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EASTERN AND
SOUTHERN AFRICA

ANGOLA

COUNTRY CLIMATE AND DEVELOPMENT REPORT

EXECUTIVE SUMMARY

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1. Angola's Climate and Development Challenge

Angola's oil-based economic growth of the past two decades has not delivered inclusive development and is now losing steam. Oil production has declined from a peak of 1.9 million barrels per day (mbpd) in 2008 to 1.2 mbpd in 2022 and is likely to continue to decline gradually in the coming decades, as low-cost reserves are exhausted and the global transition to a low-carbon pathway reduces new investment. Meanwhile, oil-driven GDP growth has failed to reduce poverty or build the human and physical capital foundations for sustainable and more diversified economic growth. As of 2018, 32.3 percent of the population was below the national poverty line, and in 2020, Angola ranked 148th out of 191 countries on the Human Development Index. Due to weak growth in the non-oil sectors, as of 2021, oil and gas still contributed 27 percent of GDP, 55 percent of government revenues, and 95 percent of exports, and per capita GNI was just US\$1,770, down from \$4,830 in 2014.

Angola's development priority is therefore to use the revenues from its dwindling oil wealth to diversify its economy, reducing its dependency on the petroleum industry and creating opportunities for sustainable growth and job creation. Recognizing this challenge, Angola's President has stated that diversification is "a matter of life or death" for the country, and the next National Development Plan (2023–2027) features economic diversification as one of three focus areas (along with human capital and infrastructure). Angola's 2018 Systematic Country Diagnostic identifies agribusiness, fisheries, and manufacturing as potential (non-extractive) industries where Angola's economy could diversify and create more employment opportunities. The potential of these sectors is also acknowledged as part of the most recent Country Private Sector Diagnostic by the International Finance Corporation (IFC). Agriculture in particular has substantial potential to positively impact growth, economic diversification, employment, and social inclusion, but it can only thrive if productivity can be significantly increased.

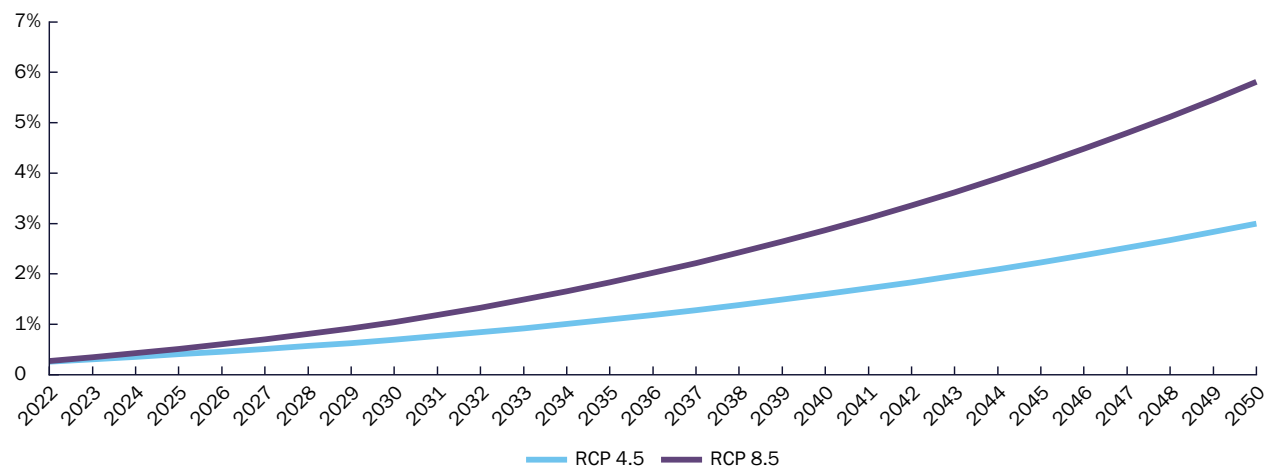
Achieving climate resilience is inextricably linked to the success of Angola's economic diversification, as most promising non-extractive sectors are highly climate-sensitive and already under increased stress from climate variability. Projected increases in rainfall variability and extremes have serious implications for agriculture, fisheries, energy production, and cities. Unreliable water availability and increased extreme events are expected to pose growing challenges to agricultural production. Direct economic losses in

agriculture from droughts may rise from as much as \$100 million per year nationwide today, to more than \$700 million per year by 2100. The productivity of fisheries is also projected to decline, with the maximum catch potential expected to decrease by 43.7 percent by 2050 and 64.0 percent by 2100. With southern and southeastern Angola projected to become dryer, hydropower production on the Kunene River, for example, is expected to decline. Meanwhile, in urban areas—where two-thirds of Angolans already live, and a majority of jobs are—climate change is likely to exacerbate water scarcity, bring more intense storms and coastal flooding, and increase the risks associated with inadequate sanitation.

Climate change is not just a future threat, but already a reality in Angola. A state-of-the-art climate impact assessment conducted for this CCDR confirmed that warming has accelerated significantly in recent years. The annual mean temperature has increased by 1.4. °C since 1951 and is expected to keep rising. Southern Angola has been the hardest hit, and experienced a severe and protracted drought over the past decade, with conditions described as the worst in 40 years. In 2021, an estimated 3.81 million people in the six southern provinces were reported to have insufficient food, and over 1.2 million people continue to face water scarcity because of the drought. By 2040–2060, most of the country is projected to be 1.5–2.5 °C warmer, except near the coast, with significant implications for water availability, drought severity, and, in some areas, extreme heat. Precipitation trends are more uncertain, but rainfall variability is clearly increasing, with longer dry spells, worse droughts, and also more floods.

Economic modeling shows that without adaptation measures, climate change impacts could reduce Angola’s GDP by 3–6 percent by 2050 (Figure ES.1). Agriculture will be hard hit, and the model shows that in a high-emission scenario (RCP8.5), agricultural productivity would be as much as 7 percent lower by 2050 than in a scenario with no climate damages. Overall worker productivity could be 4 percent lower due to higher temperatures. The capital stock in the non-oil sector, meanwhile, could be Losses and damages from floods could reduce the value of non-oil capital stock in Angola by 3–4 percent due to floods and reduced labor productivity due to higher temperatures are also expected to result in significant headwinds to Angola’s development. As a result, by 2050, the capital stock in the non-oil sector could be 4 percent lower, as assets such as roads, factories, and machinery are destroyed by floods and other extreme events.

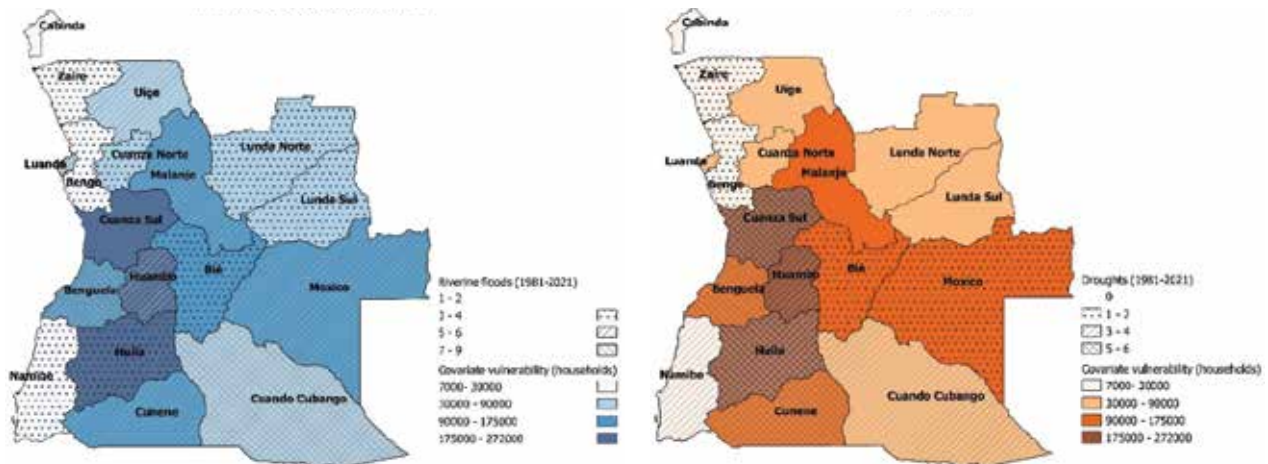
Figure ES.1. Projected loss of GDP due to climate change impacts under RCP4.5 and RCP8.5



Many Angolans who are vulnerable to falling into poverty live in areas of high exposure to climate change, which will make it harder for the country to achieve its poverty reduction goals. Chronic poverty and vulnerability to poverty are already widespread, and this increases vulnerability to covariate shocks—events that affect large swaths of the population at once (see Figure ES.2). Some of the areas with the largest numbers

of vulnerable households, shown by the dark blue and brown areas in the maps, are also areas with the highest frequency of floods (such as in Huambo) and droughts (such as in Huila). Economic and climate shocks that affect entire areas or populations, combined with high levels of vulnerability to poverty, can translate into substantial increases in the incidence and severity of poverty, food insecurity, and child malnutrition.

Figure ES.2. Vulnerability to major climate-related shocks in Angola and number of events, 1981–2021: Riverine floods (left) and droughts (right)



Given the mounting climate risks faced by Angola and its small contribution to global greenhouse gas (GHG) emissions, this CCDR prioritizes adaptation and resilience, while seizing opportunities for low-carbon growth. Angola contributes 0.21 percent of global GHG emissions, and it already gets most of its electricity from renewable sources. Angola’s largest source of GHG emissions is currently the oil and gas sector (mainly from gas flaring and fugitive methane emissions), followed by agriculture, forestry, and other land uses (AFOLU). The report recommends ways to reduce the carbon intensity of Angola’s oil and gas production, especially a fee on gas flaring and venting, as well as stronger enforcement of existing regulations. Other key measures include further expanding renewable energy; removing fuel subsidies to promote more rational fuel use and efficiency in transportation; and adopting measures to reduce emissions from agriculture, reversing land degradation and deforestation. Thus, recommended pathways are consistent with low-carbon development, as many investments and reforms needed for resilient development and diversification also contribute to meeting national mitigation targets.

Pathways to Climate-Resilient Development in Angola

This report identifies five pathways to achieve a vision of a future Angolan economy that is low-carbon, diversified and climate-resilient, with opportunities for all. Tailored to the national context, these approaches were identified in dialogue with the Government of Angola and build on national development priorities. Angola is rich in natural capital, not only oil, gas, and diamonds, but also abundant water resources, renewable energy potential, and fertile arable land. Therefore, to shift away from an economy driven by oil and gas extraction and toward a sustainable and diversified economy based on renewable natural capital, this CCDR recommends investing in and building the resilience of key sectors, notably 1) water resources, 2) agriculture and fisheries, and 3) renewable energy. Delivering the vision of a climate-resilient and diversified economy also entails 4) enabling green and resilient cities with economic opportunities for all Angolans; and leveraging Angola’s young population by 5) boosting human capital, through expanded, climate-resilient access to basic services and by fostering a culture of climate preparedness.

1. Manage water resources as a pillar of climate resilience

Angola is endowed with plentiful water resources that, if well-managed in the context of rising climate variability and change, can continue to generate clean electricity, produce abundant food, and ensure water security in both rural and urban areas. Angola's water resources are unevenly distributed, however, and there is high seasonal and interannual rainfall variability is high, and in much of the country, models point to a decrease in overall water availability. Sustainable water resources management is central to Angola's economic diversification efforts, as the sectors with most potential depend on water: the energy sector, which relies extensively on hydropower, agriculture, and urban sectors that depend on livable cities with adequate water supply and sanitation, as well as flood and drought resilience. Water is also tied to human capital development: as of 2020, only 57 percent of people nationwide had at least basic drinking water access, and 73 percent had access to an improved sanitation facility.

Key recommendations include strengthening basin water management offices and councils to balance competing demands with limited and variable water resources; investing in water storage, including groundwater and watershed storage (i.e. nature based solutions) to mitigate flood risks and store water for dry periods; expanding access to clean water and sanitation across rural and peri-urban areas ((a US\$2 billion investment); rehabilitating and strengthening the operation and maintenance of dams and rural infrastructure to serve productive uses (\$1 billion).

2. Ensure a green and climate-resilient power supply

Renewable energy—especially hydro, but also solar and wind—offers a key opportunity for Angola. Angola's power generation capacity has grown rapidly, mainly through large-scale hydropower. Hydro capacity has quadrupled in just one decade, and in 2020, total domestic power generation in Angola was 13,991 GWh, 88.5 percent of which from hydropower. Angola's solar and wind potential are also very strong. Angola has already partnered with international companies to develop seven on-grid solar PV power plants that will add a total installed capacity of 370 MW. Angola could generate large amounts of clean electricity and also produce hydrogen fuel made entirely with renewable energy—a key resource in a low-carbon future. If generation grows to exceed domestic demand, there is also potential for export to neighboring countries. However, Angola's reliance on hydropower makes it especially exposed to climate variability and climate change, and over half the population is not connected to the grid—implying that building resilience and expanding electrification will be key conditions to ensure the power sector contributes to Angola's resilient and inclusive development vision.

Key recommendations include prioritizing investments to expand the transmission and distribution grid (US\$5 billion), as well as off-grid solutions (another \$1.3 billion). The report advises to prepare and regularly update a climate-adjusted Power Sector Master Plan, and highlights opportunities to improve the sector's system operation and expansion planning, as well as the enabling environment for private sector participation in solar PV and wind projects.

3. Become a hub of climate-smart and abundant food production

Agriculture in Angola is crucial to food security and holds tremendous commercial potential, but climate change will require significant reforms to realize the sector's potential as an engine of growth. As Angola's NDC notes, the sector is “underdeveloped and not very productive,” employing 51 percent of the population—mainly as subsistence farmers—but contributing only 9 percent to GDP. However, the potential for growth is immense: only about a third of the arable land is cultivated, and only about 2 percent of arable land benefits from machinery or even animal traction. Irrigation is also rare, and unsustainable practices are common, resulting in forest loss, reduced biodiversity, and other environmental burdens. Meanwhile, as

noted above, without effective adaptation, climate change is likely to have a major negative impact on agriculture. Addressing these challenges while building climate resilience will thus be crucial if agriculture is to become a pillar of Angola's economic diversification. Angola also has large potential for fisheries and aquaculture, but it needs to carefully manage its resources to protect ecosystems and promote sustainable growth. Overfishing and changes in hydroclimatic conditions have greatly affected the sector.

Key recommendations include scaling up climate-smart agriculture practices and climate-smart fisheries technologies, rehabilitating old irrigation perimeters and infrastructure left in neglect following the civil war, and building flexible, decentralized systems for farmer-led irrigation development, while also expanding extension services support and repurposing agricultural subsidies to benefit all farmers.

4. Build green and resilient cities

Cities can be catalysts for growth and job creation, but they need to be resilient, livable, and inclusive to realize this potential. Two-thirds of Angolans live in urban areas, and by 2050, the share is expected to rise to 80 percent, with cities hosting three times as many residents as they do today. Angola has yet to realize the economic potential of urbanization, which can contribute significantly to diversification in the industrial and service sectors. But urban areas also face significant climate risks, including water scarcity, more intense storms, coastal flooding, and disruptions to sanitation systems. To realize the potential of Angola's cities, it is crucial to build their resilience, to safeguard economic assets and protect the most vulnerable populations, including the large share of urban residents who work in the informal sector without a safety net.

Key recommendations include promoting clean, compact, and connected development in Luanda and secondary cities, and investing in comprehensive solid waste management systems to curb methane emissions, reduce flooding, and improve quality of life. Local governments will need to coordinate and lead implementation of urban resilience measures—such as risk analyses, integration of risk maps into territorial plans, inspection and enforcement of zoning regulations. Flood early warning systems, especially for coastal zones, and nature-based solutions for flood and landslide protection, will also be critical measures to live with rising climate risks.

5. Boost human capital and foster a culture of climate-preparedness

Angola's most important wealth are its people, who are young (the median age is 17) and can power climate-resilient development across sectors—but only if they are healthy, well-nourished, and properly trained. Currently, Angola's human capital index stands at 0.4, similar to the average for Sub-Saharan Africa, but lower than the global average of 0.57. Climate change threatens Angola with more food and nutrition insecurity and a higher incidence of vector-borne diseases, such as malaria. Therefore, investments in health and nutrition, especially the most vulnerable and food-insecure Angolans, are a first shield against rising climate shocks, and crucial to building climate resilience, reducing poverty, and supporting inclusive growth. Angola also needs to strengthen social protection.

Key recommendations include expanding Angola's flagship anti-poverty program, Kwenda, to incorporate adaptive features that can quickly enhance benefits and expand coverage to a larger population when shocks occur. In addition, creating a culture of climate preparedness, especially through education reforms, will contribute to enhancing national capacities for climate resilience. In order to raise a climate-conscious generation, it is critical to start in the early years and instill values of shared responsibility and environmental stewardship in primary education. As Angola prepares a new strategy for its tertiary education sector, prioritizing programs that prepare workers for careers in adaptation and low-carbon technologies ("green jobs") is an opportunity to boost its future competitiveness. Investments in research and development

capacity for climate action are also crucial. Inequitable financing of climate science has left large knowledge gaps that hinder adaptation and disaster risk reduction across Africa. Enabling a vibrant local climate research industry in Angola will also have many benefits.

Financing Angola's Climate-Resilient Development

Fiscal revenues from the oil sector will remain a key source of financing for climate-resilient investments for the next decade, calling for careful management of the remaining oil wealth. Even if efforts to diversify the economy are successful and despite a gradual decline in oil production, Angola's fortunes will remain tied to oil for at least the next decade. Therefore, Angola needs to maximize the benefits from its oil wealth by boosting the sector's competitiveness through reducing emissions upstream and enhancing competition downstream. Oil revenues then need to be managed and deployed to achieve the highest impact in realizing Angola's resilient development vision.

Growing interest in oil and gas with low upstream emissions presents opportunities for Angola—if it can bring its levels of gas flaring, venting, and fugitive emissions close to the world's best performers. Recent geopolitical developments have led to a fundamental reconsideration of where oil and gas are sourced, and European governments in particular are seeking new suppliers. However, the European Union has also prioritized reducing GHG emissions along the oil and gas supply chain. World Bank data show that Angola in 2021 flared 4.4 cubic meters (m³) of associated gas per barrel of oil produced, while Norway flared 0.2 m³ and Saudi Arabia, 0.6 m³. Angola has already started monetizing associated gas (rather than flaring it), and many more opportunities exist to further reduce flaring and put the gas to productive use. In the downstream sector, refining will be economic only if the domestic refineries are able to compete on the global market. To ensure competitiveness, it is important not to provide direct or indirect government support to the refineries through the state-owned oil company Sonangol, or through trade and other restrictions that limit competition.

Effectively deploying oil revenues requires improvements in public financial management. Managing oil revenues poses significant challenges, as oil prices are highly volatile and expected to decline in the coming decades with the global transition to a low-carbon pathway. To address these challenges, oil revenues need to be saved (in Angola's case, primarily through debt reduction) or channeled to productive, climate resilient investments. But to ensure investments are productive and climate resilient, it is crucial to improve the management of fiscal policy and public investments, and to create the right incentives for optimal prioritization. Angola's institutional and regulatory frameworks need to evolve by mainstreaming climate into planning and fiscal management. In particular, consolidating the responsibilities of selection, preparation, implementation, and monitoring of public investments in a central agency with oversight powers and capable staff could lead to efficiency gains.

Reforming Angola's fuel pricing policy will free up public resources for climate action and have co-benefits for low-carbon development. Eliminating fuel subsidies (and ultimately introducing a carbon tax) will promote a more rational use of fuel, reduce consumption and emissions, and free up limited government resources that can be used to finance adaptation investments. Any reforms should be accompanied by measures to shield the poor from the impacts of subsidy removal—for instance, by providing cash transfers through an expanded Kwenda program, itself a tool for climate adaptation.

Climate and disaster risk financing will help build resilience across all sectors of Angola's economy. The cost of enhancing social protection—through Kwenda or otherwise—to support communities affected by a climate shock such as a drought can easily reach US\$50 million, and is likely to be higher after more severe shocks. Some climate-related disasters, such as floods and landslides, may also cause significant damage to infrastructure. Currently, the overwhelming majority of these costs are borne by the Government, as few losses are insured. Pre-arranged disaster contingency financing will speed its deployment. Adopting a risk-

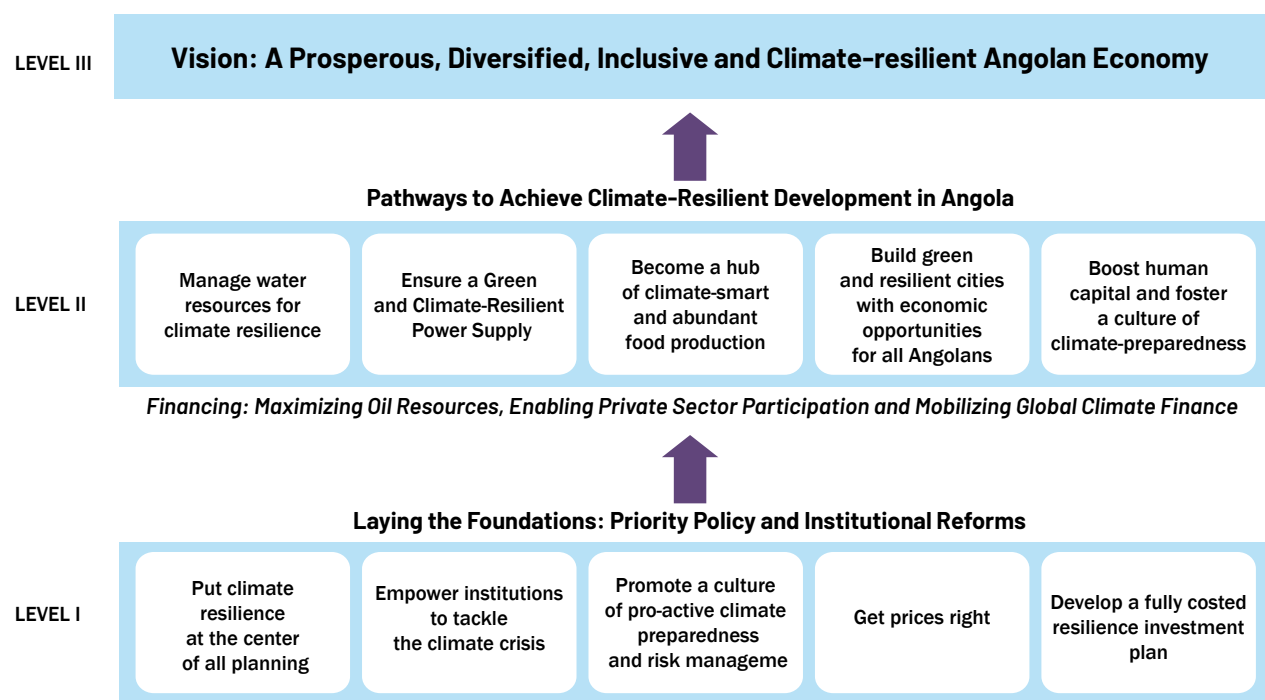
layered combination of financial instruments will also lower the overall cost of response, both on average and for extreme events, with projected savings of more than US\$480 million (over two-thirds) in a 1-in-50-year event. A national disaster-risk financing strategy, a loss database and expenditure tracking system, and insurance products for households, farmers, and small and mid-sized businesses can all help make Angola more resilient to climate shocks.

Private and concessional climate finance will also need to be mobilized to enable Angola’s climate-resilient and diversified development. To attract private investments in clean energy and other priorities for climate-resilient and low-carbon development, Angola needs to create an enabling environment, including defining a clear adaptation investment plan, a well-defined pipeline of investable projects and ensuring target sectors (such as renewable energy) are financially sustainable. At the same time, Angola needs to develop a strategy to leverage the increasing amount of funds available for green and blue (related to ocean ecosystems) financing, both concessional and market-based, and to enhance its environmental, social, and governance (ESG) scores, which are increasingly watched by global investors. Another priority is to establish a competent entity for mobilizing international climate finance in line with the treaties and conventions ratified.

Operationalizing Climate-Resilient Development in Angola

The CCDR identifies a set of priority actions for operationalizing the pathways towards climate-resilient development, starting with foundational, cross-cutting reforms of policies and institutions (Figure ES.3). While a number of priority investments have been identified, reforming policies and institutions are either preconditions for, or highly conducive to, realizing investments under the pathways.

Figure ES.3. Framework for operationalizing climate-resilient development in Angola



With this framework, the report concludes with five priorities for action that Angola can implement in the next three to five years:

1. Put climate resilience at the center of all planning, integrating climate risks and adaptation measures into all sectoral plans and strategies, the medium-term fiscal strategy, and territorial planning instruments. Sectoral, national, and subnational planners need to ask, “What new climate risks/opportunities do we need to adapt to, and what can we adapt towards?” The next National Development Plan can propose an integrated package of climate resilience investments, policy reforms, and institutional changes. The Ministries of Economic and Planning and Finance play a key role and can lead an inter-ministerial coordination structure with specific responsibilities and timelines for line ministries engaged in implementing climate action. Planning is especially critical in the climate-sensitive water sector, to address competing demands amid growing variability. Finally, public investment management needs to be strengthened and made more climate-responsive, employing mandatory assessment of new investment projects in line with national climate priorities.

2. Empower key government institutions to tackle the climate crisis, ensuring adequate financial and human resources. Professional and well-trained staff and adequate resources are both critical. Across all sectors analyzed in this CCDR, existing capacities will need to be enhanced to tackle the new exigencies of climate risk management. Data are also essential, as such it will be critical to bolster the National Hydrometeorological Agency (INAMET), mandated to monitor and predict climate risks, as well as related agencies involved in early warning/early action systems.

3. Promote a culture of proactive risk management and climate preparedness. Such a shift is crucial in a world where multiple sequential and often overlapping crises are the “new normal.” As basic services improve, they need to incorporate disaster preparedness plans. Mainstreaming climate-related disaster risk management, including through better early warning systems, will reduce the costs and shorten the response time when disasters hit. Finally, Angola needs to have the financing in place to deal promptly with climate-related disasters, while avoiding a large diversion of expenditures from its development priorities. This requires financial planning and pre-arranged disaster contingency resources.

4. Get prices right to pave the way for private sector participation, improve economic efficiency, and generate additional resources for investment in climate resilience. A key example is reforming fuel pricing while providing compensation to the poor and lower middle class, which will create fiscal space, reduce waste in fuel consumption, and open the way for a competitive refining sector. Gas flaring needs to be priced (taxed) to reflect its social costs. This requires strengthening the regulatory framework for controlling gas flaring and fugitive emissions by introducing a fee for flaring and venting, and over time for fugitive methane emissions. In parallel, enforcement capabilities need to be strengthened to ensure accurate fee determination and its timely and full collection.

5. Jointly develop a fully costed resilience investment plan through collaboration between the Ministry of Finance and the Ministry of the Economy and Planning. A key next step from this CCDR is to develop a costed investment plan that identifies the full set of priority investments and financing sources. Because achieving climate resilience is a cross-cutting issue requiring coordination across the Government, these two ministries play central roles in strategically allocating limited resources. **Before committing to large investments, ministries will need to fully understand the tradeoffs between investment choices and develop a comprehensive portfolio of climate resilience projects, with clear public and private financing sources identified to fund them.**

Table ES.1 provides a summary of priority investments recommended from the report for each sector, as well as important related policy reforms. We hope that the insights and recommendations provided by this CCDR can provide a strong foundation for Angola to develop a national climate resilience investment plan and a climate-informed National Development Plan 2023–2027.

Table ES.1. Summary of priority investments and reforms under each pathway

Pathway	Priority investments	Priority reforms			
		Climate at the center of planning	Strengthen institutions	Proactive risk management	Get prices right
Water Resilience	<p>Expand access to clean water and sanitation across rural and peri-urban areas nation-wide (\$1B)</p> <p>Invest in Greater Luanda’s resilience by implementing the Luanda Province Water and Sanitation Master Plan (\$1B)</p> <p>Fund rehabilitation and sustainable operation and maintenance of dams and water resources infrastructure (\$600M)</p>	<p>Prepare comprehensive strategy for water storage at basin level, integrating watershed, groundwater, and surface storage</p> <p>For this, invest in groundwater studies and promote nature-based solutions (NBS), such as soil and water conservation measures, sand dams, and managed aquifer recharge, to maximize “sponge” effect of watershed, mitigate flood risks and store water for dry periods</p>	<p>Strengthen river basin admin offices and councils, including capacity to monitor and allocate resources</p> <p>Enhance technical and financial capacities within the Ministry of Energy and Water (MINEA) for dam operation and maintenance</p> <p>Professionalize provincial water and sanitation utilities</p> <p>Strengthen IRSEA, the electricity and water services regulator, for a well-functioning sector</p>	<p>Implement municipal water plans that integrate local supply with local water management</p> <p>Implement drought preparedness and contingency plans for river basins and for all provincial water and sanitation utilities in Angola</p>	<p>Implement the bulk water abstraction tariff to help promote the rational use of water resources</p> <p>Electricity and water tariffs to ensure the financial sustainability of the utilities and the provision of an improved and reliable service</p>
Renewable Energy	<p>Expand and densify transmission and distribution grid, and interconnect the northern-central, southern, and eastern regional systems to allow clean energy from hydropower to reach South and East (~US\$3 billion in transmission, \$2 billion in distribution grid expansion and densification, and another US\$13 billion in off-grid will be needed to increase electricity access rate to 77 percent by 2030</p> <p>Develop cross-border transmission lines to tap into South African Power Pool</p>	<p>Complete a climate-adjusted Power Sector Master Plan</p> <p>Adopt a National Electrification Strategy based on least-cost technical solutions</p> <p>Explore green hydrogen potential</p>	<p>Improve the distributor’s (ENDE) operation and commercial performance</p> <p>Strengthen enabling environment for private sector investment in solar and wind energy to diversify the energy mix</p>	<p>Adopt state-of-the-art methodologies and tools for power system operation and expansion planning (savings estimated at < US\$11 million per year)</p>	<p>Electricity and water tariffs to ensure the financial sustainability of the utilities and the provision of an improved and reliable service</p>
Climate-Smart Agriculture & Fisheries	<p>Rehabilitate old irrigation perimeters and infrastructure and build flexible, decentralized systems for farmer-led irrigation development</p> <p>Build drainage and flood mitigation infrastructure</p> <p>Invest in climate-smart agriculture (CSA)</p>	<p>Scale up CSA to restore degraded landscapes, stem deforestation and biodiversity loss, and advance climate goals, while supplying diverse products for consumption and income</p>	<p>Strengthen agricultural extension services</p> <p>Establish network of marine protected areas covering >10% of Angola’s exclusive economic zone</p> <p>Improve transparency and statistics in the fisheries sector</p>	<p>Facilitate farmer access to risk management tools such as insurance programs, especially weather index insurance</p>	<p>Repurpose agricultural subsidies to promote climate-smart agriculture</p>
Green & Resilient Cities	<p>Invest in comprehensive solid waste management systems to curb methane emissions, reduce flooding, and improve quality of life</p> <p>Implement urban resilience measures (risk analyses, risk maps integration into territorial plans, inspection and enforcement)</p> <p>Flood early warning systems, especially for coastal zones</p>	<p>Promote risk-informed urban planning and sectoral coordination, while building the resilience of vulnerable populations</p> <p>Adopt NBS for flood and landslide protection</p>	<p>Set national standards for urban development that promote more efficient, sustainable, and inclusive urban growth, with budget support, coordination and capacity-building</p> <p>Enhance capacities for coordinated planning across sectors to boost resilience</p>	<p>Support subnational governments to coordinate resilience planning across sectors</p>	<p>Mobilize private capital to accelerate adoption of critically needed infrastructure</p> <p>Public-private partnerships to improve service delivery</p> <p>Build a circular economy, minimizing waste</p>
Human Capital	<p>Expand Kwenda to reach all the poorest households and incorporate adaptive features</p> <p>Invest in jobs and economic inclusion programs to train workers for a green economy and build resilience</p> <p>Raise a climate-conscious generation, starting in the early years</p>	<p>Incorporate climate-considerations in health sector and provincial health plans</p> <p>Provide cross-ministerial coordination and develop national and subnational mechanisms for action on climate-related health impacts</p>	<p>Enhance capacities to identify climate-related health risks and provide care even during extreme events</p> <p>Improve climate research capacity and build a strong local R&D sector with a vibrant local climate research industry</p>	<p>Agile adaptive social safety net programs can respond quickly to crises</p> <p>Add climate skills agenda under the strategic plan for the future of tertiary education</p>	<p>Develop an investment strategy for climate and human capital actions, and allocate funding for adaptation measures within key sector budgets</p>



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