (Houdret et al. 2017; Desmidt 2021; Knaepen 2021).

Furthermore, the regional emphasis on renewable energy initiatives intensifies competition for water and land resources, shifts government spending priorities, and poses significant employment challenges (Desmidt 2021). In **Morocco**, government-supported renewable energy projects are being developed in fertile but water-scarce regions, adversely impacting local farmers and redirecting water from agricultural uses. Similar trends are observed in the **Gulf states** and **Jordan** (Shehabi 2024). Additionally, **Morocco**'s 2008 Plan Maroc Vert, which aimed to boost agricultural GDP by 5.25% from 2008 to 2018 (ADA 2024), focused on investing in irrigation and agricultural equipment. However, this plan predominantly benefited large-scale agribusinesses while sidelining small-scale and traditional farming operations (Attac Maroc 2020).

Tunisia, the world's third-largest olive oil producer, exemplifies the trend of monocultural olive farming geared towards exports. While olive cultivation is suited to dry conditions and provides rural employment, it also displaces other agricultural activities, disrupts ecological balance, and misallocates scarce water resources. This approach undermines small-scale farmers in several ways: first, large-scale olive farming often monopolises land, pushing smallholders to less fertile or marginal areas. Second, the focus on olive oil production limits crop diversification, reducing small farmers' ability to grow food for local consumption or markets, thereby shrinking their income sources. Third, the high water demand for olive cultivation leads to competition for scarce water resources, leaving small farmers without sufficient water for other crops. As a result, they become increasingly marginalised in the agricultural economy, heightening dependence on food imports for key staples and increasing vulnerability to food price fluctuations. This vulnerability was starkly evident during harvest failures in exporting countries and during the onset of the Russian invasion of Ukraine in 2022, which disrupted global food supply chains (OECD/FAO 2018; Desmidt 2021; Hildén et al. 2020; Desmidt 2021; Knaepen 2021; Knaepen et al. 2023).

In **Libya**, centralised governance limits local participation and creates uneven resource distribution, worsening socio-economic challenges from climate change. Political instability and the control of critical agricultural and energy infrastructure by the Libyan Arab Armed Forces further hinder resilience efforts. With 75% of its food imported due to low agricultural output, exacerbated by conflict, Libya is highly vulnerable to global food supply disruptions intensified by climate change. Additionally, heavy reliance on oil export revenues exposes the country to oil price volatility, which is increasingly affected by global efforts to transition to renewable energy and reduce carbon emissions. As demand for fossil fuels decreases due to climate policies, Libya's economic stability becomes

more precarious, further limiting its ability to invest in climate adaptation and resilience-building efforts (Wehrey 2024; GEMS 2017; UN Libya 2023).

Even in a smaller and relatively stable country like **Jordan**, weak climate governance has hindered the necessary transformative changes for effective adaptation. Climate adaptation policies are often disconnected from key sectoral policies, such as those related to trade, water, energy tariffs, unemployment, and financial services, limiting their impact. While Jordan is highly dependent on food imports, it achieves self-sufficiency in olives, vegetables, fruits, eggs, and dairy (EIU 2022). However, climate change is expected to reduce rainfed yields, affecting thousands of farming families (El-Sharif and Muasher 2024).

Egypt is expected to face absolute water scarcity by 2025 (Cohen 2021; UN-Water 2006). Coupled with rising temperatures, unsustainable agricultural practices, and rapid population growth, this has already caused a significant decline in agricultural output, with projections suggesting a further reduction of up to 47% by 2060. As a result, Egypt has become the world's largest grain importer, heavily dependent on supplies from Russia and Ukraine (UNDP and Government of Egypt 2023; Lahn and Shapland 2022). Although large-scale water projects and land reclamation schemes were initiated to address food security, they are costly, benefit only a small population segment, and fail to restore ecological balance. Reclaimed lands have high water utilisation rates due to less fertile soil and primarily support export crops, while the green energy transition has yet to deliver equitable benefits (Al-Mailam and Hamzawy 2023; IRENA 2023; Sayigh et al. 2023).

The lack of a robust enabling environment at the national level in MENA countries exacerbates their challenges in addressing transboundary climate risks. Without strong regional cooperation, these risks can have cascading effects beyond the region. The MENA region's complex historical, political, and socio-economic ties with global actors such as the EU, US, India, and China mean that transboundary climate risks could significantly disrupt security, trade, and diplomatic relations (Lahn and Shapland 2022; Knaepen et al. 2023). Furthermore, the region's limited access to adaptation finance exacerbates these challenges, hindering efforts to manage and mitigate the widespread impacts of climate change, as will be discussed in the next section.

Barriers to adaptation finance in the MENA region

Despite the growing recognition of transboundary climate risks, international partners and MENA countries have been slow to incorporate these risks into their adaptation strategies, leaving the region vulnerable to wide-reaching impacts. Effective policy responses require integrating risk management measures across various sectors, from trade to security. Scaling up adaptation finance is crucial to helping MENA societies reduce their vulnerability and manage the transboundary effects of climate change.[2]

Under the UNFCCC framework, all countries in the MENA region are categorised as Non-Annex I Parties (developing countries), have no historical responsibility for human-made climate change, and have the right to benefit from the means of implementation provided by the UNFCCC financial mechanisms (Osman 2024). However, the MENA region's inadequate availability of and access to international (and domestic) adaptation finance severely limits its capacity to address climate change.

Many lower-middle-income countries in the MENA region face significant debt burdens. For example, in 2024, Egypt's government debt is 96.4% of its GDP, Tunisia's debt stands at 78.6% of GDP, and Morocco's debt reaches 70.4% of GDP (IMF 2024). Hence, the bulk of MENA's climate adaptation finance is expected to come from international sources, with less than 5% of domestic funding due to the region's limited fiscal capacity (ESCWA 2021; ESCWA 2022; Naran et al. 2022).

The estimated adaptation finance needs are substantial, averaging $27 billion annually (2021 value) and potentially rising to $66 billion annually over the 2021-2030 period

Table 2. Adaptation finance needs in selected MENA countries

Country	Adaptation finance gap (annually by 2030)
Egypt	$50 billion
Morocco	$16 billion
Tunisia	$4.3 billion
Jordan	$329,445,830
Lebanon	NA (Lebanon's NDC/NAP does not provide a precise total financial estimate)
Algeria	NA (Algeria's NDC does not provide a precise total financial estimate)

Source: Osman 2024; Guzmán et al. 2022

(UNEP 2023). Table 2 outlines varying financing needs across countries. However, only half of MENA states presently have detailed cost estimates for implementing their Nationally Determined Contributions (NDCs) under the Paris Agreement (ESCWA 2022). Libya and Yemen have not yet submitted NDCs, leaving their adaptation finance requirements unclear. Algeria submitted an NDC but did not specify a cost estimate (Osman 2024).[3]

There is a geographical discrepancy between MENA states, whereby fragile and conflict-affected countries, like Libya and Syria, have received little or no climate finance via the multilateral climate funds. During the period 2012-2020, 92% of (global) public climate finance was concentrated in six countries: Egypt, followed by Morocco, Jordan, Tunisia, Iraq, and Lebanon, with the energy and transport sectors receiving 45% of total climate flows, and water and agriculture receiving a combined 22% (Watson et al. 2024).

Adaptation has generally received less funding than mitigation. Figure 1 shows that during 2003-2023, flows to initiatives classified as climate change mitigation amounted to $1.12 billion, approximately three times more than flows targeting adaptation ($346 million). Most of this finance was in the form of loans or concessional loans dedicated to renewable energy mega-projects and provided by the Clean Technology Fund (CTF) and the Green Climate Fund (GCF) (Watson et al. 2024).[4] Additionally, multilateral climate funds, such as the GCF, Adaptation Fund or the Climate Investments Funds under the World Bank do not address transboundary climate risk or invest in systemic resilience by, for instance, advancing cooperation between (non-)neighbouring countries (Browne et al. 2022).

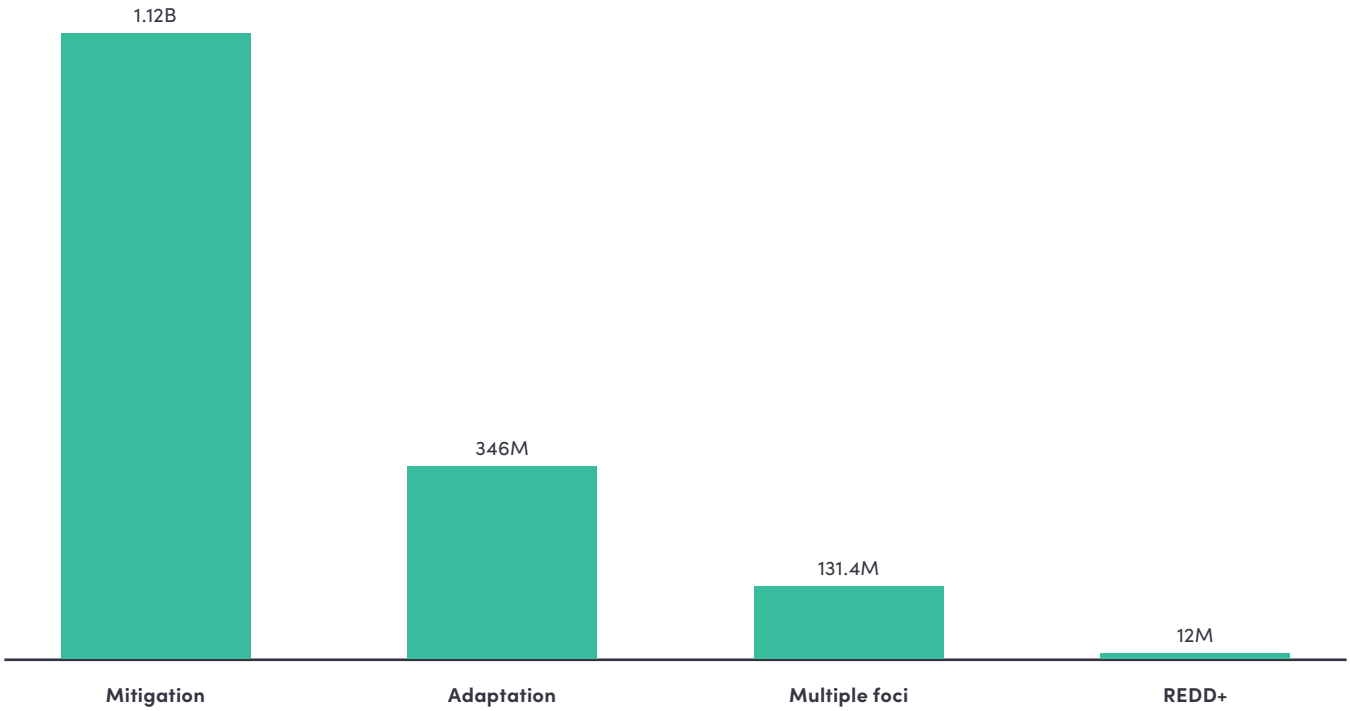
The adaptation finance gap, combined with governance challenges, leaves the MENA region unprepared to handle transboundary climate impacts, which in turn also have cascading consequences for other connected regions.

Allocating multilateral adaptation finance (for example, from the Green Climate Fund or the World Bank's International Development Association) to conflict-affected MENA countries is a major challenge. This raises a crucial question: who will fund adaptation efforts in the region? Two possible outcomes emerge, both problematic for MENA countries. First, (new) donors or investors may step in, but they could prioritise their own interests, such as resource access, and bypass the strict standards that govern multilateral funds. This could worsen existing vulnerabilities and reinforce centralised governance, undermining local resilience. Second, there may simply be a lack of funding, leaving the region dangerously unprepared for climate impacts and transboundary risks. The next section explores the role of European adaptation finance in addressing these challenges in the MENA region.

Case study: European adaptation finance to the MENA region

Through the transboundary climate risk pathways (see Table 1), climate change impacts in the MENA region

Figure 1. Approved climate funding across themes in the MENA region (2003-2023)



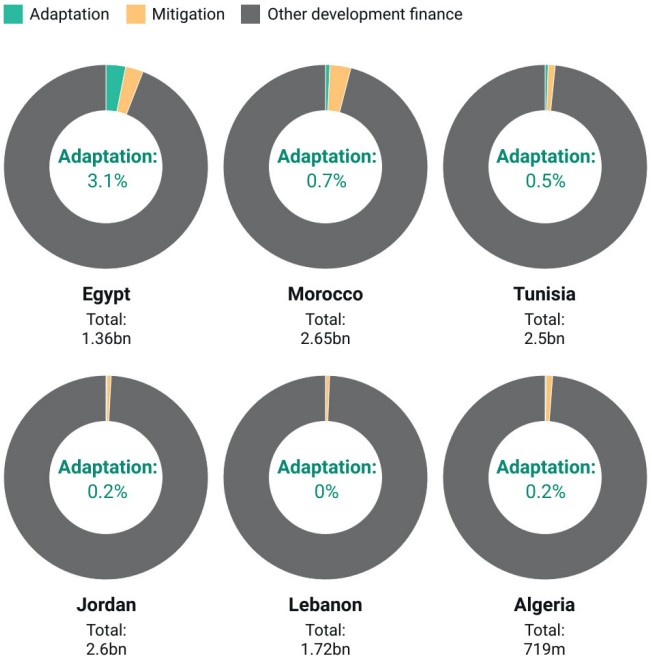
Source: Watson et al. (2024) • Created with Datawrapper

can cascade across borders, affecting nearby Europe. These effects can pose significant challenges to development, cooperation, and security policies (Lahn and Shapland 2022; Hildén et al. 2020). Consequently, how Europe support adaptation to enhance resilience in the MENA region becomes a strategic political priority.[5]

Adaptation has gained prominence in recent EU policy focusing on the Southern Mediterranean. EU-funded programmes under the European Neighbourhood Policy (ENP)-South (2021) aim to prioritise climate resilience (Knaepen and Vajpeyi 2022). The European Commission's agenda for the Southern Neighbourhood highlights green transition (for instance, mitigation) and climate action (for instance, adaptation) as crucial for post-pandemic recovery, in alignment with its Green Deal (EC DG NEAR 2021). Additionally, the Multi-annual Indicative Programme (MIP) for the Southern Neighbourhood (2021-2027) emphasises enhancing adaptive capacities through cross-border cooperation and multi-stakeholder approaches, supported by increased financial commitments.

'**Adaptation within the system**' refers to actions aimed at mitigating, absorbing, or adapting to climate impacts within a system (such as a country) where the recipient country has the influence or authority to make changes (Talebian et al. 2023). This analytic concept could practically apply were the EU to scale up (innovative) adaptation finance in MENA countries to manage transboundary climate risks, whether these risks originate within the MENA region or stem from external sources.

Figure 2. Percentage of total EU development finance (excl. EIB) spent on adaptation in selected MENA countries (2012-2021)



Source: SEI Aid Atlas 2024 • Created with Datawrapper

> "Despite the EU's acknowledgement of climate change as an 'existential threat' in its strategic agenda for 2019–2024, its priorities up to 2029 show minimal emphasis on climate and ecological transition."

However, OECD DAC finance data from the EU to the MENA region until 2021 show that European climate adaptation finance allocated to the MENA region has been low compared to the region's substantial needs and allocations to other regions, as illustrated in Figure 2 for the period 2012–2021.

Mitigation-related finance in the MENA region has been relatively low, with EU development finance (excluding the European Investment Bank [EIB]) for mitigation ranging from 0.6% (Lebanon) to 3.3% (Morocco) during 2012–2021. However, investments in mitigation are expected to increase, especially with the EU's emphasis on energy transition and security in the Southern Neighbourhood (EU 2024). The EU is intensifying efforts to source renewable energy from North Africa, aiming to offset reduced Russian oil and gas supplies with alternatives like solar energy and green hydrogen. Morocco and Egypt have already signed significant green energy partnerships with the EU, with much of the output targeted for the European export market (Habibic 2024; Kemp 2024; El-Katiri 2023). While Europe is focused on decarbonisation and competitiveness, its investments in the region are also seen as a response to China's Belt and Road Initiative (Bodenstein and Furness 2023; Gruarin 2024). There is a perception in MENA countries that the EU prioritises its geopolitical interests under the guise of climate transition, as seen with the controversial Carbon Border Adjustment Mechanism (Raggett and Harrison 2019; Bodenstein and Furness 2023; Gruarin 2024).

Migration remains a top priority on the EU's agenda concerning the MENA region. However, recent EU migration agreements with countries like Egypt (EC DG NEAR 2024) and Tunisia (EC 2023) reflect a predominantly self-interested approach. These agreements focus heavily on migration control and management, prioritising border security and the reduction of irregular migration flows into Europe. However, they completely neglect the growing impact of climate change as a driver of migration in the MENA region.

Despite the EU's acknowledgement of climate change as an 'existential threat' in its strategic agenda for 2019–2024 (EC 2019), its priorities up to 2029 show minimal

"Looking ahead, while the EU's current priorities may limit adaptation finance, global pressures and the rising prevalence of transboundary risks in a warming, more unpredictable world might drive an increase in adaptation funding."

emphasis on climate and ecological transition. Instead, the agenda prioritises defence, foreign policy, enlargement, and illegal migration (EC 2024), raising concerns about the EU's readiness to address transboundary climate risks and its tendency toward a reactive rather than preventive approach. However, the EU has an opportunity to safeguard its own interests by funding adaptation in the MENA region. By doing so, it could balance the politicisation of aid and climate finance, transforming potential conflicts into mutually beneficial outcomes. Enhancing systemic resilience could deliver significant gains in security, sustainability, and societal well-being.

Looking ahead, while the EU's current priorities may limit adaptation finance, global pressures and the rising prevalence of transboundary risks in a warming, more unpredictable world might drive an increase in adaptation funding. This anticipated shift also underscores the need for broader changes in how multilateral finance mechanisms address these complex challenges (Browne et al. 2022). The next and final section outlines the actionable steps, particularly for MENA policymakers, necessary to achieve this resilience.

Conclusion and recommendations

Climate hazards and their transboundary effects will intensify in the next 10 to 15 years. The MENA region's vulnerability to such impacts are rooted in social inequities, weak governance structures, and political instability.

Amid a rapidly evolving global landscape, collaborative efforts between international partners and the MENA region are crucial to address transboundary climate risks and to ultimately foster inclusive development, peace, and regional stability. How can policymakers from the MENA regions and international partners, along with private sectors and civil society, enhance cooperation to address these challenges? This question underscores the need for action on four critical fronts (Knaepen et al. 2023):

1. **Knowledge, tools and innovation**, to understand and manage the complexity and uncertainty of transboundary climate risks based on transformative adaptation approaches;
2. **Policy coherence**, to overcome the incoherence between various policy domains such as climate, development, security and trade;
3. **Diplomacy and cooperation** between the MENA region and its international partners to manage shared risks across scales;
4. **Finance**, including innovative instruments from international partners and domestic resources to support adaptation to transboundary climate risks and strengthen systemic resilience in the MENA region.

Table 3 presents concrete policy recommendations for MENA policymakers across four key action areas. This brief has emphasised the critical role of international partners, particularly the EU, in supporting adaptation efforts in the MENA region and addressing transboundary climate risks. While the focus was not solely on these partners, their involvement is crucial. International partners should prioritise adaptation to transboundary climate risks in multilateral funds like the Green Climate Fund of the Adaptation Fund and integrate adaptation into various sectoral policies, from trade to security. They are encouraged to significantly increase adaptation finance through grants, concessional funding, and innovative finance mechanisms such as debt-for-climate swaps. For the EU, restructuring relations through the ENP and leveraging 'strategic autonomy' could enhance cooperative efforts with the Southern Mediterranean, reinforcing regional resilience and sustainability.

Table 3. Policy recommendations for MENA policymakers and international partners to better adapt to transboundary climate risks

Action area	Recommendations for MENA
Knowledge, tools and innovation	• Collaborate under the leadership of UfM (involving RICCAR, RSS Jordan) to publish a comprehensive **MENA flagship report on transboundary climate risks**, including an assessment of the cost on the regional economy of failing to act, and the role of governance structures in addressing injustices and promoting economic diversification; • Advocate for an **IPCC Special Report on transboundary climate risks**, with a dedicated chapter to transboundary climate risks in the MENA region.
Policy coherence	• Promote **equitable and ecological transitions in export-oriented food value chains and wider food systems** in MENA countries. This should include developing alternative sustainable development pathways that account for transboundary climate risks, ensuring sustainability and resilience across borders; • Explore **co-benefits between adaptation and mitigation efforts** by, for instance, integrating renewable energy transitions to enhance climate resilience in agriculture. This can improve local adaptability but also strengthen regional stability by reducing reliance on fossil fuels or mitigating climate-induced resource conflicts (Suarez 2020); • **Revise existing regional policies** to better integrate transboundary climate risks, ensuring that current frameworks are equipped to effectively manage these challenges. In parallel, foster the **co-creation of new regional strategies**, engaging relevant organisations and stakeholders (for example, UfM, UMA, RICCAR, RSS) to enhance regional coherence and collaboration in addressing transboundary risks.
Diplomacy & cooperation	• **Enhance decentralisation and strengthen local governance:** Support local authorities and empower civil society by addressing capacity gaps and inefficiencies at the local level to make them better equipped to manage and respond to the multifaceted impacts of climate risks that cross regional boundaries; • Encourage the European Commission's **DG NEAR to consider a Team Europe Initiative on Adaptation and Resilience for MENA region with a specific focus on transboundary climate risks**. This initiative could adopt a triptych approach—Understanding, Planning, Investing—inspired by EU adaptation strategy (2021) and the French Development Agency's (AFD) AdaptAction[6] and it could incorporate the abovementioned MENA flagship report on transboundary climate risks to further enhance regional collaboration and resilience-building efforts; • **Strengthen the EU-Southern Mediterranean climate partnership** (for example, through the UfM) to facilitate discussions on common transboundary issues such as energy, water security, climate, and environmental protection. Engage key global stakeholders like the US, China, and Saudi Arabia in these multilateral dialogues to develop cooperative frameworks in North-South and South-South contexts, and encourage this broad partnership to advocate for adaptation to transboundary climate risks within the multilateral UNFCCC processes.
Finance	• **Ensure accurate cost estimates for managing transboundary climate risks are integrated into upcoming NDCs 3.0 and forthcoming NAPs**. This should be supported by capacity-building for stakeholders to enable robust cost assessments using methodologies such as Cost-Benefit Analysis (CBA), Multi-Criteria Decision Analysis (MCDA), or Integrated Assessment Models (IAMs);[7] • **Mobilise domestic climate finance** to address identified transboundary climate risks in middle-income MENA states via innovative schemes or central banks; • **Mobilise multilateral climate finance sources**, such as the Green Climate Fund, the World Bank's International Development Association, and **public development banks**, with technical support from the International Development Finance Club (IDFC) and the Task Force on Climate-related Financial Disclosures, to more effectively address adaptation to transboundary climate risks in the MENA region and pioneer innovative solutions in this space.

Endnotes

1. The term 'MENA region' is a Western construct that risks oversimplifying the rich historical and political diversity of the area. It is used in this brief primarily because of the common climate vulnerabilities shared by the countries in this region. The countries mainly covered in this brief are located in the Levant and the Maghreb regions.
2. 'Adaptation finance' are the 'public and private financial resources provided to support developing countries in adapting to the adverse effects of climate change', specifically aiming to help countries reduce their vulnerability to climate impacts, increase resilience to climate variability, and enhance adaptive capacities. This funding typically supports projects related to areas like water management, agriculture, infrastructure resilience, and disaster risk reduction (OECD 2023).
3. All MENA region countries, with the exceptions of Libya and Yemen (owing to their political situation), have submitted their NDCs. Regarding National Adaptation Plans (NAPs), Kuwait is the sole country that has submitted its NAP as a standalone document to the UNFCCC. Jordan, which partnered with the German Development Cooperation (GIZ), and the UAE, which funded its NAP through its domestic budget, has employed its updated NDCs to integrate their NAPs. Several countries, including Egypt, Morocco, and Tunisia, have started to develop their national adaptation plans using funds provided by the Green Climate Fund. But they still need to be finished (Osman 2024).
4. The definitions of 'mitigation' and 'adaptation' are the ones used by the respective funds.
5. This brief primarily highlights the role of Europe in addressing transboundary climate risks. However, numerous other international partners beyond the EU, also play significant roles in providing adaptation finance to the MENA region. China's Belt and Road Initiative (BRI) invests heavily in regional infrastructure, enhancing climate resilience through improved transportation, energy, and water management systems. However, it is essential to recognise that some BRI projects have also resulted in environmental degradation (Chiu 2022). The Gulf States—Saudi Arabia, the UAE, Qatar, Kuwait, Oman, and Bahrain—are also actively involved in regional adaptation efforts. They undertake various sustainable development projects and collaborate through the Gulf Cooperation Council (GCC) on climate resilience initiatives. The GCC's 2030 Vision highlights key objectives for enhancing climate resilience and promoting sustainable development (GCC 2021).
6. For more details on AFD's AdaptAction programme, visit afd.fr/en/adaptaction.
7. For more details on these methodologies, visit climate-adapt.eea.europa.eu/en.

References

ADA. 2024. Main Achievements of the Green Morocco Plan. Rabat: Agence pour le Développment Agricole (ADA).

Al-Mailam, M. and Hamzaway, A. 2023. Rural Vulnerability and Resource Governance in Water-Scarce Egypt. In: Climate Change and Vulnerability in the Middle East. F. Wehrey et al. (editors). Washington: Carnegie Endowment.

Attac Maroc. 2020. Au Maroc, La Destruction de l'Agriculture Locale et de Subsistance par un Modèle Tourné vers l'Exportation. Paris: Ritimo.

Ben Youssef, A. 2021. The Role of NGOs in Climate Policies: The Case of Tunisia. Working Paper No. 1519. Nice: University of Côte d'Azur.

Benzie, M., Hedlund, J. and Carlsen, H. 2016. Introducing the Transnational Climate Impacts Index: Indicators of country-level exposure – methodology report, Working Paper 2016-07. Stockholm: Stockholm Environment Institute.

Bodenstein, T. and Furness, M. 2023. European Aid to the MENA Region after the Arab Uprising. WIDER Working Paper 2023/48. UNU-WIDER.

Browne, K., Beaussart, R., Benzie, M., Canales, N., Klein, R., Harris, K., Haque, N., Lager, F., Lindblom, A., Marbuah, G. and McAuley, S. 2022. Multilateral Adaptation Finance for Systemic Resilience - Addressing Transboundary Climate Risks. SEI Brief. Stockholm: Stockholm Environment Institute (SEI).

Chiu, E. 2022. Environmental Implications of the Belt and Road Initiative: Geopolitics and Climate Change. Column. The Yale Review of International Studies.

Cohen, Y. 2021. Egypt Has a Water Problem - and No, It's Not Only the GERD. MENASource, Atlantic Council.

De Groof, E., Bossuyt, J., Abderrahim, T. and Djinnit, D. 2019. Looking North and Moving South: Little Enthusiasm for a Continent-to-Continent Approach. ECDPM Discussion Paper No. 238. Maastricht: ECDPM.

Desmidt, S. 2021. Climate Change and Security in North Africa. CASCADES Research Paper.

EC. 2019. A New Strategic Agenda for the EU. Brussels: European Council - Council of the European Union.

EC. 2023. Memorandum of Understanding on a Strategic and Global Partnership between the European Union and Tunisia. Press Release. Brussels: European Commission (EC).

EC. 2024. Outline: Strategic Agenda 2024-2029. Brussels: European Council.

EC DG NEAR. 2021. Joint Communication: Renewed Partnership with the Southern Neighbourhood – A New Agenda for the Mediterranean. Brussels: European Commission - DG for Neighborhood and Enlargement Negotiations (DG NEAR).

EC DG NEAR. 2024. Joint Declaration on the Strategic and Comprehensive Partnership between the Arab Republic of Egypt and the European Union. News Article. Brussels: European Commission - DG for Neighborhood and Enlargement Negotiations (DG NEAR).

EU. 2024. Global Gateway - EU-Southern Neighbourhood Flagship Projects. Brussels: European Union (EU).

EIU. 2022. Global Food Security Index 2022. Economist Intelligence Unit (EIU).

El-Katiri, L. 2023. Sunny Side Up: Maximising the European Green Deal's Potential for North Africa and Europe. Policy Brief 478. Brussels: ECFR (European Council on Foreign Relations).

El-Sharif, S. and Muasher, M. 2024. Vulnerability and Governance in the Context of Climate Change in Jordan. Article. Middle East Programme. Washington D.C.: Carnegie Endowment for International Peace.

ESCWA. 2021. Liquidity Shortage and Debt: Obstacles to Recovery in the Arab Region. Policy Brief. Economic and Social Commission for Western Asia (ESCWA).

ESCWA. 2022. Climate Finance Needs and Flows in the Arab Region. Policy Brief 1. Economic and Social Commission for Western Asia (ESCWA).

GCC. 2021. GCC 2030 Vision and Climate Resilience. Gulf Cooperation Council (GCC).

GEMS. 2017. Climate Change Risk Profile - Libya. Fact Sheet. Global Environmental Management Support Project (GEMS).

Gruarin, V. 2024. EU Policy in North Africa and Eastern Mediterranean: Balancing Differentiated Integration for Conflict Resolution and Democracy Support. EuroMeSCo Policy Brief No. 140. European Institute of the Mediterranean.

Guzmán, S., Dobrovich, G., Balm, A. and Meattle, C. 2022. The State of Climate Finance in Africa: Climate Finance Needs of African Countries. Climate Policy Initiative (CPI).

Habibic, A. 2024. Flurry of Green Hydrogen and Ammonia Deals Underpins EU-Egypt Partnership. Offshore Energy.

Hamouchene, H. 2023. Desertec: What Went Wrong? Article. EcoMENA, Echoing Sustainability in MENA.

Harris, K., Browne, K., Bruder, M., Bista, P. and Kohli, R. 2024. We Are All Connected - What to Know about Transboundary Climate Risks. UNDP Blog.

Hildén, M., Lahn, G., Carter, T.R., Klein, R.J.T., Otto, I.M., Pohl, B., Reyer, C.P.O. and Tondel, F. 2020. Cascading climate impacts: a new factor in European policy-making. CASCADES Policy Brief.

Houdret, A. 2012. The water connection: Irrigation and politics in southern Morocco. Water Alternatives 5(2): 284-303.

Houdret, A., Kadiri, Z. and Bossenbroek, L. 2017. A new rural social contract for the Maghreb? The political economy of access to water, land and rural development, 2017.

IRENA. 2023. Socio-Economic Footprint of the Energy Transition: Egypt. Report. Abu Dhabi, UAE: International Renewable Energy Agency (IRENA).

IMF. 2024. IMF Datawrapper. International Monetary Fund (IMF).

Kelley, C. P., Mohtadi, S., Cane, M. A., Seager, R. and Kushnir, Y. 2015. Climate Change in the Fertile Crescent and Implications of the Recent Syrian Drought. *Earth, Atmospheric, and Planetary Sciences*. 112 (11) 3241-3246. PNAS

Kemp, Y. 2024. Egypt-EU Seal Energy Deals Focused on Green Hydrogen and Ammonia. Article. ESI Africa.

Kim, K. and Ferré Garcia, T. 2024. The MENA Region is Head for More Insecurity due to Climate Change. Can This Be Mitigated? Policy Brief. IPI Global Observatory.

Knaepen, H. 2021. Climate Risks in Tunisia: Challenges to Adaptation in the Agri-food System. CASCADES Research Paper.

Knaepen, H., Benzie, M., Desmidt, S., Detges, A., Farhan, A., Grafham, O., Morales Muñoz, H., Talebian, S., Tondel, F. and Wolfmaier, S. 2023. European Policies to Support Adaptation in North African Food Systems. In: The Role of Europe in Building System-wide Resilience to Cross-Border Climate Impacts (H. Knaepen, Ed.). CASCADES Report.

Knaepen, H. and Byiers, B. 2017. Understanding the Nile Basin Initiative - Balancing Historical Rights, National Needs and Regional Interests. Background Paper. Maastricht: ECDPM.

Knaepen, H. and Vajpeyi, I. 2022. European Responses to Transboundary Climate Impacts and Insecurity. CASCADES Policy Brief. Maastricht: ECDPM.

Lahn G. and Shapland, G. 2022. Cascading Climate Risks and Options for Resilience and Adaptation in the Middle East and North Africa. CASCADES Research Paper.

Naran, B., Connolly, J., Rosane, P., Wignarajah, D., Wakaba, G. and Buchner, B. 2022. Global Landscape of Climate Finance: A Decade of Data. Climate Policy Initiative.

Norman, K, Gil, A. M. and Diab, J. L. 2024. Climate-Induced Displacement in the Middle East and North Africa. Policy Brief. Edward P. Djerejian Center for the Middle East. Rice University's Baker Institute for Public Policy.

OECD/FAO. 2018. OECD-FAO Agricultural Outlook 2018-2027. OECD Publishing, Paris/Food and Agriculture Organization of the United Nations, Rome.

OECD. 2023. Scaling Up Adaptation Finance in Developing Countries - Challenges and Opportunities for International Providers. Paris: Organisation for Economic Cooperation and Development (OECD).

Opitz-Stapleton, S., Lindsey, C. and Anisimov, A. 2023a. Policy Mechanisms of the African Union and the Regional Economic Communities to Manage Transboundary Climate Risks. London: ODI.

Opitz-Stapleton, S., Joshua, M., Denje, T., Awolala, D., Auma, S., Benzie M. and Harris, K. 2023b. How Can Africa Manage the Transboundary Climate Risks it Faces? Policy Brief. London: ODI.

Osman, S. 2024. Assessing Climate Adaptation Plans in the Middle East and North Africa. Washington: Carnegie Endowment for International Peace.

Raggett C. and Harrison, A. 2019. Mapping European Leverage in the MENA Region. ECFR/310. Brussels: European Council on Foreign Relations (ECFR).

RSS Team. 2019. From Climate Change to Climate Crisis: How Worried Should We Be? Spotlight. Amman, Jordan: Royal Scientific Society.

Sayigh, Y., Lazard, O., Hussein, Y., Wahab, N., Dargin, J. and Arafat, N. 2023. Meeting Egypt's Environmental Challenges. Malcolm H. Kerr Carnegie Middle East Centre. Carnegie Endowment for International Peace.

Scheffran, J. 2020. The Geopolitical Impact of Climate Change in the Mediterranean Region: Climate Change as a Trigger of Conflict and Migration. IEMed European Institute of the Mediterranean.

Schilling, J., Hertig, E., Tramblay, Y. and Scheffran, J. 2020. Climate Change Vulnerability, Water Resources and Social Implications in North Africa. Reg Environ Change 20, 15.

Selby, J. 2019. Climate change and the Syrian civil war, Part II: The Jazira's agrarian crisis. Geoforum. 101 (pp. 260-274).

Shehabi, M. 2024. Just Energy Transitions? Lessons from Oman and Morocco. Washington: Carnegie Endowment for International Peace.

Suarez, I. 2020. 5 Strategies that Achieve Climate Mitigation and Adaptation Simultaneously. Commentary. World Resources Institute (WRI).

Talebian, S., Benzie, M., Harris, K., Jarząbek, Ł., Magnuszewski, P., Carter, T.R. and Obermeister, N. 2023. A conceptual

Adaptation Without Borders is a global partnership working to strengthen systemic resilience to the cross-border impacts of climate change. We identify and assess transboundary climate risks, appraise the options to better manage those risks and support policymakers, planners and the private sector to develop climate-resilient and inclusive solutions. We catalyse new alliances and forms of cooperation on adaptation that pave the way towards a more sustainable and resilient world.

adaptationwithoutborders.org

Adaptation Without Borders

ecdpm ADAPT ACTION A PROGRAM AFD GROUPE

framework for responding to cross-border climate change impacts. (Version 01). Geneve: Zenodo.

UNDP and Government of Egypt. 2023. Potential Impacts of Climate Change on the Egyptian Economy. Egypt: UNDP

UNEP. 2023. Adaptation Gap Report 2023. Nairobi, Kenya: UN Environment Programme.

UNESCWA. 2024. RICCAR Regional Knowledge Hub Data Portal - in partnership with FAO. United Nations Economic and Social Commission for Western Asia.

UNHCR. 2024. Syria Refugee Crisis Explained. The UN Refugee Agency (UNHCR).

UN Libya. 2023. Financing Landscape Analysis Libya 2023. Libya: United Nations.

UN-Water. 2006. Coping with Water Scarcity - A Strategic Issue and Priority for System-Wide Action. United Nations Water.

Vinke, K. 2024. Climate Migration Governance in the MENA Region: Urgent Action Needed. DGAP External Publication. German Council on Foreign Relations.

Watson, C., Schalatek, L. and Evéquoz, A. 2024. Climate Finance Fundamentals 9: Climate Finance Regional Briefing - Middle East and North Africa. Climate Funds Update. Washington D.C.: Heinrich Böll Stiftung.

Wehrey, F. 2024. Climate Vulnerability in Libya: Building Resilience through Local Empowerment. Washington: Carnegie Endowment for International Peace.

World Bank. 2020. The World Bank Group - Middle East & North Africa Climate Roadmap (FY 2021-2025) - Driving Transformational Climate Action and Green Recovery in MENA. Washington: The World Bank Group.

This publication benefits from the financial support by AdaptAction, an AFD group programme, for the Adaptation Without Borders (AwB) initiative.

Author: Hanne Knaepen

Editor: Annette Powell

Designer: Rick Jones

I would like to thank my ECDPM colleague, Bruce Byiers, for his constructive suggestions on this brief. I am also grateful to Magnus Benzie and Katy Harris (SEI) for their invaluable feedback, and to Annette Powell (ECDPM) for the final editing. My appreciation goes to the experts who generously shared their insights during interviews, and to Rick Jones (StudioExile) for his skilled assistance with the layout.

First published by ECDPM in October 2024 on behalf of Adaptation Without Borders. Adaptation Without Borders is directed and managed by three founding members – IDDRI, ODI and SEI – and supported by the contributions of a growing number of partners.

The views presented in this brief are those of the author and do not necessarily represent the views of the Adaptation Without Borders partnership or any of its funders, members, partners, advisors or ambassadors.

For further information, contact: Katy Harris, Director of Adaptation Without Borders, katy.harris@sei.org.

Suggested citation: Knaepen, H. (2024). *Tackling transboundary climate risks in the Middle East and North Africa*. Adaptation Without Borders Policy Brief 4. ECDPM.