

SDG 13

**Take urgent action
to combat climate
change and its
impacts**

A. Introduction

The Arab region remains highly vulnerable to climate change, facing heightened exposure and sensitivity to its impacts. This is further compounded by limited adaptive capacity in many countries. An increasing share of the region's population lives in countries facing water scarcity, severe droughts and desertification, making adaptation a priority for climate action. While the region has a low absolute greenhouse gas footprint compared to other regions, emissions have increased twice as fast as the global rate in recent decades. Renewable energy adoption and energy efficiency remain low in most countries. The region's journey towards achieving SDG 13 faces considerable obstacles, including inadequate policies, insufficient attention to vulnerable groups and limited access to technology and financial resources. Current climate finance falls far short of needs; improvements to both the quantity and quality of finance are required.

What the data say

Data included in this section are from the *ESCWA Arab SDG Monitor*, unless otherwise indicated (accessed in December 2023).



Vulnerability to climate change is moderate to high across all subregions, particularly in the water and agriculture sectors, with a general upward trend over time.¹



A staggering 90 per cent of the Arab population, totalling 400 million people, lives in countries grappling with **water scarcity**.² Vast numbers of people confront escalating droughts and other disasters, which fuel food insecurity and displacement.



The number of new **internal displacements** associated with disasters fluctuated from 2018 to 2021, with a peak of 1.8 million in 2020 and a low of 568,000 in 2021.³



Between 2000 and 2020, **greenhouse gas emissions** increased by 68 per cent, twice as fast as the global average. As a result, the region's share of global emissions rose from 4.7 to 5.8 per cent.⁴ The region is home to some of the world's top per capita carbon-emitting States.



Renewable energy accounted for only 5.1 per cent of the Arab region's total final energy consumption in 2020, significantly below the world average of 19.1 per cent.⁵



Arab States received \$34.5 billion in core public international **climate finance** from 2010 to 2020. This was heavily focused on mitigation (72 per cent), directed primarily to middle-income countries (93 per cent), and provided mainly as loans (87 per cent), most of which were non-concessional. Notably, this funding represented only 6 per cent of the \$570 billion needed to fulfil the goals of the nationally determined contributions of the 11 Arab countries that have costed their climate finance requirements until 2030.⁶

Data availability for SDG 13 in the region remains limited.

For an up-to-date view of SDG 13 data at the national and regional levels and an analysis of data availability, please refer to the [ESCWA Arab SDG Monitor](#).



The impact of the polycrisis on SDG 13

The COVID-19 pandemic brought about a temporary reduction in greenhouse gas emissions in the Arab region, as many countries implemented restrictions on mobility and economic activities. The global economic deceleration also depressed demand for hydrocarbons, a notable source of emissions in many Arab countries. Nonetheless, this decline was transient, dissipating as economic activities gradually rebounded.

The pandemic and the war in Ukraine have further limited fiscal space for climate action, especially given high debt burdens in many countries. Ongoing conflicts in the region may aggravate climate change challenges as they destroy natural habitats, ecosystems, biodiversity and infrastructure, and divert policy attention and resources away from climate action.



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On the road to 2030 – suggested policy approaches to accelerate progress on SDG 13

- National development plans and visions should incorporate specific climate-related targets, with stronger attention to adaptation targets.
- Coordination must increase at the highest institutional policy levels in most countries, including on climate action, climate data and monitoring.
- Robust policies and strategic investments are required to promote climate-resilient infrastructure and foster the adoption of nature-based solutions.
- Countries need to graduate from the adoption of renewable energy targets to the implementation of policies that regulate energy intensity and improve energy performance.
- Net-zero strategies must include details on the technical, institutional and financial aspects of achieving decarbonization. They need to be better aligned with national development plans and the allocation of resources in State budgets.
- Disaster risk reduction strategies should focus on comprehensive risk assessment rather than hazard assessment. They need to better integrate gender equality, social inclusion and human mobility considerations, and include financial estimates and action plans.
- Early warning systems require strong links with extension services to ensure that timely and actionable warning messages reach at-risk communities, coupled with effective guidance to facilitate preparedness and minimize potential harm.
- Mobilizing climate finance should focus on enhancing the share of grant or concessional financing, attracting additional financing from the private sector and implementing innovative financial instruments.
- Countries must build capacities to access climate finance, including through the accreditation of local entities, the costing of climate-related needs and the demonstration of the climate rationale of projects.



B. The policy landscape for SDG 13 in the Arab region

Arab States have made strides in incorporating climate considerations into their national policies, strategies and plans. Most countries have identified adaptation priorities, established mitigation targets and taken steps to adopt national disaster risk reduction strategies. Further efforts are needed in developing comprehensive national adaptation plans, enhancing disaster preparedness, assessing and improving climate change education, and localizing climate action and disaster risk reduction initiatives.

The region's progress on SDG 13 is closely linked to water availability and efficient use (SDG 6), sustainable agriculture and food security (SDG 2), the energy transition (SDG 7), healthy ecosystems (SDGs 14 and 15), climate-induced migration (SDG 10), the built environment (SDG 11) and peace and security (SDG 16). Coherent policies to achieve SDG 13 must incorporate the water-energy-food-environment nexus and seek integrated solutions that align priorities across all SDGs.

Policy approaches to achieving SDG 13 vary among countries, reflecting unique national contexts and available resources. Several common trends are apparent, however, regardless of geographic location or income level.

◆ **Countries have made progress in integrating climate change considerations into policies, strategies and plans.** The majority of national development plans and visions since 2015 explicitly mention climate change, a notable contrast to those issued earlier, which generally did not.⁷ Several countries – including **Algeria, Djibouti, Egypt, Jordan, Morocco, Oman, the State of Palestine, Qatar, Somalia, Tunisia** and the **United Arab Emirates** – have adopted dedicated national climate plans or strategies since 2015. Some countries have sectoral and local climate plans and strategies. Examples include the Climate Change Policy for a Resilient Water Sector in **Jordan**, the Climate Change Strategy for Urban Planning and Urban Development Sector in **Qatar**, the National Climate Change Adaptation Strategy for the Tourism Sector in **Tunisia**, and the Sustainable Energy Access and Climate Action Plans developed by 61 cities in **Egypt, Jordan, Lebanon, Morocco, Palestine** and **Tunisia**.

- ◆ In **Egypt**, the National Climate Change Strategy 2050 (2022) charts a multi-sectoral approach to confronting the challenges of climate change and achieving low-emission development. It defines a roadmap with five interconnected goals: sustainable economic growth in key sectors; enhanced resilience through stronger infrastructure, early warning systems and community preparedness; effective governance via stronger institutions, policies and partnerships; robust financing through the mobilization of domestic and international resources; and knowledge and awareness through investments in research, technology transfer and education.
- ◆ The Sustainable Energy Access and Climate Action Plan developed by the city of Hurghada, in **Egypt**, outlines a framework with quantifiable objectives for 2030, based on an emissions reference inventory and a detailed assessment of energy consumption. The action plan highlights education and awareness-raising campaigns to deliver guidance and advice for citizens on saving water and energy.

◆ **Most States (20 out of 22)⁸ have submitted at least one nationally determined contribution identifying adaptation needs and priorities, yet only three – Kuwait, the State of Palestine and the Sudan – have**



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Libya and **Yemen** are among the three countries globally that have not ratified the Paris Agreement or submitted nationally determined contributions.

Across the region, adaptation commitments frequently lack indicators, targets and timelines, and are often not informed by the needs and priorities of vulnerable groups.

Investments in climate-resilient infrastructure and nature-based solutions are insufficient. Robust policies will be needed to promote these strategic investments.



adopted a national adaptation plan.⁹ Nearly all countries put a strong emphasis on **water and agriculture** as the most critical sectors for adaptation. Priority adaptation measures in these sectors include improving water-use efficiency, reducing flood risks, developing non-conventional water resources, deploying drought- and heat-resistant crop and livestock varieties, conserving genetic resources and reducing food loss and waste. Additional priority sectors for adaptation are coastal zones and health (in most countries), biodiversity, fisheries and urban settlements (in several countries), and infrastructure, tourism and waste management (in some countries).

- ◆ In the **Sudan**, the national adaptation plan assesses future vulnerability to climate change in priority sectors (including agriculture, water, health and coastal zones), identifies vulnerable hotspots, and outlines adaptation strategies comprising policies, technologies, systematic observation programmes, climate proofing needs and required investments.

For more information on climate adaptation policies in the water and agricultural sectors, see the chapters on SDG 6 and SDG 2, respectively. For more information on policies on food loss and waste, see the chapter on SDG 12.

◆ **Most States (20 out of 22) have set greenhouse gas emissions mitigation targets, primarily contingent on international support.**

Seventeen countries¹⁰ have defined quantified emissions reduction targets. Three – **Bahrain, Iraq** and the **Syrian Arab Republic** – have committed to actions and projects with mitigation benefits but without specifying quantified targets. Most countries (17 out of 20)¹¹ have made some or all of their mitigation commitments conditional on international support, including finance, technology transfer and capacity-building. The level of mitigation ambition varies considerably. For instance, in countries that have set economy-wide emissions reduction targets relative to a business-as-usual scenario, the reduction coefficients range from 7 per cent in **Oman** to 92.4 per cent in **Mauritania**. Notably, eight countries¹² have enhanced emissions reduction targets since 2016. For example, Jordan has doubled its reduction coefficient from 15.5 per cent to 31 per cent of emissions relative to a business-as-usual scenario by 2030.

Energy is a critical sector for mitigation in every Arab State, with all countries setting specific targets on renewable energy and most on energy efficiency. Priority areas for mitigation include electricity, transport, industry, waste management and agriculture in most countries, and buildings, land use, land-use change and forestry in some countries.

For more information on climate mitigation policies in the energy sector, see the chapter on SDG 7.

- ◆ In **Morocco**, the national climate plan aims to facilitate an energy transition by promoting energy efficiency and targeting a 52 per cent penetration rate of renewable energies in installed electrical capacity by 2030. The plan also seeks to accelerate the development of efficient buildings, promote sustainable mobility and facilitate the renewal of the road transport fleet. It promotes an energy transition in the agricultural and industrial sectors, advocates for integrated waste management to establish a circular economy and underscores the crucial role of forests in carbon storage.



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Although most States have adopted renewable energy targets, many also aim to expand power generation from fossil fuels, notably natural gas.

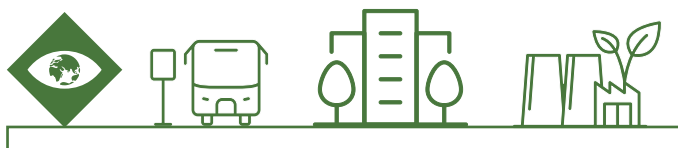
Energy intensity remains high in the region. Policies addressing economy-wide energy conservation must be strengthened alongside efforts to build capacity and enhance awareness of energy efficiency through targeted education and training.

- ◆ In the **United Arab Emirates**, the climate plan seeks to mitigate the causes of climate change by advancing economic diversification through innovative solutions, all while managing greenhouse gas emissions and sustaining economic growth. Although the plan anticipates an increase in total emissions in line with projected economic and population growth, it aims to decouple emissions from economic growth. It intends to stimulate robust growth in critical emerging non-oil sectors by implementing resource-efficient innovations, generating high added value, fostering job creation in green businesses, and leveraging the symbiotic relationship between climate action and economic diversification.

- ◆ **Some countries have pledged to achieve net-zero emissions. Only a few – including Oman, Tunisia and the United Arab Emirates – have taken the crucial step of translating these targets into comprehensive, economy-wide strategies** with integrated programmes and specific objectives for priority sectors, particularly energy. In **Oman**, the National Strategy for an Orderly Transition to Net Zero relies on six core technologies to achieve decarbonization by 2050: energy and resource efficiency, electrification and renewables, battery electric technology, sustainable hydrogen, carbon capture and storage, and negative-emission solutions. Successful implementation requires maturing these technologies, investing in infrastructure, establishing carbon pricing mechanisms, and introducing policies and legislation to incentivize behavioural changes. Other countries, including **Bahrain, Kuwait and Saudi Arabia**, have also set targets to achieve net-zero emissions by 2050 or 2060 but have not outlined how they intend to accomplish them.

Net-zero strategies lack details on the technical, institutional and financial aspects of achieving decarbonization. Furthermore, they are not aligned with national development plans and resource allocations in State budgets.

For more information on energy policies to achieve net-zero targets, see the chapter on SDG 7.



- ◆ **States have made progress in adopting national disaster risk reduction strategies yet localization remains a challenge.** Thirteen countries have either ratified or developed national strategies, five have initiated the strategy development process, and four have yet to commence it.¹³ While some countries, including **Algeria, Morocco, the State of Palestine and Tunisia**, have established local bodies to facilitate decentralization in disaster risk governance, only 32 cities across 10 countries¹⁴ have developed local disaster risk reduction strategies and action plans.

Disaster risk reduction strategies tend to focus on hazard assessment rather than a comprehensive risk assessment. They often do not sufficiently integrate gender equality, social inclusion and human mobility considerations, and frequently lack financial estimates and action plans.

- ◆ Progress has been made in understanding disaster risk through data collection and dissemination; 15 out of 22 countries¹⁵ have developed or initiated **national disaster loss databases**. Most data are not sufficiently disaggregated to properly inform decision-making, however. Advances in disaster preparedness, including the effective implementation of early warning systems, continue to move slowly. Despite the adoption of **multi-hazard early warning systems** in at least 11 countries,¹⁶ these systems frequently grapple with insufficient hazard coverage and the lack of a people-centred approach. They struggle to fully integrate prediction, forecasting, message development, dissemination and response planning. The region also has a siloed approach to risk governance that impedes the effective management of systemic risks demanding cross-border collaboration, particularly those related to water resources and sandstorms.

- ◆ **Jordan** was one of the first Arab countries to ratify a national disaster risk reduction strategy, which is now in its second edition. Together with **Morocco and Tunisia**, it stands out as among the few countries globally that have backed national strategies with well-defined financing plans. The National Disaster Risk Reduction Strategy (2023–2030) of **Jordan** seeks to integrate disaster risk reduction concepts within relevant national strategies; improve the legal and institutional basis for disaster risk reduction; raise awareness through information-sharing, education and training; support disaster-related scientific research; and promote collaboration among stakeholders. It calls for integrating nature-based solutions, such as through the use of check dams, terracing, reforestation and forest conservation to promote watershed



management and reduce the risks of floods, landslides and other natural disasters.

- ◆ In **Somalia**, the establishment of the Ministry of Humanitarian Affairs and Disaster Management, the region's first ministry devoted to disaster risk reduction, has bolstered attention to this topic in national policymaking and programming. An updated nationally determined contribution contemplates several disaster preparedness and management actions, including early warning systems, disaster risk management policies, meteorological networks, and the increased resilience of communities, infrastructure and ecosystems to droughts and floods.

◆ **Several countries have committed to integrating climate change and disaster risk reduction within educational curricula yet assessing progress remains challenging due to limited data availability.** As part of their national statements of commitment at the Transforming Education Summit in 2022, 11 countries – **Algeria, Egypt, Iraq, Kuwait, Libya, Mauritania, the State of Palestine, Qatar, Saudi Arabia, the Syrian Arab Republic** and the **United Arab Emirates** – pledged to incorporate climate change into curricula.¹⁷ Information on the effective implementation of these commitments is not readily available, however. Little progress has been observed in mainstreaming disaster risk reduction into primary and secondary school curricula, although some headway is evident in individual universities in some countries, including the **Comoros, Iraq, Jordan, Lebanon, Morocco, the State of Palestine, Somalia, and the Syrian Arab Republic.**¹⁸

Eleven Arab countries – **Bahrain, Egypt, Jordan, Kuwait, Libya, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, Tunisia** and the **United Arab Emirates** – have incorporated global citizenship and sustainable development concepts into their education policies and curricula.^a Yet the extent to which schooling covers climate change and disaster risk reduction remains unclear.

^a UNESCO, 2022a.

- ◆ In **Egypt**, education-specific strategies and plans, such as the National Education Strategic Plan 2007–2012, the National Strategy to Reform the Vocational and Technical Training System 2012–2017 and the Strategic Plan of Pre-University Education 2014–2030, do not specifically address climate change education. Various climate and development strategies, however, underscore the importance of integrating climate change education into the educational framework.

The National Strategy for Adaptation to Climate Change and Disaster Risk Reduction (2011), the Sustainable Development Strategy: Egypt Vision 2030 (2016) and the Egypt National Climate Change Strategy 2050 (2022) all advocate for incorporating climate change education into curricula at various levels. The climate change strategy also emphasizes preparing educational materials on climate change and encouraging their adoption in schools.

- ◆ **Lebanon** incorporated climate change education into its National Curriculum Framework for Pre-university General Education in 2022.¹⁹ This framework significantly emphasizes education for sustainable development, underscoring the importance of sustainability competencies across academic disciplines and extracurricular activities. A dedicated committee for climate change education is poised to integrate climate-related issues as cross-cutting concerns in subject curricula. Moreover, the Ministry of Education and Higher Education has established a multistakeholder national committee tasked with developing a policy paper and strategy on climate change education. In collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Ministry is piloting a Greening Education initiative to equip school principals, teachers and young people with knowledge and skills to foster sustainable practices and environmental stewardship. The initiative has been rolled out in selected public and private schools attended by both Lebanese and refugee students.²⁰



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C. Policy trends by subregion

1. Gulf Cooperation Council countries

Gulf Cooperation Council countries have the highest per capita greenhouse gas emissions globally. Their exports and public revenues rely heavily on hydrocarbons (see figure 7.1 in the chapter on SDG 7), a key source of their emissions. They have a higher adaptive capacity compared to other Arab countries, including to respond to climate change, moderate potential damages, harness opportunities and cope with the consequences. While renewables constitute a small fraction of their total final energy consumption (see figure 7.2 in the chapter on SDG 7), these countries host some of the world's lowest-cost utility-scale solar photovoltaic systems. With substantial financial means to invest in climate action, they can contribute to international climate finance and support initiatives to address climate change globally.

All Gulf Cooperation Council countries have adopted **economic diversification** strategies with mitigation benefits. For instance, Vision 2040 of **Oman** seeks to reduce the share of the oil sector in GDP from 39 per cent in 2017 to 16 per cent by 2030 and 8.4 per cent by 2040.

Since 2018, the majority of countries, including **Bahrain, Oman, Saudi Arabia** and the **United Arab Emirates**, have implemented **excise and value-added taxes** to reduce their dependency on hydrocarbon revenues. **Qatar** has introduced excise taxes but has not yet implemented value-added taxes.

Most countries, including **Bahrain, Kuwait, Oman, Saudi Arabia** and the **United Arab Emirates**, have pledged to reach **net-zero emission targets** by either 2050 or 2060.

Some countries are exploring **carbon market mechanisms**. For example, the Regional Voluntary Carbon Market Company, jointly owned by the Public Investment Fund of **Saudi Arabia** and the Saudi Tadawul Group, conducted the region's first **carbon offset auction** in 2022 and plans to launch a carbon credit trading exchange in early 2024.²¹ In the **United Arab Emirates**, the Ministry of Climate Change and Environment is seeking to establish a national system for carbon credits using blockchain technology.

All countries have adopted policies to enhance **water-use efficiency in agriculture**, such as through the promotion of precision irrigation or the adoption of water-efficient cropping systems.

While most countries have set **renewable energy targets**, many are also seeking to **expand fossil fuel production** and promote downstream industries. In **Bahrain**, the National Development Strategy (2015–2018) emphasizes the assessment and further development of hydrocarbon assets to maximize economic benefits over their lifespan. This entails employing enhanced recovery techniques for existing reserves and conducting exploratory drilling to identify new supplies.

Most countries, including **Bahrain, Oman, Saudi Arabia** and the **United Arab Emirates**, are planning or implementing **green and blue hydrogen** projects, including one of the world's largest green hydrogen projects in Neom, **Saudi Arabia**, costed at \$8.5 billion. The **United Arab Emirates** launched a National Hydrogen Strategy in July 2023, aimed at accelerating industry adoption of low-carbon hydrogen, cultivating a supply chain, enabling infrastructure and reaching a target annual production capacity of 1.4 million tons of low-carbon hydrogen by 2031.

Several countries, including **Bahrain, Kuwait, Saudi Arabia** and the **United Arab Emirates**, have incorporated **carbon capture and storage** measures in their nationally determined contributions. **Saudi Arabia** and the **United Arab Emirates** have followed a proactive government-led approach, emphasizing State ownership of facilities, particularly in the initial deployment phases.²² The recent launch of the National Hydrogen Strategy in the **United Arab Emirates** has corroborated the Government's commitment to carbon capture and storage. The strategy aims to achieve environmental benefits and leverage economic opportunities within the framework of the circular carbon economy by promoting the reuse of carbon dioxide across various industries.

2. Arab middle-income countries

Climate change is exacerbating the exposure of Arab middle-income countries to water scarcity and food insecurity. These countries have low to moderate greenhouse gas emissions per capita, although levels in **Algeria** and **Lebanon** are nearly twice as high as in other Arab middle-income countries (see figure 13.1). Most Arab middle-income countries, except oil-rich **Algeria**, derive a moderate share of total energy consumption from renewables (see figure 7.2 in the chapter on SDG 7).

Some countries have established **national public funds** to promote climate adaptation and mitigation projects,



such as the Fund for the Fight against the Effects of Natural Disasters in **Morocco**, the Renewable Energy and Energy Efficiency Fund in **Jordan**, and the Energy Transition Fund in **Tunisia**.

Alongside water, agriculture, coastal zones and health, which are priority adaptation sectors in most Arab countries, irrespective of income level, **tourism** and **urban settlements** are priority sectors in a number of middle-income countries, including **Egypt** and **Jordan**.²³

All middle-income countries have set **renewable energy targets**, and four (**Egypt, Jordan, Morocco** and **Tunisia**) have made substantial leaps in renewable energy installed capacity since 2015. The Noor Solar Complex of **Morocco** and the Benban Solar Park of **Egypt** demonstrate a focus on large-scale renewable energy projects to reduce emissions and promote energy sustainability. Nevertheless, the share of renewables in total final energy consumption has remained largely unchanged in most Arab middle-income countries, except **Jordan**, where it increased from 3 per cent in 2015 to 11 per cent in 2020.

All middle-income countries have used **public competitive bidding** to mitigate risks associated with the deployment of renewable energy projects. Except **Algeria**, all have also

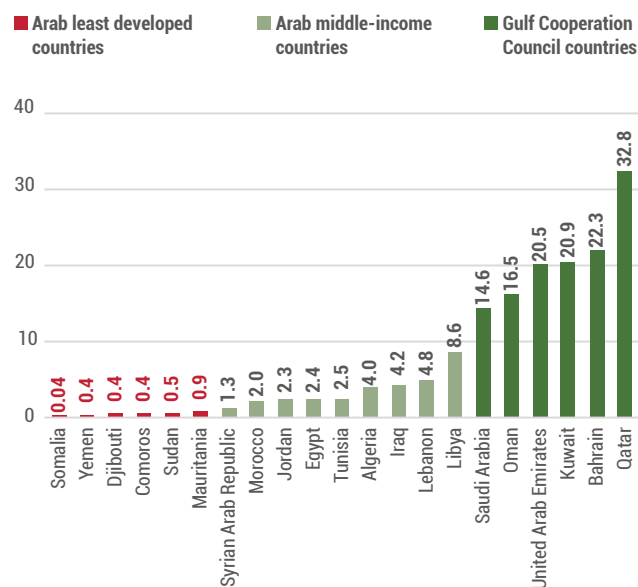
used **net metering**, an electricity billing mechanism that allows customers who generate some or all of their own electricity from solar panels or other renewable sources to sell excess electricity back to the utility grid.

Most middle-income countries (**Egypt, Jordan, Lebanon, Morocco** and **Tunisia**) have developed or updated **national and local disaster risk reduction strategies** since 2015.²⁴

3. Arab least developed countries

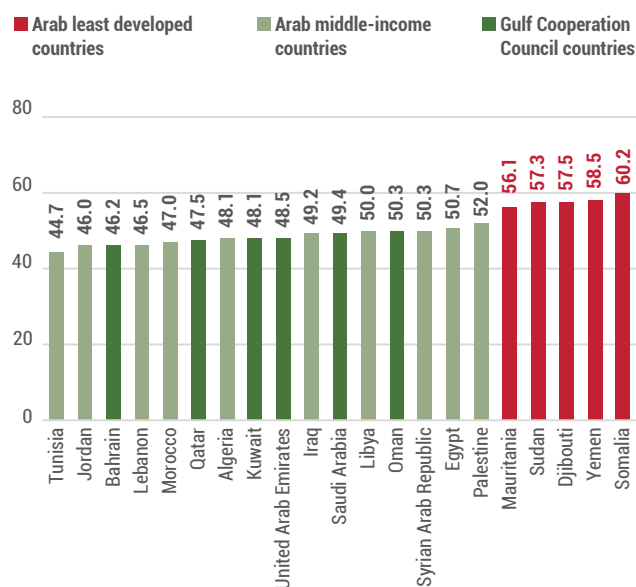
The Arab least developed countries have little historical or current responsibility for climate change but are highly vulnerable to its effects (see figures 13.1 and 13.2). They are severely impacted by extreme weather events, which often fuel food insecurity, displacement and, in some countries, conflict. The majority of these countries, except Yemen, **derive** a large share of total energy consumption from renewables, mostly from traditional sources such as biomass and hydropower. Their average renewable energy share in total final energy consumption is three times higher than the global average. Yet a high proportion of their populations relies primarily on polluting fuels and technologies for cooking, heating and lighting.

Figure 13.1
Carbon dioxide emissions per capita, 2019 (metric tons)



Source: World Resources Institute, Climate Watch (accessed on 31 May 2023).
Note: Data are not available for the State of Palestine.

Figure 13.2
RICCAR climate change vulnerability index



Source: ESCWA and others, 2017.

Notes: Based on end-century projected data and a business-as-usual RCP8.5 scenario. Data are not available for the Comoros. RICCAR refers to the Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region.

At least half the least developed countries, including the **Comoros, Mauritania** and **Somalia**, have **gender- and child-sensitive** nationally determined contributions.²⁵ The updated national determined contribution of the **Comoros** dedicates a chapter to gender considerations, including the involvement of women in the development process, the vulnerability of women to the impacts of climate change and initiatives to empower women in climate action. The Government commits to enhancing the participation of women and other vulnerable groups in planning, decision-making, capacity-building and access to technologies, as well as to conducting gender-specific analyses and collecting data disaggregated by sex and age.²⁶

The nationally determined contributions of nearly all least developed countries, including the **Comoros, Djibouti, Mauritania, Somalia** and the **Sudan**, feature measures aimed at replacing inefficient and environmentally harmful cooking systems with **clean fuels and advanced technologies**. For instance, the updated nationally determined contribution of the **Sudan** articulates the goal of replacing traditional inefficient wood stoves with improved cookstoves, targeting 20 per cent of the rural population. This transition, coupled with associated biomass savings, is expected to result in a reduction of 2.6 million tons of carbon dioxide-equivalent emissions by 2030.²⁷ The proportion of the population that relies primarily on clean fuels and technologies in the least developed countries has more than doubled over the past two decades, rising from 23 per cent in 2001 to 37 per cent in 2011 and reaching 51 per cent in 2021. Nevertheless, the average for these countries still lags significantly behind the regional average (88 per cent) and the global average (71 per cent). Substantial progress is essential to bridge this gap.²⁸

The nationally determined contribution of every least developed country prioritizes the reduction of greenhouse gas emissions from **forests and land-use changes**, including by reducing deforestation or expanding afforestation and reforestation. For example, **Mauritania** in its updated nationally determined contribution emphasizes commitments to assisted forest regeneration, pasture restoration and combating desertification. It is participating in the Great Green Wall initiative of the African Union in partnership with 20 African countries, including two other Arab least developed countries, **Djibouti** and the **Sudan**.²⁹

Some least developed countries, such as **Somalia** and **Yemen**, have national policies to address **displacement**

related to climate change or natural disasters. The National Policy on Refugee-Returnees and Internally Displaced Persons of **Somalia** commits the Government to protect people from climate-induced displacement, implement disaster risk reduction measures in disaster-prone areas, develop and activate early warning systems before any future displacement, and facilitate the voluntary return, relocation and local reintegration of refugee-returnees and internally displaced people.³⁰

4. Arab countries in conflict

The nexus between climate change, peace and security in the Arab region is important. Climate change does not create conflict on its own but may exacerbate challenges where the social contract is weak or broken due to conflict. Climate impacts can affect drivers of conflict, such as the loss of livelihoods, food insecurity, competition for resources and migration. Conversely, ongoing conflicts may aggravate climate challenges as they destroy ecosystems and biodiversity, with the extent of such destruction dependant on the type of ordnance used. For example, chemical weapons or phosphorous shells have been used in conflict-affected countries in the Arab region with deleterious impacts on natural resources that are also subject to climate pressures.



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Conflict can also hamper the ability to build adaptive capacity as climate is usually deprioritized compared to more immediate socioeconomic and humanitarian priorities. Besides limiting resources for climate action, conflict may pause discussions on resource mobilization, cooperation and partnerships.

Conflict is a leading cause of displacement in the Arab region, which has 4 of the top 10 countries globally in terms of the highest numbers of internally displaced people (**Somalia**, the **Sudan**, the **Syrian Arab Republic** and **Yemen**). Climate change intensifies the challenges of internal displacement caused by conflict as displaced populations are less equipped to manage climate-induced natural disasters. Conflict and natural disasters, compounded with other vulnerabilities for internally displaced persons, disproportionately impact women, children and persons with disabilities.

Conflict-affected countries need targeted international support for climate-related interventions. This should encompass not only financial resources and technology but also capacity-building to enhance national and local abilities to access and effectively use climate finance.

Some countries have **relegated climate action** to focus on immediate needs rather than long-term goals. For instance,

Yemen submitted an intended nationally determined contribution but has not ratified the Paris Agreement.

Despite significant challenges in formulating climate policies due to ongoing conflict, some conflict-affected countries have made efforts to **integrate climate change considerations into plans and policies**. For example, **Yemen** is promoting climate resilience in water resources, agriculture and infrastructure.

Two of the three Arab States that have submitted **national adaptation plans** are conflict-affected countries (the **State of Palestine** and the **Sudan**). Four other conflict-affected countries are developing national adaptation plans (**Iraq**, **Somalia**, the **Syrian Arab Republic** and **Yemen**).

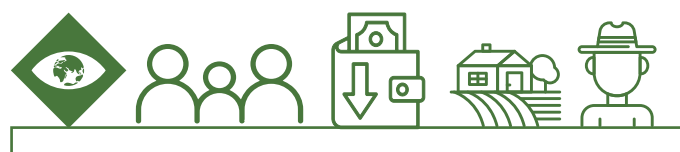
Iraq, **Somalia** and **Yemen** have adopted national policies or frameworks to address **displacement in the context of natural hazards**.³¹

The updated nationally determined contribution of the **State of Palestine** and the intended nationally determined contribution of **Yemen** include **loss and damage** considerations related to mobilizing financial resources to deliver ambitious climate actions, with a strong focus on adaptation.

D. Policies to leave no one behind

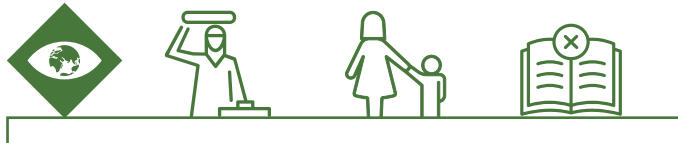
Climate-related challenges in the Arab region disproportionately affect a number of vulnerable groups, including individuals with lower incomes, rural populations, women, children, the elderly, persons with disabilities, internally displaced people, refugees, migrants and residents of low-lying coastal areas. These communities often bear the brunt of severe climate change impacts yet encounter significant obstacles to accessing essential resources, technology and infrastructure for effectively adapting to evolving environmental conditions. Despite their heightened vulnerability, these groups also serve as pivotal agents for driving positive change in climate-related initiatives.

Achieving SDG 13 demands the implementation of comprehensive, inclusive policies that specifically address climate change impacts on marginalized populations, ensuring that no one is left behind. Below are examples of existing measures that countries are deploying to address climate fallout on vulnerable groups.



- ◆ **Individuals with lower incomes** are severely affected by global warming and disasters as they lack resources to adapt to changes or cope with shocks. The rural poor are especially vulnerable due to their reliance on climate-sensitive farming and pastoralism for their livelihoods.
- ◆ The **Sudan** has introduced drought-resistant crop and animal varieties and developed new agricultural extension products and services focused on drought-resistance and sustainable farming methods.³²
- ◆ **Djibouti** has developed agropastoral shade gardens to improve the resilience of poor rural communities and adaptation to recurrent climate change-induced droughts.³³

- ◆ **Somalia** has advanced ecosystem-based flood preparedness through the establishment of climate monitoring and early warning centres and the promotion of small-scale community water capture infrastructure.³⁴



- ◆ **Women and girls** are more likely to suffer losses due to climate change and disasters, including through increased maternal mortality, the disruption of livelihoods and social networks, displacement, higher schooling dropout rates, and gender-based violence in the aftermath of disaster or conflicts.

- ◆ In **Egypt**, the National Strategy for Mainstreaming Gender in Climate Change (2011) seeks to integrate gender perspectives into climate policies. It promotes the equal participation of men and women in shaping effective adaptation and mitigation measures, towards ensuring that everyone can benefit from climate action programmes and funds. The National Strategy for Adaptation to Climate Change and Disaster Risk Reduction (2011) recognizes gender as a cross-cutting issue and emphasizes women's participation and leadership.
- ◆ The National Strategy for Women in **Lebanon** (2011–2021) addresses climate change under two of its key objectives: enhancing the contribution of women to environmental protection, and protecting girls and women in situations of emergency, armed conflict, war and natural disaster. Additionally, the strategy emphasizes the role of women in educating children about eco-friendly behaviours.
- ◆ In **Mauritania**, the nationally determined contribution requires any project or programme developed within its framework to reserve 10 per cent of its budget to integrate gender, youth and human rights dimensions.³⁵
- ◆ In **Tunisia**, gender was mainstreamed as a cross-cutting concern within the updated nationally determined contribution, including in the identification of priority areas and measures for advancing gender equality in climate action. Examples include adopting gender-just water and agricultural policies, and ensuring women's transformative participation in the development and implementation of disaster risk reduction strategies and policies.³⁶



- ◆ **Children and young people** bear disproportionate impacts from climate change and disasters; moreover, young and future generations will inherit an environment with diminishing resources and higher risks to lives and livelihoods.

- ◆ At least eight Arab countries (the **Comoros, Egypt, Jordan, Mauritania, the State of Palestine, Somalia, Tunisia** and the **United Arab Emirates**) have submitted child-sensitive nationally determined contributions.³⁷ These policy documents not only acknowledge children and young people as rights-holders, but also emphasize their pivotal role in shaping climate action policies. Specific child-sensitive commitments span various sectors, with a notable emphasis on education, energy, social protection and water.
- ◆ In the **United Arab Emirates**, the Emirates Youth Climate Strategy (2018) seeks to build youth capacities to meet the challenges of climate change and promote youth participation in climate action and domestic decision-making. Youth councils have been established for consultations on policies and legislation, including the National Climate Change Plan and the nationally determined contribution.³⁸



- ◆ **Persons with disabilities** are particularly vulnerable during natural disasters and extreme climate events, which exacerbate barriers to their full participation in society, including the inaccessibility of the physical environment.
- ◆ The nationally determined contribution of **Jordan** calls for the inclusion of disability-friendly options in the development of green infrastructure in urban areas and the creation of new green skilled labour opportunities for the disabled through learning, awareness and career path management.³⁹ The National Climate Change Policy highlights the critical importance of inclusivity and the participation of people with disabilities in climate change adaptation and mitigation.
- ◆ In **Qatar**, the National Command Centre has developed an emergency distress service (Aounak) that enables persons with disabilities, persons with chronic diseases and the elderly to easily contact the emergency service.⁴⁰



◆ **Internally displaced people, refugees and migrants** are frequently subjected to displacement caused by disasters and the repercussions of climate change, which undermine security and well-being. The convergence of conflict and environmental disasters often results in multiple displacements for these individuals, compounding and extending their vulnerability.

- ◆ The Policy Framework on Displacement within **Somalia** mandates authorities and other stakeholders to assist and protect internally displaced people in emergency situations, including by ensuring safety from floods and other natural calamities. The National Policy on Refugee-Returnees and Internally Displaced Persons commits the Government to safeguard its population from climate-induced displacement and facilitate the voluntary return, relocation and local reintegration of refugee-returnees and internally displaced people.⁴¹
- ◆ The National Strategy for Disaster Risk Reduction 2030 in **Egypt** considers the nexus between disasters

and displacement, including the risk of displacement associated with slow-onset processes, such as sea-level rise in the Nile delta.⁴²



◆ **Inhabitants of low-lying coastal areas** are vulnerable to rising sea levels, erosion and saltwater intrusion into rivers and aquifers, particularly those living in informal settlements, which are often built in areas subject to high-intensity climate hazards.

- ◆ At least **15 Arab countries** have committed to coastal zone management actions to adapt to the impacts of climate change in their nationally determined contributions. These include **Bahrain, the Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, the State of Palestine, Saudi Arabia, Somalia, the Sudan and Tunisia**.
- ◆ **Egypt and Tunisia** have reinforced their capacities to implement integrated coastal zone management through ecosystem-centric approaches to building resilience.⁴³

E. The financing landscape

Costed climate finance needs in the region until 2030 are estimated to be \$570 billion.⁴⁴ This estimate is based on assessments made by 11 Arab States, including most least developed, middle-income and conflict-affected countries, and excluding the Gulf Cooperation Council countries. Costed needs are almost entirely conditional on international support (95 per cent) and concentrated on mitigation measures (at least 54 per cent) and middle-income countries (80 per cent). A significant proportion, approximately 75 per cent, is concentrated in just three countries: **Egypt, Iraq and Morocco**.

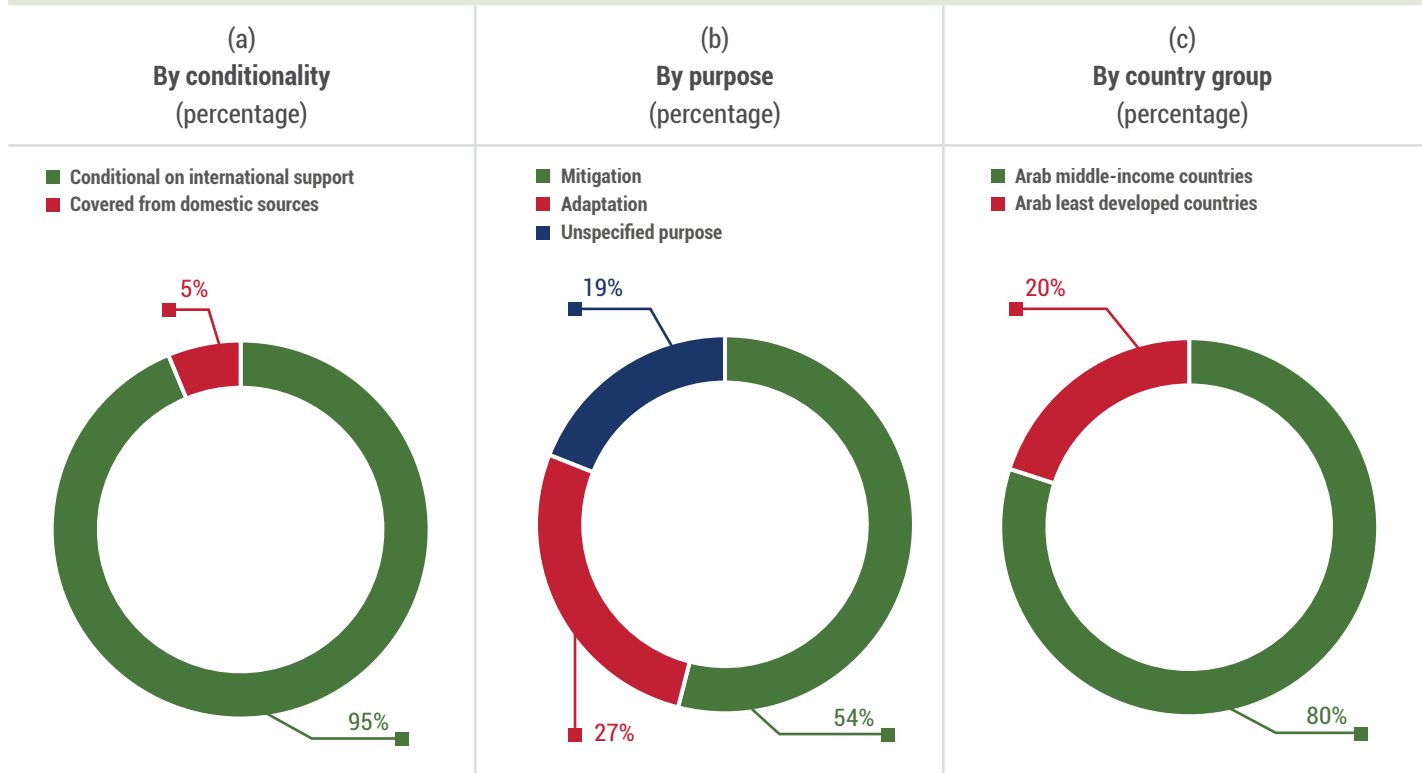
Core public international climate finance flows to the Arab region reached \$34.5 billion from 2010 to 2020.⁴⁵ This funding went to 16 Arab States, encompassing all least developed, middle-income and conflict-affected countries, but excluding Gulf Cooperation Council countries. This estimate is a lower bound, as it considers only flows where climate was a principal objective and climate components reported by multilateral development banks.⁴⁶ Notably, core public international

climate finance represented only 6 per cent of climate finance needs costed by the 11 States noted above. Funding was highly concentrated on mitigation (72 per cent) and a few sectors (49 per cent went to energy and transportation alone). Moreover, middle-income countries received 93 per cent of core public international climate finance, with **Egypt and Morocco** alone accounting for 60 per cent. Most funding entailed loans (87 per cent) that were largely non-concessional.

Given the tight budgetary constraints in many middle-income, least developed and conflict-affected countries, it is essential to **enhance the share of grant or concessional financing in public international climate finance** as well as to **attract additional financing from the private sector**.

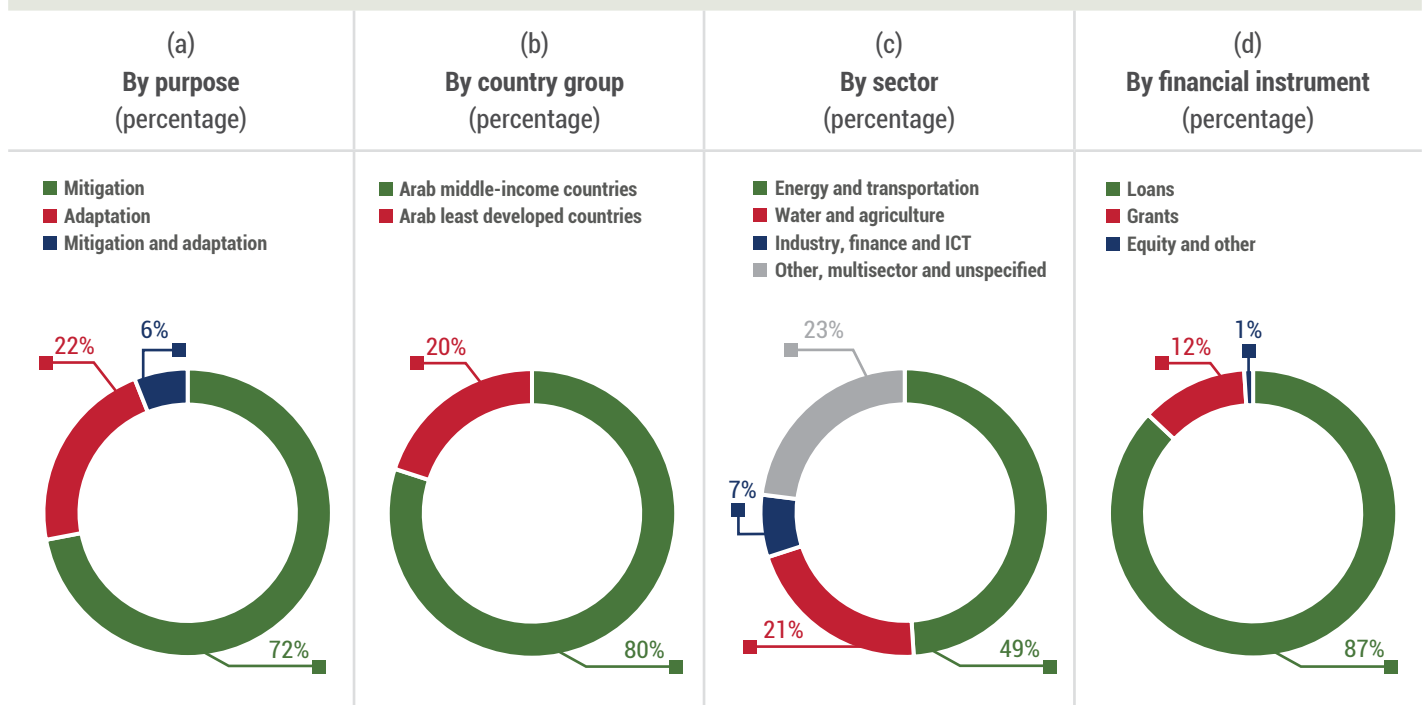
These measures should be accompanied by **capacity-building** on how to better cost climate finance needs, frame the climate rationale of projects, and communicate climate finance needs to donors and investors.

Figure 13.3
Costed climate finance needs in the Arab region to 2030



Source: ESCWA, 2022a.

Figure 13.4
Core public international climate finance flows to the Arab region, 2010–2020



Source: ESCWA, 2022a.



◆ **Data on climate-related finance flows from domestic sources in the Arab region are limited. Yet some notable trends and initiatives have emerged.**

- ◆ **National public funds:** Some countries, including **Jordan, Morocco, the Syrian Arab Republic and Tunisia**, have established national public funds dedicated to supporting climate-related projects within their respective countries, often with a focus on renewable energy and energy efficiency.
- ◆ **National tracking systems:** **Morocco** is exploring the development of a national tracking system to monitor domestic public expenditure related to climate action. **Egypt, Jordan and Lebanon** have formulated plans to introduce mechanisms tracking domestic and international finance as part of their climate measurement, reporting and verification systems.

A whole-of-government approach is needed in climate finance, as multiple entities need to be aware of climate policies and support their implementation, including ministries of planning and finance. Weak horizontal coordination may result in parallel strategies, policies and plans without required financing.

- ◆ **Green and sustainability bonds:** Six Arab countries (**Egypt, Lebanon, Morocco, Qatar, Saudi Arabia and the United Arab Emirates**) collectively raised \$12.8 billion through green and mixed sustainability bonds between 2015 and June 2022.⁴⁷
- ◆ **Sovereign green bonds:** **Egypt** issued the region's first sovereign green bond in 2020, raising \$750 million. The proceeds were earmarked for water, sanitation and transportation projects.⁴⁸

- ◆ **Sustainability-themed funds:** **Egypt** launched the region's first impact investing fund in 2022.⁴⁹ This type of fund focuses on investments with the potential to generate positive environmental and social impacts while also delivering financial returns.
- ◆ **Domestic banks** are increasingly involved in financing renewable energy projects. **Jordan** has emerged as a leader in this area, offering a favourable environment for securing finance for renewable energy initiatives.⁵⁰
- ◆ **Coalition of Finance Ministers for Climate Action:** Five Arab countries (**Bahrain, Djibouti, Egypt, Iraq and Morocco**) have joined this global coalition.

◆ **Countries have explored various innovative financial instruments to enhance access to climate finance and promote sustainable development.** Some noteworthy examples include:

- ◆ **Blended climate finance:** The region mobilized \$864 million through blended climate finance mechanisms between 2019 and 2021.⁵¹ Blended finance typically combines public and private sector resources to support climate-related projects.
- ◆ **Climate debt swaps** involve restructuring a country's debt in exchange for commitments to allocate resources for climate priorities. Swaps offer a unique opportunity to alleviate debt burdens while channelling funds into critical climate initiatives.
- ◆ **Weather-indexed insurance:** **Egypt, Morocco and Tunisia** have introduced weather-indexed insurance schemes that protect farmers against drought, floods and other climate-related risks. Other countries are exploring similar schemes.



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F. Regional dimensions

The region has important regional policy frameworks on climate change and disaster risk reduction, including the **Arab Framework Action Plan on Climate Change (2010–2030)**, the **Arab Strategy for DRR 2030** and the **Prioritized Plan of Action for DRR (2021–2024)**. Moreover, climate change is mainstreamed in regional strategies and action plans for key sectors, such as the Arab Strategy for Water Security in the Arab Region (2010–2030), the Pan-Arab Renewable Energy Strategy 2030, the Strategy for Sustainable Arab Agricultural Development for the Upcoming Two Decades (2005–2025) and the Arab Strategy for Housing and Sustainable Urban Development 2030.

The **Council for Arab Ministers Responsible for Environment**, under the umbrella of the League of Arab States, is the regional mechanism dedicated to supporting cooperation among Arab States on environmental matters, including the formulation of regional strategies on climate change and disaster risk reduction. The Regional Center for Renewable Energy and Energy Efficiency, the Arab Water Council, the Arab Climate Outlook Forum, the Arab Organization for Agricultural Development and the Joint Ministerial Council of the Arab Ministers of Agriculture and Water are other regional entities that contribute to enhancing regional cooperation on climate action.

The **Arab Youth Council for Climate Change**, established under the League of Arab States, supports young people to take climate action and engages young Arabs in developing innovative and sustainable solutions to climate change. Other notable regional youth initiatives include the Arab Youth Climate Movement and the Arab Youth Sustainable Development Network.

Regional cooperation on climate and disaster risk reduction is vital to address transboundary issues, such as water and energy, and can help strengthen governance, bolster the science-policy interface, and enhance the mobilization of and access to finance (for more on transboundary water and energy issues, see the chapters on SDG 6 and SDG 7, respectively). In particular, multi-country and subregional approaches can improve access to finance for smaller States and attract scaled-up finance.⁵²



Regional efforts to support collective understanding and climate action could include:

- **Strengthening the science-policy interface through regional initiatives to identify climate risks and propose solutions.** For example, climate-related data and analyses provided under the ESCWA Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR)⁵³ can help identify geographic areas, economic sectors and parts of society that are most vulnerable to the impacts of climate change. It also assists in formulating clear climate rationales for projects.
- **Enhancing regional early warning systems for climate-related hazards and promoting collaboration among meteorological offices,** including through the exchange of experiences, joint research and capacity-building.
- **Strengthening and developing regional and subregional strategies and mechanisms for disaster risk reduction to address common and transboundary disaster risks,** including floods, flash floods, forest fires, droughts, sand and dust storms, plant pests and animal diseases. Mechanisms are already in place between **Algeria** and **Tunisia** and between **Jordan** and the **State of Palestine**.⁵⁴
- **Developing regional and subregional response plans to prepare for and ensure rapid and effective disaster responses in situations that exceed national coping capacities.** While no regional response plans exist, coordinated approaches and operational mechanisms have been adopted.
- **Convening regional forums that link climate adaptation and mitigation project owners to potential donors and funds to increase access to adequate finance for climate action and achieve regional ambitions under the Paris Agreement.** For example, seven Arab States showcased 30 bankable projects to donors and financial institutions at the Arab Regional Forum on Climate Finance in 2022.



Endnotes

1. ESCWA and others, 2017.
2. ESCWA calculations based on FAO, 2023.
3. See the ESCWA Arab SDG Monitor.
4. Calculations based on the ESCWA Arab SDG Monitor.
5. See the ESCWA Arab SDG Monitor.
6. ESCWA, 2022a.
7. ESCWA, 2021.
8. All Arab countries, with the exception of Libya and Yemen, have ratified the Paris Agreement and submitted nationally determined contributions. Yemen has submitted an intended nationally determined contribution.
9. In addition, fourteen Arab countries have initiated the process to formulate national adaptation plans: Algeria, the Comoros, Djibouti, Egypt, Iraq, Jordan, Lebanon, Mauritania, Morocco, Oman, Somalia, the Syrian Arab Republic, Tunisia and Yemen (UNFCCC, 2022). Some countries, including Iraq, Jordan and Morocco, are more advanced in this process than others.
10. Algeria, the Comoros, Djibouti, Jordan, Kuwait, Lebanon, Mauritania, Morocco, Oman, Qatar, Somalia, the State of Palestine, Tunisia and the United Arab Emirates have set economy-wide targets. Saudi Arabia has an annual absolute greenhouse gas emissions avoidance target. Egypt and the Sudan have sector-specific targets.
11. Algeria, Bahrain, the Comoros, Djibouti, Egypt, Iraq, Jordan, Lebanon, Mauritania, Morocco, Oman, Qatar, Somalia, the State of Palestine, the Sudan, the Syrian Arab Republic and Tunisia. Three Arab countries have fully unconditional mitigation commitments: Kuwait, Saudi Arabia and the United Arab Emirates.
12. The Comoros, Jordan, Lebanon, Mauritania, Morocco, the State of Palestine, Tunisia and the United Arab Emirates.
13. Bahrain, the Comoros, Djibouti, Egypt, Jordan, Kuwait, Lebanon, Mauritania, Morocco, Somalia, the Sudan, Tunisia and the United Arab Emirates have ratified or developed national disaster risk reduction strategies (UNDRR, 2022). Algeria, Iraq, Qatar, Saudi Arabia and the State of Palestine are in the development process, while Libya, Oman, the Syrian Arab Republic and Yemen have not initiated it (UNESCO, 2021).
14. Algeria, Egypt, Jordan, Lebanon, Mauritania, Morocco, the State of Palestine, the Sudan, Tunisia and the United Arab Emirates (UNDRR, 2022, 2023a).
15. Algeria, the Comoros, Djibouti, Egypt, Iraq, Jordan, Lebanon, Morocco, Qatar, Saudi Arabia, Somalia, the State of Palestine, the Syrian Arab Republic, Tunisia and Yemen (UNDRR, 2022).
16. Algeria, Egypt, Iraq, Jordan, Kuwait, Lebanon, Qatar, Somalia, the State of Palestine, the Sudan and the United Arab Emirates (African Union, 2022; UNDRR and WMO, 2022).
17. UNESCO, 2022b.
18. UNDRR, 2022.
19. See Lebanon, [National Curriculum Framework for Pre-university General Education \(Arabic\)](#).
20. UNESCO, 2023.
21. Benny, 2023.
22. Global CCS Institute, 2018.
23. Tourism is a priority adaptation sector in Egypt, Jordan and Tunisia, as are urban settlements in Egypt, Jordan and Morocco.
24. UNDRR, 2022, 2023b.
25. UNICEF, 2023. Data are not available for Djibouti and Yemen.
26. See the Comoros, [Contribution déterminée au niveau national \(CDN actualisée\): Rapport de synthèse](#).
27. See the Sudan, [First Nationally Determined Contribution Under the Paris Agreement: Updated 2021](#).
28. See the ESCWA Arab SDG Monitor.
29. See Mauritania, [Contribution déterminée nationale actualisée CDN 2021-2030](#).
30. See Somalia, [National Policy on Refugee-Returnees and Internally Displaced Persons \(IDPs\)](#).
31. IDMC, 2021.
32. UNDP, 2018.
33. Ibid.
34. Ibid.
35. See Mauritania, [Contribution déterminée nationale actualisée CDN 2021-2030](#).
36. See Tunisia, [Contribution déterminée au niveau national \(CDN\) actualisée](#).
37. UNICEF, 2023. Data are not available for five Arab countries (Algeria, Djibouti, Libya, the Syrian Arab Republic and Yemen).
38. See the United Arab Emirates, [A Bridge to Greater Climate Ambition: Updated Second Nationally Determined Contribution of the United Arab Emirates](#).
39. See Jordan, [Updated Submission of Jordan's First Nationally Determined Contribution \(NDC\)](#).
40. UNDRR, 2022.
41. See Somalia, Policy Framework on Displacement within the [National Policy on Refugee-Returnees and Internally Displaced Persons \(IDPs\)](#).

42. See Egypt, [National Strategy for Disaster Risk Reduction 2030](#).
43. UNDP, 2018.
44. ESCWA, 2022a.
45. Ibid.
46. A broader estimate of public international climate finance flows to the region, incorporating flows with climate tagged as a significant objective and funding from global climate funds, would reach \$62 billion from 2010 to 2020, equivalent to 11 per cent of costed climate finance needs of the 11 States (ESCWA, 2022a).
47. ESCWA, 2023a.
48. Ibid.
49. ESCWA, 2023a.
50. BloombergNEF, 2023.
51. Ibid.
52. UNFCCC, League of Arab states and ESCWA, 2022.
53. ESCWA, 2023b.
54. UNDRR, 2022.



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