STUDY REPORT ON NATIONALLY DETERMINED CONTRIBUTIONS (NDC) IMPLEMENTATION TRACKING IN ZIMBABWE

ICAT Initiative for Climate Action Transparency

Initiative for Climate Action Transparency – ICAT

Study Report on Nationally Determined Contributions (NDC) Implementation Tracking in Zimbabwe

Deliverable 5

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1. Introduction

Climate change is viewed as a threat by the Government of Zimbabwe (GoZ) as it poses serious risks to the country's food and nutrition security, economic growth and development. Climate change is affecting the country's main socio-economic sectors such as agriculture, forestry, tourism, health, water resources, transport, and infrastructure. Zimbabwe is a Party to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 2015 Paris Agreement. The later aims to hold "the increase in the global average temperature to well below 2oC above pre-industrial levels and pursuing efforts to limit temperature increase to 1.5oC above pre-industrial levels.

This entails that the country has a mandate to fulfil developing Party obligations as set out in the Convention and Paris Agreement including reporting of in-country actions aimed at addressing climate change. In its 2021 revised Nationally Determined Contributions (NDCs) Zimbabwe has committed to an ambitious and sector-wide commitment, with a target to reduce greenhouse gas (GHG) emissions by 40% by 2030. The Enhanced Transparency Framework (ETF) established under Article 13 of the Paris Agreement requires progress towards the achievement of this NDC to be tracked and reported vis-a-vis the 2030 target.

The Enhanced Transparency Framework (ETF) was set up "to provide a clear understanding of climate change action in the light of the objective of the Convention···including clarity and tracking of progress towards achieving Parties' individual NDCs under Article 4, and Parties' adaptation actions, including good practices, priorities, needs and gaps, to inform the global stocktake", as well as "to provide clarity on support provided and received by relevant individual Parties in the context of climate change actions···[and] to provide a full overview of aggregate financial support provided···" (Paris Agreement).

Countries, Zimbabwe included, are increasingly developing climate-related policies and strategies to address climate change and mitigate greenhouse gas (GHG) emissions. While this trend is positive, policies and strategies will only be successful in meeting the climate challenge to the extent that they are financed and implemented. Therefore, NDC implementation progress forms part of the two mandatory requirements under the EFT (the other mandatory requirement being a Party's GHG Inventory) to be reported through the Biennial Transparency Report from December 2024. Tracking the progress of a diverse range of climate-related policies and strategies in a consistent manner will present a challenge to analysts, advocates, and policymakers and innovative approaches are required.

Tracking the implementation of the NDC will require public and private sector participation of several key actors responsible for energy, IPPU, waste and AFOLU sectors. It will also require linkages with the country's adaptation planning framework in order to track the adaptation component of the NDC. Therefore, consultations with stakeholders are critical towards the design and development of the NDC Implementation Tracking study report.

2. Background to the Study

The Objectives of this Study Report

The objective of this study is to contribute towards achieving a Nationally Determined Contributions implementation progress tracking tool that is operational given the understanding that the NDC is an international commitment which the country needs to ensure that it makes progress towards achieving. The measurement of this progress requires a tracking tool that will inform policy adjustments during the NDC implementation phase.

This study lays the ground work for the full-scale development of the tracking tool under the Capacity Building Initiative for Transparency Project by suggesting an overarching tracking framework, outlining current institutional arrangements, and highlighting existing opportunities and challenges to NDC implementation tracking in Zimbabwe. This study is part of efforts towards enhancing Zimbabwe's compliance to the Paris Agreement through facilitating cooperation between the Government of Zimbabwe, development partners, private sector, civil society and other stakeholders.

Approach to the Study

This report was developed through a study on NDC implementation tracking for Zimbabwe to inform institutional arrangements; propose monitoring, reporting and verification (MRV) procedures; and data collection templates for all Intergovernmental Panel on Climate Change (IPCC) sectors (Energy/Industrial Processes and Product Use/Waste/Agriculture, Forestry and Land Use). A series of consultations were held involving relevant stakeholders, including government, private sector, development agencies, research institutions, academia, civil society organizations and individuals' experts. Desk review of the Low Emission Development Strategy (LEDS) and the Revised NDCs provided important information and data relating to the study.

The Consultant had access to documentation relevant to the work, which helped in understanding the country context and experience in relation to NDC implementation tracking. An important part of the research methodology for coming up with the report included two sponsored workshops where key information was drawn for the report.

3. Zimbabwe's 2021 Revised NDC

Nationally determined contributions (NDCs) are at the heart of the Paris Agreement and the achievement of the long-term goal of limiting the global temperature rise in temperature to below 2 degrees Celsius. NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change and are submitted every five years to the UNFCCC secretariat. In order to enhance the ambition over time the Paris Agreement provides that successive NDCs will represent a progression compared to the previous NDC and reflect its highest possible ambition. In 2015 Parties were requested to submit new NDCs or updated NDCs by 2020 and every five years thereafter, regardless of their respective implementation time frames. Zimbabwe submitted its revised NDC in 2021 whose target is a 40% per capita emissions reduction across all sectors of the economy below the projected business as usual scenario by 2030 (relative to the 2017 emission baseline).

The key highlights to note in the revised NDC are as follows:

i. The emissions baseline and expanded list of mitigation measures now cover all Intergovernmental Panel on Climate Change (IPCC) sectors namely Energy; Industrial Processes and Product Use (IPPU); Waste; and Agriculture, Forestry and Other Land Use (AFOLU).
ii. The NDC revision process incorporated impacts of COVID-19 on emissions trends and macroeconomic parameters, including Gross Domestic Product (GDP).
iii. Compliance with the Revised NDC remains fully conditional on affordable international financial support, investment, technology development and transfer and capacity development.

Mitigation component

The analysis carried out to inform the NDC update estimates that in 2017, Zimbabwe's net GHG emissions were 35.84 MtCO2eq. The Energy sector; and Agriculture, Forestry and Other Land Use (AFOLU) sector contributed the majority of the emissions in 2017 (33% and 54%, respectively), followed by Industrial Processes and Product Use (IPPU), and Waste. Using the Zimbabwean LEAP model, the revised analysis suggests total GHG emissions in 2030 can be reduced by 40%, to 44.7 MtCO2eq. These projections are based on population and GDP growth assumptions taken from the NDS1, which takes into account the impact of COVID-19 on Zimbabwe's economy and its expected recovery.

The energy sector, including transport, is currently the second biggest contributor to total national GHG emissions in Zimbabwe, accounting for 33% of GHG emissions in 2017. The main source of GHG emissions in the sector is thermal power generation (37.71%), followed by residential (19.08%), road transportation (15.48%) and agriculture (13.84%). Industrial processes and product use (IPPU) relates to emissions from industrial processes which transform physically and chemically materials and emissions from the use of products. Energy use and efficiency in industry is covered in the energy sector analysis together with combustion of fuels in industry.

The GHG modelling shows that emissions from the IPPU sector contributed 1.2 MtCO2eq (3.3%) to Zimbabwe's 2017 emissions, compared with 0.7 MtCO2eq (2.2%) in 2010, which is an

increase of approximately 0.47 MtCO2eq (1.1%) over the period. The largest contributions to emissions in the sector originated from ferrochrome production (37%), followed by cement production (32%), the consumption of HFCs (25%), chemical production (6%), and insignificant amounts from non-energy fuel use, lime production, lead and iron and steel production.

The AFOLU sector is currently the biggest contributor to GHG emissions in Zimbabwe, accounting for 54% of GHG emissions in 2017. The GHG emissions in the AFOLU sector have been increasing in the past 30 years. Historical emission and removals data from the Zimbabwe's first Biennial Update Report to the UNFCCC shows that the AFOLU sector was a net sink between 1990 and 1993, however, the sector became an increasing net source from 1994 to 2017. The major drivers of emissions and removals in this sector include deforestation due to agricultural expansion, fuelwood gathering, increased livestock, commercial logging, veld fires, harvesting construction timber, illegal settlements and mining, tobacco curing and charcoal making.

Since 1990, GHG emissions from the waste sector gradually increased, reaching 1.76 MtCO2eq in 2017. The increase from 1990-2005 and 2011-2017 was due to increased generation and collection rates while the dip from 2006-2011 was attributed to the economic recession with low collection rates for Municipal Solid Waste (MSW). Compared to 1990, emissions in 2017 increased due to increase in volumes of MSW received at the landfill. Mitigation measures for the waste sector were drawn from the Low Emission Development Strategy and Zimbabwe's Integrated Solid Waste Management Plan.

Adaptation component

Direct and indirect exposure to climate-related hazards, shocks and stressors are already causing adverse impacts on Zimbabwe's human, physical, natural, social and financial capital. Climate projections suggest that climate-related hazards associated with slow-onset changes in temperature and precipitation, and with the magnitude and frequency of extreme events, will continue to worsen. In order to avoid further similar and more damaging impacts, Zimbabwe urgently needs to implement a wide range of adaptation measures, which seek to reduce climate sensitivities, increase adaptive capacities and/or reduce direct or indirect exposure to climate-related hazards.

Zimbabwe's NDC focuses on four high-level priority adaptation measures, namely to:

i. Develop, implement and scale-up climate smart agriculture solutions and strengthen agricultural value chains and markets;
ii. Enhance early warning and climate-related disaster risk reduction systems (including information management systems);
iii. Ensure climate resilient infrastructure designs and development; and
iv. Develop and promote resilient and sustainable water resources management.

4. Current institutional arrangements and roles of different actors

Institutional arrangements are a critical component towards a country's ability to implement, monitor and report on progress achieved against its ambitious targets and obligations under the UNFCCC and PA. Setting up institutional arrangements is one of the critical steps for Parties to secure high-level approval on climate change and provides room for the integration of climate change across all sectors.

The country has been reporting its National Communications (NCs), Biennial Update Reports (BUR), Greenhouse Gas Inventory Report, and submitting its Nationally Determined Contributions to the UNFCCC, which signifies coordination and strength in data access, collection, analysis, and reporting. In-order to implement the NDCs, climate change priorities are integrated into national and subnational institutions, private sector, civil society, and local government levels.

The National Climate Policy acknowledges the need to enhance coordination of climate change interventions across institutions and aims to provide ''an overarching framework to give the country basic principles and guidance'' to implement climate policies and strategies (National Climate Policy, 2016). The National Climate Policy (NCP) Institutional Framework (NCPIF) is the mechanism responsible for implementing the national climate policy, headed by the Cabinet Committee on Climate Change.

The Green Climate Fund (GCF) Coordination Framework, which is a multi-stakeholder platform responsible for ensuring alignment of GCF activities with country priorities, implementation of the country programme, etc, is built upon the NCP Institutional Framework. The framework provides another level of NDC implementation and tracking of climate change funds.

The Climate Change Management Department, in the Ministry of Environment, Climate, Tourism and Hospitality Industry (MECTHI) is responsible for the coordination of NDC implementation and international reporting. Institutional responsibilities for implementation of the various adaptation and mitigation measures are spread across government ministries, local authorities, and private sector organizations.

A High-Level NDC Steering Committee, Government ministries, and NDC Technical Committees drive NDC implementation and tracking. Members are drawn across public and private sector, including development agencies, UN Agencies, civil society, local government, and academia. The NDC Technical Committees are embedded in the GCF Coordination Framework to provide their technical guidance in relation to projects or priorities discussed. The upcoming Climate Act is expected to institutionalize the NDC Steering Committee.

The Ministry of Finance and Economic Development (MoFED) launched its Development Cooperation Policy and strategy, to guide development "finance and implementation of

national results frameworks through a transparent, participatory and multi-stakeholder process driven by Government" (Development Cooperation Policy; 2019). The tracking of climate finance and non-climate finance funds towards achieving NDC targets is thus strengthened. The ongoing development of the Development Projects Management Information System (DEVPROMIS) is guaranteed of policy support as "Development Partners, as a key source of data on commitments and disbursements, are likewise expected to designate a focal person who will work closely with the International Cooperation Department (ICD)" under MoFED.

The table below shows key institutions for NDC implementation tracking highlighted in the revised NDC target final report. Stakeholders responsible for implementing the NDCs are also responsible for tracking the implementation, with coordination from the Climate Change Management Department.

Table 1: Key institutions for NDC implementation tracking (extracted from the Revised Zimbabwe NDC report, January 2022)

	Name of stakeholder	Role
Crosscutting	Ministry responsible for climate change management	Co-lead of implementing agency
	Climate Change Management Department (CCMD)	Coordination of NDC implementation and international reporting
	Ministry responsible for Finance and Economic Planning	Co-lead of implementing agency Coordination of climate actions in national budget, projects and programmes
	ZimStat and Environmental Management Agency (EMA)	Data on NDC MRV
	Department of Social Welfare under the Ministry of Public Service, Labour and Social Welfare	Support for communities suffering from adverse impacts of climate change
	Ministry responsible for Women Affairs, Community, Small and Medium Enterprises	Promote, protect and advance gender equality in the NDC
	Zimbabwe Gender Commission	
	Ministry responsible for Youth	Ensure equitable participation of youth in NDC implementation
	Ministry of Local Government and the Provincial Development Committees	Mainstream climate change at the subnational level in line with Zimbabwe's devolution agenda
Water	Ministry responsible for Agriculture	Co-lead of implementing agency-adaptation
	Local authorities	Adaptation/mitigation data provider
Health	Ministry responsible for Health	Co-lead of implementing agency - adaptation
	Ministry responsible for Transport Services	Co-lead of implementing agency - Mitigation and Adaptation
Energy	Ministry responsible for Energy	Utility mitigation projects (large hydro -Zimbabwe Power Company), MRV data
	Zimbabwe Energy Regulatory Authority (ZERA)	Provider of Regulations, Tariffs and Activity Data (Petroleum including ethanol and bio-diesel, coal, electricity)

	Ministry responsible for Mines and Mining Development	Provider of AD (coal production and its secondary products)
	ZimStats	Data on NDC MRV
	Zimbabwe Electricity Transmission and Distribution Company	Reduction of transmission and distribution losses
	Rural Energy Fund	Provider biogas digester projects
	Ministry responsible for Transport	Mitigation projects in transport
	Ministry responsible for Local Government	Coordination of the implementation of mitigation and adaptation actions in the provincial and local authorities
IPPU	Ministry responsible for climate change management and environmental affairs	Co-lead of implementing agency Data Provider (annual production data on Non energy products and use, ODS substitutes)
	Private companies	Data providers
	Industry Associations	Data providers
	Research and Standards associations	Data providers, research and development on technologies
	Ministry responsible for Industries	Co-lead of implementing agency (Mitigation actions in industry)
AFOLU	Ministry responsible for Agriculture	Co-lead of implementing agency-Agriculture mitigation / adaptation
	Department of Research and Specialist Services (DR&SS)	Data provider and implementing agency
	Forestry Commission	Forestry and Other Land-Use (FOLU) Mitigation actions implementation
Waste	Ministry responsible for climate change management and environmental affairs	Mitigation actions and GHG activity data providers GHG activity and mitigation actions data providers
	Ministry responsible for Local Governance	
	Environment Management Agency	
	Local Authorities	
	Private Company - Zimbabwe Sunshine Group	

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5. Proposed NDC Implementation Tracking Framework

Tremendous support, including financial resources and supportive international rules, is required for the implementation of the NDCs, including the tracking of its implementation. Developing countries are making headways in strengthening their NDC implementation tracking, which assists to guide the pace and momentum towards achieving NDCs targets by 2030.

The number of policies, strategies, regulations and plans/frameworks that exists around decision making, present a number of factors useful in determining effective monitoring/measurement of the implementation of NDCs. A monitoring, reporting and verification system becomes paramount towards achievement of the NDC target. The objective of an MRV framework, generally looks at:

- Measuring efforts to address climate change and the impacts of these efforts,
- Reporting results and activities through national reports on actions taken to implement the UNFCCC, and facilitating discussions on the progress made in implementation, and
- Verify reports at the international level through the International Consultation and Analysis (ICA) process to increase the transparency of mitigation actions and their effects (UNFCCC; 2014).

Information required for measuring and monitoring mitigation and adaptation activities covers an economy-wide view and may be challenging for country Parties. It is essential to develop MRV and MRR systems to monitor mitigation and adaptation actions for national planning, implementation and coordination of individual mitigation activities of bottom-up actions and policies and top-down goals (GIZ; How to Set Up National MRV Systems). The concept of MRV has evolved individual UNFCCC requirements aimed at promoting the uptake, tracking and communication of mitigation and adaptation actions (GIZ; 2018)

Measuring NDC Implementation by country Parties happens in three major ways, which include:

a. MRV of mitigation actions: The country has developed the LEDS which provide economy-wide mitigation actions, transformed into projects, in the IPPU, AFOLU, Energy and Waste sectors.

b. MRV of Emissions: This provides for the measurement of greenhouse gas emissions from economic sectors identified in the LEDS as well as removals from its forestry sinks. This becomes a backstopping as a policy support which is reported in the National GHG Inventory Report, and communicated in the National Communications (NC) Report and Biennial Update Report (BUR).

c. MRV of support: This requires the measurement of financial flows, the type of support being sought and received, sources of funding, linked to the kind of activities being supported, as well as assessment of impact of such support against identified NDC mitigation actions. The DEVPROMIS, with the support of the Development Cooperation Policy and Strategy are key instruments towards NDC implementation tracking of financial flows.

Whilst the Initial NDC (INDC) only covered energy-related emissions, Zimbabwe's revised baseline and mitigation target has been expanded to include emissions from all sectors, including industrial processes and product use (IPPU), agriculture, forestry, and other land use (AFOLU), and waste. This is a significant increase in ambition from the INDC.

Conditionality of mitigation and adaptation actions in the NDCs

The country has strengthened its mitigation contribution to be a 40% reduction in per capita GHG emissions below business as usual, a significant increase from the 33% reduction in per capita energy sector emissions included in the INDC. "Achieving this will require considerable support from the international community and the 40% target is conditional on such support being forthcoming and provided in a timely manner" (Revised NDC target draft report, 2021). Support in this context may also extend to climate finance, technology transfer or capacity building (Deciphering MRV, Accounting and Transparency for the Post-Paris era; GIZ; 2018).

Climate Policy Tracking Framework

Below is a picture illustrating Climate Policy Tracking Framework designed by World Resources Institute (WRI) in 2014 in order to guide NDC-related policy implementation tracking. The framework is designed to provide guidance on selecting milestones and indicators that help track the progress of policy adoption and implementation. The framework also assists in finding the reasons for implementation success or failure. Appendix 2 (Summary of key policies linked to IPCC Sectors) also provides summaries of key climate related policies.

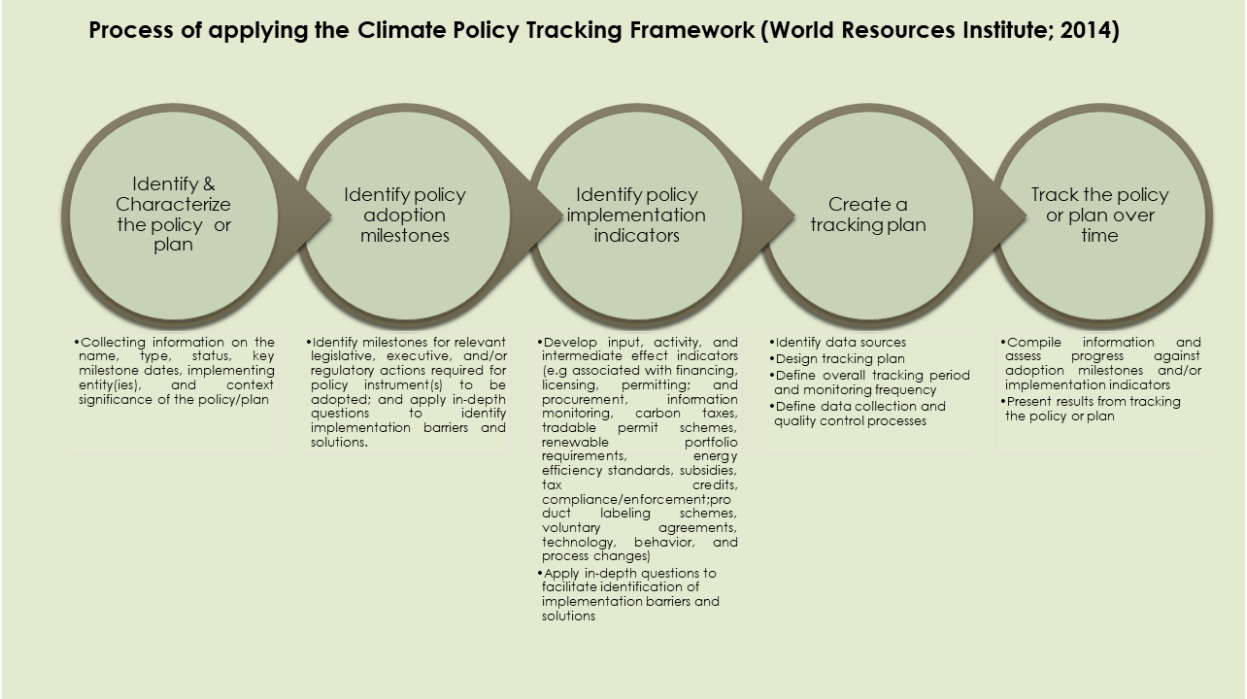


Figure 1: WRI's Climate Policy Tracking Framework: 2014

National Adaptation Planning (NAP)

Adaptation to climate change is a long-term and recurrent process, which requires flexibility amongst countries in responding to new evidence on vulnerability and their experiences of the impacts of a changing climate. Most of the (developing) countries have highlighted the importance of adaptation actions as conditional on receiving international support (including finance, capacity building, and technology transfer) to enable adaptation goals to be achieved.

The country is currently implementing a Green Climate Fund (GCF) funded National Adaptation Planning (NAP) Readiness Project. One of the expected outcomes of the project is to see the Monitoring, Reviewing and Reporting (MRR) on the NAP process in Zimbabwe improved, which compliments the ongoing work towards building an NDC implementation tracking system for Zimbabwe.

The NAP process helps to identify NDCs adaptation goals and operationalises/translate them into action. The MRR system being designed will monitor agriculture, water, health, forestry and biodiversity, infrastructure, human settlements, and tourism sectors.

Linking the NAP process with the development of NDCs can support he identification of adaptation-mitigation co-benefits. These are critical to the integration of climate actions, especially considering that the country's main focus is adaptation efforts. Therefore, the implementation and development of NDC adaptation goals through the NAP process has the potential to mobilize greater finance for adaptation by increasing country ownership of its adaptation goals and leverage for future NDC funding towards adaptation.

Greenhouse Gas Abatement Cost Model (GACMO)

The GACMO model is a "bottom-up" modelling tool developed at UNEP DTU Partnership over more than 20 years. It aims to provide countries, mainly developing countries, with a tool that allows them to carry out rapid but accurate evaluations of the greenhouse gas emissions impact of a variety of mitigation options (UNEP DTUP Partnership; 2020)

GACMO operates the following functions:

i. Calculates GHG emissions of the "start year" by applying growth factors for each sector, the tool will project the emissions for the baseline/reference scenario (Business As Usual (BAU)), towards 2025, 2030 and/or 2050;

ii. The tool can project GHG emission reduction (mitigation) scenarios towards 2025, 2030 and/or 2050;

iii. Mitigation investment costs and operation, implementation and maintenance costs, which result from each mitigation action;

iv. The tool also allows monitoring the GHG emission reductions achieved through the effective implementation of mitigation options;

v. Establishes a marginal "abatement revenue curve" that compares, among all selected options, the total cost for an option to reduce one unit of CO2 emissions, with the total potential of emission reduction of this option.

GACMO can be used as a tool for MRV of climate change mitigation options. The tool has been used in over 50 countries and at national, subnational, and sectoral levels. The tool is important towards coming up with reports such as National Communications, Biennial Update Reports, or for the preparation of the NDCs. GACMO can become a build up towards MRV of the country's revised NDCs.

Notwithstanding the key advantages highlighted above, other advantages of using GACMO as an MRV for the NDC Implementation tracking are that:

The methodology used in GACMO is the same with that used in the 2006 Intergovernmental Panel on Climate Change (IPCC) guidelines, and the Long-Range Energy Alternatives Planning System (LEAP) modelling tool.

i. GACMO can synchronize and import historical data from the 2006 IPCC guidelines, and data from LEAP, and it is in-sync with NDC reporting timeline (every five years).

ii. GACMO has projects designed and imbedded (imported from the Clean Development Mechanism (CMD) into its system with complete information and calculations which allow efficiency and flexibility as countries can only input country-specific data on specific highlighted sections.

iii. GACMO addresses the limitations in the LEDS by providing a marginal abatement revenue curve (MARC)

iv. Costing using the GACMO is closer to accurate more than the costing done in the revised NDC target report.

Figure 2 is a draft format for implementation tracking of the revised NDC targets developed by the consultant. This compliments the previous design by WRI as it gives an umbrella picture of domestic information available as potential NDC implementation tracking sources of information.

The format identifies 8 pillars for NDC implementation tracking, guided by the IPCC sectors (AFOLU, IPPU, Energy and Waste). An example is illustrated below to identify relevant documentation in the energy sector, where key policy plans can be categorized, action plans can be identified, and indicators matched to the actions and tracked/monitored.

Additional illustrations are available in Appendix 1 which also show tracking options from mitigation action, project(s) aligned to the action, including project alignment/tracking using the NDC implementation framework. This framework would best be utilized using a portal, similar to the DevProMIS tool for climate finance tracking.

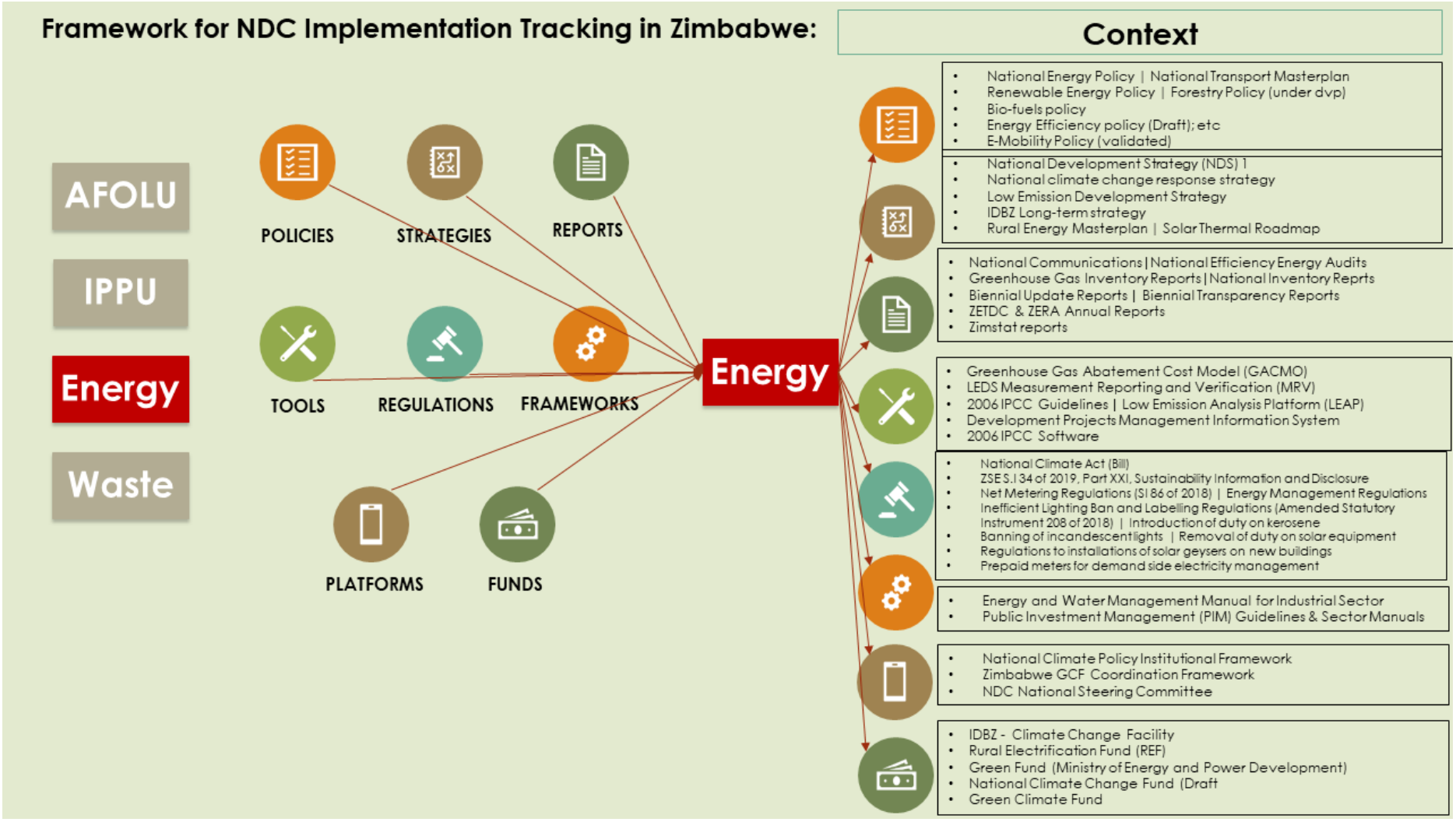


Figure 2: Format for NDC Implementation tracking in Zimbabwe; example of the energy sector: designed by Desire Nemashakwe, August 2021

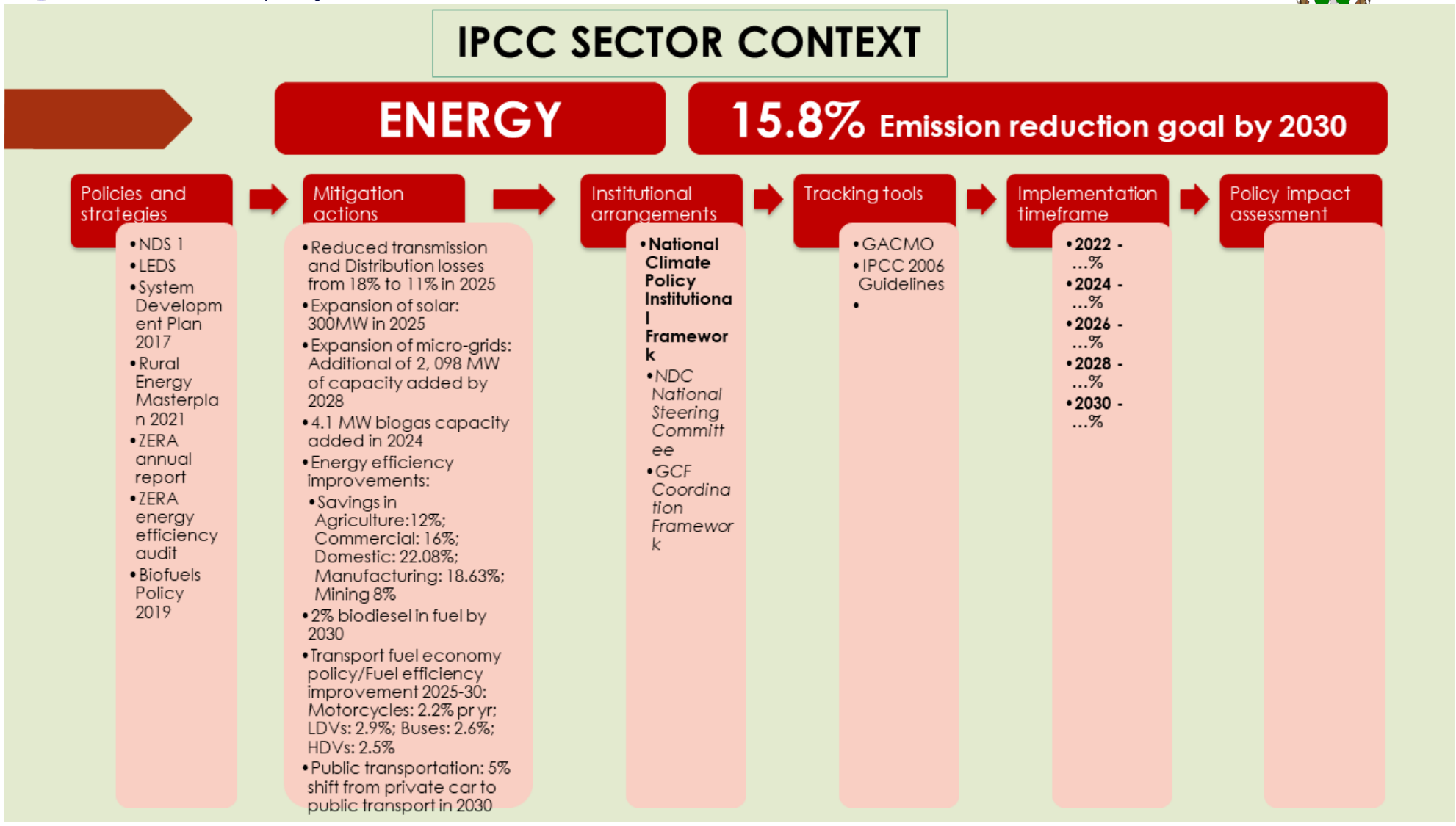


Figure 3: IPCC Energy sector roadmap towards achievement of NDC targets in the sector by 2030.

6. Opportunities, Challenges and Recommendations

Methodology

A stakeholder engagement process has led to gathering of information from different sectors on their views regarding the opportunities and challenges in tracking and reporting on NDC implementation. A closer inspection at the waste sector reveals some insight on how far the country is in terms of domestic systems' readiness to track NDC implementation.

Challenges highlighted by local authorities

Local authorities are on a drive towards developing "smart cities", which provides a Launchpad for the promotion of clean energy technologies, further addressing other NDC mitigation actions and mitigation-co-benefits, including Sustainable Development targets. Table 2 shows some of the challenges noted by the sector, including recommendations on how to step closer towards compliance to NDC implementation tracking principles and expectations. Table 3 shows the challenges and opportunities existing in the tracking of NDC implementation. It is important to reflect on the major barriers in order to continuously improve NDC ambition, measuring emissions, actions and financing.

Table 2: IPCC guidelines key categories in the waste sector; and Challenges and Recommendations from local authorities

Category	Challenges	Recommendations
Solid Waste Disposal	-Parameters measured by Local Authorities (LA) were aggregated whilst IPCC needs disaggregated data. -Shortage of weighing equipment to measure weights, leading to approximating weight of waste.	-Localizing data collection templates and incorporate reporting requirements. -Procurement of self-weighing trucks
Wastewater treatment discharge	-Flow meters from sewage treatment are damaged. -Units for biological oxygen demand (BOD) are available in mg per litter whilst reporting requirements need kg/cap/year. -Waste stabilisation ponds system overload	-Repairing flow meters and installing ones that are more efficient. -Using equations to convert material units to ensure compliance and consistency.
Hazardous waste	-Some incinerators are no longer working, and waste is transferred to hospitals incinerators. -Hospitals dispose waste without measurements and reporting. -Approximation of waste is done due to lack of equipment for more accurate information.	-Fostering collaborations with institutions in the jurisdiction of Las, and capacity building activities on waste-to-energy projects -Innovative ways to capture data that is not recorded through the set channels and interpolate missing data.
Incineration	-Incinerators broke down and -Incineration records are missing; -Inaccurate records of what is happening as some would want to cover data gaps they are missing. -Lack of infrastructure to quantify waste incinerated and GHG emissions recorded.	-Centralising waste information systems across Government entities. -Skills capacitation for waste quantification. -Sectorial approach for data collection, harmonization and publishing.
Population	-National Census was conducted in 2012 and now the statistics is outdated.	-Zimstat has population growth models in which they will factor in adjustments to suit the current socio economic environment.
Biological treatment (composting)	- Lack of scales to assist approximation of composts. -Absence of separation of waste at source to disaggregate composting material.	-Uncertainty analysis for estimated quantities. -Innovative ways to account for waste separated at

	-Most composts are in household's backyard and it is difficult to access all of them, as they do not have a centralised place to verify their location. -Most of the waste is collected using one bag and estimates have to be used to estimate approximated disaggregated data.	source. -Use of models and frequent visits at prospective sites that deal with composts.
Biological treatment (anaerobic)	-biogas systems are damaged -Lack of adequate instruments to measure methane production	-net metering of biogas plant. -education on biogas digesters

Table 3: highlighting the challenges and opportunities towards strengthening mitigation and adaptation NDC implementation tracking.

Adaptation Challenges	Mitigation Challenges
There's a lack of knowledge and skills from the recruited Monitoring and Evaluation Officers in Government.	Some policies do not have specific mechanism that obligates, enforces or incentivizes the technological or behavioural change that will in turn mitigate GHG emissions.
The absence of data for identified NDC implementation tracking indicators in public sector statistical agencies, e.g., ZIMSTATS	Lack of proper institutional arrangements and inconsistency in implementing entities
Lack of political will to support and strengthen MRR or M&E	Lack of disaggregated data; Lack of industry data by sub-category and a lack of a standardized data collection system; and data from private sector across sectors is, largely, not forthcoming
The various MRR and M&E systems which are project or programme based, designed without consideration of NDC targets or Government priorities.	Lack of capacity to prepare the energy balance timeously to meet the NDC tracking timelines, and of BUR and National Inventory Report (NIR)
Coordination of the climate change agenda lacks adequate coverage at subnational and community levels as there are no resource persons to monitor work on a continuous basis	Lack of capacity to manage waste to energy projects (Poor tariff system; poor financial position of the off taker; and viability challenges because of currency exchange rate issues, affecting investment interest.
Limited capacity towards institutional strengthening because of a limited human resource base	Lack of regulations in biodiesel production, including lack of feedstock
Some policies do not have specific mechanism that obligates or	Lack of fuel efficiency, awareness raising, road infrastructure, and lack of cycle tracks

incentivizes the technological or behavioural change that will in turn advance adaptation actions.	
Opportunities	
Supports future iterations/review in NDCs	
Raises the profile of the NAP and the LEDS to create domestic and international buy-in	
Provides a leverage for prioritization of adaptation and mitigation priorities, and access to climate finance	
Strengthens streamlining of Transparency, Accuracy, Consistency, Comparability and Completeness (TACCC) principles	
Identification of sources of data and information towards enhancing MRR and MRV on the implementation of NDCs	
Existence of an institutional structure used to drive the climate change agenda through the National Climate Policy Institutional Framework	
The Government of Zimbabwe is currently recruiting Monitoring and Evaluation (M&E) Officers into various ministries towards strengthening compliance of public sector projects and programmes against set targets and priorities.	
Zimbabwe has strong climate change policy frameworks, and continues to make strides to improve the current aspect through the ongoing development of a Climate Act (at Bill stage) and the National Climate Change Fund (NCCF)	

Recommendations towards strengthening NDC implementation tracking:

i. The need to strengthen key Government ministries, departments, and agencies (MDAs) towards NDC implementation tracking

ii. Continuous capacity building of climate change issues is essential towards strengthening Climate Change Focal Points and IPCC sector specific stakeholders for NDC implementation tracking at national, subnational, and private sector levels

iii. Pursuing awareness raising and regulatory measures across all sectors to increase confidence in stakeholders regarding data access, ownership, and disclosure.

iv. Policymakers and Political Leaders are an important vehicle towards strengthening adaptation monitoring, reporting and reviewing

v. The National Climate Policy Institutional Framework should be activated towards NDC implementation tracking since it is where Focal Points should derive.

vi. Priority should be invested in alignment of indicators and MRR/M&E frameworks of major donors with those of the NDCs adaptation component

vii. Develop South-to-South cooperation towards strengthening NDC implementation tracking

viii. Strengthen existing national reports to include climate change indicators e.g., ZimVAC and ZIMSTATS

ix. Policies, strategies, and frameworks must provide mitigation and adaptation indicators to improve trackability

x. There must be balance of climate finance to equally support adaptation projects, providing flexible packages for uptake

xi. Activation and strengthening of key legal instruments such as the Climate Change Bill and Zimbabwe Stock Exchange, Statutory Instrument (S.I) 134 will become key building blocks towards NDC implementation tracking

xii. Global climate finance windows must be fully utilized for the country to tap into available and accessible climate funds

xiii. The need to create incentives for private sector participation, focusing on maintenance and replacement of equipment used to monitor mitigation abatement interventions to reduce the cost and increase the appetite from private sector

xiv. Iterative processes are the initial steps towards developing strong policies, strategies, etc culminating in projects that align with IPCC sector priorities

xv. Completion of transitions or understanding of roles of key adaptation and mitigation interventions between ministries, departments and agencies is important towards sustainability of NDC implementation tracking

xvi. Records are not readily available and most of the data provided is based on estimation. For example, records on refrigeration sub-sector trade statistics are not available, and ZIMSTAT bases on estimates. The National Ozone Office, in the Climate Change Management Department compiles records on sales of chemical species imported, but not the destination product they'll be used for.

7. CONCLUSION

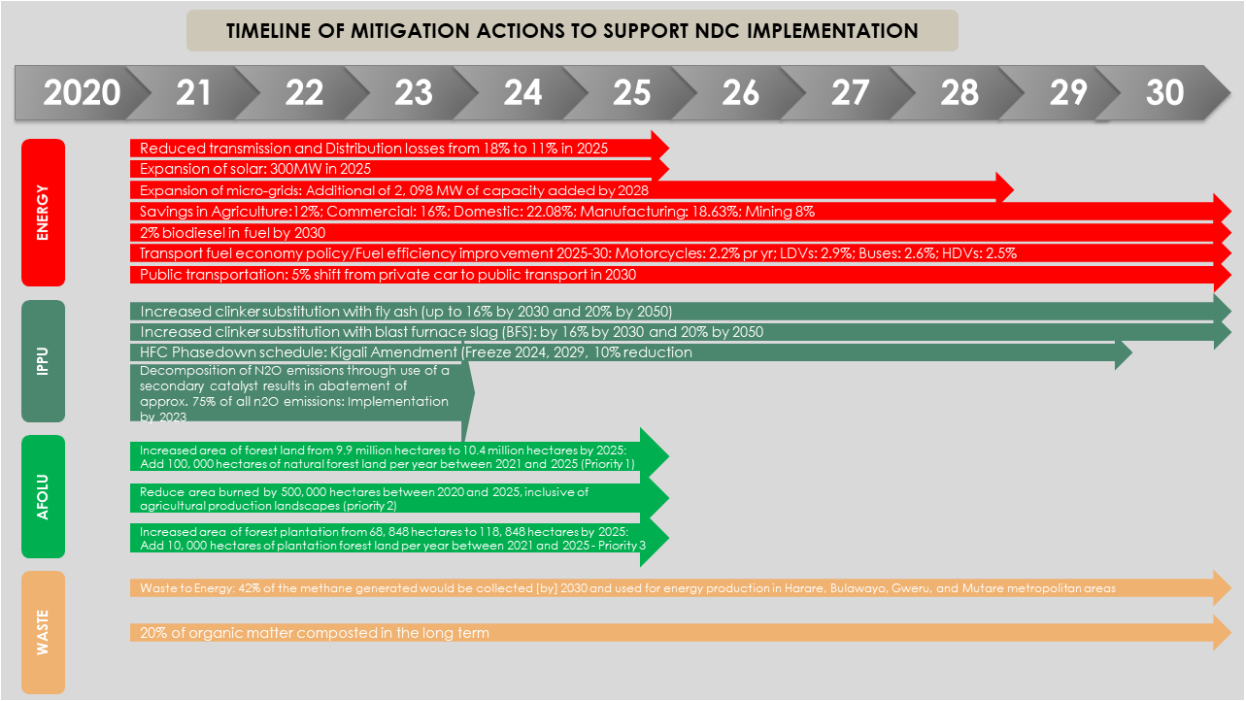
Planning, implementing, and tracking NDCs requires coordination at the highest levels in order to ensure efficiency and effectiveness, and clarity in roles across all levels. Coordination across ministries, departments, agencies; and sectors, complex laws and policies, including new sources of finance is vital.

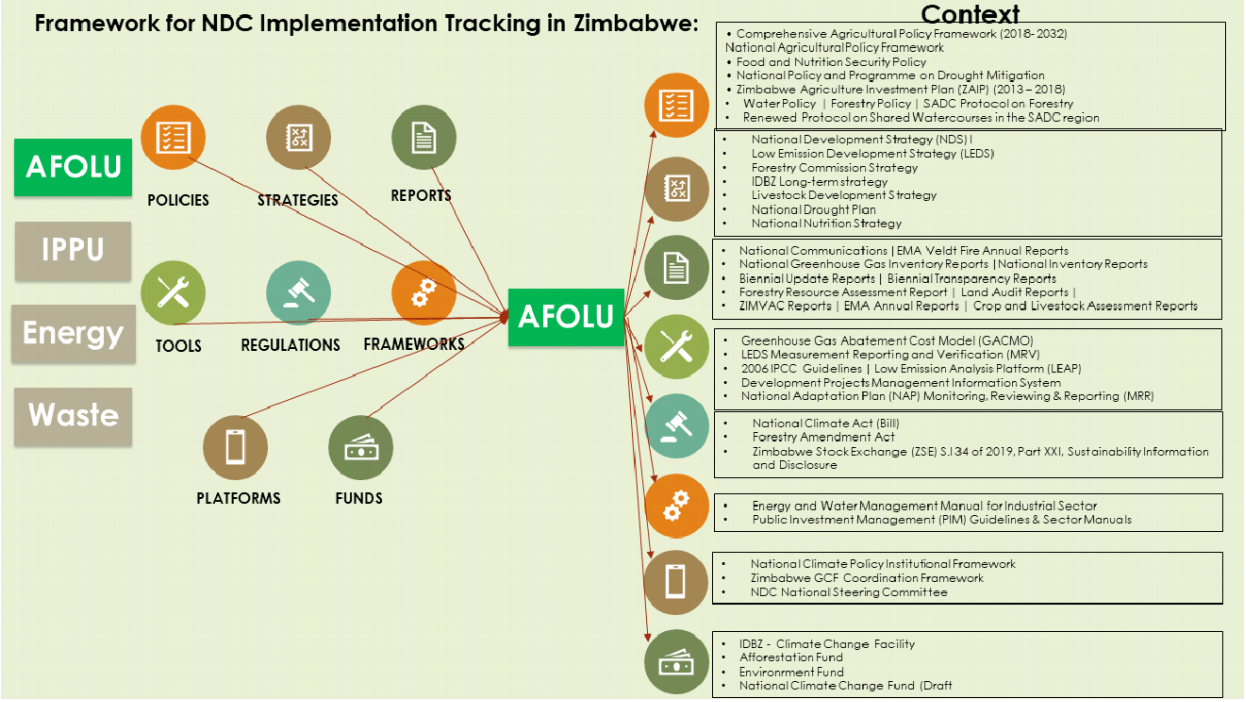
As most Parties submitted their final revised and ambitious NDC targets, there is need to ensure that systems, regulations, policies and strategies are in place or being improved. The NDC implementation tracking system is an integral part of ensuring that adaptation and mitigation actions are monitored to ensure results continue to be achieved in relation to NDC targets, and ultimately addressing the goals of the UNFCCC and Paris Agreement.

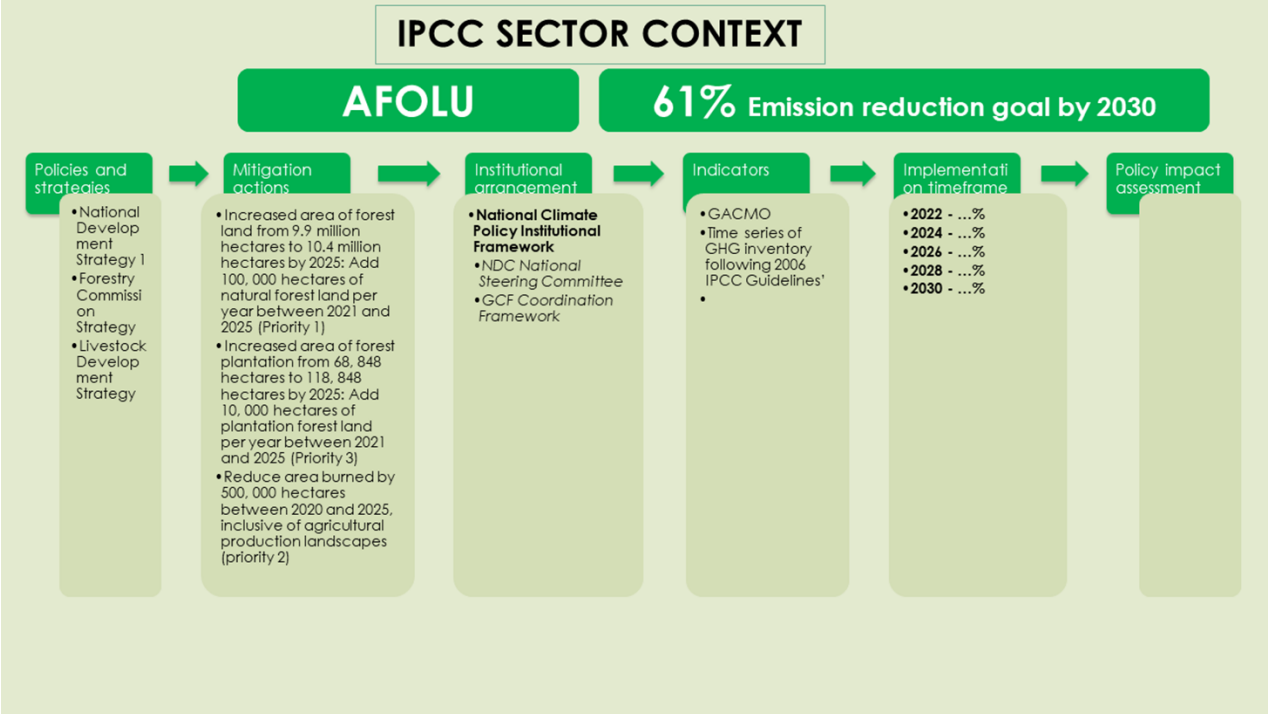
References

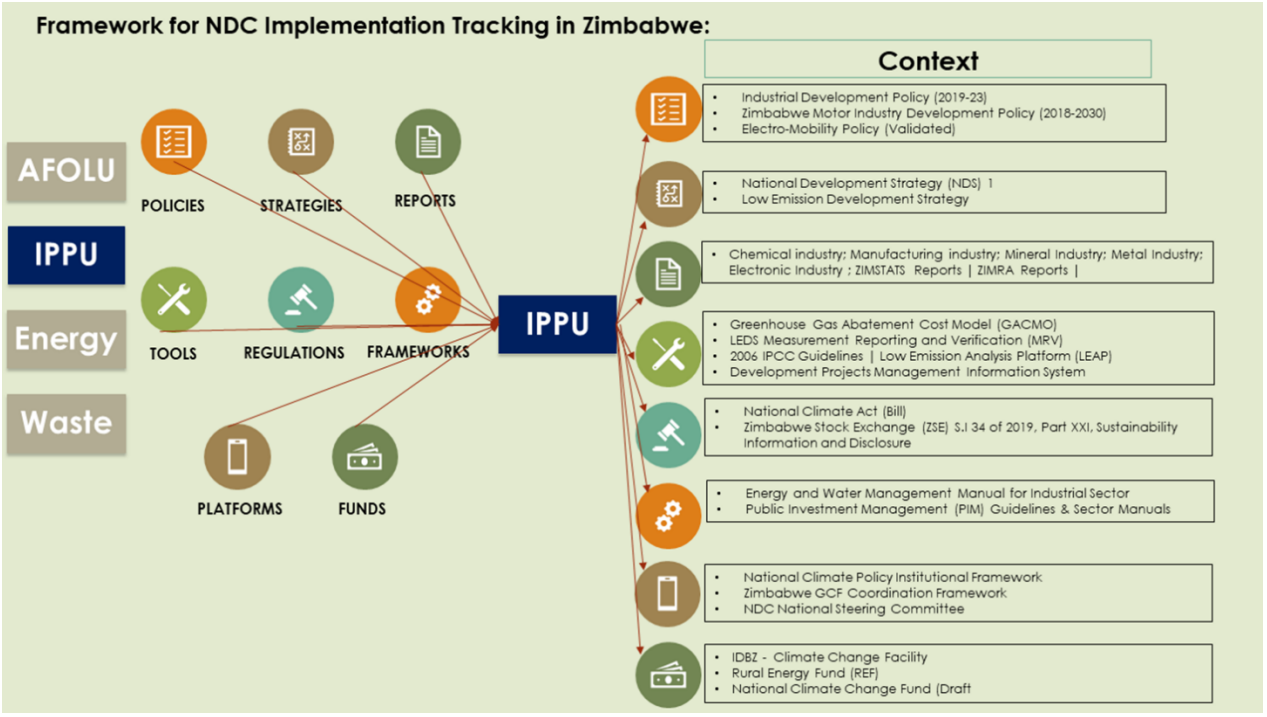
1. Development Cooperation Policy: Ministry of Finance and Economic Development
2. GCF NAP Readiness Project document
3. Greenhouse gas Abatement Cost Model Report
4. Integrated Solid Waste Management Plan
5. Intergovernmental Panel on Climate Change
6. National Climate Policy
7. National Climate Change Response Strategy
8. NDC Partnership website
9. Paris Agreement
10. Word Resources Institute
11. United Nations Framework Convention on Climate Change (UNFCCC)
12. Zimbabwe NDC Implementation Framework for Mitigation, Final Report, 2019
13. Zimbabwe Revised NDC Target final report
14. Zimbabwe Green Climate Fund Country Programme

Annex 1: Conceptual Framing for NDC Implementation Tracking for AFOLU, IPPU and Waste




Framework for NDC Implementation Tracking in Zimbabwe:
Context
AFOLU
IPPU
Energy
Waste
POLICIES
STRATEGIES
REPORTS
TOOLS
REGULATIONS
FRAMEWORKS
PLATFORMS
FUNDS
AFOLU
• Comprehensive Agricultural Policy Framework (2018- 2032)
National Agricultural Policy Framework
• Food and Nutrition Security Policy
• National Policy and Programme on Drought Mitigation
• Zimbabwe Agriculture Investment Plan (ZAIP) (2013 – 2018)
• Water Policy | Forestry Policy | SADC Protocol on Forestry
• Renewed Protocol on Shared Watercourses in the SADC region
• National Development Strategy (NDS) I
• Low Emission Development Strategy (LEDS)
• Forestry Commission Strategy
• IDBZ Long-term strategy
• Livestock Development Strategy
• National Drought Plan
• National Nutrition Strategy
• National Communications | EMA Veldt Fire Annual Reports
• National Greenhouse Gas Inventory Reports | National Inventory Reports
• Biennial Update Reports | Biennial Transparency Reports
• Forestry Resource Assessment Report | Land Audit Reports |
• ZIMVAC Reports | EMA Annual Reports | Crop and Livestock Assessment Reports
• Greenhouse Gas Abatement Cost Model (GACMO)
• LEDS Measurement Reporting and Verification (MRV)
• 2006 IPCC Guidelines | Low Emission Analysis Platform (LEAP)
• Development Projects Management Information System
• National Adaptation Plan (NAP) Monitoring, Reviewing & Reporting (MRR)
• National Climate Act (Bill)
• Forestry Amendment Act
• Zimbabwe Stock Exchange (ZSE) S.I 34 of 2019, Part XXI, Sustainability Information and Disclosure
• Energy and Water Management Manual for Industrial Sector
• Public Investment Management (PIM) Guidelines & Sector Manuals
• National Climate Policy Institutional Framework
• Zimbabwe GCF Coordination Framework
• NDC National Steering Committee
• IDBZ - Climate Change Facility
• Afforestation Fund
• Environment Fund
• National Climate Change Fund (Draft


IPCC SECTOR CONTEXT
AFOLU
61% Emission reduction goal by 2030
Policies and strategies
• National Development Strategy 1
• Forestry Commission Strategy
• Livestock Development Strategy
Mitigation actions
• Increased area of forest land from 9.9 million hectares to 10.4 million hectares by 2025: Add 100, 000 hectares of natural forest land per year between 2021 and 2025 (Priority 1)
• Increased area of forest plantation from 68, 848 hectares to 118, 848 hectares by 2025: Add 10, 000 hectares of plantation forest land per year between 2021 and 2025 (Priority 3)
• Reduce area burned by 500, 000 hectares between 2020 and 2025, inclusive of agricultural production landscapes (priority 2)
Institutional arrangement
• National Climate Policy Institutional Framework
• NDC National Steering Committee
• GCF Coordination Framework
Indicators
• GACMO
• Time series of GHG inventory following 2006 IPCC Guidelines'
•
Implementation timeframe
• 2022 - ...%
• 2024 - ...%
• 2026 - ...%
• 2028 - ...%
• 2030 - ...%
Policy impact assessment


Framework for NDC Implementation Tracking in Zimbabwe:
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Waste
POLICIES
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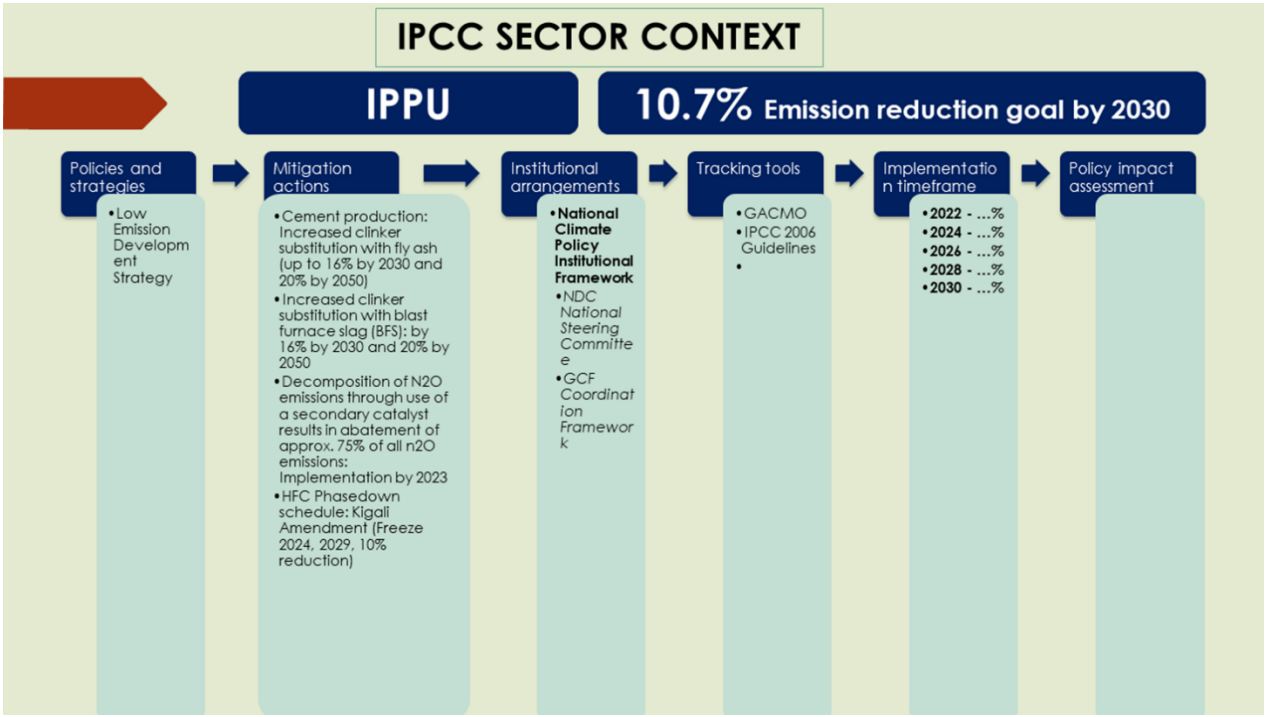
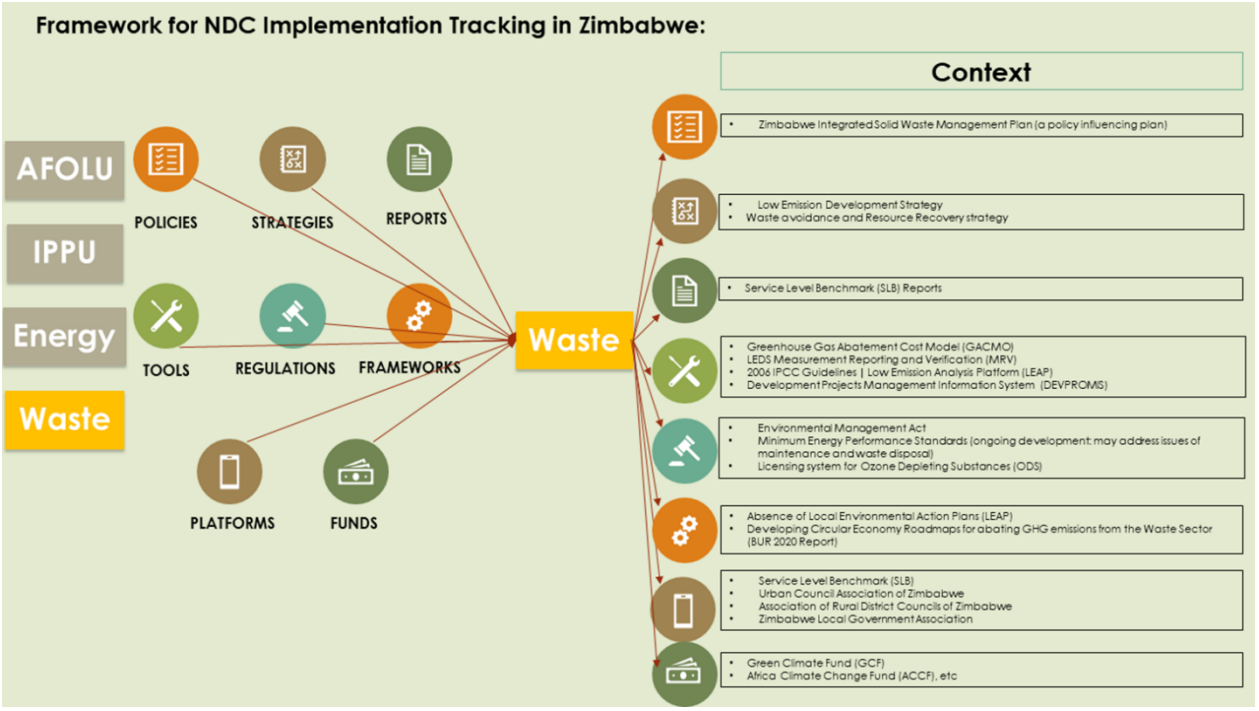
REGULATIONS
FRAMEWORKS
PLATFORMS
FUNDS
IPPU
Context
Industrial Development Policy (2019-23)
Zimbabwe Motor Industry Development Policy (2018-2030)
Electro-Mobility Policy (Validated)
National Development Strategy (NDS) 1
Low Emission Development Strategy
Chemical industry; Manufacturing industry; Mineral Industry; Metal Industry; Electronic Industry ; ZIMSTATS Reports | ZIMRA Reports |
Greenhouse Gas Abatement Cost Model (GACMO)
LEDS Measurement Reporting and Verification (MRV)
2006 IPCC Guidelines | Low Emission Analysis Platform (LEAP)
Development Projects Management Information System
National Climate Act (Bill)
Zimbabwe Stock Exchange (ZSE) S.I 34 of 2019, Part XXI, Sustainability Information and Disclosure
Energy and Water Management Manual for Industrial Sector
Public Investment Management (PIM) Guidelines & Sector Manuals
National Climate Policy Institutional Framework
Zimbabwe GCF Coordination Framework
NDC National Steering Committee
IDBZ - Climate Change Facility
Rural Energy Fund (REF)
National Climate Change Fund (Draft


IPCC SECTOR CONTEXT
IPPU
10.7% Emission reduction goal by 2030
Policies and strategies
•Low Emission Development Strategy
Mitigation actions
•Cement production: Increased clinker substitution with fly ash (up to 16% by 2030 and 20% by 2050)
•Increased clinker substitution with blast furnace slag (BFS): by 16% by 2030 and 20% by 2050
•Decomposition of N2O emissions through use of a secondary catalyst results in abatement of approx. 75% of all n2O emissions: Implementation by 2023
•HFC Phasedown schedule: Kigali Amendment (Freeze 2024, 2029, 10% reduction)
Institutional arrangements
•National Climate Policy Institutional Framework
•NDC National Steering Committee
•GCF Coordination Framework
Tracking tools
•GACMO
•IPCC 2006 Guidelines
•
Implementation timeframe
•2022 - ...%
•2024 - ...%
•2026 - ...%
•2028 - ...%
•2030 - ...%
Policy impact assessment


Framework for NDC Implementation Tracking in Zimbabwe:
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POLICIES
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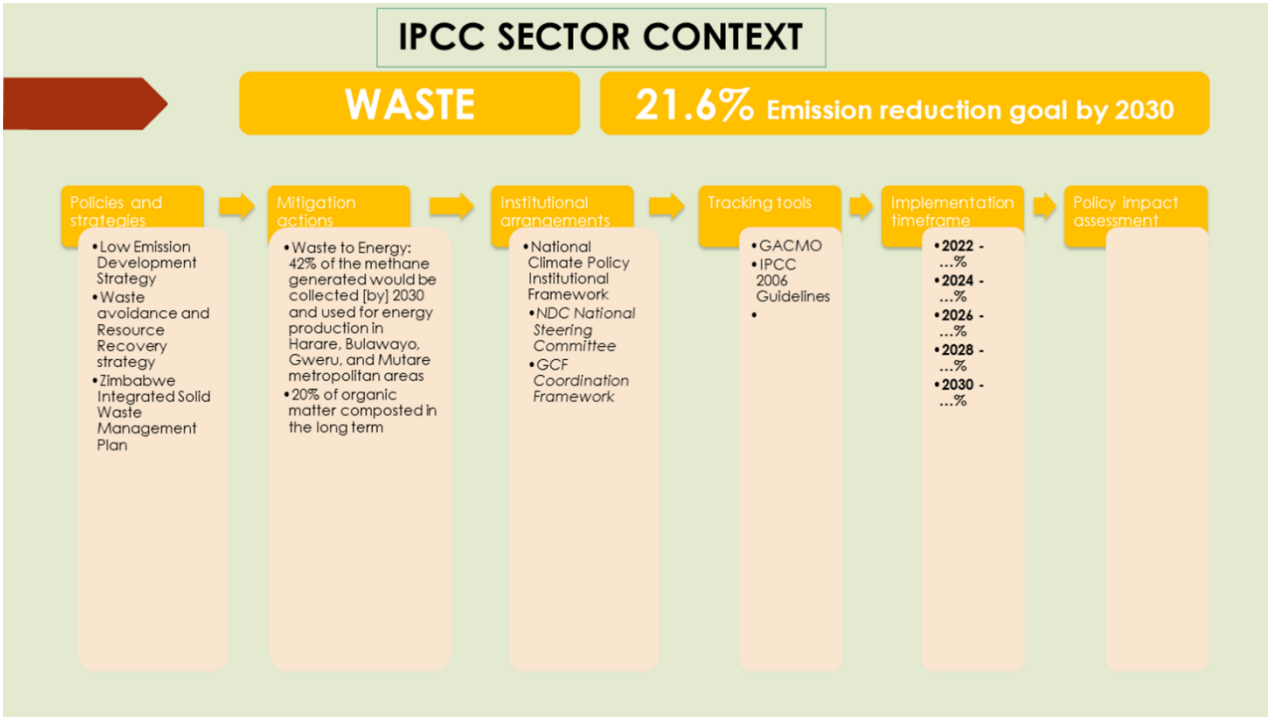
TOOLS
REGULATIONS
FRAMEWORKS
PLATFORMS
FUNDS
Waste
Context
Zimbabwe Integrated Solid Waste Management Plan (a policy influencing plan)
Low Emission Development Strategy
Waste avoidance and Resource Recovery strategy
Service Level Benchmark (SLB) Reports
Greenhouse Gas Abatement Cost Model (GACMO)
LEDS Measurement Reporting and Verification (MRV)
2006 IPCC Guidelines | Low Emission Analysis Platform (LEAP)
Development Projects Management Information System (DEVPROMIS)
Environmental Management Act
Minimum Energy Performance Standards (ongoing development: may address issues of maintenance and waste disposal)
Licensing system for Ozone Depleting Substances (ODS)
Absence of Local Environmental Action Plans (LEAP)
Developing Circular Economy Roadmaps for abating GHG emissions from the Waste Sector (BUR 2020 Report)
Service Level Benchmark (SLB)
Urban Council Association of Zimbabwe
Association of Rural District Councils of Zimbabwe
Zimbabwe Local Government Association
Green Climate Fund (GCF)
Africa Climate Change Fund (ACCF), etc


IPCC SECTOR CONTEXT
WASTE
21.6% Emission reduction goal by 2030
Policies and strategies
Low Emission Development Strategy
Waste avoidance and Resource Recovery strategy
Zimbabwe Integrated Solid Waste Management Plan
Mitigation actions
Waste to Energy: 42% of the methane generated would be collected [by] 2030 and used for energy production in Harare, Bulawayo, Gweru, and Mutare metropolitan areas
20% of organic matter composted in the long term
Institutional arrangements
National Climate Policy Institutional Framework
NDC National Steering Committee
GCF Coordination Framework
Tracking tools
GACMO
IPCC 2006 Guidelines
Implementation timeframe
2022 - ...%
2024 - ...%
2026 - ...%
2028 - ...%
2030 - ...%
Policy impact assessment

Sector	2017 GHG emissions (mill tonnes CO2 eq)	2030 Baseline GHG emissions (mill tonnes CO2 eq)	2030 GHG emissions (mill tonnes CO2 eq) With mitigation actions	Policies and strategies	Mitigation actions	Institutional arrangements	MRV systems	Implementation timeline	Policy impact assessment
Energy	12.41	26.62	22.42 (-15.8%)	Refer to Framework for NDC Implementation Tracking	• Reduced transmission and Distribution losses from 18% to 11% in 2025 • Expansion of solar: 300MW in 2025 • Expansion of micro-grids: Additional of 2, 098 MW of capacity added by 2028 • 4.1 MW biogas capacity added in 2024 • Energy efficiency improvements: Savings in Agriculture:12%; Commercial: 16%; Domestic: 22.08%; Manufacturing: 18.63%; Mining 8% • 2% biodiesel in fuel by 2030 • Transport fuel economy policy/Fuel efficiency improvement 2025-30: Motorcycles: 2.2% pr yr; LDVs: 2.9%; Buses: 2.6%; HDVs: 2.5% • Public transportation: 5% shift from private car to public transport in 2030	-National Climate Policy Institutional Framework -NDC National Steering Committee -GCF Coordination Framework	• Greenhouse Gas Abatement Cost Model (GACMO) • LEDS Measurement Reporting and Verification (MRV) • 2006 IPCC Guidelines | Low Emission Analysis Platform (LEAP) • Development Projects Management Information System	2022…% 2024…% 2026…% 2028…% 2030…%	
IPPU	1.17	4.20	2.75 (-10.7%)		• Increased clinker substitution with fly ash (up to 16% by 2030 and 20% by 2050) • Increased clinker substitution with blast furnace slag (BFS): by 16% by 2030 and 20% by 2050 • Decomposition of N2O emissions through use of a secondary catalyst results in abatement of approx. 75% of all n2O emissions: Implementation by 2023 • HFC Phasedown schedule: Kigali Amendment (Freeze 2024, 2029, 10% reduction)			2022…% 2024…% 2026…% 2028…% 2030…%	
AFOLU	20.50	41.57	16.22 (-61%)		• Increased area of forest land from 9.9 million hectares to 10.4 million hectares by 2025: Add 100, 000 hectares of natural forest land per year between 2021 and 2025 (Priority 1) • Increased area of forest plantation from 68, 848 hectares to 118, 848 hectares by 2025: Add 10, 000 hectares of plantation forest land per year between 2021 and 2025 (Priority 3) • Reduce area burned by 500, 000 hectares between 2020 and 2025, inclusive of agricultural production landscapes (priority 2)			2022…% 2024…% 2026…% 2028…% 2030…%	
WASTE	1.76	3.00	2.35 (-21.6%)		• Waste to Energy: 42% of the methane generated would be collected [by] 2030 and used for energy production in Harare, Bulawayo, Gweru, and Mutare metropolitan areas • 20% of organic matter composted in the long term			2022…% 2024…% 2026…% 2028…% 2030…%	

Annex 2: Policy Frameworks aiding NDC Implementation

POLICY	OVERVIEW
CROSS CUTTING	
National Climate Policy	The vision is of a climate resilient and low carbon Zimbabwe, adopted in order to climate-proof all the socio-economic development sectors of Zimbabwe to address the national challenge of reducing the country's vulnerability to climate and climate-related disasters, while developing a low carbon pathway.
ENERGY SECTOR	
National Renewable Energy Policy	The Renewable Energy Policy was developed under the overall framework laid out by the National Energy Policy of 2012. Apart from improving the share of renewable energy in the overall energy mix and addressing issues of climate change, this policy also focuses on obtaining cost-effective implementation of productive energy sources, social upliftment through community involvement, gender equality and employment generation as laid out in other different Acts and Policies.
National Biofuels Policy	The National Biofuels Policy has been developed to guide long-term sustainable development of the bio fuel sector in Zimbabwe through provision of an enabling environment. The Policy ensures that biofuel production; processing, distribution and marketing in Zimbabwe will remain within the parameters of economic, environmental and social sustainability.
E-Mobility Policy (Validated)	Create an enabling environment conducive to promoting and facilitating the transfer and diffusion of e-mobility. The country-specific circumstances that include existing market and technological conditions, institutions, resources and practices are considered, which can be subject to changes in response to government actions. The policy measures may target both; supply-side and demand-side aspects of the transfer and diffusion of technologies.
National Energy Efficiency Policy (draft)	Intended to catalyze sustainable economic growth by promoting competition, efficiency and investment in clean energy, improving access to affordable, competitive, and reliable energy services
National Energy Policy	To provide an overall framework for optimal supply and utilization of energy in general and ensure access to modern energy services for the country's socio-economic development
National Transport Masterplan	Prioritized list of short-term, medium-term and long-term transport sector investments. Zimbabwe acknowledged that its transport systems should be developed to be compatible with environmental concerns, for example by reducing pollution in urban areas.
Forestry Policy (under development)	Under development: With a focus on addressing deforestation which is attributed to conversion of forest land to agricultural land which accounts for about 80% of the deforestation rate.

AFOLU SECTOR	
Comprehensive Agricultural Policy Framework (2018- 2032)	In line with this vision, the specific objectives of the agricultural sector policy are to: (i) Assure national and household food and nutrition security; (ii) Ensure that the existing agricultural resource base is maintained and improved; (iii) Generate income and employment to feasible optimum levels; (iv) Increase agriculture's contribution to the Gross Domestic Product (GDP); (v) Contribute to sustainable industrial development through the provision of home-grown agricultural raw materials; and (vi) Expand significantly the sector's contribution to the national balance of payments.
National Agricultural Policy Framework	The overall goal of the NAPF is to create an environment that enhances the sustainable flow of investment into the agricultural sector towards enhancing productivity and production, ensure food and nutrition security, and promote national economic growth and development.
Food and Nutrition Security Policy	To promote and ensure adequate food and nutrition security for all people at all times in Zimbabwe, particularly amongst the most vulnerable and in line with the country's cultural norms and values and the concept of rebuilding and maintaining family dignity
National Policy and Programme on Drought Mitigation	Establish a framework for Zimbabwe to conduct an effective, coordinated and appropriate response to drought that minimizes potential adverse impacts. To be prepared for and mitigate against the impacts of future and occurring drought events in Zimbabwe.
Zimbabwe Agriculture Investment Plan (ZAIP) (2013 – 2018)	The plan will provide agriculture stakeholders with a sustainable mechanism through which investment is mobilised, controlled and directed towards the sector to avert shocks to food and nutrition security posed by a growing list of risks associated with a fragile global food security situation, climate change, unstable international financial markets and escalating energy costs
Water Policy	To ensure the availability of good quality and affordable water in adequate quantity for all at all times.
WASTE SECTOR	
Integrated Solid Waste Management Plan (policy influencing document plan specific to solid waste)	Promoting a safe and secure and sustainable solid waste management system that transforms Zimbabwe into a clean, healthy and environmentally friendly country through citizen participation
IPPU SECTOR	
Zimbabwe Motor Industry Development Policy (2018-2030)	To promote growth of the local motor industry and increase capacity utilization by over 90% in the next 12 years.
Industrial Development Policy (2019-23)	To open the country for business, modernise, industrialise and promote investment, with the ultimate goal attaining broad based economic empowerment, inclusive economic growth and employment creation.