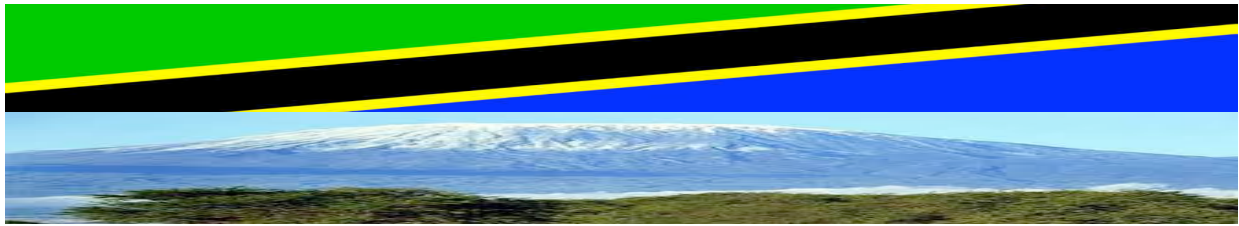




UNITED REPUBLIC OF TANZANIA



INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (INDCs)

1. Introduction

The United Republic of Tanzania, which comprises of Tanzania Mainland and Zanzibar, brings forth her Intended Nationally Determined Contributions (INDCs) guided by both national and international contexts. These INDCs were prepared in consistence with decision 1/CP.20, and will be implemented by 2030.

Tanzania is already experiencing adverse impacts of climate change. Current climate variability and change resulting in extreme weather events already lead to major economic costs in Tanzania. Every annual event has economic costs in excess of 1% of GDP, and occurs frequently, reducing long-term growth and affecting millions of people and their livelihoods. The net economic costs of addressing climate change impacts could be equivalent to a further 1 to 2% of GDP per year by 2030. Climate change impacts are affecting coastal zones, public health, energy supply and demand, infrastructure, water resources, agricultural production and availability of ecosystem goods and services. Potentially, there will be high economic costs across these sectors. Current climate vulnerability and future climate change adverse impacts are significant to curtail Tanzania from achieving key economic growth, development and poverty reduction targets for reaching middle income developing country status.

Tanzania has been undertaking various efforts towards addressing climate change in accordance with her national context. The National Climate Change Strategy (2012) and the Zanzibar Climate Change Strategy (2014) comprehensively elaborate adaptation and mitigation actions. The strategies aim to, among others, enhance adaptive capacity to climate change thereby ensuring long term resilience; resilience of ecosystems to climate change; and enhanced participation in climate change mitigation activities to contribute to international efforts while ensuring sustainable development. The two climate change strategies and other national climate change and development related documents and processes were the basis for the identification of adaptation and mitigation priorities along with detailed consultations with sectoral experts and other stakeholders.

In addition, Tanzania has adopted and implements various other policies, legislations, strategies, plans and programmes in the course of addressing climate change. Some of these are: the National Communications (2003 and 2015); the National Adaptation Programme of Action (2007); Natural Gas Policy (2013); the Zanzibar Environmental Policy (2014); the Renewable Energy Strategy (2014); the Natural Gas Act (2015); the National Forestry Policy

(1998); the National Transport Master Plan (2013); the National Environmental Policy (1997); the Zanzibar Environmental Policy (2013); the National Environmental Action Plan (2012 – 2017); the National REDD+ Strategy and Action Plan (2013) and the National Environment Management Act (2004).

The Economics of Climate Change reports for Tanzania mainland and Zanzibar (2012) provide indicative costs of Business-as-Usual (BAU) and a good basis for estimating adaptation and mitigation costs required to enhance adaptive capacity and long term resilience in Tanzania. Accessing financial resources to meet the estimated costs is necessary in supporting Tanzania's efforts to meet socio-economic development goals while contributing to the international climate change agenda.

An initial estimate of immediate and start-up financing needs for enhancing adaptive capacity is about USD 150 million. In addition, about USD 500 million per year is needed to address climate change adaptation and building resilience up to 2020, increasing up to USD 1 billion per year by 2030. These costs are likely to increase further depending on global mitigation efforts. Estimated costs are up to US\$ 60 billion by 2030 in mitigation investments in Tanzania.

2. Principles and Assumptions

The implementation of these INDCs will be guided by the principles of the United Nations Framework Convention on Climate Change particularly the Principle of Equity and that of common but differentiated responsibilities and respective capabilities. In this context, it is assumed that the identified INDCs will:

- a) Contribute to building adaptive capacity and enhancing long-term resilience to the adverse impacts of climate change.
- b) Contribute to greenhouse gas emissions reduction efforts to meet the ultimate objective of the Convention while achieving sustainable development consistent with national development agenda and priorities.
- c) Be implemented in a participatory and voluntary manner.
- d) Be implemented, as Tanzania's incremental contributions beyond our current efforts and upon availability of adequate and predictable financial and technological support from the international community.

3. Methodological approach

The INDCs were prepared in a consultative and inclusive manner through technical and policy dialogues. A national technical team was established, with representatives from various sectors and relevant institutions. Broad based national and sub-national stakeholders' consultative workshops were held during the process. The consultations brought together Civil Society Organizations (CSOs), Academic and Research institutions, the Private sector, and government institutions from across the country.

National policies, legislations, strategies, programmes and action plans together with UNFCCC decisions guided the preparation of these INDCs. Priority sectors on both adaptation and mitigation were identified through a review of various climate change and economic development relevant documents. Adaptation priority sectors are: Agriculture, Livestock, Coastal and Marine Environment, Fisheries, Water resources, Forestry, Health, Tourism, Human Settlement and Energy. Identified mitigation priority sectors are: Energy, Transport, Forestry and Waste management.

The mitigation scenario analysis utilized data from the Initial National Communication (INC) and Second National Communication (SNC) and other data was from secondary sources. The year 2000 was used as a base year for calculating the baseline (business-as-usual) projection scenario. High and low ambition projections provided a range of deviation against the BAU baseline. The data to develop accurate bottom-up estimates of the contributions of the INDCs were not adequate to provide a sector-by-sector emissions reduction between 2020 and 2030.

4. Planning process

The INDCs are in line with the Tanzania Development Vision (2025), Zanzibar Vision (2020), Tanzania Five Year Development Plan (2011/12-2015/16), and are anchored in the National Climate Change Strategy (2012) and the Zanzibar Climate Change Strategy (2014).

5. Intended Contributions

Tanzania has negligible emissions of greenhouse gases (total and per capita), whereby per capita emissions are estimated at 0.2 tCO₂e¹. On the other hand, the country has a total of 88 million hectares of land areas, of which 48.1 million are forested land and under different management regimes, with a current estimated total of 9.03² Trillion tones of carbon stock. The estimates are based on the present stocks from limited studies. This implies that Tanzania is a net sink.

5.1 Adaptation contributions

Climate change projections in Tanzania indicate a consistent change in key climate variables, including warming from 0.5⁰C in 2025 up to around 4⁰C in 2100, with more warming over the South Western part of the country. Mean seasonal rainfall is projected to decrease consistently and progressively for the most parts of the country, but more significantly over the North-eastern highlands, where rainfall is projected to decrease by up to 12% in 2100. In this context, the frequency and severity of extreme climate change related events will increase. In the last 40 years Tanzania has experienced severe and recurring droughts with devastating effects to agriculture, water and energy sectors. Currently more than 70% of all natural disasters in Tanzania are climate change related and are linked to recurrent droughts and floods.

Tanzania will embark on a climate resilient development pathway. In doing so the adaptation contributions will reduce climate related disasters from 70% to 50%, and significantly reduce the impacts of spatial and temporal variability of declining rainfall, frequent droughts and floods which have long term implications to all productive sectors and ecosystems, particularly the agricultural sector. Access to clean and safe water will be increased from 60% to 75% and, based on a conservative and a worst-case scenario of 50cm and 1m sea-level rise, the contributions will verifiably reduce the impacts of sea level rise to the island and coastal communities, infrastructure and ecosystems.

¹ World Bank 2008

² Forest Resource Assessment 2015 – Country Report, United Republic of Tanzania, (FAO, 2015)

Sector	Intended Contributions
Agriculture	<ul style="list-style-type: none"> a) Up-scaling the level of improvement of agricultural land and water management. b) Increasing yields through <i>inter alia</i> climate smart agriculture. c) Protecting smallholder farmers against climate related shocks, including through crop insurance. d) Strengthening the capacity of Agricultural research institutions to conduct basic and applied research. e) Strengthening knowledge, extension services and agricultural infrastructures to target climate actions.
Livestock	<ul style="list-style-type: none"> a) Promoting climate change resilient traditional and modern knowledge on sustainable pasture and range management systems. b) Enhancing development of livestock infrastructures and services. c) Promoting livelihood diversification of livestock keepers. d) Promoting development of livestock insurance strategies.
Forestry	<ul style="list-style-type: none"> a) Enhancing efficiency in wood fuel utilization, b) Enhancing participatory fire management. c) Enhancing forest governance and protection of forest resources. d) Enhancing Sustainable forest management.
Energy	<ul style="list-style-type: none"> a) Exploring and investing in energy diversification system. b) Promoting use of energy efficient technologies and behaviour. c) Enhancing integrated basin catchment and upstream land management for hydro sources. d) Enhancing the use of renewable energy potential across the country (hydro, solar, wind, biomass and geothermal).
Coastal, Marine Environment and Fisheries	<ul style="list-style-type: none"> a) Strengthening management of coastal resources and beach erosion/sea level rise control systems. b) Promoting livelihood diversification for coastal communities. c) Improving monitoring and early warning systems of both sea level rise impacts and extreme weather events for building adaptive capacity. d) Enhancing programme for management of saltwater inundation and intrusion. e) Mangrove & shoreline restoration programme. f) Enhancing conservation & fishery resource management. g) Strengthening key fisheries management services for sound development and management of the fishery sector for resilience creation.
Water Resources	<ul style="list-style-type: none"> a) Promoting integrated water resources development and management practices. b) Investment in protection and conservation of water catchments including flood control and rainwater harvesting structures. c) Promoting waste water reuse and recycling technologies; d) Development and exploitation of groundwater resources.

Tourism	<ul style="list-style-type: none"> a) Promoting sustainable tourism to consolidate growth and ensure climate resilient tourism. b) Promoting diversified tourist attractions (e.g., eco-tourism and cultural tourism).
Human settlements	<hr/> <ul style="list-style-type: none"> a) Promoting sustainable land management systems and climate sensitive human settlement developments. b) Facilitating provision of, and access to adequate, affordable and climate sensitive shelter to all income groups. c) Enhancing awareness on the impacts of climate change in the context of human settlements. d) Construction and rehabilitation of drainage systems in respond to frequent and high intensity floods. <hr/>
Health	<hr/> <ul style="list-style-type: none"> a) Promoting sustainable and climate sensitive health and sanitation infrastructure. b) Conducting vulnerability assessment for a comprehensive action plan in health sector. c) Integrating climate change adaptation action into health sector policies, plans and programmes. <hr/>

5.2 Mitigation contributions

For the global effort to avoid dangerous anthropogenic climate change, a below 2°C scenario requires serious mitigation actions including a “substantial deviation from baseline” by 2050 in all developing countries. Tanzania continues to undertake various efforts, which contribute to the global mitigation agenda. Beyond enhancing carbon sinks through forest conservation, afforestation and reforestation, the country is embarking on enhanced use of natural gas with 53.28 trillion cubic feet discovered reserves of which to-date over 100 million cubic feet are exploited to produce 501 MW. There is also expanded use of renewable energy sources such as geothermal (with a potential of 5 GW); solar with average sunshine of more than 9 hours per day; hydro with a potential of 4.7 GW (while the installed capacity is 561 MW); and wind with speed of 0.9 – 9.9 m/s across many parts of the country.

Tanzania will reduce greenhouse gas emissions economy wide between 10-20% by 2030 relative to the BAU scenario of 138 - 153 Million tones of carbon dioxide equivalent (MtCO₂e)- gross emissions, depending on the baseline efficiency improvements, consistent with its sustainable development agenda. The emissions reduction is subject to review after the first Biennial Update Report (BUR).

between 110.4 and 137.7 MtCO₂e
(cond.?)

In the transport sector, Tanzania has a total railway track length of 3,687 km and a tarmac road network of 17,742 km that promote mass transport. In addition, the rapid transport and mass marine transport systems are being improved. Waste management systems in the country are being enhanced by encouraging private sector and community involvement in waste to energy management approaches; enhancing management of waste disposal sites; encouraging waste recycling and re-use; mapping and identifying informal dump sites; and implementing landfill gas recovery as well as electricity generation programmes.

The intended contributions in the sectors of energy, transport, forestry and waste management will enable the country to achieve low emission growth pathway while achieving the desired sustainable development. These sectors are among the top contributors towards economic development in Tanzania. The intended contributions by these sectors are considered fair and ambitious in light of Tanzania’s national circumstances and for achieving the UNFCCC objective.

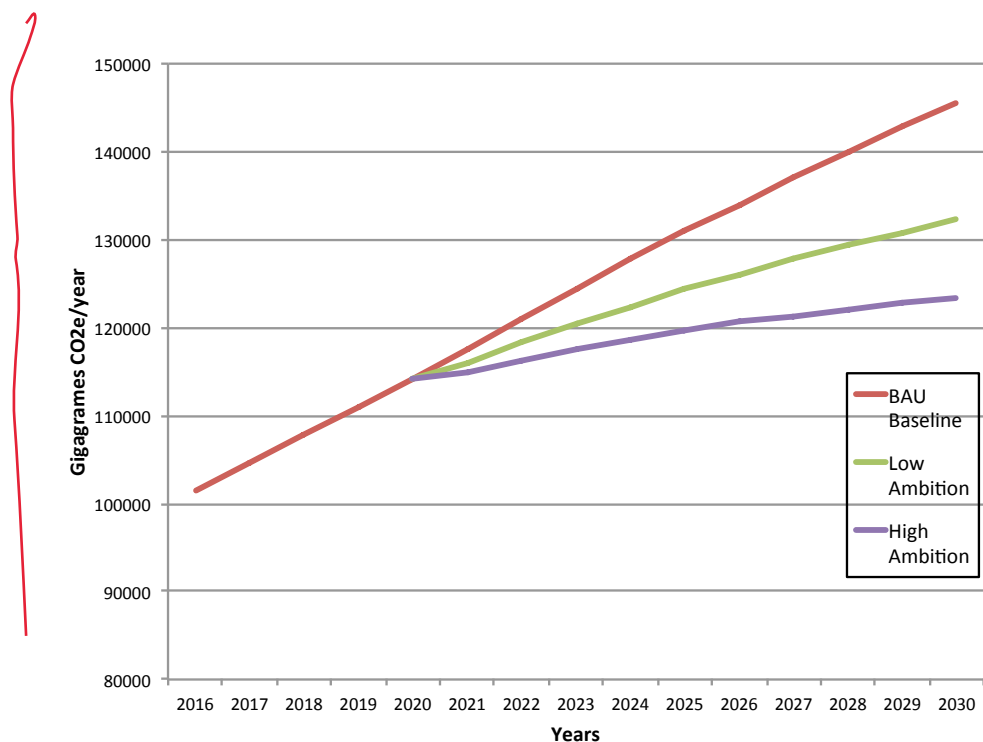


Fig. 1: Projected emission reduction from **BAU³** with low and high ambition by 2030.

Therefore, Tanzania will meet its contribution by implementing the following mitigation actions: -

Sector	Intended Contributions
Energy	<ul style="list-style-type: none"> a) Exploring and investing in the energy diversification system to ensure overall energy security for economic development through enhanced availability, affordability and reliability while contributing towards energy emissions intensity reduction over time. b) Promotion of clean technologies for power generation; and diverse renewable sources such as geothermal, wind, solar and renewable biomass. c) Expanding the use of natural gas for power production, cooking, transport and thermal services through improvement of natural gas supply systems throughout the country. d) Promoting energy efficient technologies for supply, transmission/transportation and demand side as well as behavioral change in energy use. e) Promoting rural electrification.
Transport	Promoting low emission transport systems through deployment of Mass Rapid Transport Systems and investments in air, rail, marine and road infrastructures.

³ This implies national efforts without support for the intended contributions

Waste management

- a) Application of modern and practical way of managing waste including the enhanced use of engineered/sanitary landfills.
- b) Promotion of waste to energy programmes.
- c) Promoting co-generation activities.

Forest sector

- a) Enhancing and up-scaling implementation of participatory forest management programmes.
- b) Facilitating effective and coordinated implementation of actions that will enhance contribution of the entire forest sector including Forest policies, National Forest Programmes and REDD+ related activities.
- c) Strengthening national wide tree planting programmes and initiatives.
- d) Strengthening protection and conservation of natural forests to maintain ecological integrity and continued benefiting from service provisions of the sector.
- e) Enhancement and conservation of forest carbon stocks.

6. Means of Implementation

Tanzania will continue its adaptation efforts to enhance resilience, strive to achieve Vision 2025 and contribute more towards global greenhouse gas emissions reduction efforts. Effectively implementing mitigation and adaptation contributions will require timely access to adequate and predictable financial resources; access to appropriate technologies; access to appropriate knowledge and skills; and institutional capacity building.

Tanzania's capacity to undertake strong adaptation and mitigation actions beyond national efforts depend on support for implementation. In addition, enhancing capacity in early-warning systems across sectors, improved research and systematic observations, improved climate change institutional capacity and coordination as well as awareness will be critical in addressing climate change. As indicated in section 1, the total amount of financial resources needed for implementation of the identified adaptation contributions is about USD 500 million to 1 billion per annum, and a total of USD 60 billion for mitigation contributions. Therefore, implementation of the identified INDCs will strongly depend on how the international community meets its commitments in terms of financial and technological support.

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7. Review processes

The implementation of INDCs is based on the country's various policies, development vision programmes, strategies and action plans, which are set to be reviewed regularly. Therefore, the submitted INDCs will be reviewed in a participatory manner to reflect the emerging needs, changes and decisions, particularly the outcome of the 21st Conference of the Parties (COP 21) of the United Nations Framework Convention on Climate Change, December 2015.