CLIMATE CHANGE AND THE BUILT ENVIRONMENT SYMPOSIUM 2022

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PRESENTATION STRUCTURE

- Current vulnerabilities
- Future scenarios
- Responses to climate change
  - International/National Policies
  - Low Emission Development Strategies and Nationally Determined Contributions
- Mitigation options
- National Adaptation Planning

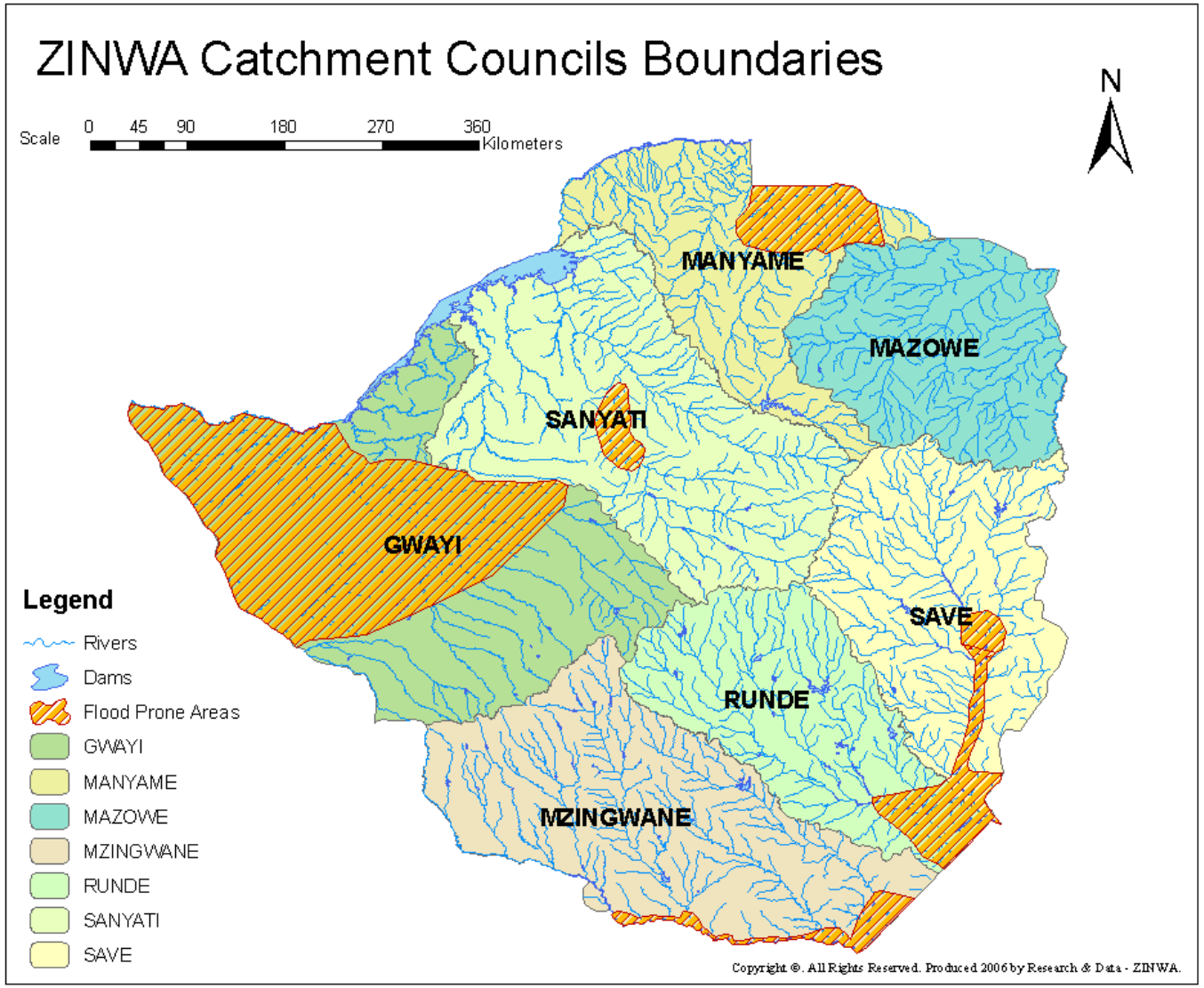
CURRENT VULNERABILITIES TO CLIMATE CHANGE (AFRICA REGION)

- The level of risk posed by climate change in Africa depends both on the level of warming and on how population, consumption, production, technological development and land management patterns evolve.
- Africa is highly vulnerable to climate change mainly because of its strong economic dependency on climate-related activities and products and low adaptive capacity.
- Water, agriculture, health sectors and entire ecosystems, are sensitive to changing climate, including changes in the magnitude and frequency of extreme events.
- The rise of mean sea level will threaten African coastal cities.
- The agricultural sector is sensitive to rising surface temperatures and varying rainfall, and these changes will affect the attainment of food security on the continent.
- Climate sensitive diseases (including malaria, meningitis, and cholera) are expected to expand to areas where they are not currently common e.g. malaria is likely to expand to highland areas, where increased temperatures will make it easier for mosquitoes to breed.

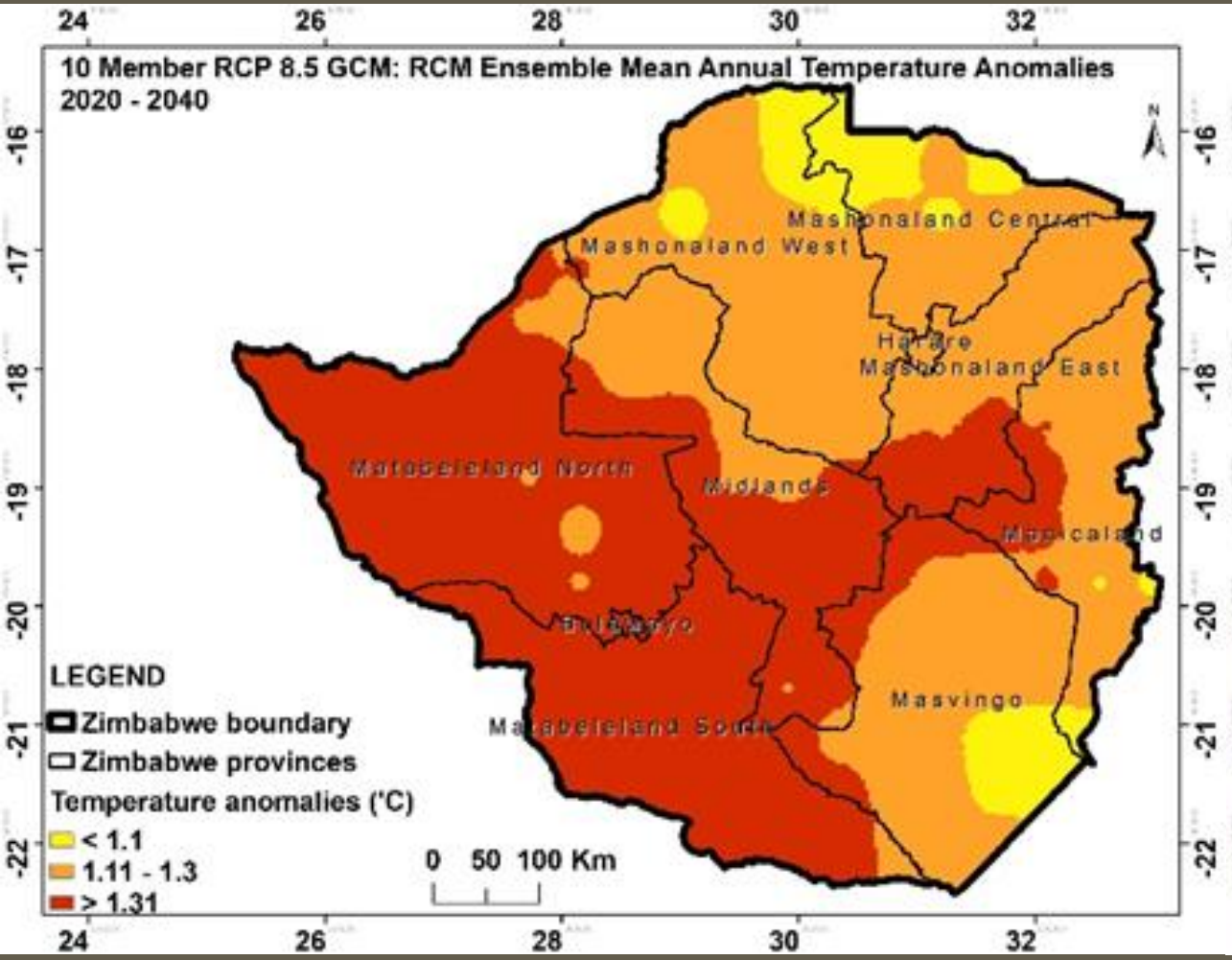
CURRENT VULNERABILITIES TO CLIMATE CHANGE IN ZIMBABWE

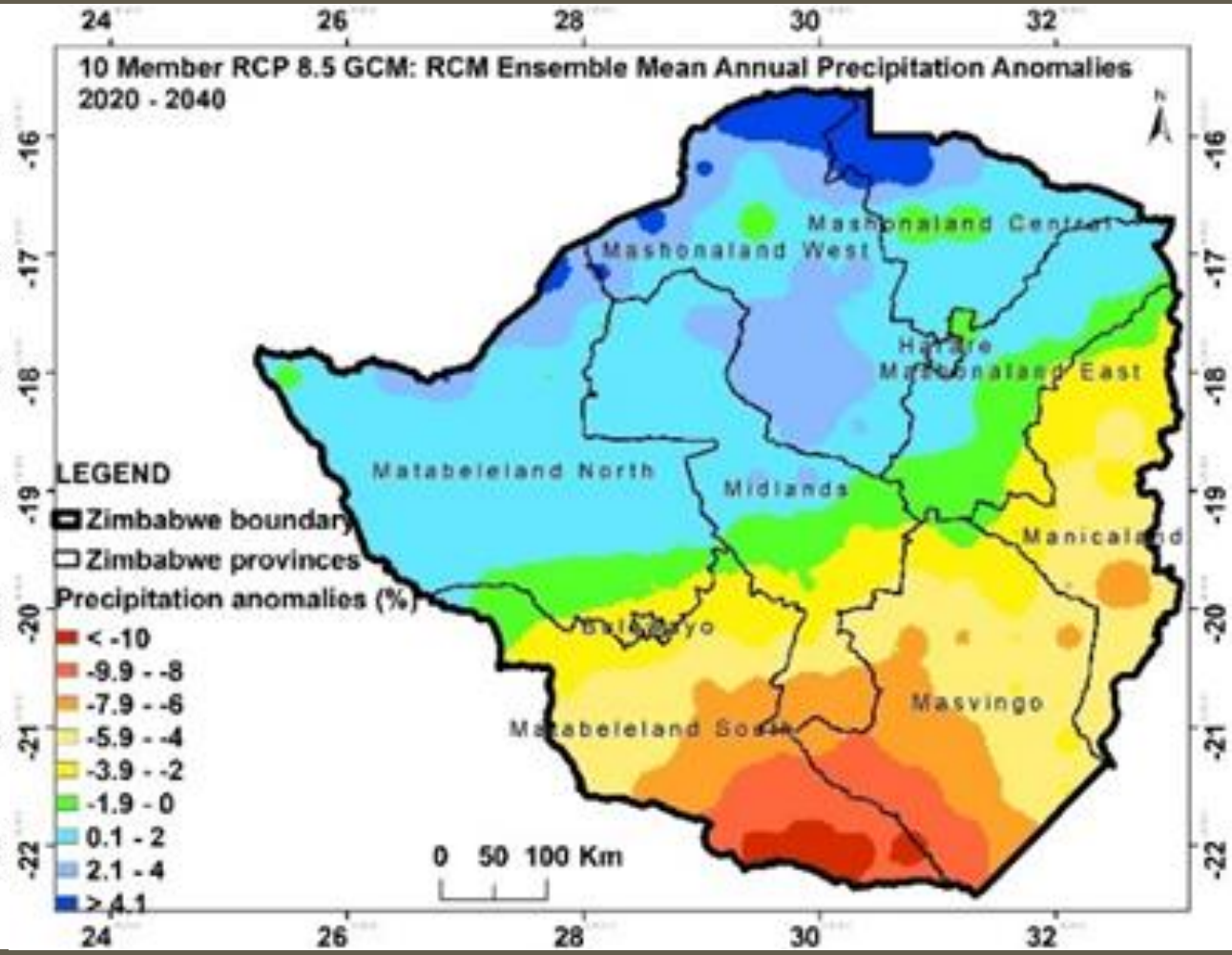
- General increase in annual average temperatures
- Rainfall has declined by ~8%
- More intense rainfall events – high runoff, erosion, siltation and flooding – infrastructure destruction
- Increased mid-season dry spells duration and frequency
- Periodic shift in onset of rains
- Extreme events are becoming more intense and longer – emergence of landslides and mudslides

ZIMBABWE'S FLOOD HAZARD MAPPING



FUTURE CLIMATE SCENARIOS IN ZIMBABWE

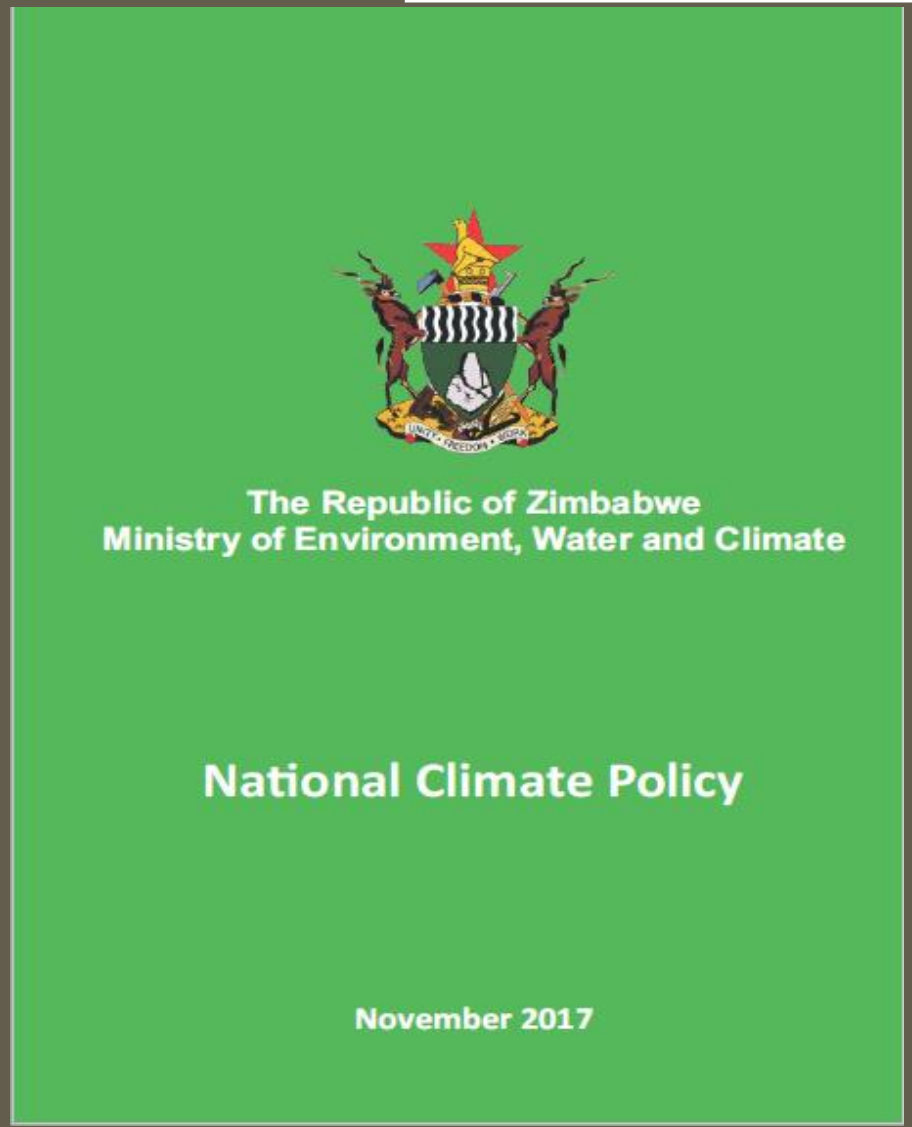




INTERNATIONAL RESPONSE TO CLIMATE CHANGE

- In 1992 Zimbabwe became a Party to the United Nations Framework Convention on Climate Change (UNFCCC) which has the aim to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the global climate system.
- Zimbabwe is also a Party to the 2015 Paris Agreement which has the following objectives:
  - Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
  - Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and for world to have a Global Goal on Adaptation;
  - Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

ZIMBABWE'S CLIMATE CHANGE POLICY FRAMEWORKS



- National Climate Policy
- National Climate Change Response Strategy
- Low Emissions Development Strategy (LEDS)
- National Climate Change Learning Strategy
- Climate Change and Gender Action Plan
- Green Climate Fund (GCF) Country Programme
- National Adaptation Plan (NAP)

NATIONAL CLIMATE POLICY GOALS

The Policy is meant to guide climate change management in the country, enhance the national adaptation capacity, scale up mitigation actions, facilitate domestication of climate-related global policies and ensure compliance to the global mechanisms.

Policy Goals:

- Reduce vulnerability to climate variability and climate related disasters by strengthening adaptive capacity.
- Accelerating mitigation measures by adopting and developing low carbon development pathways.
- Strengthen education and awareness to climate variability and change.
- Promote technology transfer, capacity building and information sharing.
- Search for solutions to financial resource allocation, mobilisation and management.
- Foster collaboration among national and international institutions in climate related issues.
- Strengthen governance structures for the climate policy to increase Zimbabwe's resilience to climate change and climate variability.

ZIMBABWE'S LOW EMISSION DEVELOPMENT STRATEGY (LEDS) 2020-2050

- The Paris Agreement requires countries to communicate their mid-century Low Greenhouse Gas Emission Development Strategies (LEDS) to the UNFCCC.
- These LEDS are equivalent to green growth strategies with longer time horizon (2020-2050).
- In 2020, Zimbabwe developed its Low Emission Development Strategy (LEDS) to foster long term planning beyond the short-term cycles of the NDCs because meaningful results of mitigation actions are visible in the long term.
- The LEDS covers the 4 Inter-governmental Panel on Climate Change (IPCC) sectors:
  - Energy
  - Industrial Processes and Product Use (IPPU)
  - Agriculture Forestry and Other Land Use (AFOLU), and
  - Waste
- Achieved through implementation of 38 prioritized mitigation options with potential to reduce GHG emissions against the Business As Usual (BAU) scenario.
- Provides a Financing Strategy for the mitigation options.
- Proposes the Establishment of a Measurement, Reporting and Verification (MRV) Framework for reporting to the UNFCCC.

MITIGATION OPTIONS FOR ENERGY SECTOR IN THE LEDS

Energy sector

- Emissions from electricity and heat production are derived mostly from the burning of coal, natural gas and oil constituting the largest source of GHG emissions
- Mitigation options for this sector include:
  - ✓ Use of renewable heat and power **– solar,** biogas, wind, biofuels, hydropower
  - ✓ Improved energy supply and distribution efficiency
  - ✓ **Energy efficiency – lighting, equipment**
  - ✓ Combined heat and power generation

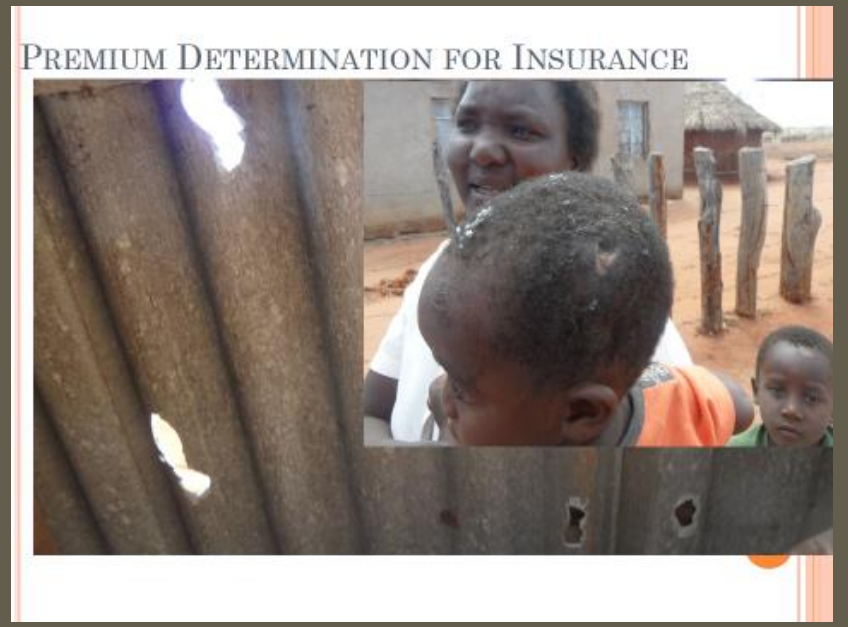
MITIGATION OPTIONS FOR BUILDING SECTOR IN THE LEDS

Building Sector

GHG emissions from this sector arise from onsite energy generation and burning fuels for heat in buildings or cooking in homes.

Mitigation options in this sector include:

- ✓ Efficient lighting and natural lighting
- ✓ More efficient electrical appliances, heating and cooling devices
- ✓ Improved insulation of buildings and appliances
- ✓ Integrated design of buildings including technologies such as intelligent meters that provide feedback and control
- ✓ Solar photovoltaic systems Integrated in buildings
- ✓ Motion sensors and automated shutdown equipment



MITIGATION OPTIONS FOR WASTE SECTOR IN THE LEDS

Waste

- Waste generates methane emissions from both liquid and solid streams coming from domestic and in industrial processes
- Mitigation options in this sector include:
  - ✓ Landfill methane recovery
  - ✓ Waste incineration with energy recovery
  - ✓ **Composition of organic waste**
  - ✓ Controlled wastewater treatment
  - ✓ **Recycling and waste minimization**
  - ✓ Bio-covers and bio-filters to optimize methane oxidation
  - ✓ Construction of biogas digesters

BENEFITS OF CLIMATE CHANGE MITIGATION AND LOW EMISSION DEVELOPMENT

1. Environmental benefits

- Conservation of biodiversity and ecosystems
- Improved water and air quality
- Restoration of degraded land

2. Economic benefits

- Employment creation
- Energy security
- New economic opportunities
- Potential cost savings

3. Social benefits

- Access to better services
- Health benefits
- Lifestyle benefits

ZIMBABWE'S REVISED NATIONALLY DETERMINED CONTRIBUTION (NDC)

- Zimbabwe's revised NDC sets a target to reduce the nations greenhouse gas emission by 40% per capita across the economy, relative to the 2030 BAU scenario.
- Estimated USD5billion to implement the commitment
- Conditional on international climate finance, technology development and transfer.
- International climate finance – i.e. GCF, GEF, Bilateral, Philanthropy etc
- Developed through a consultative process
- Endorsed by Cabinet and submitted to UNFCCC in Sept 2021
- Development of a NDC Implementation Plan currently underway

ENHANCING ZIMBABWE'S ADAPTATIVE CAPACITY AND RESILIENCE THROUGH NDCS

Enhancing early warnings and climate related disaster risk reduction

Promoting Climate Smart Agriculture

Promoting climate resilient infrastructure and design

Sustainable water resources development and management

NATIONAL ADAPTATION PLANNING (NAP) IN ZIMBABWE

- In response to the adverse effects of climate change, Zimbabwe is developing its National Adaptation Plan (NAP) to be completed by December 2022
- Will be accompanied by a Financing Strategy and Monitoring and Evaluation Framework
- Pro-activeness to the impacts of climate change.
- Tool for resource mobilization as it identifies the priority for building resilience whilst also recognizing that enablers such as gender, research and awareness are critical pillars in ensuring that no one is left behind.

PRIORITY INTERVENTIONS FOR BUILDING SECTOR IN THE NAP

- Heavy rains, flooding, strong winds, hailstorms- what does this mean for our infrastructure? Mobility of people during rainy seasons?
- There are schools that have a history of their roofs being blown off by heavy winds every year especially in Manicaland and to some extent Midlands with Mat South reporting these issues of late
- Bridges and dams have not been spared
- Infrastructure codes need to align with new climate data trends for given areas
- In the process of codes revision consider also energy & water use efficiency and making the buildings greener

CLIMATE FINANCE TO SUPPORT MITIGATION AND ADAPTATION IN THE BUILDING SECTOR

- It is now a requirement for the Government to strengthen its monitoring and evaluation systems to access finance from multilateral funding windows such as the Green Climate Fund, Global Environment Facility and Adaptation Fund among others.
- A climate finance tracking system was developed in collaboration with the Ministry of Finance.
- The system will also help to establish gaps in terms of allocation from treasury for resilience building interventions.
- Ministry of Finance has also mandated all Ministries, Departments and Agencies to mainstream climate change into their budgeting process.
- There is also need for private sector engagement in the adaptation discourse

GREEN BUILDING STANDARDS IN ZIMBABWE

- The Ministry of Environment, Climate, Tourism and Hospitality Industry in partnership with Ministry of National Housing and Social Amenities and Ministry of Local Government and Public Works have sought for technical assistance from the Climate Technology Centre and Network (CTCN) to develop Green Building Standards for Zimbabwe.
- **Project Objective:** Develop green building standards for enhanced energy efficiency in three building types (residential buildings, office buildings, and commercial complexes) and introduce effective mechanisms for their operationalization
- **Key Outputs:**

  Green building standards and policy guidelines

  Updated building by-laws

  Monitoring, Verification and Evaluation System

  User's manual to guide retrofitting of old buildings and development of new buildings

  Capacity building materials and training programme for experts in the sector

THANK YOU

2022

Year to Act