

SDG7 Technical Advisory Group

Policy Brief on Advancing SDG7 in the Arab Region

Draft of 5 May

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This draft was shared with participants of the Expert Group Meeting in Support of SDG7 review at the HLPF 2023, 11-12 May, as background information

Lead author: UN ESCWA

Contribution organisations : EU, FAO, IRENA, GEIDCO

Key messages

The Arab region¹ has made recent progress but must accelerate action on achieving Sustainable Development Goal (SDG) 7 targets. Continued supply chain disruptions, economic downturns, conflict, and instability in several Arab countries have slowed SDG progress, and urgent efforts are vital to achieve SDG7 targets by 2030. The region retains an overwhelming reliance on fossil fuels, though some Arab countries have made substantial progress on utility-scale renewable generation in recent years, and many of these world-leading projects are set to come online in 2023. So far, five Arab countries have pledged to achieve economy-wide net-zero emissions.²

Access

Access to electricity in the Arab region was almost 91% in 2021, with many countries having reached universal electricity access. Conflict, political instability, and utility sector mismanagement nevertheless leave nearly 42 million people without electricity access. Rural areas suffered the largest deficits, with only 83% of the population having electricity access compared to 98% in urban areas. The rural-urban divide was most prominent in Arab LDCs where urban electricity access was 84.5% while in rural access was only 52%. Around 52 million people in Arab countries did not have access to clean cooking, with large subregional disparities.

Renewable Energy

Renewable energy deployment rates continue to lag all other regions. Renewables accounted for only 5.1% of total final energy consumption in the region in 2020, and most renewable energy comes from traditional biomass. Electricity generation from modern renewables, however, continues to accelerate. Utility-scale solar PV projects have been especially prominent, with some of the largest projects globally boasting record low prices for power set to come online in the region, particularly in the Gulf Cooperation Council (GCC) countries.

Energy efficiency

Primary energy intensity is higher in the Arab region than the global average, increasing year over year, from 5.11 (MJ/\$2017 PPP GDP) in 2019 to 5.17 (MJ/\$2017 PPP GDP) in 2020. Over the past decade, however, energy intensity remained largely flat, from 5.2 (MJ/\$2017 PPP GDP) in 2010. Despite earlier improvements, the pace of improvement has slowed and lags behind the SDG 7.3 target of improving energy intensity by 2.6% per year till 2030.

Priority actions

Over the next three years

- Accelerate policy action on energy access, renewables, and efficiency by setting ambitious targets with wider socioeconomic objectives to enable just, inclusive, and sustainable energy transitions.
- Improve communication and awareness raising so stakeholders better understand policy choices and changing regulations and can plan accordingly.
- Increase public investment in emerging technologies in the energy sector and promote policies which encourage private sector participation by de-risking investments.
- Boost electrification across sectors, including industry, buildings, and transport, to improve energy intensity and accelerate the uptake of renewable energy.
- Enhance the linkages between energy and agrifood systems and adopt new holistic approaches such as integrated food-energy systems and water-energy-food-land nexus.
- Synergize interlinkages between SDG 7 and other SDGs, particularly SDG 1 on zero hunger, SDG 6 on clean water and sanitation, SDG 9 on industry, innovation, and infrastructure, SDG 11 on sustainable cities and communities, and SDG 17 on partnerships.

Towards 2030

¹ The Arab region here includes the Maghreb (Algeria, Libya, Morocco, and Tunisia), Mashreq (Egypt, Iraq, Jordan, Lebanon, the State of Palestine and the Syrian Arab Republic), GCC (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates), LDC (Comoros, Djibouti, Mauritania, Somalia, the Sudan and Yemen).

² Five Arab countries have pledged to achieve economy-wide net-zero emissions: Oman and the United Arab Emirates aiming to achieve this target by 2050, and Bahrain, Kuwait, and Saudi Arabia by 2060.

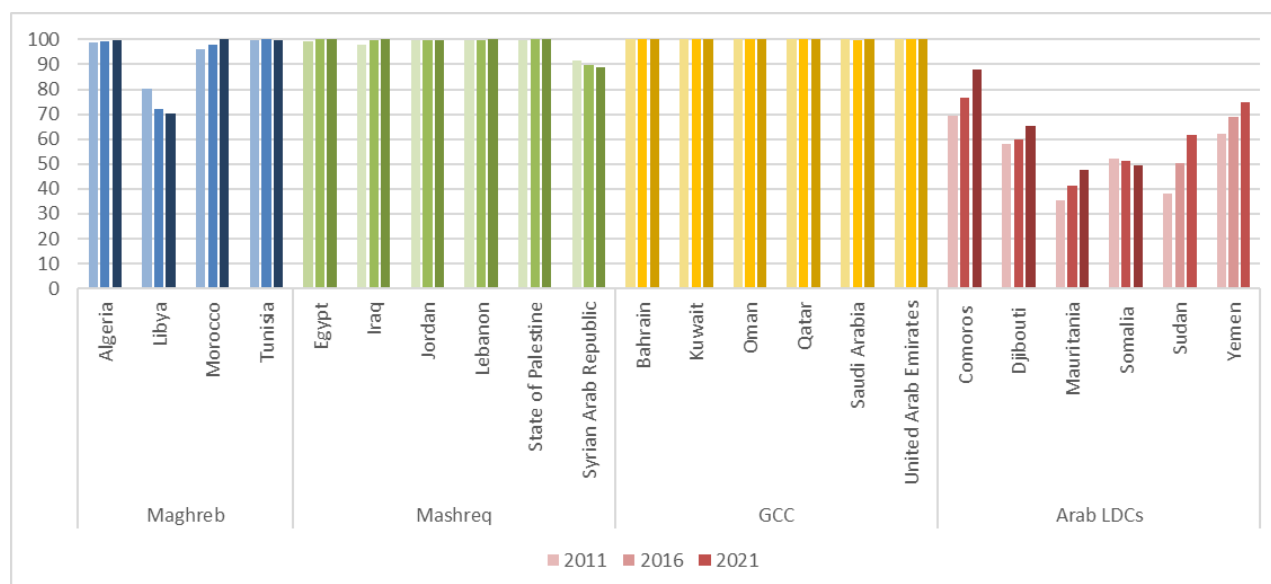
- Implement and enhance national, regional, and international multi-stakeholder partnerships for energy and leverage technical assistance and expert advice to build capacity based on lessons learned from successful global programmes.
- Enhance coordination at the national and regional level to strengthen energy governance and institutions, develop technological capacity, and increase the pace of implementation of SDG7 to attract additional climate financing.
- Enhance Nationally Determined Contributions to better align with Paris Agreement goals and establish or enhance net-zero emissions targets to decarbonise economies by mid-century.

PROGRESS TOWARDS ACHIEVING SDG 7

Energy Access

Electricity access rates in the Arab region crossed the 90% mark for the first time in 2017 and continue to increase, reaching 90.8% in 2021. The total number of people without access to electricity in the Arab region stands at almost 42 million, with 89% residing in Arab Least Developing Countries (LDC). Electricity access in Arab LDCs has been improving by 2% annually since 2019 but access remains the lowest among the Arab subregions, reaching 63.5% in 2021. Inequality remains with approximately 52%, 51% and 38% of the populations in Mauritania, Somalia, and the Sudan still without electricity access in 2021.³

Figure 1. Share of population with electricity access in the Arab region, 2011, 2016 and 2021 (Percentage)



Source: Data provided by World Bank

Sudan (17.5 million), Somalia (8.6 million) and Yemen (8.3 million) combined have over 34 million people without access to electricity and need rapid improvement to provide access to all. Although there has been a considerable improvement in electricity access in Arab LDCs since 2011, there is still a disparity in the improvement among countries. All GCC countries and most countries in the Mashreq region boast universal electricity access. There was also a slight improvement in access rates in countries in conflict where the share of people with electricity access increased to an average of 77.5% in 2021, up from 76.8% in 2020 and 70.4% in 2011.⁴

Rural-urban divide. In 2021, almost 98% of urban areas in the Arab region had access to electricity but only 83% of rural areas did. The rural-urban divide was most prominent in Arab LDCs where urban electricity access was 84.5% while in rural access was only 52%.⁵

³ World Bank, 2023

⁴ World Bank, 2023

⁵ World Bank, 2023

Electrification solutions. Targeted subsidies based on household income are a viable solution to provide affordable electricity to energy-poor households. In most cases, this will also require institutional reform and capacity building in order to help build up effective and transparent social safety systems, especially in Arab LDCs. Decentralized RE solutions are also emerging as a cost-effective alternate to electricity from the grid. New business models to provide on-demand energy access should be implemented, especially in remote areas without grid connectivity. The Arab region also holds large potential for electrified transport, both in the public transport segment, and for private vehicles, once policy incentives and infrastructure development support this development.

Clean Cooking

88% of people have access to clean fuels and technology for cooking in the Arab region but there are large sub-regional disparities. In 2021, 52 million people in the Arab region did not have access to clean cooking, a slight increase from 2019, with 88% of them in Somalia, the Sudan and Yemen alone. The countries with the highest share of their populations lacking access to clean fuels, at more than 90%, are Djibouti and Somalia.⁶

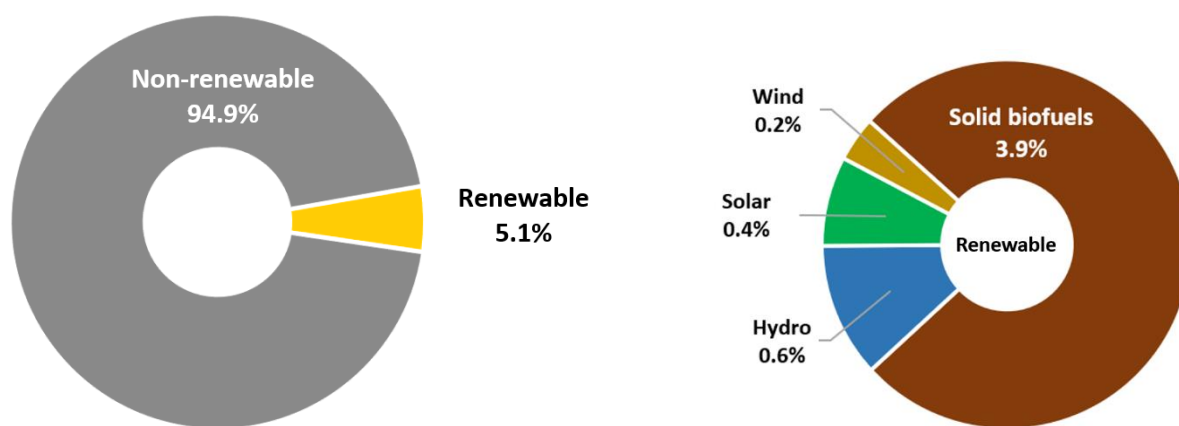
Urban-rural divide. The urban-rural divide is also evident for clean cooking. In the Arab region, 5.5% of urban populations did not have access to clean cooking in 2021, while 21% of rural populations suffered from a clean cooking deficit. The urban-rural divide was most evident in Mauritania, Yemen, the Sudan, and Comoros.

Financing and implementation. Clean cooking needs to be prioritized in national policy for implementation on the ground in countries with significant deficits. Multilateral lending agencies should partner with national governments to provide low-cost capital along with technical assistance and capacity-building based on successful global projects, as well as success stories from within the region.

Renewable energy

Renewable energy (RE) penetration rates continue to lag other regions, with only 5.1% of the region’s total final energy consumption generated by renewables in 2020, mainly from solid biofuels. Three countries (the Sudan, Egypt, and Somalia) account for 72% of the region’s renewable energy consumption, mainly from traditional solid biofuels which account for 78% of renewable energy in the region. The share of this type of energy is likely to fall in the coming decades as more modern sources of energy become more accessible in Arab LDCs, most likely based on a mix of fossil fuels and modern renewable energy.

Figure 2: TFEC breakdown by source in the Arab region, 2020 (Percentage)



Source: Data provided by IEA

Solid biofuels continue to account for the largest share of renewable energy consumed in the Arab region. Arab LDCs continue to be the largest consumer of solid biofuels, with the fuel accounting for nearly 53% of the subregion’s total final energy consumption. Most of the region’s solid biofuel is traditional and is largely used for cooking, heating and even lighting, with low efficiency levels which adversely affects health due to indoor air pollution. Modern renewable energy solutions, including sustainably sourced modern biofuels

⁶ WHO, 2023

(which could help the transition from traditional biomass towards other modern renewable energy solutions, or be used in hybrid systems) are required to close this gap.

Box 1: Promoting Small-Scale Renewable Energy Technologies and Applications in Rural Areas of the Arab Region.

Initiatives such as United Nations ESCWA's [Regional Initiative to Promote Small-Scale Renewable Energy Applications in Rural Areas of the Arab Region](#) (REGEND) aim to improve the livelihood, economic benefits, social inclusion and gender equality of Arab rural communities, particularly marginalized groups, by addressing energy poverty, water scarcity, vulnerability to climate change, and other natural resources challenges. Appropriate small-scale RE technologies are used to conduct productive activities (water pumping, food manufacturing, agricultural practices, and others), support entrepreneurial development, and ensure women's empowerment, with an emphasis on creating jobs and developing robust value chains.

Total installed renewable electricity capacity in the region has roughly doubled over the past decade, reaching a little over 22 GW in 2021.⁷ In 2020, solar and wind energy accounted for nearly 12% of the region's RE consumption, up from 11% in 2019, with solar being the fastest growing RE source for power generation. Jordan, Lebanon, the State of Palestine, and Yemen exhibit the highest shares of solar in their energy mix, partly – and contrary to the region trend otherwise - driven by decentralised solutions owing to lacking capacity of grid-based electricity, while Morocco is leading the way in wind energy (46% of the region's total wind energy consumption). The rise in RE investments in the region could see capacity increase by 33 GW between 2022 and 2026, with around 26 GW as utility and distributed solar.⁸

Several large utility-scale RE projects are set to come online in the coming years, including the 2,060 MW Al Shuaibah solar PV plant and the 1,500 MW Sudair solar PV plant in Saudi Arabia, and the 2,000 MW Al Dhafra solar PV plant in the United Arab Emirates, some of the largest globally. Recently completed megaprojects include the 580 MW Ouarzazate concentrated solar power farm in Morocco, and the 200 MW Baynouna solar PV project in Jordan.

Diversifying the energy mix is a key aspect of the energy transition in the Arab region. Beyond accelerating the uptake of RE and electrifying relevant sectors, alternative energy carriers including hydrogen and hydrogen derivatives are being explored as a way to leverage the region's renewable resource potential. Low-carbon hydrogen development can diversify Arab export revenues and reduce energy-related emissions. It would also play an important role as part of a toolbox of clean energy solutions to address the environmental and economic vulnerability to which the region is exposed, leveraging the region's natural gas resources (paired with carbon capture use and storage) and expansive renewable energy potential (for green hydrogen).

Box 2: Sustainable hydrogen

The Arab region is well-placed to dominate sustainable hydrogen (green and blue) exports by 2050, supplying up to 20 per cent of global markets,^a due to the low cost of renewable power, experience with oil and gas exports, and North Africa's proximity to Europe as an export market.^b The most adequate near-term applications in the region are the petrochemicals and refining industries (which currently depend on grey hydrogen), steel and aluminium smelters, ammonia and methanol. In the medium to long term, large-scale seasonal energy storage, long-haul transportation and maritime shipping are prospective applications. When it comes to hydrogen use in industry, the Arab region currently dominates direct reduced iron (DRI) production using hydrogen, with 40 per cent of global production. One DRI project with carbon capture use and storage (CCUS) launched in 2016 – the Al Reyadah carbon capture project in the United Arab Emirates – produces an estimated 70 kilotonnes (kt) annually of low-emission hydrogen. However, it is the only project of its type in operation today. No similar projects of this scale are under development.

Egypt, Mauritania, Morocco, Oman, Saudi Arabia and the United Arab Emirates all have green hydrogen projects under development. Saudi Arabia is developing a \$8.5 billion 3.5 GW green hydrogen plant at Neom which aims to produce 219,000 tonnes of hydrogen and 1.2 million tonnes of ammonia annually.^c Mauritania recently signed a memorandum of understanding with partners in Germany, Egypt and the United Arab Emirates

⁷ IRENA, 2022

⁸ APICORP, 2022

to develop a 10GW green hydrogen project with an annual capacity of up to 8 million tonnes of green hydrogen and derivatives, with phase one to be completed by 2028.^d

^a ESCWA (2022), Potential blue and green hydrogen developments in the Arab region. Available at:

<https://www.unescwa.org/sites/default/files/pubs/pdf/potential-blue-green-hydrogen-developments-arab-region-english.pdf>.

^b ECFR (2023), Sunny side up: Maximising the European Green Deal's potential for North Africa and Europe. Available at:

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^c ACWA Power (2023), NEOM Green Hydrogen Project. Available at: <https://acwapower.com/en/projects/neom-green-hydrogen-project/>

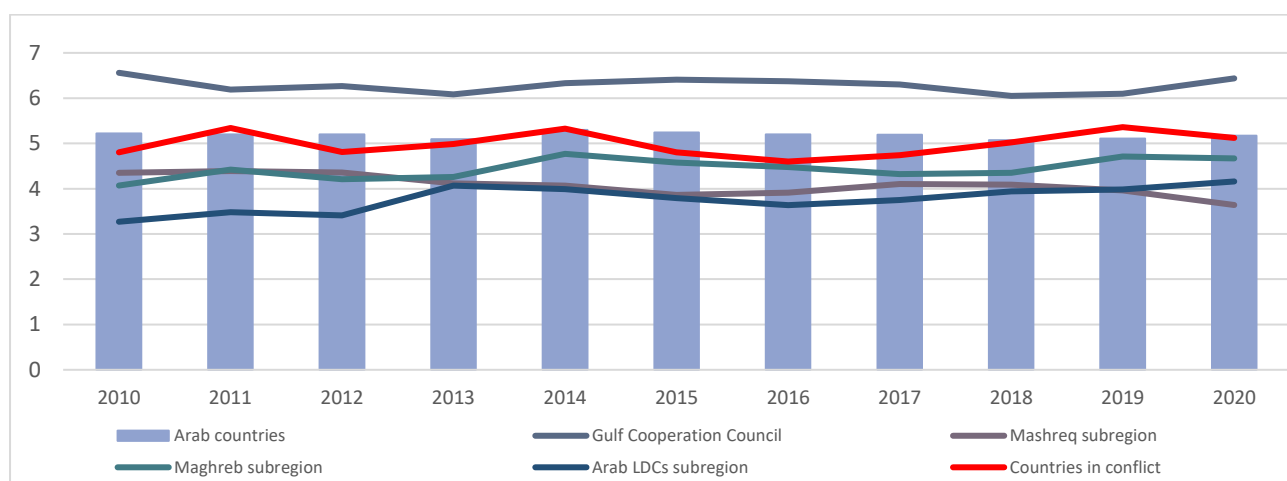
^d The National (2023), Infinity Power and Conjuncta to develop green hydrogen project in Mauritania. Available at:

<https://www.thenationalnews.com/business/2023/03/09/infinity-power-and-conjuncta-to-develop-green-hydrogen-project-in-mauritania/>

SDG 7.3 Energy efficiency improvement

Energy intensity in the Arab region increased year over year, from 5.11 (MJ/\$2017 PPP GDP) in 2019 to 5.17 (MJ/\$2017 PPP GDP) in 2020. Over the past decade, however, energy intensity decreased from 5.2 (MJ/\$2017 PPP GDP) in 2010. The gradual decline in energy intensity since 2010 is driven by lower energy intensity in the GCC and the Mashreq sub-regions. On the other hand, energy intensity in the Maghreb and Arab LDC sub-regions increased since 2010. Energy intensity in the Maghreb region reached 4.67 (MJ/\$2017 PPP GDP) in 2020, up from 4.07 (MJ/\$2017 PPP GDP) in 2010, while Arab LDCs witnessed an even bigger increase, from 3.27 (MJ/\$2017 PPP GDP) in 2010 to 4.16 (MJ/\$2017 PPP GDP) in 2020. Growth in energy supply was the highest in countries in conflict in 2019-2020 despite a GDP contraction.

Figure 3: Arab subregion energy intensity trends from 2010 to 2020 (MJ/\$ 2017 PPP GDP)



Source: Data provided by IEA

Continued shortfalls – below rates that would meet the target of SDG 7.3 – imply that energy efficiency (EE) policies are not yielding the desired results – including in upper middle- and high-income countries - and more efforts are needed by all countries. The annual rate of improvement in EE would now need to be 3.2% through 2030 to make up for slow progress in previous years.⁹ Early action on EE through well-designed and implemented EE policies can deliver multiple benefits apart from lifetime savings of energy and GHG emissions. Price signals also play a vital role for attracting private investments and therefore Arab countries need to progress with gradual rationalization of energy subsidies. Proactive policies and regulatory incentives need to separately address energy efficiency in industries, transport, and the buildings sector.

As part of the [Saudi & Middle East Green Initiatives](#), the Regional Investment Fund for Circular Carbon Economy (CCE) technology solutions is being launched to advance EE innovation throughout the region. These initiatives aim to reduce emissions from hydrocarbon production in the region by more than 60%. Within this framework, the first phase of the region's largest CCUS hub was launched in Jubail, Kingdom of Saudi Arabia, with a capacity of 9 million tons annually, reaching a maximum capacity of 44 million tonnes annually by 2035.

⁹ IEA, IRENA, UNSD, World Bank, WHO (2022)

POLICY IMPLICATIONS AND RECOMMENDATIONS

Increase public investment in energy access, renewable energy, and energy efficiency. Detailed implementation plans for on- and off-grid renewable access solutions should be backed by public investments and supported by technical and financial resources by the international community to achieve progress on ground. Private sector involvement will enable scaling up of renewable energy pilot programmes and can catalyse investment in energy efficiency to provide economy-wide savings.

Accelerate policy action. Governments should make energy access (including availability and affordability), renewables, and efficiency top political priorities by setting ambitious targets, plans and policies while implementing specific projects. This includes regulation to drastically improve technology standards, fuel efficiency and economy while promoting cost-effective solutions such as decentralised/rooftop generation. Public communication, information and transparency must be improved so consumers, businesses, and industries understand policy choices and changing regulations and can plan accordingly. Regional cooperation over minimum standards for new technology equipment, components, and vehicle standards could significantly reduce the cost for companies to improve the performance standards of their products. Region-wide, consumer information and transparency are vital to influencing demand and consumption patterns.

Boost energy electrification. Leverage renewable sources to enhance energy efficiency and promote sustainable development in Arab countries. By increasing electrification in various sectors like oil and gas exploration, desalination, manufacturing, transportation, and residential life, energy intensity can be reduced. Governments should create mid-term and long-term plans, set clear goals for electrification, and strengthen technology research and development. Supportive policies, including financial subsidies and tax breaks, can encourage the growth of industries such as electric vehicles, port shore power, and electric hydrogen production.

Synergize interlinkages with other SDGs. There are strong interlinkages between SDG 7 and other SDGs such as SDG 1 on zero hunger, SDG 6 on clean water and sanitation, SDG 9 on industry, innovation and infrastructure, SDG 11 on sustainable cities and communities, and SDG 17 on partnerships. These interlinkages must be clearly identified at the regional and national levels, risks of trade-offs must be managed, impacts on gender equality must be considered, and synergies between them must be harnessed to achieve multiple benefits.

Enhance the linkages between energy and agrifood systems. Promote investment in renewable energy solutions and adopt new holistic approaches such as integrated food-energy systems and water-energy-food-land nexus. These approaches can address trade-offs and leverage synergies in water and land use and directly advance energy and food security, while also contributing to job creation, gender equality, and building resilience to climate change.

Strengthen multi-stakeholder partnerships. Multi-stakeholder partnerships with international agencies can be leveraged to provide technical assistance and expert advice and build capacity based on lessons learned from successful global programmes. Collaborative decision-making processes and programmes involving local actors such as NGOs, civil society and entrepreneurs can accelerate clean energy projects. The involvement of private companies and new business models will complement international and national efforts. Strengthen regional grid interconnection.

Reinforce coordinated action from Governments. High-level policies, enhanced coordination between ministries, and clear allocation of responsibilities of implementing agencies is essential to increase the pace of implementation of SDG7 and to attract additional climate financing. Attention should be paid to strengthening energy governance, building strong institutions, developing technological capacity, including technology and knowledge transfer, and reskilling human resources. Current Nationally Determined Contributions should be enhanced to better align with Paris Agreement goals. Net zero emissions targets should be expanded beyond the current five Arab countries that have pledged to achieve economy-wide net-zero emissions by 2050 or 2060. Capacity building should be strengthened for relevant ministries, agencies, and local governments, including training staff in climate finance-related matters.

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