

Chapter 6

Investing in climate action for North Africa's sustainable development

This chapter focuses on mobilising sustainable investment in North Africa's six countries (Algeria, Egypt, Libya, Mauritania, Morocco and Tunisia). It analyses the region's financial inflows and considers in particular how they are allocated to sustainable activities that promote regional integration. Next it explores the potential of sustainable finance markets to attract investment for climate action in North Africa. It examines the vulnerability of the region's economies to climate change and identifies their sustainable development financing needs. Finally, this chapter suggests public policies that would allow sustainable finance markets to be developed and integrated into North Africa.

EXECUTIVE BRIEF

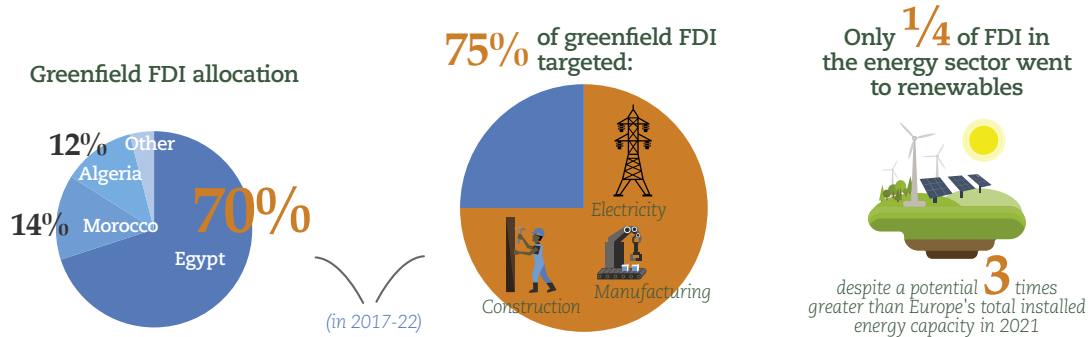
Climate change is having a significant socio-economic impact on North African countries, reducing per capita gross domestic product (GDP) growth by between 5% and 15% each year. In particular, the region is more exposed than the rest of the continent to risks associated with temperature increases, which lead to droughts, water stress and fires. It does, however, have the assets to encourage energy transition, such as its potential capacity to generate solar and wind power – which is about 3 times greater than Europe's total installed capacity in 2021.

However, North African countries are struggling to attract climate finance. Over 2019-20, they received an annual average of USD 5.8 billion – well below the over USD 39 billion per year needed by 2030 to address climate change. Developing innovative financial mechanisms, such as green bonds, nevertheless enabled Egypt and Morocco to mobilise USD 1.1 billion between 2016 and 2021. However, weak institutional co-ordination and the lack of regulatory frameworks adapted to sustainable finance are limiting the development of this type of instrument in the region.

Policy makers can use three levers to mobilise investment for climate action: 1) improving the identification and allocation of financing needs according to national priorities; 2) developing inclusive and supportive regulatory frameworks for sustainable finance; and 3) supporting the development of the sustainable finance market through regional co-operation.

North Africa

An unequal allocation of investments



Climate finance is lagging behind

USD 38.9 billion

the annual amount required for the implementation over 2020-30 of Nationally Determined Contributions (NDCs) under the Paris Agreement by North African countries



USD 5.8 billion

the annual amount received on average by North African countries over 2019-20

Green bonds issuance in **Egypt** and **Morocco** between 2016-21 mobilised



USD 1.1 billion

25% of the total amount mobilised by the entire continent

Blended finance allocated to climate action in North Africa

USD 91 million



USD 447 million

2012-16

2017-21

What's next?



Improve assessment of financing needs based on national and multi-sectorial priorities



Adopt and implement inclusive regulatory frameworks on sustainable finance

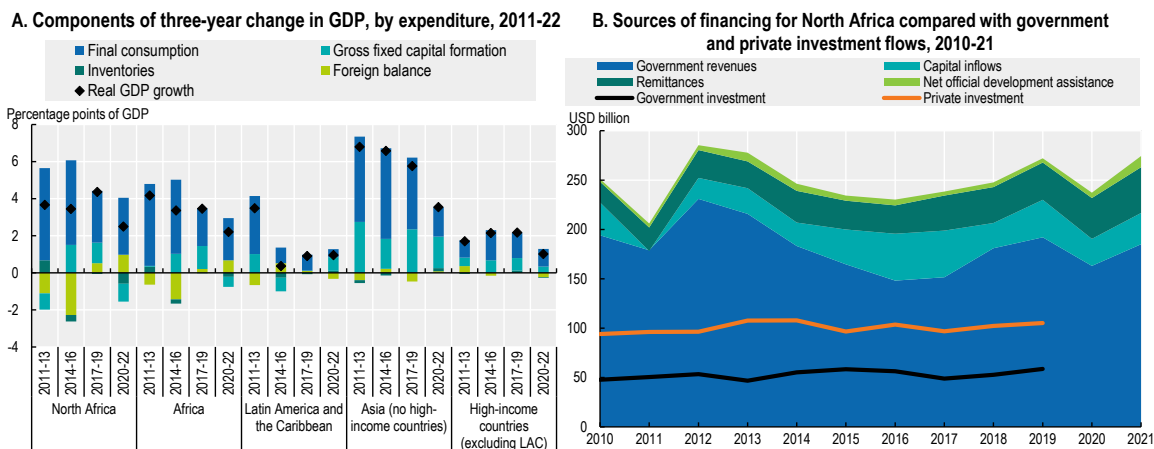


Encourage the development of sustainable finance markets



North Africa regional profile

Figure 6.1. Components of economic growth and sources of financing in North Africa

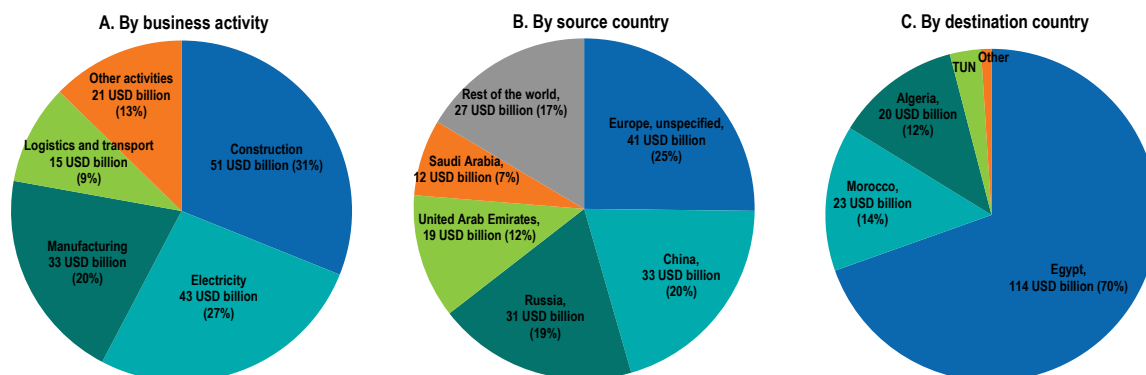


Note: The components of GDP growth are calculated on an annual basis by using real annual GDP growth to estimate the increase in real US dollars. Aggregate figures are calculated by taking the average of the national figures weighted by GDP in purchasing-power-parity dollars. The components of GDP growth over three-year periods were calculated by taking the difference between the geometric average of the annual real GDP growth over the period and the real GDP growth when setting each component to zero for individual years. Foreign balance is the difference between imports and exports. Imports contribute negatively to GDP. “High-income countries” refers to countries classified as “high-income” according to the World Bank Country and Lending Groups outside of Latin America and the Caribbean. Government revenues include all tax and non-tax government revenues minus debt service and grants received. Capital inflows include foreign direct investment (FDI), portfolio investment and other investment inflows reported by the International Monetary Fund under asset/liability accounting. Figures for capital inflows should be interpreted with some caution as some figures for 2021 and for portfolio inflows are missing.

Source: Authors’ calculations based on IMF (2022a), *World Economic Outlook Database, October 2022* (database), www.imf.org/en/Publications/WEO/weo-database/2022/October; (OECD, 2022a), *Development Assistance Committee* (database), <https://stats-1.oecd.org/Index.aspx?DataSetCode=TABLE2A>; World Bank (2022a), *World Development Indicators* (database), <https://data.worldbank.org/products/wdi>; IMF (2022b), *Balance of Payments and International Investment Position Statistics (BOP/IIP)* (database), <https://data.imf.org/?sk=7A51304B-6426-40C0-83DD-CA473CA1FD52>; IMF (2022c), *Investment and Capital Stock Dataset (ICSD)* (database), <https://data.imf.org/?sk=1CE8A55F-CFA7-4BC0-BCE2-256EE65AC0E4>; and World Bank-KNOMAD (2022), *Remittances* (database), www.knomad.org/data/remittances.

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Figure 6.2. Greenfield foreign direct investment flows to North Africa, by activity, source and destination, 2017-22



Note: The fDi Markets database is used only for comparative analysis. Actual investment amounts should not be inferred, as fDi Markets data are based on upfront announcements of investment projects, including a share of projects that do not actually materialise. TUN = Tunisia.

Source: Authors’ calculations based on fDi Intelligence (2022), *fDi Markets* (database), www.fdiintelligence.com/fdi-markets.

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Sustainable investments remain unevenly distributed in North Africa

Development finance in North Africa has suffered from recent crises

The contribution of investment to North Africa's GDP growth has declined, despite buoyant regional demand. The COVID-19 pandemic had a negative effect on the contribution of public and private investment (gross fixed capital formation or GFCF) to GDP growth in North Africa, which decreased from a positive contribution of 1.1 percentage points per year over the 2017-19 period to a negative contribution of -1 percentage point in 2020-22 (Figure 6.1). Private consumption, however, continued to have a positive effect on GDP growth, rising from 2.8 percentage points in 2017-19 to 3.1 percentage points in 2020-22. This resilient consumption illustrates the significant potential that regional demand holds for local businesses.

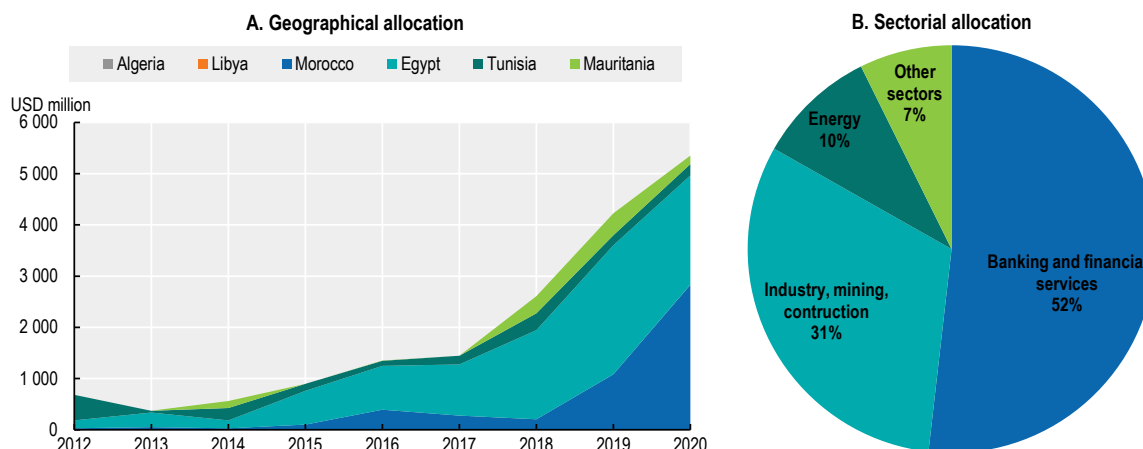
Domestic revenue declined due to the COVID-19 pandemic, amid rising debt levels. From 2016 to 2019, governments mobilised additional revenue through comprehensive tax reform and oil price recovery following the 2015 fall. However, government revenue contracted in 2020 because of measures put in place to reduce the economic, health and social impact of the pandemic. Debt levels have increased in most countries, leading Mauritania, for example, to participate in the G20 Debt Service Suspension Initiative from June to December 2020 and to bilaterally restructure its debt. Several rating agencies progressively downgraded Tunisia's sovereign rating between 2020 and 2023, while Moody's recently downgraded Egypt's rating in 2023 (AfDB, 2022a; Moody's, 2023a, 2023b). Although the increased price of raw materials is benefiting the region's exporting countries, rising global inflation and the interest rate crisis could exacerbate North Africa's debt burden.

External financial inflows declined in 2020, with the exception of remittances (Figure 6.1). Remittances remain the largest source of external financial flows into the region, accounting for over 5% of GDP in Egypt, Morocco and Tunisia in 2020. In contrast, other financial flows continue to fluctuate and remain limited. Greenfield FDI inflows have declined since 2018. They accounted for just 1.3% of North Africa's GDP in 2020-21 compared with over 2% previously. Moreover, portfolio investments have remained volatile, declining from 7% of the region's GDP in 2017 to just 1% in 2020-21. This is partly due to political instability in some countries, global macroeconomic risks, and global supply disruptions and contractions in demand.

Investment allocation in sustainable sectors remains inconsistent

The distribution of foreign private financing in the region is geographically unbalanced. North Africa is the second-largest recipient of greenfield FDI on the continent, after Southern Africa. Between 2017 and 2022, Egypt received more than 70% of the region's FDI inflows, followed by Morocco (14%) and Algeria (12%) (Figure 6.2). The private finance mobilised by development banks and development finance institutions is allocated in much the same way as FDI across the region, with a focus on Egypt and Morocco. Blended finance increased nearly tenfold over the 2012-20 period (Figure 6.3, Panel A). Around half was allocated to banking and financial services, a promising sector for the region. The remainder went mostly to industry and renewable energy production (Figure 6.3, Panel B).

Figure 6.3. Private finance mobilised by public development finance interventions in North Africa, 2012-20 (USD million)



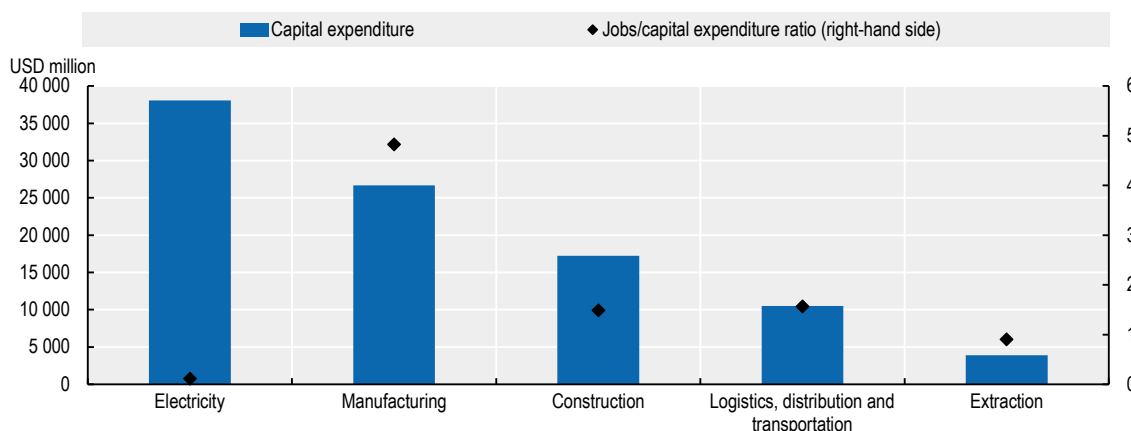
Note: "Other sectors" includes (in size order): multisectoral/cross-cutting; other infrastructure and social services; education; agriculture, forestry and fishing; health; water supply and sanitation; trade policies and regulations; unspecified allocation; tourism; corporate and other services; government and civil society; and population and reproductive health policies/programmes.

Source: OECD (2022b), "Mobilisation", OECD.Stat (database), https://stats.oecd.org/Index.aspx?DataSetCode=DV_DCD_MOBILISATION.

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Foreign investment in North Africa has produced mixed results in terms of job creation. Around three-quarters (78%) of greenfield FDI received in 2017-22 targeted the construction, electricity and manufacturing sectors (Figure 6.2). In contrast to other sectors, the manufacturing industry offers the highest jobs-capital expenditure ratio, with more than four jobs created per million dollars invested (Figure 6.4). Greater investment in renewable energy could also create more jobs, particularly as part of the transition away from fossil fuels (Chapter 1; AUC/OECD, 2022). Compared with a business-as-usual scenario, limiting global warming to 1.5°C could increase the number of jobs in North Africa by 3% by 2030, despite job losses in the fossil fuel sector, and by 1.4% by 2050 (IRENA/AfDB, 2022).

Figure 6.4. Greenfield FDI in North Africa, capital expenditure, and job creation by business activity, 2017-21



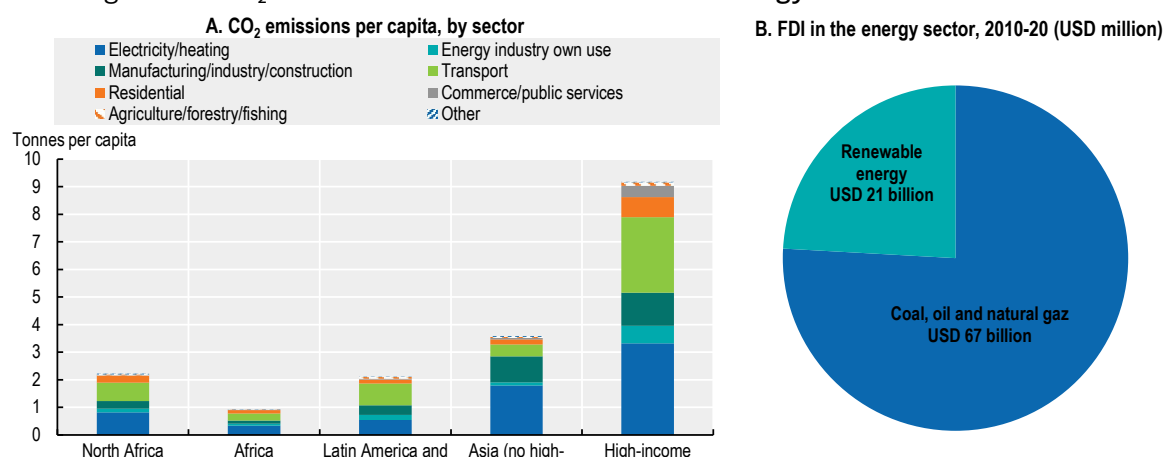
Note: The figure shows the main commercial activities by capital expenditure in 2017-21.

Source: Authors' calculations based on fDi Intelligence (2022), fDi Markets (database), www.fdiintelligence.com/fdi-markets.

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Until now, most foreign investment has targeted sectors that negatively affect the environment. At present, North Africa accounts for only 1.5% of global carbon dioxide (CO₂) emissions and the region's per capita emission levels are similar to those of southern Africa and Latin America and the Caribbean. More than half of total emissions come from power generation and transport, both of which attract significant private financing. For example, more than half of the USD 14 billion allocated through OECD export credit agencies over the 2012-21 period went to the energy sector, followed by industry (27%), then transport and storage (19%). Given Algeria, Libya and Mauritania's significant resource endowments, around three-quarters of FDI in the energy sector targeted coal, oil and gas projects over the past decade (Figure 6.5). However, most countries in the region have placed renewable energy among their priority sectors for investment and are implementing policies to attract investment in sustainable energy production (OECD, 2021a).

Figure 6.5. CO₂ emissions and investments in the energy sector in North Africa



Source: IEA (2022), *Data and Statistics* (database), www.iea.org/data-and-statistics/data-tools/greenhouse-gas-emissions-from-energy-data-explorer; fDi Intelligence (2022), *fDi Markets* (database), www.fdiintelligence.com/fdi-markets.

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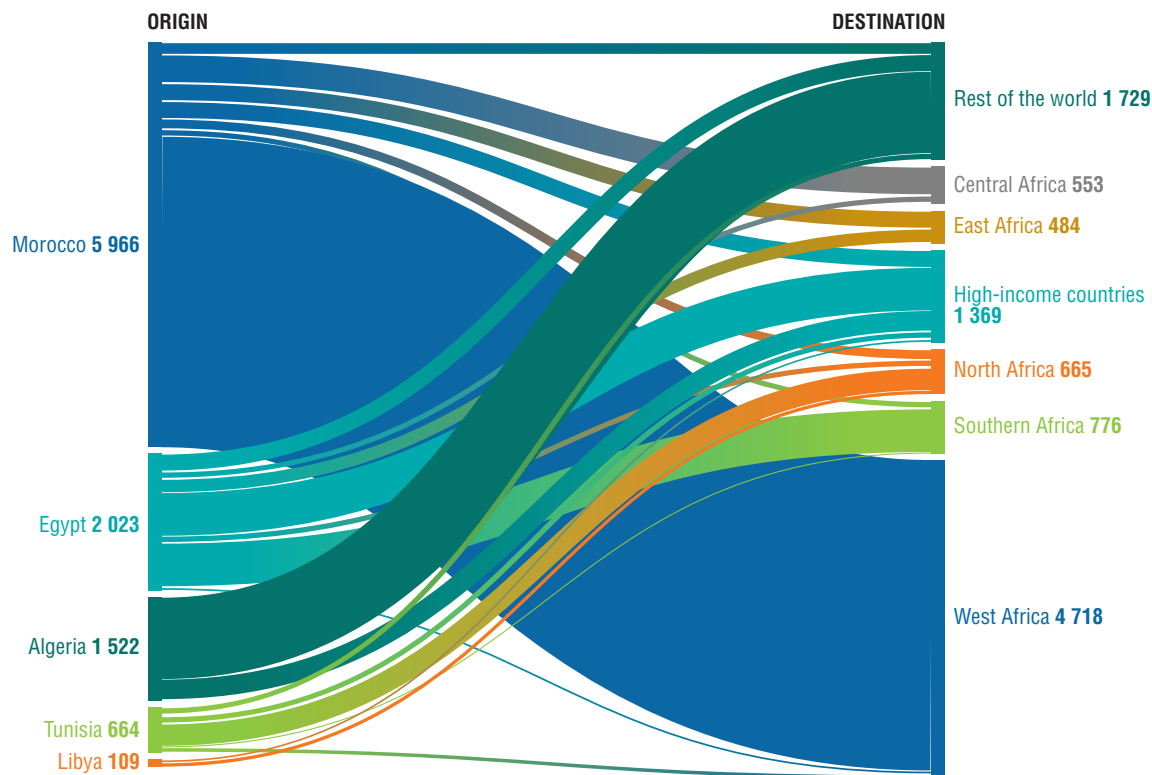
Official development assistance (ODA) and philanthropy are aimed at more-sustainable sectors, but are limited sources of funding. In 2020, ODA accounted for less than 1% of GDP in North Africa, which is made up almost entirely of middle-income countries (which receive proportionately less aid than less-advanced economies). Morocco and Egypt received the highest amounts of ODA in 2020, yet this still accounted for just 0.4% and 1.6% of their respective GDPs. In contrast, ODA made up 7% of GDP in Mauritania in 2020, the only low-income country in North Africa. Over the 2011-20 period, most ODA targeted socio-economic services, such as education (18%), health (15%) and energy (13%) (OECD, 2022a). Philanthropic flows remain limited (at around USD 150 million) and are directed mainly towards government and civil society, such as local non-governmental organisations, followed by environmental protection (OECD, 2021b).

North Africa has significant potential to boost intra-African investment

North Africa's outward FDI highlights the potential for increased continental integration. Inbound investment for new projects comes mostly from Europe, the People's Republic of China (hereafter "China"), Russia and the Middle East (by order of magnitude), while intra-African FDI accounted for only 1.3% of the total over the 2017-22 period (Figure 6.2). In contrast, most outward flows from North Africa for new investment projects targeted other African countries over the same period (Figure 6.6). Morocco accounted for


more than 50% of outbound investments and had the largest continental reach (larger than South Africa), targeting mainly West African countries but also Central and East African countries. Egypt, the second-largest investor, targeted high-income countries and southern Africa, while Tunisia invested mainly at the regional level. Algerian investment flows targeted non-African destination countries in the Middle East and other high-income countries.

Figure 6.6. Greenfield foreign direct investment outflows from North African countries, by destination regions, 2017-21, USD million



Note: "Rest of the World" includes developing countries in Asia (USD 370 million), Latin America and the Caribbean (USD 131 million) and other regions not included in the figure (USD 1 228 million).

Source: Authors' calculations based on fDi Intelligence (2022), fDi Markets (database), www.fdiintelligence.com/fdi-markets.

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The leading regional companies could expand into manufacturing and financial services in Africa. Of the 147 North African private companies with subsidiaries in Africa listed in the Orbis database, 89 are based in Egypt, 35 in Tunisia, 22 in Morocco and 1 in Algeria (Bureau van Dijk, 2022). More than half of these companies operate in the manufacturing (28%) and financial services (26%) sectors, followed by real estate, information and communication technologies, and retail – sectors with great potential to develop regional value chains. North Africa also has many state-owned enterprises. While most of them have high levels of debt (IMF, 2021), some offer additional sources of sustainable investment in the region and the continent. The Moroccan OCP Group, for example, partners with West African governments to provide capacity-building programmes for local farmers and to make agricultural ecosystems more resilient (OCP Group, n.d.).

The financing gap hinders North Africa's response to the urgent climate crisis

Most North African countries have submitted their nationally determined contributions (NDCs) for climate action

The region's countries are relatively better prepared for climate change than the rest of the continent, but they remain vulnerable. North African countries can be divided into three groups based on their resilience to climate change (particularly in terms of the intensity of temperature variations) and their level of preparedness for its negative effects. The first group, comprising Mauritania, is the most vulnerable and least prepared to face the consequences of climate change in the region. The second, less vulnerable, group comprises Algeria, Egypt and Libya. The final group, the best prepared to deal with climate change, comprises Morocco and Tunisia (University of Notre Dame, 2020). Most North African countries are classified as "low vulnerability, high preparedness". However, the region remains extremely vulnerable to the impacts of climate change due to its high exposure to temperature increases, resulting in droughts, water stress and fires (AfDB, 2022a; Cos et al., 2022). The Physical Vulnerability to Climate Change Index (PVCCI), which measures the exposure of countries to climate shocks, confirms this trend (Table 6.1).

Table 6.1. Classification of North African countries according to the Physical Vulnerability to Climate Change Index, 1950-2016

| | PVCCI | Risks related to progressive shocks linked to climate change | | Risks related to intensifying recurrent shocks linked to climate change | | |
|---------------------------------|-------------|--|-------------|---|-------------|------------|
| | | Flooding | Aridity | Rainfall | Temperature | Storms |
| Algeria | 61.2 | 0.6 | 82.5 | 84.9 | 68.6 | 0.1 |
| Egypt | 61.7 | 5.0 | 81.9 | 85.4 | 71.0 | 0.0 |
| Libya | 62.6 | 1.1 | 83.0 | 85.4 | 73.7 | 0.0 |
| Morocco | 58.7 | 0.9 | 82.9 | 81.1 | 61.2 | 4.8 |
| Mauritania | 64.7 | 1.0 | 83.1 | 84.5 | 83.1 | 0.0 |
| Tunisia | 61.1 | 3.6 | 86.5 | 81.9 | 66.8 | 0.0 |
| North Africa (average) | 61.7 | 2.0 | 83.3 | 83.9 | 70.7 | 0.8 |
| Rest of Africa (average) | 54.7 | 2.4 | 55.4 | 70.5 | 78.3 | 7.5 |

Note: The PVCCI is a composite indicator that measures both exposure to climate shocks and the size of the shocks for 191 countries. It comprises five dimensions, which refer to the risks of flooding, aridity, temperature shocks, rainfall shocks and cyclones. For each risk, the degree of exposure to these shocks and their likely magnitude was measured. The PVCCI components were then normalised on a scale of 0 (minimum) to 100 (maximum). Morocco has the lowest index score in the region (58.7), making it the least vulnerable country in North Africa. Mauritania has the highest score in the region, making it the most vulnerable country in North Africa (ranked tenth in terms of physical vulnerability to climate change globally). Source: Cornier et al. (2018), *Physical Vulnerability to Climate Change Index* (database), <https://ferdi-indicators.shinyapps.io/PVCCI/>.

Climate change will have a serious socio-economic impact in North Africa. The annual loss in per capita GDP growth due to climate change is estimated at between 5% and 15% over the 1986-2015 period (AfDB, 2022a). Climate change affects the productive sectors. For example, in Egypt, where the agrifood sector accounts for around 20% of exports and one-third of employment, production could fall by 5.7% by 2050 – a greater drop than the 4.4% forecast for the rest of the world. Egypt's poorest populations will likely be the most affected, as climate change impacts on agriculture and health could increase the population living on less than USD 4 a day by 0.8% by 2030 (World Bank, 2022b). Fishing-related activities are also likely to be affected by global warming, which alters the availability of micronutrients and oxygen levels in the water, affecting the livelihoods of an estimated 300 000 people in Mauritania (ITA, 2022). Meanwhile, droughts could displace around 2 million of Morocco's poorest rural inhabitants by 2050 (World Bank, 2022b, c, d).

The transition to carbon neutrality in North Africa could contribute to post-COVID-19 economic recovery and make the region more resilient to crises. In 2022, global conflicts and periods of drought exacerbated North Africa's economic fragility, jeopardising food security in the region. This situation demonstrated some countries' reliance on global food supply chains. Egypt, for example, relied on Ukraine and Russia for more than 80% of its wheat imports (UNDP, 2022). Making the region's countries more resilient to climatic and external shocks offers opportunities. In Morocco, international restrictions on fertiliser exports boosted the OCP Group's profits from fertiliser sales by 83% between 2021 and 2022 (reaching USD 3.6 billion), and spurred investment, particularly in green fertiliser production (Les inspirations Éco, 2023; Mousjid, 2022). In addition, investment in renewable energies could help alleviate the energy crisis that is particularly affecting European countries (El-Katiri, 2023).

Most North African countries have submitted their NDCs in the context of the Paris Agreement. These contributions include adaptation and mitigation measures to reduce climate change impacts and greenhouse gas (GHG) emissions, with the aim of limiting global warming to below 1.5°C. To date, all North African countries apart from Libya have submitted their NDCs. They estimate their financing needs at USD 389 billion for implementation over the 2020-30 period. For most countries in the region, achieving these commitments remains largely conditional on financial support from the international community (Table 6.2).

Table 6.2. NDCs from North African countries

| Country | Submission date | Estimated financing needs (USD billion) | Commitment to reducing greenhouse gas (GHG) emissions and adapting to climate change |
|------------|-----------------|---|---|
| Algeria | 2017 | N/A | Reduce its GHG emissions by 7% on its own, and by 22% with international financial and technological support. |
| Egypt | 2017 and 2022 | 246 • Adaptation: 50 • Mitigation: 196 | Reduce its GHG emissions by 33% in the electricity sector, 65% in the oil and gas sector, and 7% in the transport sector. |
| Morocco | 2016 and 2021 | 78.8 • Adaptation: 40 • Mitigation: 38.8 | Reduce its GHG emissions by 18.3% on its own, and by 45.5% with international financial and technological support. |
| Mauritania | 2017 and 2021 | 46.6 • Adaptation: 10.6 • Mitigation: 34.3 • Other activities: 1.7 | Reduce its GHG emissions by 22.3% by 2030, and by up to 92% with the support of the international community. |
| Tunisia | 2017 and 2021 | 19.4 • Adaptation: 4.3 • Mitigation: 14.4 • Other activities: 0.7 | Reduce its GHG emissions by 45% by 2030 compared with its 2010 level. |

Note: Libya has not submitted an NDC.

Source: Authors' compilation based on UNFCCC (n.d), *Nationally Determined Contributions Registry* (database), <https://unfccc.int/NDCREG>.

North African countries have also put national and sectoral strategies in place to achieve these objectives.

- **Algeria** has developed a National Climate Plan 2020-30, which includes 155 projects, in addition to other plans, such as the National Action Plan for the Environment and Sustainable Development, the National Biodiversity Strategy and Action Plan, and the National Strategy for Integrated Waste Management by 2035 (People's Democratic Republic of Algeria, 2015, 2019).
- In 2022, **Egypt** adopted the National Climate Change Strategy 2050, which aims to: 1) improve governance and management of climate change mitigation and adaptation projects; 2) improve the regulatory framework for green finance by

promoting national green banks and credit lines that prioritise adaptation measures; 3) promote scientific research, technology transfer, knowledge management and awareness-raising to tackle climate change; and 4) facilitate the dissemination of information among government institutions and citizens (Arab Republic of Egypt, 2022).

- **Morocco** has developed its National Climate Plan 2020-30, as well as Regional Climate Plans. It devised a strategic framework that includes the National Charter for the Environment and Sustainable Development, the National Sustainable Development Strategy, and the National Water Plan. In 2021, Morocco published its Low-Carbon Development Strategy 2050 to achieve an integrated and shared vision, setting out the main directions for the Moroccan economy and society between 2020 and 2050, and envisioning profound economic and social transformations in a carbon-neutral world (Kingdom of Morocco, 2021a, b).
- **Mauritania** established its National Adaptation Programme in 2020, which covers ecosystem protection and conservation; sustainable rangeland management; biodiversity conservation; fishing and aquaculture; housing and urban planning; agriculture and food security (including genetic improvement, health, water, coastal management, prevention of extreme climate events, infrastructure and education) (Islamic Republic of Mauritania, 2021).
- In 2022, **Tunisia** published its Strategy for Carbon-Neutral and Climate-Resilient Development 2050, which includes the National Low-Carbon Strategy and the National Climate Change Resilience Strategy. The latter encompasses all sectors and areas of intervention, paying particular attention to water, agriculture, ecosystems and natural resources, coastal development, health, tourism, land-use and urban planning, and gender issues (Republic of Tunisia, 2021a, b, 2022).

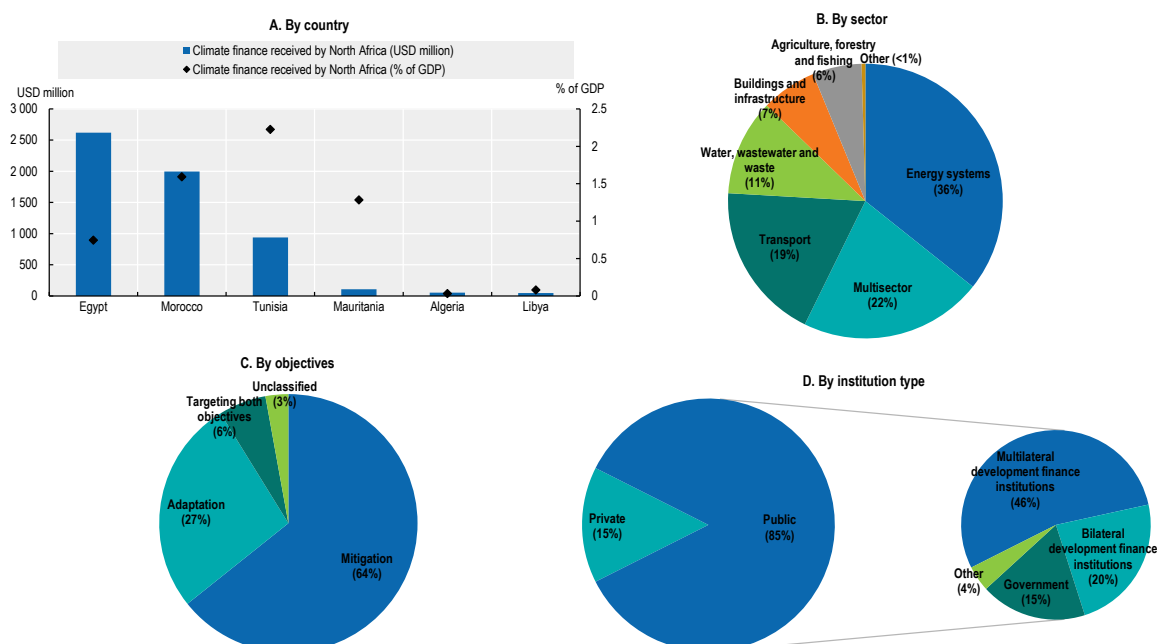
North African countries are directing their mitigation strategies mainly towards the renewable energy sector (AUC/OECD, 2022). Algeria aims to achieve a 27% share of renewables in national electricity production by 2030, while Morocco is aiming to reach 52%. Egypt has set its objective at 42% by 2035. Given their strategic location and environments that are conducive to solar and wind energy, North African countries could provide developed countries with climate change mitigation solutions. In 2021, revenue from Moroccan electricity exports to developed countries increased by nearly 700% in a single year, reaching around MAD 565 million (Moroccan dirhams). Assuming a land-utilisation factor of 1% for renewables, North Africa has an electricity generation potential of 2 792 gigawatts for solar and 223 gigawatts for wind, which is over 12 times Africa's installed electricity generation capacity and about 3 times Europe's total installed capacity in 2021 (IRENA/AfDB, 2022). Other opportunities could strengthen the region's exportable renewable energy offer, including green hydrogen (AU/ISA/EIB, 2022). However, such strategies require careful evaluation, taking into account local energy needs and the technological dependencies they may create (CEO/TNI, 2022).

Financing needs for climate change adaptation projects are nevertheless likely to be underestimated. Despite their vulnerability to the consequences of climate change, North African countries estimate that 73% of financing needs come from mitigation projects and that only 27% of funding is reserved for investment in adaptation actions (Table 6.2). In addition to human and productivity challenges, it is crucial to consider climate change adaptation needs, in order to ensure the financial stability of these countries. In Morocco, for example, the direct and indirect exposure of banks to drought and flood risks is estimated at 35% of total assets, mostly in the agricultural, tourism and real estate sectors (World Bank, 2022c).

The climate finance gap hinders the achievement of climate change mitigation and adaptation goals in North Africa

North African countries face a significant climate finance gap. Over the 2019-20 period, they received an average of USD 5.8 billion per year in climate finance, well below the over USD 39 billion needed annually by 2030 according to their NDCs. The amount received is equivalent to 19% of the finance mobilised by the African continent and only 1% of global finance (IPC, 2022). Egypt, Morocco and Tunisia received the majority of climate project financing in North Africa. The other countries in the region each received less than 2% (Figure 6.7, Panel A). Of the total, 36% went to the energy sector, compared with 19% for transport, 11% for waste, 7% for buildings and infrastructure, and 6% for agriculture, forestry and fishing (Figure 6.7, Panel B). Most of the financing was spent on mitigation measures (Figure 6.7, Panel C).

Figure 6.7. Climate finance received by North Africa, 2019-20 average



Note: The “Other” category in Panel B includes the information and communications technology and industrial sectors. The “Other” category in Panel D covers state-owned enterprises, export credit agencies, multilateral climate funds and domestic development finance institutions.

Source: Adapted by the authors from CPI (2022), *Landscape of Climate Finance in Africa* (database), www.climatepolicyinitiative.org/publication/landscape-of-climate-finance-in-africa/.

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Given the finance gap, diversifying climate finance sources remains crucial. Approximately 85% of the climate finance received in 2019-20 came from the public sector, including bilateral and multilateral development finance institutions, as well as multilateral climate funds (Figure 6.7, Panel D). The region benefits from large investment programmes, such as the Great Green Wall Initiative, which includes Mauritania and plans to regreen 100 million hectares in the Sahel and southern Sahara to combat desertification. This project was launched in 2007 and supported by many donors. However, it has encountered implementation difficulties due to the lack of steering and funding. In 2021, the international community committed to reviving the project by investing USD 12 billion over the next five years (One Planet Summit, 2021).

Achieving the international community's commitments, including those made at the United Nations Climate Change Conferences (COP, Box 6.1), will be crucial to sustaining climate change action.

Box 6.1. Comparing the results of the United Nations Climate Change Conferences (COP) held in North Africa

North Africa has hosted two editions of the COP, which have enabled some progress but have not achieved their more ambitious goals:

- COP22, held in Morocco in 2016, was marked by the official ratification of the Paris Agreement, in which developed countries committed to allocating USD 100 billion per year to developing countries by 2020. However, no agreement was reached on how these funds would be distributed between adaptation and mitigation projects.
- COP27, held in Egypt in 2022, reaffirmed the commitment to the Paris Agreement, but failed to achieve a concrete commitment to reducing fossil fuels from the world's major GHG emitters. An agreement between China, the European Union, India and the United States would cover 64% of future global CO₂ emissions, while the expansion of such an agreement to include all G20 members would cover 85% (IMF, 2021). COP27 ended with a decisive agreement to establish a dedicated global fund for loss and damage, intended to compensate the most vulnerable countries for the irreversible damage caused by global warming (UNFCCC, 2022).

COP22 and 27 enabled initiatives to be put in place to mobilise financial flows and develop green financial markets at the continental level. At the national level, COP22 was an opportunity for Morocco to develop a regulatory framework conducive to mobilising climate finance, with the establishment of a road map to link the Moroccan financial sector to sustainable development. At the regional level, COP22 enabled 25 countries to ratify the Marrakech Pledge for Fostering Green Capital Markets in Africa. COP27 was marked by the launch of continental initiatives, including the Alliance for Green Infrastructure in Africa and the African Carbon Markets Initiative, which could provide a basis for strengthening the mobilisation of sustainable investments in the region.

North African countries could mobilise more financing for climate action by developing their sustainable finance markets

Sustainable financing can be mobilised through multiple financial mechanisms. Sustainable financing brings together all financial processes, management methods and regulations that connect the community's economic, social and environmental interests in the medium and long term. Sustainable finance therefore aims to achieve the Sustainable Development Goals (SDGs) through various financial mechanisms (Table 6.3). Green finance refers to all financial activities and operations geared towards investments that explicitly aim to preserve the environment by working towards the energy transition and tackling global warming.

Table 6.3. Selection of financial instruments to mobilise sustainable financing

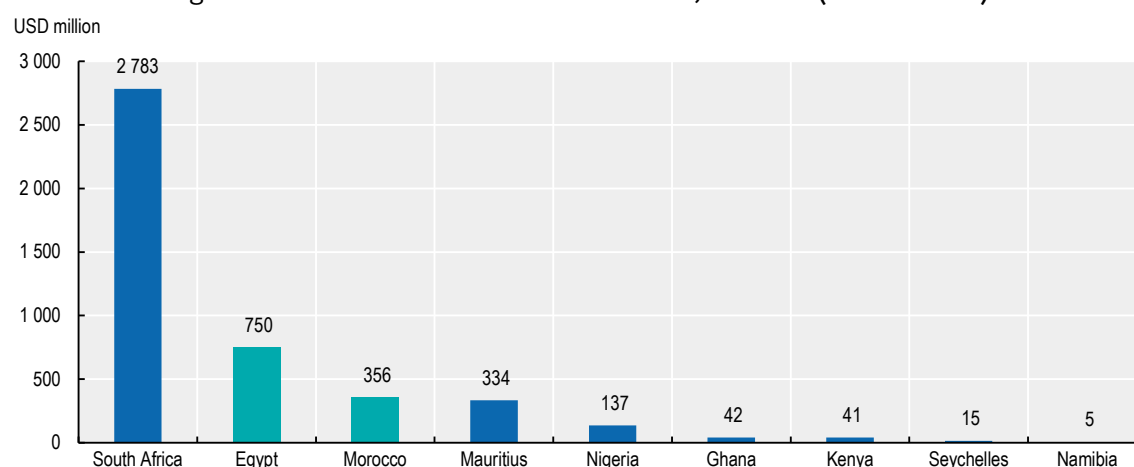
| Financial mechanism | Definition | Examples in North Africa |
|--|---|---|
| Blended finance | The strategic allocation of public funding to channel private capital flows towards achieving the SDGs through risk-mitigation mechanisms (credit lines, guarantees, hedging, syndicated loans, insurance products, and subordinated shares, etc.). | Private finance mobilised through public development finance allocated to climate action increased from an average of USD 91 million over the period 2012-16 to USD 447 million over 2017-21 (OECD, 2022b). |
| Performance- or results-based funding | Payments to a government, organisation or individual that are conditional on achieving predetermined and measurable objectives. | In Morocco, the Results-Based Financing Employment Programme targets populations experiencing barriers to entering the job market. This programme is part of Compact II, a co-operation programme concluded between Morocco and the United States and implemented by the Millennium Challenge Account-Morocco Agency. |
| Sustainable bonds (green, blue and social) | Bonds where the interest rate applied is linked to contributions towards the SDGs (climate and/or social objectives). | North Africa mobilised 25% of the cumulative volume of green bonds in Africa during the 2014-21 period. |
| Green sukuk | Bonds that comply with Islamic law and remunerate the investor based on the project's environmental performance, progressively repaying the capital invested. | In 2018, Morocco launched a sovereign sukuk, worth USD 104.2 million, which was 3.6 times oversubscribed. In 2020, Egypt issued the first private-sector sukuk worth USD 127 million for real estate development (UNEP, 2021). |

Source: Compiled by the authors.

Focus on green bonds in North Africa

Some North African countries have recently started participating in the green bond market. The international green bond market has grown significantly since 2014, increasing from a cumulative USD 37 billion to USD 1.7 trillion in 2022. By region, Europe is the top issuer, with a share of approximately 50% of cumulative volume over the 2014-22 period, followed by Asia-Pacific and North America, with shares of 26% and 21%, respectively. Although Africa's share remains marginal (0.3% of the total issued on the international market), North Africa stands out, having issued green bonds worth USD 1.1 billion, i.e. 25% of the continent's cumulative amount over the same period (Figure 6.8).

Figure 6.8. Green bond issuance in Africa, 2014-21 (USD million)



Source: Adapted by the authors from Climate Bonds Initiative (2022), Climate Bonds Initiative Data Platform (database), www.climatebonds.net/market/data/.

StatLink  <https://stat.link/jl7gt5>

The reforms initiated at COP22 have allowed Morocco to lead the way by issuing two green bonds (Box 6.1). The Moroccan Agency for Sustainable Energy issued the first bond in 2016, with national stakeholders (including the Moroccan Pension Fund and the Central Reinsurance Company) and commercial banks (Al Barid Bank and Attijariwafa

Bank), to provide MAD 1.15 billion in co-financing for the Noor solar power project. Also in 2016, the Moroccan Bank for Foreign Trade (now Bank of Africa) issued green bonds for renewable energy projects worth MAD 500 million (USD 50 million). In 2017, the People's Central Bank, supported by the International Finance Corporation (IFC) and Proparco, issued the country's first foreign-currency green bond (EUR 135 million) to refinance investments in energy efficiency. Since 2018, five green bonds have been issued by public companies (National Railways Office), the private sector (Al Ormane, Casablanca Finance City Authority) and municipal actors (City of Agadir) to finance projects for issues such as energy efficiency, renewable energy, and sustainable transport and buildings.

In 2020, Egypt issued the region's first foreign-currency sovereign green bond. The Egyptian Financial Regulatory Authority approved the legal framework for issuing green bonds in 2018, allowing the government to develop its first sovereign bond in 2020, with the support of the World Bank. This USD 750 million bond is aimed at financing projects in the transport sector (46% of the funds mobilised) and sustainable water and wastewater management sectors (54%) (Ministry of Finance of the Arab Republic of Egypt, 2021). In 2021, Commercial International Bank – also supported by the IFC – launched the first private-sector green bond, worth USD 100 million, to develop energy-efficient industrial transformation projects (IFC/HSBC, 2022). Green bonds issued by private companies are more likely to provide additional private financing for investment (UNEP, 2022). In 2022, the Norwegian group Scatec Solar, in partnership with Africa50, committed to refinancing six Egyptian solar power plants, issuing a green bond worth USD 334.5 million.

However, there are obstacles to mobilising sustainable financing in the rest of the region. The lack of information and data on investment opportunities and climate risks is a major constraint to investment in the region, particularly for climate change adaptation projects (AfDB, 2022a). A clear institutional and regulatory framework, such as that established in Egypt and Morocco, could enable other countries in the region to take advantage of innovative financial mechanisms to attract greater sustainable investment. Adequate public finance management and support from the international community will also be essential to ensure that blended financing mechanisms are established in the most vulnerable countries, such as Mauritania.

Policy levers to support the development of sustainable finance markets in North Africa

Improve the identification and allocation of financing needs according to national priorities

A green transition requires better institutional co-ordination to assess financing needs and establish allocation priorities. Many countries have adopted a sectoral approach in their climate change action strategies, making it difficult to identify priorities and allocate financing effectively. In Morocco, for example, the National Water Plan does not take into account the water needs of the National Road Map for Green Hydrogen. Similarly, water desalination solutions should be developed alongside renewable energy deployment, taking into account demand from other sectors (such as transport and industry) (World Bank, 2022c).

Reforming public finance management and monitoring the implementation of national strategies will strengthen their credibility and improve funding allocation. Most governments in the region have not introduced legal or regulatory requirements to integrate climate change into public finance management instruments. It is therefore difficult to assess the extent to which unconditional commitments made as part of NDCs are also reflected in national budgets. A green taxonomy would allow public

authorities to ascertain whether economic activities are sustainable and to limit the risk of greenwashing through green labelling. This would enable public resources to be prioritised for interventions that include a climate dimension, thereby sending a strong and credible signal to market players about the authorities' commitment to advancing the green transition.

Tax reforms and voluntary carbon markets could also provide financing for climate change adaptation.

- An environmental tax could raise additional revenue to finance the green transition and climate change adaptation for the countries in the region, while discouraging polluting behaviour. Egypt, Mauritania, Morocco and Tunisia, for example, have introduced environmental taxes in recent years, mainly in the energy and transport sectors. However, the revenue mobilised did not exceed 1.5% of their GDP in 2020 and could be extended to other sectors (OECD/ATAF/AUC, 2022).
- Introducing a carbon tax or a carbon credit market could also be considered. Reforming the use of fossil fuel subsidies and introducing a carbon tax on fossil fuels equivalent to EUR 30 per tonne of CO₂ (a low estimate of the climate damage currently caused by 1 tonne of CO₂ emitted) could generate additional revenue estimated at 4.6% of GDP in Egypt and 1.7% in Morocco (OECD, 2021c). North African governments could build on the African Carbon Markets Initiative established at COP27 to create a credible continent-wide carbon credit certification system (ACMI, 2022).

A just energy transition must be strategically sequenced to limit the negative effects on local economies. The implementation of tax reforms and energy subsidies must be carefully designed and sequenced to avoid unintended side effects such as energy affordability problems or job losses in the fossil fuel sector. As such, the Equitable Framework and Finance for Extractive-Based Countries in Transition (EFFEKT) provides a toolkit for policy makers in fossil-fuel-producing and mineral-rich developing countries to chart low-carbon transition pathways in line with their national development priorities. EFFEKT identifies ways of mitigating the transition's impacts on fossil fuel industries and poor workers and households, and of preventing the risks of high-carbon lock-in and stranded assets. This initiative is structured around three interrelated pillars: i) decarbonising extractive industries and managing uncertainties; ii) planning for a sustainable exit from fossil energy; and iii) achieving systemic change and economy-wide decarbonisation (OECD, 2023).

Leveraging local institutions for climate change will better align the funding received with national needs. Local institutions are ideally placed to channel funding to the projects with the greatest needs, while offering risk-minimisation mechanisms and services (such as information on local market conditions). Tunisia, for example, could expand the mandate of its Energy Transition Fund, which is currently limited to providing grants (AfDB, 2021). Local institutions can benefit from initiatives such as the Green Climate Fund (GCF) Readiness Programme, which provides countries with grants and technical assistance for developing strategies and receiving the accreditation necessary to secure international funding. For example, the GCF supported Mauritania to develop its National Adaptation Plan in 2018 (GCF, 2018).

Regional and international partners can help develop bankable projects to attract more investment to the region. For example, the Mediterranean Solar Plan offered all countries in the region (except Mauritania) a technical assistance system to help them prepare renewable-energy and energy-efficiency projects, and to mobilise funding from European institutions (EIB, 2015). In 2023, the African Development Bank (AfDB) also plans to launch the USD 1.5 billion African Green Finance Facility Fund (AG3F), which will

provide technical assistance grants to help local governments and financial institutions design green finance facilities and develop sustainable project portfolios in line with the Paris Agreement (AfDB, 2022b).

Facilitate the implementation of inclusive and supportive regulatory frameworks for sustainable finance

Central banks and financial regulators can co-ordinate to establish a regulatory framework to integrate climate change into the national financial system. Morocco and Egypt's experience can provide examples. Thanks to the publication of national road maps, green bonds have been issued in both these countries. These reforms included inclusive consultation processes (UNEP, 2021). In Morocco, for example, the central bank mobilised the association of banks and five other national financial regulators to draft its Road Map for Aligning the Moroccan Financial Sector with Sustainable Development (Banque Al-Maghrib et al., 2016). In addition, in 2022, the Financial Market Council of Tunisia partnered with the World Bank's IFC to establish its *Guide d'émission d'obligations vertes, socialement responsables et durables en Tunisie* [Guide to Issuing Green, Social and Sustainability Bonds in Tunisia] (FMC/IFC, 2022), thus ensuring a framework for project assessment and financing.

Financial regulators could also require publication of environmental, social and governance (ESG) criteria. In 2010, the Egyptian stock exchange became the second stock exchange in the world to adopt an ESG sustainability index. As early as 2012, it was one of four stock exchanges to implement the United Nations Sustainable Stock Exchanges initiative, designed to improve transparency and increase listed companies' engagement on ESG issues (UNEP, 2021). Since 2022, the regulator has also required companies listed on the Egyptian stock exchange and those operating in non-banking financial activities to provide quarterly compliance reports containing ESG information (Ashraf Atef, 2022). In Morocco, the central bank introduced ESG and climate disclosure requirements in 2021. Banks must estimate their exposure to physical and transitional climate risks under different climate change scenarios. These risks relate to the direct impact of climate change and the economic implications of the low-carbon transition (UNEP, 2021).

Stronger financial inclusion would increase access to sustainable finance among the poorest populations. The populations most exposed to climate risks, especially in rural areas, are also the most excluded from access to financing. According to the Global Findex, about 70% of the poorest people in North Africa did not have a bank account in 2021 (World Bank, 2021). Adapting financial inclusion policies to these populations will therefore be crucial if climate change adaptation strategies are to be effective. In Morocco, for example, the National Strategy for Financial Inclusion aims to improve access to finance, particularly among young people, women and rural populations, while promoting green financing solutions. It also aims to develop alternative financing mechanisms, such as mobile payments, microfinance and inclusive insurance (UNEP, 2021). In addition, digital microfinance solutions used by local start-ups could help reduce financial exclusion among these populations. Regulatory sandboxes (or regulatory frameworks for testing) allow new digital solutions to facilitate access to finance to be tested, as has been done in Tunisia, for example (AUC/OECD, 2021).

Support the development of the sustainable finance market through regional co-operation

Regional co-operation can support capacity-building for regulators and financial service providers. In 2021, Egypt launched the Regional Centre for Sustainable Finance to build capacity and raise awareness of sustainable finance among financial institutions

in the Middle East and North Africa region. The centre provides technical assistance on topics related to integrating ESG, implementing the recommendations of the G20 Task Force on Climate-related Financial Disclosures, and considering climate risks. It also encourages redirecting of private capital flows to finance the SDGs (Ashraf Atef, 2022). At the international level, Egypt, Mauritania, Morocco and Tunisia participate in the Network of Central Banks and Supervisors for Greening the Financial System, a platform for sharing best practices in climate risk management and implementing a regulatory framework that supports green finance.

Integrating financial markets could also allow sustainable finance to be developed in other countries in the region. Financial market integration, within the broader framework of continental integration (Jedlane et al., 2012), would offset underdeveloped financial systems in some countries in the region. For example, linking national stock exchanges would diversify the financial instruments available, while reducing the costs of cross-border investments. In 2022, the Egyptian and Moroccan stock exchanges, alongside others, joined the African Exchanges Linkage Project, launched by the African Securities Exchanges Association and the AfDB to facilitate cross-border trading between African stock exchanges and selected brokerage firms (AfDB, 2022c).

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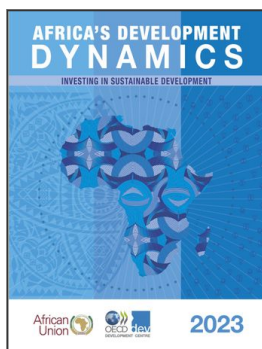
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