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Promoting sustainable development;
addressing climate change

Southern African Climate Finance Partnership

Zambia Country Diagnostic

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Context

Climate context

Zambia's climate is tropical, but varies according to the elevation and latitude (between 8S and 18S): mean annual temperatures vary from 18C-20C, and annual rainfall ranges from 600mm in the south to 1200mm in the north (Zambia Ministry of Lands Natural Resources and Environmental Protection 2014). Zambia's climate is highly variable, with frequent droughts, seasonal floods, extreme temperatures, and dry spells. Projected temperatures are expected to increase by 3C to 5C by 2100, with average precipitation declining during the early rainy season (October to December) and intensifying thereafter (CIFs 2013b).

Zambia has experienced climatic hazards over several decades, including drought, seasonal floods, flash floods, extreme temperatures, and dry spell. Some events – especially droughts and floods – have increased in frequency, intensity, and magnitude over the two decades up to 2007 (Zambia Ministry of Tourism Environment and Natural Resources 2007).

A scoping study into the needs and potential for inclusive green growth in Zambia highlighted the following priorities: Zambia waste to energy; a diversity of clean energy supplies and suppliers; green infrastructures and services; and mainstreaming sustainable agriculture approaches. The importance of generating new green asset classes to attract significant, long-term and quality investment was also highlighted (Banda & Bass 2014).

Socioeconomic context

Zambia attained independence in 1964, after 72 years of British colonial rule. It is classified as a lower middle-income country, with a GDP per capita of US\$1,305. The population is 16.2 million, with a growth rate of 3.1%, and 41% living in urban areas. Natural resources include copper, cobalt, coal, emeralds, gold, silver, forests, water, and fertile land. The main industries are mining, transport, construction, manufacturing, and agriculture.

GHG emissions per capita are 7.39tn CO₂eq. Total national emissions are 0.384% of the global total. The electrification rate is 22.1% overall, and 5.8% in rural areas. Energy production is 91.8% renewable, with substantial amounts coming from hydropower. Zambia's main energy sources are petroleum, hydropower, and biomass. Fuel wood and coal from forests are important indigenous energy sources. There's potential to expand into solar and geothermal energy. Households accounted for 73% of energy consumption in 2000, with the largest share of household consumption sourced from wood fuel. Deforestation is substantial, ranging from 250,000 to 300,000 hectares per year and driven by charcoal production (4.5%), commercial firewood (1.4%), timber (16.8%), semi-permanent agriculture (23.7%), and shifting agriculture (53.6%). Wildlife resources are threatened by climate change and human-animal conflict (Zambia Ministry of Lands Natural Resources and Environmental Protection 2014).

Floods and droughts have increased in frequency over the past three decades, costing an estimated 0.4% in annual economic growth. Without adaptation, rainfall variability alone could keep an additional 300,000 people in poverty over the next decade, and reduce annual GDP growth by 0.9%. The negative effects of climate change and variability on agriculture and natural resource productivity also poverty and reduce economic growth (CIFs 2013b). Only 25 per cent of Zambians have access to electricity (GCF 2017a).



Intended Nationally Determined Contribution

Zambia submitted its Intended Nationally Determined Contribution (INDC) in 2015 (Republic of Zambia 2015). It was converted to a Nationally Determined Contribution (NDC) in 2016. Zambia's NDC is informed by its Revised Sixth National Development Plan and Vision 2030.

Zambia will endeavour to make significant emission reductions through implementation of its ambitious NDC and provide leadership in the region through a 47% emission reduction target, with 2010 being the base year. Mitigation policies, actions, and programs converge into three programs: sustainable forest management; sustainable agriculture; and renewable energy and energy efficiency.

Adaptation measures identified, based on vulnerability assessment of seven key economic sectors (agriculture, water, forestry, energy, wildlife, infrastructure, and health) comprise three goals: adaptation of strategic productive systems (agriculture, forests, wildlife, and water); adaptation of strategic infrastructure and health systems; and enhanced capacity building, research, technology transfer, and finance.

Further analysis will be necessary to refine the required investment cost and determine the domestic support as more data and results of studies become available. Presently, the NDC estimates that over US\$50 billion is required up to 2030 – US\$15 billion in unconditional support from the Zambian government, and US\$35 billion in conditional support sourced externally. Effective NDC implementation will be ensured through development and strengthening of existing Monitoring, Reporting, and Verification (MRV) systems to track progress of implementation of both the mitigation and adaptation programs.



Policy and planning documents

Zambia ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1993, and ratified the Kyoto Protocol in 2006.

The National Adaptation Planning process being undertaken by the Government provides a good basis for long-term adaptation programming and mainstreaming of climate change adaptation into the existing national planning process.

National Communications to the UNFCCC

The Ministry of Tourism, Environment, and Natural Resources submitted Zambia's Initial National Communication (INC) to the UNFCCC in 2002 (Zambia Ministry of Tourism Environment and Natural Resources 2002).

INC potential mitigation options include:

- Energy:
 - Improving the charcoal production processes
 - Switching from use of diesel power generators to minihydros
 - Streamlining operations of the petroleum industry
 - Minimising spontaneous GHG emissions from coal mining
 - Use of energy efficient cook stoves in households
 - Increasing electrification of households in low-income groups
 - Use of renewable energy sources (e.g. solar, biogas, wind)
- Manufacturing:
 - Improving boiler operating efficiency
 - Converting coal/diesel fired boilers to electric
 - Adopting new technologies in mining smelter operations
- Transport:
 - Pooling transport, technically efficient vehicles, blending fuel with ethanol
- Agriculture:
 - Promoting organic fertiliser use
 - CH₄ emissions from paddy rice fields
 - N₂O emissions from livestock through feed supplementation
- Protect CO₂ sinks:
 - Currently achieved through Environmental Support Programme (ESP) under Ministry of Environment and Natural Resources (including community based management of forest resources)

INC potential adaptation measures include:

- Agriculture and fisheries:
 - Measures consonant with existing policy framework already being implemented, including: development of drought-tolerant and early maturing crop varieties; crop diversification; improvement of crop management techniques; and construction of supporting infrastructure.
 - Restocking livestock in badly affected areas
 - Promoting the rearing of drought-tolerant goats
 - Strict fisheries licensing, promotion of fish farming, and encouraging fish conservation
- Wildlife:
 - Sinking boreholes to protect wildlife during drought
 - Encouraging game ranching for conservation
 - Culling animals where necessary to control competition
- Forestry:
 - Use alternative energy sources, to reduce pressure on Miombo woodlands
 - Establishing forest resource data bank
- Water:
 - Improve water resource management
 - Vest groundwater ownership in the State

- Strengthen institutional frameworks

The Ministry of Lands, Natural Resources, and Environmental Protection submitted Zambia's Second National Communication (SNC) to the UNFCCC in 2014 (Zambia Ministry of Lands Natural Resources and Environmental Protection 2014).

SNC adaptation measures include:

- Agriculture:
 - Strengthen early warning systems
 - Increase irrigation to boost maize production and water management systems
 - Develop and propagate drought resistant crops
 - Increase use of manure
 - Improve grazing management practices
- Energy and water:
 - Inter-basin water transfers
 - Alternative energy sources
 - Early warning systems
 - Integrated water management system, with climate scenario considerations
 - Conservation of water in agriculture sector
 - Water harvesting
- Wildlife and forests:
 - Identify potential wildlife refuges and corridors under climate change conditions
 - Develop response plans for water supply and flood management in national parks
 - Improve fire management
 - Promote soil conservation
- Health:
 - Early warning systems for malaria and other diseases
 - Capacity building for improved environmental health
- Infrastructure:
 - Develop design standards and codes of practice for infrastructure

National Adaptation Programme of Action (NAPA)

The Ministry of Tourism, Environment, and Natural Resources produced Zambia's NAPA in 2007 (Zambia Ministry of Tourism Environment and Natural Resources 2007) The NAPA prioritises ten immediate adaptation interventions (over the sectors of agriculture and food security, energy and water, human health, natural resources, and wildlife).

	Priority project title	Indicative cost (US\$)
1	Strengthening of early warning systems to improve services to preparedness and adaptation to climate change	1,800,000
2	Promotion of alternative sources of livelihoods to reduce vulnerability to climate change / variability of communities living around GMAs	175,000
3	Adaptation to the effects of drought in the context of climate change in Agro-Ecological Region 1 of Zambia	3,000,000
4	Management of critical habitats	1,400,000
5	Promote natural regeneration of indigenous forests	1,000,000
6	Adaptation of land use practices (crops, fish, and livestock) in light of climate change	1,200,000
7	Maintenance and provision of water infrastructure to communities to reduce human-wildlife conflict	75,000
8	Eradication of invasive alien species	1,000,000
9	Capacity building for improved environmental health in rural areas	3,000,000
10	Climate proofing sanitation in urban areas	2,000,000



Vision 2030

In 2006, Zambia outlined its plan to become a prosperous middle-income nation by 2030. While Zambia had prepared and implemented several medium-term national development plans since independence in 1964, Vision 2030 was the first long-term plan, which spanned the horizon of a generation. Vision 2030 is to be operationalized through the implementation of five national development plans, starting with the Fifth National Development Plan, and continuing through the Sixth National Development Plan, and Revised Sixth National Development Plan (Republic of Zambia 2006).

Revised Sixth National Development Plan (R-SNDP)

The R-SNDP covers the years 2013 to 2016. Informed by Vision 2030, the R-SNDP is primarily an investment plan containing quantifiable programmes to inform sector planning and budgeting processes. The Plan focuses on public capital investments with a focus on rural development and job creation. The primary investment areas are skills development, science and technology, agriculture, livestock and fisheries, energy and infrastructure development, water and sanitation, and education and health. The Plan notes the importance of addressing the effects of climate change, especially in rural development, agriculture, energy, and the water and sanitation sector (Zambia Ministry of Finance 2014). The Seventh National Development Plan for 2017 to 2020 is currently under development, which will incorporate the mitigation and adaptation programmes outlined in the INDC.

National Climate Change Response Strategy (NCCRS, 2010)

Zambia's NCCRS was developed to support and facilitate a coordinated response to climate change issues, enabling the country to position itself strategically to respond to the adverse effects of climate change and contribute to the achievement of the overall objective of the UNFCCC. Published in 2010, the medium-term goal of the NCCRS was to ensure that climate change was mainstreamed in the most economically important and vulnerable sectors of the economy by 2015, and the longer-term goal to ensure climate change is mainstreamed in all sectors by 2030.

The Strategy's vision is 'a prosperous climate change resilient economy', and its mission is 'to ensure that the most valuable sectors of the economy are climate proofed, and sustainable development achieved through the promotion of low carbon development pathways'. The vision and mission are aligned with Zambia's development priorities, as articulated in Vision 2030 and R-SNDP. As in these documents, the development of agriculture is stressed as the engine of economic expansion, offering the best opportunities for improving livelihoods to the 60% of Zambia's population and 70% of its poor who live in rural areas. Infrastructure, tourism, manufacturing, mining, and energy are also prioritised as core economic sectors and areas for climate-proofing and sustainable development.

NCCRS objectives deal with: land use (agriculture and forestry); water; health and social infrastructure; physical infrastructure; transport; energy; mining; governance; and mainstreaming. Core pillars for action and implementation of the Strategy are: adaptation and disaster risk reduction; mitigation and low carbon development; cross-cutting issues; governance and climate change; and finance and investment framework (Zambia Ministry of Tourism Environment and Natural Resources 2010).

Other documents

Other relevant Zambian policies and plans include:

- National Policy on Environment (NPE, 2007)
- National Forestry Policy (2014)
- National Energy Policy (2008)
- National Agriculture Policy (2014)
- Transport Policy (2002)
- Second National Biodiversity Strategy and Action Plan (NBSAP2)
- Technology Needs Assessment (TNA, 2013)
- National Strategy for Reducing Emissions from Deforestation and Forest Degradation (REDD+, 2015)



Climate finance stakeholders

The bodies responsible for climate change in Zambia have shifted as a result of the 2016 national elections. In February 2017 a 23 member Zambian delegation, including three ministers, visited the GCF Secretariat in Songdo (GCF 2017b). This was the largest national delegation to visit the GCF Secretariat to date.

Ministry of National Development Planning

The National Development Planning Department of the Ministry of National Development Planning is the NDA to the GCF; and its Director of Planning, Mr Chola Chabala is the FP to the GCF.

Zambia nominated the National Development Planning Department of its Ministry of Finance as its Nationally Designated Authority to the GCF in August 2014; the Department is now under the Ministry of National Development Planning. Mainga Luwabelwa, the National Coordinator of the NDA Project Office, has highlighted the following as potential programmes that would represent a paradigm shift (GCF 2017a):

- Renewable energy investments;
- A sustainable and climate-smart agriculture initiative, focused on enhancing the lives and livelihoods of smallholder farmers in rural Zambia; and
- A project to strengthen Zambia's hydrological and meteorological services to make better linkages with national planning and emergency frameworks.

National Climate Change Fund (NCCF)

There is an ongoing process to select a National Implementing Entity (NIE) and establish a National Climate Change Fund (NCCF). Zambia's INDC recognises the efforts being made to establish the National Climate Change Development Council, which will coordinate climate change activities in the country, as stipulated in the draft National Policy on Climate Change.

Interim Inter-Ministerial Climate Change Secretariat (ICCS)

The ICCS was established under Zambia's Ministry of Finance, as a mechanism for a coordinated approach to adaptation and mitigation against the effects of climate change. It was born out of consultations on the National Climate Change Response Strategy. Its primary purpose is to facilitate the coordination of all climate change activities undertaken by government, private sector, civil society, and cooperating partners in order to achieve the aims and objectives of the National Climate Change Response Strategy. The ICCS is currently an interim structure, but it will become an independent and permanent institution in the future, once its mandate has been approved through the passing of a new Climate Change Strategy (Zambia ICCS 2016).

In addition to its role as facilitator in developing and mainstreaming Zambia's integrated climate change and disaster risk reduction agenda, the ICCS has overall responsibility for project execution and reporting under the PPCR. Given the PPCR is now underway, the ICCS's ability to carry out its responsibilities could be constrained in the absence of additional capacity. While the ICCS is predominantly funded by the PPCR, there is a shift underway toward increasing the share that is funded from domestic sources (van Rooij 2014).

Pilot Programme for Climate Resilience (PPCR)

The PPCR is funded by the Strategic Climate Fund (SCF), a multi-donor Trust Fund under the Climate Investment Funds (CIFs) (CIFs 2013b). Zambia has two PPCR projects, with approved funding of US\$76m and expected co-financing of US\$103m. Of the money approved from PPCR, US\$37 million is for Enabling Environment, and US\$39 million is for Agriculture and Landscape Management. The International Bank for Reconstruction and Development (IBRD) and African Development Bank (AfDB) are the implementing multilateral development banks (MDBs) for these projects.

This Strengthening Climate Resilience (PPCR Phase 2) Project aims to strengthen Zambia's institutional framework for climate resilience and improve the adaptive capacity of vulnerable communities in the Barotse sub-basin (CIFs 2013a). Efforts to mainstream climate change into the economy will ensure sustainable



economic development towards the attainment of Zambia's Vision 2030. The Ministry of Finance and National Planning have coordinated the PPCR. The Strengthening Climate Resilience in the Kafue River Basin (SCRIBA) Project's objective is to foster sustained economic growth, reduce poverty, and enhance food security through strengthening the adaptive capacity of 800,000 rural communities to better respond to current climate variability and long-term consequences of climate change in the Kafue sub-basin (CIFs 2013b).

United Nations Development Programme (UNDP)

The UNDP has lead a number of projects addressing climate change mitigation and adaptation in Zambia, including (UNDP 2016):

- Low emission capacity building project (LECB);
- UN collaborative programme on Reducing Emissions from Deforestation and Forest Degradation in developing countries;
- Adaptation to the effects of climate change and variability in agro-ecological regions I and II;
- Lake Tanganyika integrated management programme – Zambia component (catchment management through sedimentation control); and
- United Nations joint programme on climate change and disaster risk reduction.



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