



GOVERNMENT OF THE REPUBLIC OF ZAMBIA

NATIONALLY DETERMINED CONTRIBUTION 3.0

1.0 Background

This document presents the third generation Nationally Determined Contribution (NDC 3.0) for Zambia to the Paris Agreement on climate change. This is pursuant to Decision 1/CP.19, 1/CP.20, and 1/CP.21, requesting countries to enhance their climate ambitions and update their Nationally Determined Contributions from 2020 and every five years thereafter. This submission is a critical step in Zambia's efforts to address climate change and contribute to the global efforts of limiting global warming to well below 1.5°C above pre-industrial levels.

Zambia's first NDC (NDC 1.0) was submitted on December 9, 2016, with a conditional pledge to reduce Greenhouse Gas (GHG) emissions by 20,000 Gg CO₂ eq. by 2030 against a base year of 2010 under the Business As Usual (BAU) scenario with limited international support, or by 38,000 Gg CO₂ eq.) with substantial international support¹. This pledge consisted of both mitigation and adaptation components based on Zambia's national circumstances, including its development priorities and economic growth prospects. The country submitted its revised NDC 2.0 on July 30, 2021 in which the country maintained the targets for reducing greenhouse gas emissions by 47% with substantial international support while enhancing climate resilience. In the NDC 2.0 Zambia broadened the scope of sectors under mitigation by adding transport, liquid waste, and coal (production, transportation, and consumption). This expansion was based on a thorough review of Zambia's national circumstances and the need to address the growing emissions from these sectors. Further, the submission elaborated on the adaptation component of the NDC by developing indicators that will enable the country to track progress on building resilience in both the human and physical systems and on adaptation actions. In this NDC 3.0 submission, Zambia enhances its ambition by broadening the scope of sectors to include: Tourism. ; Industrial Processes and Product Use (IPPU)-; Infrastructure (Green Buildings); Water security-.

With the addition of these four sectors, Zambia is enhanced its ambition through a total of ten (10) sectors comprising Forestry (sustainable forest management), Agriculture (sustainable agriculture), Energy (renewable energy and energy efficiency), Transport, Coal (production, transportation and consumption), Waste, Infrastructure (Green buildings), Tourism (Eco-Tourism) and Industrial Processes and Products Use (Cement Production) and water security. This is progressively moving the country towards an economy-wide approach in its sectors coverage.

In addition, Zambia adopts the indicators from the UAE Framework for Global Climate Resilience and Adaptation as a basis for enhancing its ambition in adaptation (Annex 2). The country has developed complementary indicators on cross-cutting initiatives. These indicators include (i)strengthened institutional capacity for coordinating climate change projects and programmes, (ii) fiscal policies improved to foster low-carbon and resilient sustainable development and(iii) financial stability and supervisory policy and procedures improved to foster low-carbon and resilient sustainable development.

Zambia's updated NDC 3.0 demonstrates its commitment to enhancing its climate ambitions and contributing to the global effort to address climate change. The country's efforts to broaden the scope of sectors under mitigation and adaptation will help broaden the scope to reduce greenhouse gas emissions and enhance climate resilience. Through NDC 3.0, Zambia demonstrates its determination to transition to a low-carbon, climate-resilient economy.

By scaling up interventions in forestry, agriculture, energy, and water management while mobilizing international partnerships, the country seeks to protect livelihoods, reduce poverty, and contribute meaningfully to the global effort of limiting temperature rise to 1.5°C. Zambia's NDC 3.0 reflects a comprehensive, economy-wide commitment to both mitigation and adaptation, leveraging domestic action and international partnerships to build a low-carbon, climate-resilient future while safeguarding livelihoods and contributing to global climate goals.

1.1 Further information necessary for clarity, transparency and understanding (ICTU) of Zambia's NDC (Annex 1).

Sustainable agriculture: Zambia's agriculture sector, the backbone of rural livelihoods and food security, is acutely vulnerable to climate change. Increasingly erratic rainfall, prolonged dry spells, and rising temperatures are already undermining staple crop production – particularly maize – on which much of the population depends, the sector is also a significant source of GHG emissions in the country. With 70% of the farmers reliant on rain-fed agriculture, the sector faces heightened exposure to climate shocks that threaten to deepen rural poverty and food insecurity. Scaling up CSA practices offers a transformative pathway to reduce these risks and build long term resilience. (Word Bank Group, 2025). Conservation agriculture (CA) and agroforestry are the most widely promoted as Climate Smart Agriculture (CSA) practices in Zambia, with various benefits on livelihoods and the environment.

Current efforts need to be expanded to incorporate CSA practices in crops, livestock and fisheries. Manure management, integrated soil fertility management (ISFM), pasture and forage management, fodder production, improved livestock housing and manure application all have potential to be well integrated into Zambia's production systems. Given the large contribution of savanna-burning to Zambia's agricultural GHG emissions, climate smart practices would play an important role in meeting the AFOLU GHG emissions reduction targets outlined in the country's Nationally Determined Contribution (NDC).

CSA initiatives sustainably increase productivity, enhance resilience, and reduce/remove greenhouse gases (GHGs) as co-benefits (GRZ, 2024a). CSA interventions – such as conservation agriculture, use of stress-tolerant crop varieties, improved soil and water management, and agroforestry – enhance productivity and climate responsiveness by enabling farmers to maintain yields despite worsening weather conditions. Agroforestry, in particular, integrates trees into farming systems to improve soil fertility, reduce erosion, enhance microclimates, and diversify incomes, thereby buffering smallholders against climate and market volatility. These practices also improve soil health, increase water-use efficiency, and reduce the risk of total crop failure, especially in drought-prone and degraded landscapes. By mainstreaming CSA approaches across Zambia's agroecological zones, this intervention will strengthen the adaptive capacity of smallholder farmers, stabilize food supply chains, and reduce systemic vulnerability across the agriculture sector (Veronica Nanyangwe & Royd Tembo, 2024).

Sustainable forest management: Zambia's forests and woodlands, predominantly miombo and mopane ecosystems, are increasingly under pressure from deforestation, shifting cultivation, wildfires, and unsustainable charcoal production. Climate change compounds these threats through rising temperatures, prolonged dry spells, and unpredictable rainfall patterns, which further degrade already vulnerable forest landscapes.

As forest health declines, so too do the critical ecosystem services that underpin rural livelihoods – including water regulation, soil stability, fuelwood, nutrition, and non-timber forest products (FAO, 2025b).

Sustainable forest and woodland ecosystem management offers an essential, nature-based solution to reduce climate risks and build long-term resilience. Community-led Forest governance ensures local ownership and stewardship, while early burning and firebreak systems help prevent destructive late-season wildfires. Restoring degraded woodlands through assisted natural regeneration improves biodiversity, stabilizes soils, and enhances microclimates that support surrounding farming systems.

At the same time, diversifying incomes through sustainable harvesting and value addition of non-timber forest products – such as honey, mushrooms, and wild fruits reduces dependence on increasingly fragile rainfed agriculture and helps buffer households against climate-induced income shocks. Fuelwood with sustainable fuelwood systems, improved governance, and restoration at scale, this intervention safeguards both ecosystems and the wellbeing of forest-adjacent communities (Mongabay, 2024).

Water security: The Zambezi River Basin Climate Impact Assessment, conducted in 2018 by the Southern African Development Community (SADC) and the Zambezi River Commission (ZAMCOM), evaluated the impacts of climate change on regional water availability and examined potential upstream-downstream water flow tensions arising from Zambia's headwaters¹. The study identified nature-based solutions and investment pathways to address increasing risks from droughts and floods and promoted transboundary cooperation for climate-resilient water management. For the 2025–2030 period, NDC 3.0 will outline adaptation projects that include expanding climate-smart, solar-powered irrigation systems for smallholder farmers in Eastern, Southern, and Western Provinces; integrated catchment restoration and reforestation in critical ecosystems such as the Kafue Flats, Lukanga Swamps, and the upper Zambezi; rainwater harvesting infrastructure in drought-prone districts such as Gwembe, Kazungula, and Luangwa; and upgraded flood early warning systems in high-risk areas such as Mongu, Senanga, and the Barotse Floodplain. Strengthening regional cooperation under ZAMCOM and SADC will remain a key component (AfDB, 2025).

Sustainable Tourism Development and Management: Tourism Resilience Enhancement Pilot Project (2024)² was implemented with the objective of strengthening climate resilience at priority tourism destinations, including Lower Zambezi National Park and the Victoria Falls area. Key activities included vulnerability mapping of tourism sites, upgrading infrastructure to withstand climate impacts, and training local communities on climate-smart tourism practices. Funded at approximately USD 1.2 million by the Ministry of Green Economy and Environment (MGEE) and development partners, the project operationalized adaptation measures in the tourism sector and safeguarded critical natural and cultural assets from climate risks. Going forward, several projects will be considered to further enhance resilience. These include upgrading tourism infrastructure in national parks such as South Luangwa, Lower Zambezi, and Mosi- oa-Tunya to make them climate-resilient, with improvements to access roads, water supply, and communication systems.

¹ Zambezi Watercourse Commission (ZAMCOM) and Southern African Development Community (SADC). Strategic Climate Resilience Investments in the Zambezi River Basin (Policy Brief, circa 2018).

² Ministry of Tourism and Arts Zambia (2024): Tourism Resilience Enhancement Pilot Project Report. Lusaka, Zambia

Ecosystem restoration will be prioritized in tourist zones such as the Kafue Flats and Liuwa Plains through reforestation, catchment protection, and biodiversity conservation (WBG, 2025b). Climate-informed early warning and visitor safety systems will be deployed in flood-prone areas, and sustainable tourism certification schemes will promote energy-efficient operations and low-carbon transport in ecologically sensitive destinations.

Sustainable Transport: Zambia's transport sector is highly vulnerable to extreme heat and flooding. For instance, the floods of 2007 affected 75 out of the country's 110 districts, of which, in 39 of these districts, 66 percent of the roads, bridges and culverts were either washed away or damaged.³ The consequences of such events are significant. The 2019 floods damaged over 500 km of roads and several bridges, resulting in repair costs equivalent to about 0.2 percent⁴ of Zambia's GDP.⁵ Projections indicate that, without adaptation measures, annual damages to roads and bridges could increase by US\$72 million by 2040.⁶ Most of these costs will be associated with repairs and delays⁷ on primary and paved roads, with the highest costs concentrated on roads in northern Zambia and bridges on tributaries to the Zambezi River in the south.⁸ In key transport corridors like Lusaka–Chongwe–Luangwa and Livingstone–Sesheke, annual climate-induced damage is expected to exceed US\$ 9 million by 2050 under high-emissions scenarios.⁹ With climate adaptation action, studies show that damage costs and delays associated with more paved roads and road upgrades under the aspirational scenario¹⁰ can lead to significant reductions of up to US\$60 million annually by the 2040s.¹¹

Power sector: The power sector in Zambia faces significant challenges due to its vulnerability to climate change, including extreme weather events and variability in water resources, which impact hydropower generation. In 2006, the Government of the Republic of Zambia launched Vision 2030, a document that reflects the collective understanding, aspirations, and determination of the Zambian people to become a prosperous middle-income nation by 2030. For the energy sector, the country aims to achieve universal access to clean, reliable, and affordable energy at the lowest total economic, financial, social, and environmental cost, consistent with national development goals, by 2030. The investments planned in the energy sector, as outlined in the 8NDP, are expected to increase Zambia's electricity generation capacity from 3,307.43 MW in 2021 to 10,000 MW by 2030. As part of this expansion, the share of renewable energy in the national installed electricity capacity, excluding large hydro, aims to grow from 3 percent to 10 percent within the same period. In electricity sub-sector, the country plans to significantly expand its generation capacity, from 3,705 MW in 2020 to 23,193 MW in 2050 (Mission 300 Africa Energy Summit, 2025).

Sustainable infrastructure: Between late 2024 and 2025¹², Zambia initiated a series of transport-sector projects that directly addressed climate change adaptation, particularly under the Transport Corridor for Economic Resilience (TRACER) programme and related climate vulnerability assessments.

³ Nordic climate vulnerability assessment report (2020)

⁴ About US\$50 million

⁵ Zambia Roads Authority (2020) and Ministry of Finance (2021).

⁶ Zambia CCDR (2025) Unpublished

⁷ Increases in road delays are primarily driven by repairs on primary roads, most of which are paved in Zambia, at an annual average of 37.3 million hours. World Bank Zambia CCDR (2025) Unpublished.

⁸ World Bank Zambia CCDR (2025) unpublished

⁹ GCA (2024).

¹⁰ A National Green Growth Strategy-inspired growth development trajectory.

¹¹ World Bank Zambia CCDR (2025) unpublished

¹² Global Center on Adaptation (2024): GCA Launches Climate-Resilient Transport Initiative in Zambia.

These initiatives focused on road and bridge infrastructure along major economic corridors (mainly Lusaka to Nakonde), integrating risk mapping, climate-resilient engineering designs, and capacity development.

The Climate-Resilient Green Buildings Pilot Programme (Planned for 2025–2027) will integrate green building principles into public infrastructure in Lusaka, Copperbelt, and Central Provinces. Activities will include retrofitting government facilities, schools, and health centres with solar PV systems, improved insulation, natural ventilation, rainwater harvesting, and climate-resilient roofing. Climate-responsive design standards and sustainable building materials will be promoted, and demonstration projects for net-zero energy buildings will be implemented in Lusaka, Kitwe, and Ndola.

Coal Production and use: Under NDC 3.0, targeted adaptation measures will be progressively introduced in both coal-producing regions (including Maamba) and copper mining areas on the Copperbelt and North-Western Provinces. These will address vulnerabilities to extreme heat, erratic rainfall, flooding, and water stress. In Maamba, actions will target the model mine focusing on sediment control systems, improved mine water management, and occupational heat stress mitigation. In the copper sector, interventions will include advanced dust suppression systems, climate-informed water management, and site-specific risk assessments, such as Kitwe, Mufulira, Chingola, Solwezi, and Kalumbila. Community livelihood diversification programs will be introduced to reduce socio-economic vulnerability and support a just transition in a decarbonizing economy.

Tracking the NDC: In line with the Paris agreement, especially the Enhanced Transparency Framework (ETF), the Government of the Republic of Zambia developed a Monitoring, Reporting and Verification (MRV) system. It is based on the 3 main components namely: (i) mitigation, (ii) adaptation and support (finance, technology transfer and capacity building). The current NDC3.0 describes the institutional arrangements for collecting data, analysis and reporting for Zambia's adaptation, mitigation and support components. It also presents an updated MRV framework of sectoral indicators.

Means of implementation: As a part of the NDC preparation process, expert meetings were conducted to set criteria and analyze the measures that will be implemented using domestic resources or international support. This allowed for the estimation of domestic finance to underwrite the unconditional commitments and, as a result, the estimation of international climate finance needed to fund the conditional commitments were estimated. Each commitment is accompanied by a brief narrative about its climate rationale and anticipated climate change benefits, as a foundation for the development of the NDC Investment Plan. The international support will significantly enhance access to investments that the Government of the Republic of Zambia cannot easily accommodate from domestic sources of support.

Annex 1: Information necessary to facilitate Clarity, Transparency and Understanding (ICTU)

Nationally Determined Contribution (NDC) of Zambia for the timeframe 2025-2030

The GHG inventory exercise was carried out to determine which options are most suitable for inclusion in Zambia NDC3.0.

- Unconditional contribution: a reduction of 25% (20,000 Gg CO2eq) compared to the business as usual will be achieved by 2030. This unconditional target, based on domestic supported and implemented national policies, strategies, programs, projects and plans, with limited international support or Business As usual scenario.
- Conditional contribution: an additional reduction of up to 47% (38,000 Gg CO2eq) relative to business as usual in the year 2030 will be achieved with substantial international support and funding.

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
1	Quantifiable information on the reference point (including, as appropriate, a base year):	
(a)	Reference year(s), base year(s), reference period(s) or other starting point(s);	Base year: 2010
(b)	Quantifiable information on the reference indicators, their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year	The reference indicator has been quantified based on national total greenhouse gas (GHG) emissions with 2010 as the base year. The base year gross emission level was 185,957.4 Gg CO2-equivalents. ¹³
(c)	For strategies, plans and actions referred to in Article 4, paragraph 6, of the Paris Agreement, or policies and measures as components of nationally determined contributions where paragraph 1(b) above is not applicable, Parties to provide other relevant information	<p>Zambia prepared Nationally Appropriate Mitigation Actions (NAMAs) on small hydro, sustainable agriculture, and sustainable transport, integrated waste management, and sustainable charcoal production. The NAMAs were submitted to the UNFCCC NAMA registry in 2016. Further a national REDD+ Strategy and its Investment Plan were developed in 2017. Zambia also prepared the Technology Needs Assessment for both adaptation and mitigation in 2013.</p> <p>In addition, these documents have been referred to in the following documents:</p> <ul style="list-style-type: none"> • 8th National Development Plan 2022 to 2026 • National Green Growth Strategy of 2023 • National Adaptation Plan (NAP) of 2023 • NDC implementation Framework of 2023

¹³ The emission reduction targets of 20,000 Gg CO2 eq with limited international support and 38,000 Gg CO2 eq with substantial international support was calculated based on the 1996 IPCC guidelines, however, there has been a recalculation using the 2006 IPCC guidelines in the Biennial Transparency Report (BTR1/4th NC) which resulted in a base year (2010) gross emission levels of 185,957.4 Gg CO2 equivalents and net emissions of 23,772.9 Gg CO2 equivalents.

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		<ul style="list-style-type: none"> • Nature People Climate Investment Plan of 2024 • Green Economy and Climate Change Act of 2024 • National Water Policy of 2024 • Zambia Water Investment Programme 2022-2030 • National Gender Policy 2023 • National Tourism Policy 2015 • Zambia National Tourism Master Plan 2018 – 2038 <ul style="list-style-type: none"> • National Tourism and Hospitality Act 2015 • National Heritage Policy 2020 • Energy Efficiency and Strategy Plan • Integrated Resource Plan • National Energy Compact • National Infrastructure Policy 2023 • Environmental Management Act 2023 • National Irrigation Strategy • National Agriculture Mechanization Strategy • Rural Electrification Master Plan • National Transport Policy 2019 • Integrated Resource Plan 2020 – 2050 • Health National Adaptation Plan 2018
(d)	Target relative to the reference indicator, expressed numerically, for example in percentage or amount of reduction;	At least 25% (20,000 Gg CO ₂ eq.) by 2030 against a base year of 2010 under the business-as-usual scenario with limited international support or by 47% (38,000 Gg CO ₂ eq.) with substantial international support.
(e)	Information on sources of data used in quantifying the reference point(s);	The Zambian national GHG inventory Report has been revised and methodologically enhanced since NDC 2.0, as reflected in Zambia's first Biennial Transparency Report/ 4 th National Communication to be submitted to the UNFCCC. Emissions across multiple reporting categories have been recalculated in line with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Sources of information

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		include; the Biennial Update Report and Third National Communication submitted to UNFCCC Secretariat in 2020.
(f)	Information on the circumstances under which the Party may update the values of the reference indicators	The value of the reference indicators has been updated because GHG emissions have been recalculated because of change of methodologies from 1996 IPCC guidelines to the 2006 IPCC guidelines and the change of the Global Warming Potential (GWP) from AR2 to AR5 .
2	Time frames and/or periods for implementation:	
(a)	Time frame and/or period for implementation, including start and end date, consistent with any further relevant decision adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA).	From 1 st January 2015 – 31 st December 2030
(b)	Whether it is a single-year or multi-year target, as applicable.	Single-year target in 2030.
3	Scope and coverage:	
(a)	General description of the target	<p>During the implementation of the NDC3.0, the Government of the Republic of Zambia is aiming to reduce emissions in the following proportion:</p> <ul style="list-style-type: none"> Unconditional contribution: a reduction of 25% (20,000 Gg CO2eq) compared to the business as usual will be achieved by 2030 against the 2010 base year. This unconditional target, based on domestic supported and implemented national policies, strategies, programs, projects and plans with limited international support or business as usual. Conditional contribution: This reduction could be raised to 47% (38,000 Gg CO2eq) relative to business as usual in the year 2030 will be achieved with substantial international support and funding.
(b)	Sectors, gases, categories and pools covered by the nationally determined contribution, including, as applicable, consistent with Intergovernmental Panel on Climate Change (IPCC) guidelines	<p>Information provided in this NDC 3.0 is consistent with the IPCC guidelines:</p> <p>Sectors and sub-categories</p> <ol style="list-style-type: none"> Energy-categories include Energy industries, manufacturing industries, and construction, transport, and other sectors. Agriculture, Forestry and Other Land Use (AFOLU)-categories include livestock, Land and Aggregate sources and non-CO2 emissions sources on land. Waste categories include solid waste disposal, biological treatment of solid waste, Incineration and open burning of waste,

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC and wastewater treatment and discharge.
		<p>These sectors were selected because they are key categories and emerging sectors that are contributing to the emission profile of the country.</p> <p>Gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), Sulphur hexafluoride (SF₆).</p>
(c)	How the Party has taken into consideration paragraph 31(c) and (d) of decision 1/CP.21	Zambia's NDC 3.0 is fully aligned with national policies and strategies, covering key sectors such as energy, agriculture and land use, industry, and waste, with mitigation efforts focused on expanding renewable energy; electrification and clean cooking, improving energy efficiency; enhancing carbon sequestration through reforestation and sustainable land management; and reducing methane emissions from waste. On the adaptation side, the NDC integrates climate resilience across tourism, mining, sustainable infrastructure, water security, and transport, anchored in national frameworks including the National Policy on Climate Change (NPCC-2016), the Eighth National Development Plan, and Vision 2030, emphasizing the protection of people, ecosystems, and economic systems while supporting poverty reduction, food security, and inclusive growth.
	Para. 31(c) "Parties strive to include all categories of anthropogenic emissions or removals in their nationally determined contributions and, once a source, sink or activity is included, continue to include it"	<p>Zambia has taken a comprehensive approach to enhance its Nationally Determined Contribution (NDC 3.0) in line with paragraph 31(c) and (d) of decision 1/CP.21. This involves broadening the scope of sectors under mitigation and adaptation to include cement production under the Industrial Production and Product Use (IPPU) and sustainable waste management. Additionally, other sectors include infrastructure and tourism, in addition to the existing sectors of agriculture, transport, forestry, energy, and mining. This expansion brings the total number of sectors to ten, demonstrating Zambia's commitment to addressing greenhouse gas emissions from all relevant sectors and sub sectors. IPPU has been included due to its significant reduction potential in the mineral industry, in particular, cement production.</p> <p>Zambia has strengthened its NDC by expanding the scope of sectors and sub-sectors contributing to the country's mitigation efforts, with the aim of transitioning towards an economy-wide NDC in future submissions, covering all IPCC sectors and selected sub-categories with significant mitigation potential, subject to resource availability. By considering all sectors and categories as potential contributors to its mitigation efforts, Zambia ensures a comprehensive and inclusive approach to reducing emissions, reflected in its updated NDC, which outlines specific actions for each sector, while also considering the need for adaptation and resilience-building measures.</p>

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
	31(d) "Parties shall provide an explanation of why any categories of anthropogenic emissions or removals are excluded"	Zambia has prioritized sectors with the highest mitigation potential and the greatest likelihood of rapid implementation, aligning with the GHG Inventory Key Category Analysis. This approach supports the country's gradual transition toward an economy-wide Nationally Determined Contributions (NDCs).
(d)	Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans, including description of specific projects, measures and initiatives of Parties' adaptation actions and/or economic diversification plans.	Zambia has identified and implemented several mitigation co-benefits from adaptation projects and programs namely: Transforming Landscapes and Resilience and Development Program, Zambia Integrated Forest Landscape Project, Zambia Cashew Infrastructure Development Project, Ecosystem Based Adaptation Project, Strengthening Climate Resilience of Agricultural livelihoods in Agro-ecological Regions I & II in Zambia, Zambia Green, Resilient and Transformational Tourism Development. Zambia has also developed the National Adaptation Plan, National Green Growth Strategy, Integrated District Development Plans among others.
(e)	Sectoral targets	A quantitative analysis of some sectors are yet to be developed and validated. Therefore, sectoral targets have not been considered in this submission.
4	Planning processes	
(a)	Information on the planning processes that the Party undertook to prepare its nationally determined contribution and, if available, on the Party's implementation plans, including, as appropriate:	<p>The formulation of Zambia's NDC 3.0 involved comprehensive cross-sectoral engagements, iterative analytical review, and multi-tiered validation across national, provincial, and district levels, underpinned by extensive inter-ministerial and inter-agency collaboration and the deliberate inclusion of diverse stakeholders. Stakeholders included development partners, NGOs, civil society, youth, children, women, people with disabilities, academia, and the private sector.</p> <p>The aim of these consultations was to ensure the alignment with national development priorities, climate adaptation and mitigation objectives, and securing institutional and societal buy-in for sustainable implementation. Governance and technical oversight were anchored in the NDC Technical Committee, coordinated by the Ministry of Green Economy and Environment (MGEE). Complementing this, a wider stakeholder group was engaged at multiple stages from launching the process and reviewing draft outputs to validating the final NDC 3.0 with sector-specific workshops facilitating in-depth review, refinement, and classification of measures into unconditional, conditional, or hybrid actions.</p> <p>Through this inclusive, evidence-based, and rigorous consultation and validation framework, Zambia has ensured that NDC 3.0 is technically robust and strategically aligned, reflecting a cohesive</p>

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		approach to achieving mitigation, adaptation, and resource mobilization objectives while strengthening the country's capacity to meet its climate commitments and contribute meaningfully to global climate action.
(i)	Domestic institutional arrangements, public participation and engagement with local communities and indigenous peoples, in a gender-responsive manner	<p>Institutional arrangements: The institutional arrangements for climate change implementation is established in the Green Economy and Climate Change Act No. 18 of 2024 through an inter-ministerial coordination structure. The Act establishes the Council of Ministers chaired by the Vice President which is the supreme decision-making body in overseeing Climate Change interventions in the country. It provides policy guidance on climate change programming, mainstreaming, resource mobilization, measurement, reporting, and verification. The Technical Committee on Green Economy and Climate Change comprises representatives from relevant Ministries and a broad range of other stakeholders, including private sector, civil society organizations, financial institutions, among others. The Committee is the main technical advisory body to the Council of Ministers. It is chaired by the Ministry responsible for Climate Change implementation under which there is a dedicated department responsible for coordinating climate change implementation in Zambia. The technical committee is also serving as the Designated National Authority (DNA) for carbon markets and trading.</p> <p>The Zambia Environmental Management Agency prepares Biennial Transparency Reports and National Communications, will also serve as the host for the National Carbon Registry and Integrated Measurement Reporting and verification (iMRV) system. Sub-National structures to coordinate climate change implementation at the sub-national levels will follow the established national coordination structures under the development plans. Public participation and engagement with local communities and in a gender-responsive manner need to take place during the development and implementation of NDCs.</p>
(ii) a.	Contextual matters, including, inter alia, as appropriate: National circumstances, such as geography, climate, economy, sustainable development and poverty eradication	<p>Geography:</p> <p>Zambia, with a territory covering 752,612km² of land, is richly endowed with natural wealth including agricultural land, mineral deposits such as copper, cobalt, manganese, gold and gemstones, wildlife and fisheries, forestry and water resources that can be harnessed to grow and transform its economy. Zambia is a land linked country that lies between the latitudes 10° and 18° South and longitudes 22° and 33° East. Its neighbors are Democratic Republic of Congo (DRC) to the north and northwest, Tanzania to the northeast, Malawi to the east, Mozambique to the southeast, Zimbabwe to the south, Botswana and Namibia to the southwest and Angola to the West. The country also has strong democratic credentials which are essential in speeding up the</p>

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		<p>development process and it enjoys the status of being an oasis of peace and stability on the African continent having seen three (3) peaceful transitions of political power.</p> <p>Climate Change:</p> <p>Zambia is the 41st most vulnerable country and has prioritized adaptation to ensure the building of resilience of the economy and communities to the impacts of climate change. However, GHG emissions is projected to rise by 169.60 percent to 76,622.81 GgCO₂ eq in 2030 from 31,446.3 GgCO₂ eq in 2015 bringing prominence to mitigation and the need to embark on a low-carbon development trajectory (Ministry of Green Economy and Environment (MGEE, 2024a).</p> <p>Climate change has become a major threat to sustainable development in Zambia as evidenced in mean annual temperatures that have increased by 1.3°C while the mean annual precipitation has been decreasing at an average rate of 1.9 mm per month since 1960. Agriculture, water, energy, health, and infrastructure have been negatively impacted, thus affecting the food and water security, water quality, energy and livelihoods of the people, especially in rural communities. (Ministry of Green Economy and Environment (MGEE), 2024a).</p> <p>According to the multisectoral droughts response, the impacts of climate change affected an estimated 9.8 million, representing 1.1 million households in 84 districts across ten provinces. Zambia experienced the driest agricultural season for more than 30 years thereby affecting surface water levels, crop and pasture production for an estimated 6.1 million people (1 million farming households) across the country. Late onset and prolonged dry spell associated with El-Nino phenomenon have negatively affected crop production. This comes against the backdrop of at least 2.04 million people already severely food insecure and need humanitarian assistance beyond the end of lean season in 2024. (DMMU 2024).</p> <p>The drought of 2023 and 2024 season affected more than 9.8 million people and is estimated to have generated costs to the Government of the Republic of Zambia amounting to US\$3.5 billion. Key sectors affected by these droughts include agriculture, livestock, health, energy, water and education.</p> <p>Economic trends:</p> <p>The 2022 World Bank Green Resilient and Inclusive Development Diagnostic for Zambia has shown that in the absence of mitigation and adaptation policies, climate change is expected to reduce Zambia's GDP by about 6 percent by 2050.</p> <p>The impacts of climate change, such as floods and droughts, over the last 30 years, are estimated to have cost the Zambian economy US\$13.8 billion in GDP losses. With extreme weather events projected to increase in intensity and frequency, the impact could rise to 0.9 percent of GDP over the next decade (Ministry of Green Economy and Environment (MGEE),</p>

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		<p>2024a)</p> <p>According to the Biennial Transparency Report (BTR/4thNC), in 2023, preliminary estimates indicate real GDP growth was 5.4 percent compared to 5.2 percent in 2022. The key drivers of growth were the information and communication technology and construction sectors. Key sectors such as agriculture and mining posted negative growth over the same period.</p>
ii. b	Best practices and experience related to the preparation of the nationally determined contribution.	<p>The multisectoral institutional framework for coordinating climate change which is described under Section 4 (a) (i) in this document is good practice for handling cross-cutting issues like climate change. Zambia conducted a countrywide risk vulnerability assessment (CVA) to arrive at scenarios for enhancing adaptation measures. The CVA informed the preparations of the country's NDC implementation framework and national adaptation plan. The NDC stock-take and the GHG inventory exercise have been critical to informing the country of progress made on reducing GHG emissions. These practices have been crucial to the preparations of Zambia's NDC.</p> <p>The development of the NDC stock-take to inform the NDC revision is one of the best practices followed in the preparation of this NDC3.0. Furthermore, the composition of the Technical Working Group which comprises by the sector experts to update the NDC3.0 has also worked as an emerging good practice.</p>
ii.c	Other contextual aspirations and priorities acknowledged when joining the Paris Agreement	<p>As a Least Developed Country (LDC), Zambia has flexibility in submitting its Biennial Transparency Report and plans to submit a combined BTR1/NC4 in 2025. The draft BTR1/NC4 has informed the revision and enhancement of this NDC3.0.</p> <p>Achieving the aspirations of the National Development Plan and Sustainable Development Goals (SDGs) requires substantial financial and technical assistance.</p> <p>Zambia's debt burden can be partly attributed to climate change, thereby constraining the country's capacity for enhancing ambition for climate action. Therefore, it is anticipated that the Paris Agreement will provide a mechanism for reducing the cost of financing climate change. Furthermore, the Paris Agreement is one of the important mechanisms for achieving gender equality by supporting the people with disabilities, the women, youths and children affected by the impacts of climate change. Additionally, climate change offers opportunities for enhancing investments in renewable energy and energy efficiency technologies, nature-based solutions, and climate-smart projects.</p>
ii.d	Specific information applicable to Parties, including regional economic integration organizations and their member States, that have	Not applicable

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
	reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement, including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16–18, of the Paris Agreement	
ii.e	How the Party's preparation of its nationally determined contribution has been informed by the outcomes of the global stock-take in accordance with Article 4, paragraph 9, of the Paris Agreement	Zambia conducted the NDC stock-take of the action identified in the NDC implementation framework on adaptation and mitigation. The stock-take report informed the Government of Zambia's consolidation and broadening the scope of priority sectors for contributing to the achievement of the 1.5-degree temperature goal. These priority sectors covering agriculture, forestry, energy, transport, coal, waste, industrial processes and product use, are key to achieving the outcomes of the global stock-take in accordance with decision 1/CMA.5 paragraph 28 (a), (d) & (g).
f	Each Party with a nationally determined contribution under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on:	In developing its nationally determined contribution (NDC), Zambia explicitly recognizes that climate actions must not only reduce emissions and enhance resilience but also support inclusive economic growth, poverty reduction, and social equity. Given that more than 70% of Zambia's population depends on climate-sensitive livelihoods such as rain-fed agriculture, forestry, and hydropower, the government has carefully evaluated the economic and social implications of proposed measures. Mitigation options are designed to create co-benefits for jobs and livelihoods. These include, for example, the scale up and promotion of renewable energy, electrification and clean cooking, sustainable charcoal alternatives, and forest conservation initiatives. These activities aim to provide income for rural households. Adaptation priorities, such as climate-smart agriculture, early warning systems, and sustainable water management, are prioritized with the dual aim of safeguarding food security and protecting vulnerable communities from climate shocks.
i.	How the economic and social consequences of response measures have been considered in developing the nationally determined contribution	<p>the NDC integrates gender equality and youth empowerment, ensuring that women and young people who often bear disproportionate climate burdens—can access opportunities in green value chains. The economic costs of low-carbon transitions, such as possible impacts on energy access and traditional industries, were weighed against long-term benefits like improved energy security, reduced health costs from air pollution, and enhanced competitiveness in green markets.</p> <p>In its implementation phase, Zambia's NDC 3.0 will explore how to integrate circular economy approaches into climate action in key sectors, including sustainable agricultural practices, sustainable forest management, industrial processes and product use, infrastructure, and sustainable waste management. This is in addition to increase expenditure on social protection and</p>

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		<p>empowerment programmes aimed to reducing the exposure of the vulnerable groups to impacts of electricity loadshedding triggered by the severe drought of 2023/2024 agriculture season.</p> <p>Finally, Zambia stresses the importance of just transition principles, committing to minimize negative socio-economic impacts while maximizing resilience, equity, and sustainable development gains. Access to international climate finance, technology transfer, and capacity building is highlighted as essential to ensure that the response measures generate net positive outcomes for the economy and society.</p>
iii	<p>Specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also yield mitigation co-benefits, which may cover, but are not limited to, key sectors, such as energy, resources, water resources, coastal resources, human settlements and urban planning, agriculture and forestry; and economic diversification actions, which may cover, but are not limited to, sectors such as manufacturing and industry, energy and mining, transport and communication, construction, tourism, real estate, agriculture and fisheries.</p>	<p>The analysis of adaptation measures also captured synergies with mitigation co-benefits, particularly in energy-efficient infrastructure, sustainable agriculture, and ecosystem-based approaches—enabling Zambia to position certain interventions as dual-benefit solutions. Furthermore, each action was mapped against Zambia's obligations under the Sustainable Development Goals (SDGs), to reinforce the alignment between climate resilience and broader national development priorities. The culmination of this structured, inclusive, and data-intensive process was a prioritized and costed adaptation investment portfolio¹⁴, which reflects Zambia's evolving climate risk landscape, institutional readiness, and commitment to inclusive, climate-resilient development.</p> <p>The National Adaptation Plan (NAP) identify the following 9 key sectors for adaptation action, anchoring resilience-building within national development frameworks such as Vision 2030 and the 8th National Development Plan:</p> <ol style="list-style-type: none"> 1. Agriculture (including Fisheries & Livestock) <p>Agriculture—still the cornerstone of Zambia's rural livelihoods—employs nearly 72% of the population, with women constituting about 65% of the workforce. Many smallholder farmers continue to rely on rainfed systems, making them extremely climate vulnerable. To bolster resilience, NDC 3.0 envisions scaling up climate-smart agriculture: extending solar-powered irrigation across 150,000 ha, promoting adaptive seed and livestock varieties, and halving post-harvest losses from the current ~15%. A national insurance scheme will safeguard 120,000 ha of smallholder production against weather shocks.</p> <ol style="list-style-type: none"> 2. Forestry & Other Land Use (FOLU) <p>Deforestation remains a significant challenge—with 276,021 ha cleared annually, contributing to ecosystem degradation and GHG emissions. Zambia's NDC 3.0 proposes restoring 50,000 ha of degraded forest by 2030, increasing to 80,000 ha by 2030, and expanding agroforestry to 1.2 million ha. These measures support carbon sequestration, biodiversity, and watershed resilience.</p>

¹⁴ The portfolio referred to will be reflected in the revised NDC Implementation Framework and the NDC Investment Plans to be elaborated in separate documents

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		<p>3. Energy (Renewables & Efficiency)</p> <p>Zambia is highly exposed due to its hydro-centric energy mix; drought-induced hydropower shortfalls have resulted in 450–500 MW supply deficits, impacting food production and mining. Scaling solar energy is essential: Zambia commissioned the 60 MW Itimpi Solar Plant (2024) and the 100 MW Chisamba Solar Plant (2025) in addition to 89 MW of solar electricity in Ngonye/Bangweulu, cumulatively expected to increase solar's share significantly. NDC 3.0 targets diversified, resilient energy infrastructure through improved transmission, generation, and efficiency, as outline in Zambia's National Energy Compact and policies. Large hydropower production such as the 2354 MW Batoka by 2030 will be added including 17.7 MW by 2030 generation from Geothermal, 100 MW from Biomass. Improved cookstoves projects are expected to contribute 50,000 stoves in addition to an estimated 3,500,000 LEDs bulbs distributed by 2027.</p> <p>4. Water Resources</p> <p>IWRM is central to adaptation. NDC 3.0 commits to rehabilitating 600,000 ha of degraded catchments, expanding water-quality monitoring sites from 1,000 to 1,800 by 2030, and safeguarding 50% of flood-prone households by 2030, scaling to 75% by 2030. These actions will enhance water reliability and reduce hydrological shocks. An estimated 25 small dams are earmarked for construction, 468 ground water aquifer resources mapped and protected, 1650 exploration boreholes drilled and 41 Well fields will be identified by 2030.</p> <p>5. Transport</p> <p>Climate-proofing critical transport links especially in rural zones is essential. Upgrades include slope stabilization, raised embankments, and improved drainage along agricultural and trade corridors to combat disruptions from flooding and erosion. 50km of Tramway system to be rehabilitated including 30% of total railway lines electrified by 2030. Railway infrastructure modernization – 1248km in Zambia railways and 884 Tazara railways. This is an addition to the planned electric mobility – Lusaka Urban Low Carbon Project.</p> <p>6. Infrastructure and health systems (Buildings & Facilities)</p> <p>NDC 3.0 mandates integrating climate risk into public infrastructure planning including health, education, and civic buildings with spatial planning guided by Zambia's national adaptation and development plans. Mainstreaming climate change in the National Health Policy, Environmental Health Policy and Water and Sanitation Policy. Staff training for 150 staff to be conducted, 2250km climate resilient roads constructed and 1000 demonstration decent housing built by December 2030. Codes and standards for road infrastructure promoted and land-use</p>

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC plans developed by 2030.
		<p>7. Tourism & Wildlife</p> <p>While explicit data is scant, NDC 3.0 emphasizes adaptation in eco-tourism and wildlife resilience via habitat restoration, water resource protection, and ecosystem buffering zones—crucial for maintaining tourism-based economies in national parks and protected areas.</p> <p>8. Mining</p> <p>Mining—a cornerstone of economic output—is repositioned as an adaptation ally. By 2030, 90% of mining operations are expected to adopt water-efficient processes and dry-stack tailings. Decommissioned sites will be transformed into ecological buffers, and flood-impact safeguards will protect local communities and environments.</p> <p>9. Waste (Circular Economy)</p> <p>Waste management (circular economy) initiatives will be deployed at scale country-wide. This will involve waste management regulatory and policy framework, improved solid waste management, awareness campaigns, waste disposal guidelines and waste to energy initiative such biogas digesters and commercial aerobic structures of different sizes.</p>
5	Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, as appropriate, removals:	
(a)	<p>Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removals corresponding to the Party's nationally determined contribution, consistent with decision 1/CP.21, paragraph 31, and accounting guidance adopted by the CMA</p> <p>The Zambian national GHG inventory Report has undergone comprehensive revision and methodological enhancement since the formulation of NDC 2.0. As reflected in Draft Zambia's recently compiled first Biennial Transparency Report, estimated emissions across multiple reporting categories have been recalculated in accordance with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.</p> <p>Concurrently, the national GHG inventory has been substantively strengthened through the inclusion of improved and additional activity data spanning several reporting categories. The most pronounced enhancements have been observed within Agriculture Forestry and Land Use (AFOLU), energy, IPPU and Waste Management and the current emissions projections are recorded as follows AFOLU emissions increased from 12,899.36 Gg CO₂eq (2015) to 46,532,868.10 Gg CO₂eq (2030), energy from 9,396.15 Gg CO₂eq to 21,626.06 Gg CO₂eq, for IPPU from 1,829.26 Gg CO₂eq to 2,210.08 Gg CO₂eq while waste management emerged with 1,421.74 Gg CO₂eq to 2,674.04 Gg CO₂eq in the same period. Notable revisions include emissions from livestock, solid waste disposal, and wastewater treatment and discharge, the latter categories reflecting the integration of updated per capita waste generation coefficients and refined sectoral emission factors. Collectively excluding AFOLU, these refinements have resulted in a revised estimate of Zambia's net</p>	

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		<p>base year emissions, increasing from 54,740.5 Gg CO₂eq (NDC 2.0) in 2020 to 60,019.1 Gg CO₂eq in 2022. This updated inventory is considered more scientifically robust, technically defensible, and consistent with international reporting standards under the UNFCCC. It therefore constitutes the foundational reference for the enhanced ambition and scope articulated within Zambia's NDC 3.0, providing a strengthened basis for mitigation planning, policy prioritization, and climate finance mobilization.</p>
(b)	Assumptions and methodological approaches used for accounting for the implementation of policies and measures or strategies in the nationally determined contribution	<p>Pursuant to the iterative refinement of Zambia's Nationally Determined Contribution (NDC) under the Paris Agreement, the country has undertaken a comprehensive recalibration of its mitigation contribution, predicated upon a robust, sectoral exegesis of envisaged policies and measures. The ensuing quantification of mitigation potential and aggregate economy-wide contributions through 2030, evidence that are relative reductions vis-à-vis the Business-as-Usual (BAU) trajectory remain broadly in conformity with NDC 2.0.</p> <p>Notwithstanding, the recalibrated base-year emissions, now incorporating refined activity data, updated emission factors, and expanded sectoral coverage including Land Use, Land-Use Change, and Forestry (LULUCF), manifest an augmented BAU reference pathway. Consequently, percentage-based reduction targets translate into substantively larger absolute abatement volumes, thereby amplifying the ambition of NDC 3.0 relative to its antecedent. This ex-post incorporation of net sequestration alongside gross emissions sources engenders a more rigorous articulation of relative mitigation efficacy, further accentuated by the economy-wide inclusivity of all anthropogenic GHGs and sectors in alignment with Article 4 of the Paris Agreement. For the purposes of methodological transparency, the NDC demarcates between reductions derived from emissions abatement and those attributable to removals.</p> <p>The policy matrix underpinning the updated NDC encompasses a suite of sectoral differentiated interventions engineered to optimize mitigation potential from 2025 through 2030. These encompass all priority emitting sectors and constitute the apex of domestic mitigation feasibility, conditional, were pertinent, upon the mobilization of requisite international support. The suite includes, <i>inter alia</i>, the augmentation of renewable energy capacity through hydropower and solar PV, the accelerated electrification of the transport sector, and nature-based carbon sequestration initiatives. Implementation of these measures necessitates structural adjustments in regulatory, fiscal, and behavioral domains and will be operationalized via government-led instruments and complementary facilitative mechanisms, as alluded to in Section 5.</p> <p>The recalibration of Zambia's mitigation trajectory is further informed by the outcomes of the first Global Stock-take, on nationally determined contributions responsive to differentiated national circumstances and cognizant of global climate imperatives. This encompasses the eleven-fold of renewable</p>

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		<p>energy throughput and concomitant acceleration of energy efficiency; expedited decarbonization of energy systems, including the phased substitution of fossil fuels with zero- and low-emission alternatives; scaling of abatement and negative-emissions technologies, inclusive of carbon capture, utilization, and storage (CCUS). Curtailment of non-CO₂ forcings, notably methane from agriculture and waste streams; and targeted decarbonization of the transport sector through electrification and modal shift strategies like construction of tramways.</p> <p>The envisaged trajectory entails an unprecedented expansion of renewable generation capacity from 3% to 33% by 2030, concomitant with the progressive obsolescence of imported petroleum derivatives and fossil-based energy vectors. Complementary mitigation in the AFOLU sector prioritizes nature-based removals, whereas agriculture and waste sectors are targeted for significant methane abatement. Road transport decarbonization is predicated on a combination of accelerated Electrical Vehicle (EV) adoption, enhanced public transport infrastructure, non-motorized transport facilitation, and rigorous efficiency standards for residual internal combustion fleet operations.</p>
(c)	<p>If applicable, information on how the Party will take into account existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement.</p>	<p>As a Party to the UNFCCC and the Paris Agreement, Zambia is committed to reinvigorating the already established domestic Data Management Information Systems (DMIS) and maintaining a robust Measurement, Reporting and Verification (MRV) system that enables transparent tracking of greenhouse gas (GHG) emissions, removals, and the implementation of climate actions. This domestic MRV system serves as the foundation for assessing Zambia's contribution to global climate goals and for reporting progress under its Nationally Determined Contribution (NDC).</p> <p>To comply with the Enhanced Transparency Framework (ETF) and to improve domestic implementation, Zambia has overhauled its national MRV framework as part of its revised NDC. This updated MRV system includes new institutional arrangements, improved data flows, and enhanced sectoral tracking tools ensuring full alignment with the Modalities, Procedures and Guidelines (MPGs) of the Paris Agreement.</p> <p>The Ministry of Green Economy and Environment (MGEE) serves as the lead institution for climate change coordination and chairs technical processes related to the implementation of Zambia's Nationally Determined Contribution (NDC). As part of this mandate, MGEE convenes relevant ministries, statutory bodies, civil society, and private sector actors through Thematic Working Groups (TWGs) focused on priority climate action areas such as adaptation, mitigation, forestry, and energy.</p> <p>The Zambia Environmental Management Agency (ZEMA) plays a central role in monitoring and reporting progress, including</p>

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		<p>oversight of the national Measurement, Reporting and Verification (MRV) system. ZEMA coordinates with line ministries, the Meteorological Department, and the Central Statistical Office to gather data and assess the implementation of mitigation and adaptation actions.</p> <p>ZEMA leads the Climate Change MRV Team which validates technical inputs and supports alignment with the Enhanced Transparency Framework under the Paris Agreement. This committee acts as the national coordination point for institutions contributing to GHG inventory updates, adaptation tracking, and climate finance reporting.</p> <p>These institutional arrangements enable Zambia to systematically track the delivery of its climate commitments while promoting inclusive stakeholder engagement and ensuring alignment with both national development priorities and global climate obligations.</p>
(d)	IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removals	The revision of Zambia's national GHG inventory represents a pivotal foundation for the NDC 3.0. This process has entailed the systematic enhancement of data quality, completeness, and consistency, guided by the latest Intergovernmental Panel on Climate Change (IPCC) methodological frameworks. Updated inventory compilation has incorporated enhanced sectoral datasets, improved activity data collection, and rigorous quality assurance and quality control protocols. This ensures that the NDC baseline year and associated emission estimates are both transparent and reflective of the current state of Zambia's emissions profile, thereby strengthening the evidential basis for policy and investment decisions.
(e)	Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, as appropriate, including, as applicable:	
(i)	Approach to addressing emissions and subsequent removals from natural disturbances on managed lands	<p>Several measures were proposed to deal with fire outbreaks and ecosystems encroachments. Sustainable forest and woodland ecosystem management offers an essential, nature-based solution to reduce climate risks and build long-term resilience. Community-led Forest governance ensures local ownership and stewardship, while early burning and firebreak systems help prevent destructive late-season wildfires. Restoring degraded woodlands through assisted natural regeneration improves biodiversity, stabilizes soils, and enhances microclimates that support surrounding farming systems.</p> <p>At the same time, diversifying incomes through sustainable harvesting and value addition of non-timber forest products – such as honey, mushrooms, and wild fruits reduces dependence on increasingly fragile rainfed agriculture and helps buffer households against climate-induced income shocks. Fuelwood with sustainable fuelwood systems, improved governance, and restoration at scale, this intervention safeguards both ecosystems and the wellbeing of forest-adjacent communities.</p>
(ii)	Approach used to account for emissions and removals from	Zambia applies the production approach, meaning that emissions and removals are reported for wood harvested within national

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	harvested wood products	<p>boundaries, regardless of whether the products are consumed domestically or exported. This method avoids double counting between producing and consuming countries and ensures consistency with international reporting. The Harvested Wood Products (HWP) categories considered include sawnwood, wood panels, paper and paperboard, with default decay functions and half-lives applied as per IPCC guidelines.</p> <p>Data on wood harvests are drawn from the National Forest Monitoring System, forestry production statistics, and relevant FAO databases. Where national data gaps exist, Zambia relies on IPCC default values while progressively strengthening its capacity to generate disaggregated national datasets. Emissions from non-HWP uses such as traditional charcoal and fuelwood are accounted for at the point of harvest or combustion rather than within the HWP pool.</p> <p>This approach ensures that Zambia's HWP accounting is transparent, avoids methodological inconsistencies, and supports accurate tracking of mitigation outcomes from sustainable forest management, REDD+ implementation, and forest-based value chains.</p>
(iii)	Approach used to address the effects of age class structure in forests;	<p>In Zambia, the approach to addressing the effects of age class structure in forests is grounded in sustainable forest management practices that promote a balanced distribution of tree age groups to ensure long-term forest health and productivity. Methods such as continuous cover forestry, selective harvesting, and reforestation initiatives are applied to maintain ecological integrity, enhance biodiversity, and support natural regeneration. Community-based mechanisms like Joint Forest Management and participatory management of forest reserves further strengthen these efforts by combining scientific and indigenous knowledge, ensuring that both ecological and socio-economic needs are met.</p> <p>To complement these strategies, Zambia promotes agroforestry systems, regular forest inventories, and monitoring to assess and manage forest age dynamics effectively. These practices help to restore degraded areas, sustain livelihoods, and provide alternative income sources that reduce dependence on unsustainable activities like charcoal production and illegal logging. While challenges remain due to deforestation pressures and land-use changes, the integration of participatory management, reforestation, and evidence-based monitoring provides a robust framework for maintaining resilient forests with diverse age structures.</p>
(f)	Other assumptions and methodological approaches used for understanding the nationally determined contribution and, if applicable, estimating corresponding emissions and removals, including:	
(i)	How the reference indicators, baseline(s) and/or reference level(s), including, where applicable, sector-, category- or activity- specific reference levels,	Zambia's updated mitigation contribution is expressed as a percentage reduction in greenhouse gas (GHG) emissions relative to a projected business-as-Usual (BAU) baseline for the period 2010–2030. These mitigation targets are presented at the national level and further broken down by sector, distinguishing

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	are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used	<p>between emission sources and carbon sinks. Progress will be monitored using Zambia's National GHG Inventory, comparing actual emissions and removals against the projected BAU pathway throughout the NDC implementation period.</p> <p>Where</p> <p>$BAU(t)$ = Emissions (and removals) in the baseline in tCO₂eq at time t</p> <p>$Inventory(t)$ = Emissions (and removals) in GHG Inventory in tCO₂eq at the time t.</p> <ul style="list-style-type: none"> • Any climate mitigation interventions introduced after the baseline year (2010) are excluded from the Business-as-Usual (BAU) baseline and are counted only in the "with measures" mitigation scenario. As these interventions are implemented, their impact is recorded in the national GHG Inventory allowing Zambia to quantify the actual emissions reductions achieved. • Zambia's BAU scenario is dynamic, not static. It will be updated periodically to reflect: <ol style="list-style-type: none"> 1. Revised national projections for GDP, population, and sectoral growth; 2. Corrections or improvements to previous modeling or data; 3. Enhancements in GHG inventory accuracy—such as updating methodologies, applying the latest IPCC Guidelines, and refining emission factors. • Progress toward Zambia's NDC targets is reported biennially through Biennial Transparency Reports (BTRs), consistent with the ETF and Modalities, Procedures, and Guidelines (MPGs) of the Paris Agreement. Reports must include sector-level tracking of key mitigation actions, modelled BAU and mitigation scenarios, and optional indicators such as co-benefits, socioeconomic impacts, and costs. <p>Following UNFCCC best practices, Zambia's MRV framework specifies a set of core tracking activities like a suite of indicators for critical sectors: Energy, Industrial Processes, AFOLU (further divided into Agriculture and Forestry), and Waste and a unified template for aggregating and assessing progress across sectors, with and without land-use, land-use change, and forestry (LULUCF) components.</p>
(ii)	For Parties with nationally determined contributions that Contain non-greenhouse-gas components, information on	<p>Particulate matter (PM) or particle pollution is a mixture of airborne solid particles and liquid droplets. Out of these, PM_{2.5} (inhalable particles 2.5 micrometres or smaller in diameter) are particularly harmful to health, increasing the risk of heart, cardiovascular, lung, and neurological disease, and cancer, amongst other illnesses.</p> <p>Black carbon, or soot, is a powerful pollutant and a short-lived climate pollutant (SLCP, also known as super pollutants).</p>

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		<p>Methane (CH₄) is a GHG, SLCP, and major contributor to ground level ozone, which has powerful impacts on both human health and climate change.</p> <p>Polluting emissions share the same general sources as GHG emissions namely energy / power, transport, industry, and waste sector combustion, and agriculture. The leading sector sources of PM_{2.5} in Zambia are fires, industry, residential buildings, and energy; while the lead sector sources of black carbon include buildings, industry, transport, energy, and waste; and the leading sector sources of methane are agriculture, energy, waste, buildings, and transport.</p> <p>Climate change and air pollution are closely related and pose significant risks to human health, environments, and economies. Climate change directly harms health while also impacting social and environmental determinants of health – clean air, safe drinking water, secure and sufficient food, housing, education and livelihoods. Greenhouse gases (GHGs), air pollution, black carbon, and methane emitted from energy, industry, transport, household, agricultural, and waste management sectors harm both environment and population health. Zambia has a unique opportunity to improve the environment, population health and wellbeing by integrating meaningful health and air pollution mitigation activities into NDCs.</p>
(iii)	For climate forcers included in Nationally determined contributions not covered by IPCC guidelines	Previous section
(iv)	Further technical information, as necessary	Not applicable.
(g)	The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable.	<p>The use of voluntary cooperation under article 6 of the Paris Agreement is obvious for Zambia. Building on reforms and investments from earlier climate initiatives, Zambia's strategy for financing its updated NDC is anchored in strengthened institutional frameworks and innovative financial tools.</p> <p>Foundational policies like the National Climate Finance Strategy, the Green Finance Taxonomy tailored to Zambia's economic landscape, and the widespread adoption of Climate Budget Tagging (CBT) across ministries and local governments, have been crucial in channeling resources towards climate priorities.</p> <p>The financing approach has evolved towards a comprehensive, results-focused model aligned with Zambia's Eighth National Development Plan (8NDP) spanning 2022 to 2026.</p> <p>This approach integrates climate resilience as a core development theme and embeds climate actions within sectoral and district planning, allowing coordinated investment portfolios that are well-suited for blended funding, concessional loans, and participation in carbon markets.</p> <p>Facilities such as the Zambia's broader initiative to attract private and international investment for green projects are of great value.</p>

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		<p>Zambia prioritizes mobilizing internal financial resources, expanding access to concessional capital, leveraging market instruments, and activating carbon finance opportunities under Article 6 of the Paris Agreement.</p> <p>A cornerstone of Zambia's strategy is establishing a consistent pipeline of investible projects by integrating climate initiatives into Sector Strategic Plans (SSPs) and District Development Plans (DDPs). This alignment maximizes funding efficiency, supports economies of scale, and attracts blended finance. The idea of establishing Zambia's Climate Finance Dashboard plays a pivotal role in delivering up-to-date financial tracking, helping policymakers and investors identify gaps and steer investments to meet NDC and 8NDP goals.</p>
6	How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances:	
(a)	How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances	<p>The robust and integrative formulation of Zambia's NDC 3.0 necessitated comprehensive cross-sectoral engagement, iterative analytical scrutiny, and rigorous multi-tiered validation spanning all levels of governance that is national, provincial, and districts alongside extensive inter-ministerial and inter-agency collaboration.</p> <p>Central to this endeavor was the deliberate incorporation of domain-specific expertise and the systematic engagement of a heterogeneous and multi-stakeholder assemblage, encompassing bilateral and multilateral development partners, non-governmental organizations, civil society organizations, youth, children, women, people with disability, academic institutions, and private sector entities.</p> <p>Such inclusivity was indispensable to ensuring both strategic and operational congruence between the NDC and Zambia's overarching developmental imperatives, policy trajectories, and climate adaptation and mitigation priorities, while concomitantly securing requisite institutional and societal buy-in essential for the operationalization and sustainable implementation of the NDC commitments.</p>
(b)	Fairness considerations, including reflecting on equity	<p>Zambia has redefined its national mitigation ambition based on the emission projections estimated at 160,250.2 Gg CO₂e by 2030.</p> <p>Zambia's mitigation commitment comprises two tiers:</p> <ul style="list-style-type: none"> • Unconditional Target: A 25% reduction in projected BAU emissions by 2030 (20,000 Gg CO₂e), achievable through domestically implemented policies and existing support mechanisms. • Conditional Target: A 47% reduction relative to BAU (38,000 Gg CO₂e), contingent on additional international finance, advanced technologies, and capacity-building support.

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
(c)	How the Party has addressed Article 4, paragraph 3, of the Paris Agreement	Zambia has addressed Article 4, paragraph 3 of the Paris Agreement by ensuring that its updated Nationally Determined Contribution (NDC) represents clear progression beyond its previous submissions and reflects its highest possible ambition in light of national circumstances. The initial NDC (2015) committed to reducing greenhouse gas emissions by 25–47 percent below business-as-usual levels by 2030. The updated NDC (2021) reaffirmed and strengthened these targets through enhanced sectoral coverage, improved data, and more robust transparency provisions. It distinguishes between unconditional reductions, achievable with domestic resources, and higher conditional reductions that depend on international support in finance, technology transfer, and capacity building. Zambia situates its ambition within the principle of common but differentiated responsibilities, highlighting its very low historical emissions, high climate vulnerability, and pressing development needs. Despite these constraints, Zambia has expanded mitigation and adaptation sectors to ten by demonstrating ambition within its capacity while contributing fairly to global climate action.
(d)	How the Party has addressed Article 4, paragraph 4, of the Paris Agreement	Zambia's Third Generation Nationally Determined Contribution (NDC 3.0) demonstrates a progressive enhancement of its climate mitigation efforts, reflecting Article 4, paragraph 4 of the Paris Agreement. As a developing country, Zambia focuses on balancing ambition with national circumstances and development priorities. The updated NDC commits to a 25% unconditional and 47% conditional reduction in emissions by 2030, strengthening ambition compared to the first NDC while accounting for limited technical, institutional, and financial capacity. Conditional measures rely on international support, illustrating Zambia's adherence to the principle of common but differentiated responsibilities and its commitment to contributing fairly to global climate goals. The NDC 3.0 expands adaptation and mitigation actions across ten key sectors: forestry, agriculture, energy, waste management, transport, mining and coal, tourism, industrial processes and product use (IPPU), infrastructure (green buildings), and water security. In each sector, Zambia promotes practical interventions such as sustainable forest management, climate-smart agriculture, low-emission transportation, renewable energy adoption, and improved water management. By prioritizing sectors where mitigation is feasible and aligned with Sustainable Development Goals (SDGs), Zambia signals readiness to progressively move toward economy-wide targets as capacities improve. This approach demonstrates a pragmatic and coherent application of Article 4.4, balancing national development needs, vulnerability considerations, and global climate responsibilities.
(e)	How the Party has addressed Article 4, paragraph 6, of the Paris Agreement.	Zambia addresses Article 4, paragraph 6 of the Paris Agreement by clearly distinguishing between unconditional mitigation and adaptation actions, which can be implemented using domestic resources, and conditional actions that depend on international support. In its NDC 3.0, the country identifies financing needs across key sectors including forestry, energy, agriculture,

Para	Guidance in decision 4/CMA.1	ICTU guidance as applicable to Zambia's NDC
		transport, waste management, mining and coal, infrastructure, tourism, IPPU, and water security and emphasizes the role of grants, concessional loans, and technical assistance from multilateral and bilateral sources. By linking higher mitigation and adaptation ambition to predictable financial, technological, and capacity-building support, and reporting transparently through the 4 th National Communications and Biennial Transparency Report (BTR), Zambia operationalizes the country ownership principle while enabling the implementation of climate actions to be aligned with its national priorities.
7	How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2	
(a)	How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2	The emission reductions from all measures proposed under Sustainable Energy, Sustainable Transport, IPPU, AFOLU, and Waste are projected to reach 29% (20,555Gg CO ₂ e) by 2030 compared to the BAU levels.
(b)	How the nationally determined contribution contributes towards Article 2, paragraph 1(a), and Article 4, paragraph 1, of the Paris Agreement	Zambia's NDC 3.0 contributes to Article 2, paragraph 1(a) of the Paris Agreement by proposing sector-specific mitigation actions that aim to limit global temperature rise well below 2 °C, including 25% unconditional and 47% conditional reductions by 2030 across forestry, agriculture, energy, waste management, transport, mining and coal, industrial processes and product use, infrastructure, tourism, and water security. These actions also enhance carbon sinks through sustainable forest management and land-use practices, supporting global temperature goals while aligning with national development priorities. In relation to Article 4, paragraph 1, Zambia actively works toward reducing net emissions and increasing removals, establishing a progressive pathway toward the long-term balance between anthropogenic emissions and removals. By combining unconditional measures with conditional targets dependent on international finance, technology, and capacity-building. Zambia demonstrates a practical approach to contributing to global peaking, emission reductions, and the eventual achievement of net-zero emissions. By implementing these measures, Zambia will also be ensuring job creation and poverty eradication by 2030 through increased investments in mitigation and adaptation actions.

Annex 2: Selected indicators for Zambia adaptation measures

No.	Indicator (Global Goal on Adaptation)	National Indicators (Zambia NDC)	Baseline in 2025	Target by 2030
01	Significantly reducing climate-induced water scarcity and enhancing climate resilience to water-related hazards towards a climate-resilient water supply, climate-resilient sanitation and towards access to safe and affordable potable water for all.	Catchments with allocation plans (%)	20%	80%
02	Attaining climate-resilient food and agricultural production and supply and distribution of food, as well as increasing sustainable and regenerative production and equitable access to adequate food and nutrition.	Area under climate-smart agriculture (Ha)	300,000	800,000
03	Strengthening resilience against climate-related health impacts, promoting climate-resilient health services, and reducing climate-related morbidity and mortality, particularly in the most vulnerable communities	Health: % of health facilities with climate-resilient WASH (Water, Sanitation and Hygiene) systems and reduced incidence of cholera/malaria.	TBD	80%
04	Reducing climate impacts on ecosystems and accelerating the use of ecosystem-based adaptation and nature-based solutions, including through management, enhancement, restoration and conservation and the protection of terrestrial, inland water, mountain, marine and coastal ecosystems	Hectares of forest put under community forest management	2,000,000	8,369,501

05	Increasing the resilience of infrastructure and human settlements to climate change impacts to ensure basic and continuous essential services for all, and minimizing climate related impacts on infrastructure and human settlements	Operational climate-resilient Road Asset Management System (RAMS)	Zambia highway management system	Operational climate-resilient Road Asset Management System (RAMS)
06	Substantially reducing poverty and livelihood vulnerability in areas with high climate risk for communities, by promoting the use of adaptive social protection measures	Green investments benefiting both men and women, youth and people with disabilities	TBD	TBD
07	Protecting cultural heritage from the impacts of climate related risks by developing adaptive strategies for preserving cultural practices and heritage sites and by designing climate resilient infrastructure, guided by traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems;	Infrastructure sector Climate Vulnerability Assessment (CVA) report	0	1