

GOVERNMENT OF SIERRA LEONE



THE ENVIRONMENT PROTECTION AGENCY SIERRA LEONE

SIERRA LEONE'S INTENDED NATIONALLY
DETERMINED CONTRIBUTION (INDC)

Executive Summary

Background and introduction

Sierra Leone is among the most vulnerable countries to climate change, and economic sectors and livelihoods are already frequently experiencing the manifestations of the impacts. Sierra Leone has been ranked as the third most vulnerable after Bangladesh and Guinea Bissau to adverse effects of climate change. Our vulnerable population has a low capacity to adapt to climate change and the rural populations will be the most affected because of their high dependence on rain-fed agriculture and natural resource-based livelihoods. According to the science of climate change, these impacts are likely to continue to affect Sierra Leone in the future, despite the country being least responsible for the problem since Sierra Leone's contribution to global emissions of greenhouse gases is negligible.

Sierra Leone's Vision for 2013 to 2035 is to become a middle-income country. It would be an inclusive, green country, with 80% of the population above the poverty line. It would have gender equality, a well-educated, healthy population, good governance and rule of law, well-developed infrastructure, macroeconomic stability, with private-sector, export-led growth generating wide employment opportunities; there would be good environmental protection, and responsible natural resource exploitation. The Sierra Leone National Development Plan – **the Agenda for Prosperity 2013 -2018** indicates that Sierra Leone is committed to mainstreaming inclusive green growth in her development process. Thus, the implementation of the INDC will support the transition to low-emission development involving decoupling carbon emissions from economic growth through a series of measures across all economic sectors.

The national circumstances of Sierra Leone have been fully taken into consideration during the development of the INDC. This includes national and sectoral strategies included in the **National Development Plan–the Agenda for Prosperity**. A review of the current status of implementation of the cross-cutting issues of the Climate Convention at the national level has been documented. These include (a) research and systematic observation systems; (b) technology transfer; and (c) education, training and public awareness.

This document presents Sierra Leone's Intended Nationally Determined Contribution (INDC) in response to decisions adopted at the 19th and 20th sessions of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), that invite Parties to communicate to the Secretariat their INDCs, towards achieving the objective of the UNFCCC as set out in Article 2 of the Convention.

Sierra Leone's INDC builds on the participatory multi-stakeholder and cross-sectoral consultative processes during the development of the Second National Communications (SNC), National Climate Change Policy and National Climate Change Strategy and Action Plan (NCCSAP) at national and district levels. The contribution will also contribute towards the delivery of the Constitution of Sierra Leone and the attainment of **Vision 2035**, the country's development master plan.

National Circumstances of Sierra Leone:

Geographical location and main physical features/regions:

Sierra Leone is located on the west coast of Africa, between the 7th and 10th parallels north of the equator. Sierra Leone is bordered by Guinea to the north and northeast, Liberia to the south and southeast, and the Atlantic Ocean to the west. The country has a total area of 71,740 km², divided into a land area of 71,620 km² and water of 120 km². The country has four distinct geographical regions: coastal Guinean mangroves, the wooded hill country, an upland plateau, and the eastern mountains. Eastern Sierra Leone is an interior region of large plateaus interspersed with high mountains, where Mount Bintumani rises to 1,948 meters. Sierra Leone can be split into three geological areas, in the east is part of the West African craton, the western area consists of the Rokelides, an orogenic belt, and a 20- to 30-km coastal strip of sediments (*Schlüter and Trauth, 2008*).

Since the year 2000, Sierra Leone has published three National Strategies on Climate Change and in 2009 adopted its first Special Program on Climate Change.

In addition, Sierra Leone has presented two National Communications with their respective greenhouse gas inventories to the United Nations Framework Convention on Climate Change.

Major social and developmental setbacks

Due to the outbreak of the Ebola Virus Disease (EVD) in Sierra Leone which claimed 3,461 lives by February 2015 (WHO, 2015), the development gains made by Sierra Leone after the country's emergence from a ten-year civil war in 2000 were rudely reversed.

Notwithstanding these setbacks, Sierra Leone recently developed and adopted its National Climate Change Policy (NCCP) and National Climate Change Strategy and Action Plan (NCCSAP) around which this INDC revolves.

The INDC of Sierra Leone has three components, one for Mitigation, one related to Adaptation and the third for Loss and Damage.

This INDC is consistent with Sierra Leone's green growth pathway to development.

Greenhouse Gas Emissions from and Projections for Sierra Leone

According to the Second National Communication of Sierra Leone to the UNFCCC, total carbon dioxide emission (CO₂) for the year 2000 was 574.061 Gg CO₂. The carbon dioxide emissions from energy generation amounted to 529.287 Gg of CO₂ as Sierra Leone energy generation is based on diesel powered generators. The Land Use, Land Use Change and forestry (LULUCF) sector was the least significant source of CO₂ emissions by up taking 752,748 Gg of CO₂, followed by the waste sector emitting 11.8 Gg CO₂. The industrial processes are however

marginal amounting to 39.55 Gg of CO₂ and these emissions came mostly from cement production.

In 2000, the total Methane (CH₄) emissions were 32,312.53 Gg CH₄. Agriculture was the most important source of CH₄ emissions (86.67%), followed by the LULUCF sector (5.631) and finally the waste sector (11.83). The other sectors were not sources of CH₄ emissions.

Nitrogen dioxide (N₂O) emissions were estimated at 13.91 Gg N₂O with 8.54Gg N₂O coming almost exclusively from the agricultural sector. The waste sector was also a source of emission and emitted 31.29Gg N₂O.

Projected Greenhouse Gas Emissions for Sierra Leone

Sierra Leone is yet to produce her Nationally Appropriate Mitigation Action (NAMA) and the National Communications have not produced projections of greenhouse gas emissions for the country.

Sierra Leone's historical contribution is low at 0.1% of the total global emissions. Since Sierra Leone gained her independence in 1961 i.e. fifty four (54) years ago, her per capita emissions has not exceeded 0.6 tCO₂e.

Table 2 below shows the projections of greenhouse emissions developed for Sierra Leone by the US Environmental Protection Agency.

According to these projections total emissions from all sources and sectors and for all gases, GHG emissions are projected to increase to about 4.8MtCO₂Eq in 2015 and to about 6.6MtCO₂Eq in 2030. The major greenhouse gas emitted is Methane (CH₄) with projected emissions of 3.7MtCO₂Eq in 2015 and about 5.0MtCO₂Eq in 2030. The largest emitting sectors are Agriculture and Waste and between them, they are projected to emit between 95 to 98% of the projected national emissions from 2015 to 2030. The largest emitting category is Waste Management and will be responsible for about 54% of the total projected emissions in 2015 and 56% in 2030. Waste Management is projected to emit 2.6MtCO₂Eq in 2015 and 3.7MtCO₂Eq in 2030.

Sierra Leone	2015	2020	2025	2030
All Sources, Gases, Sectors	4.765	5.239	5.851	6.551
CH₄	3.670	4.029	4.458	4.970
N₂O	0.997	1.069	1.156	1.271
Agriculture	2.107	2.224	2.374	2.575
Energy	0.001	0.001	0.001	0.001
Industrial Processes	0.097	0.142	0.238	0.311
Waste	2.559	2.872	3.239	3.664
Source: http://www.epa.gov/climatechange/EPAactivities/economics/nonco2projections.html				

This INDC is consistent with Sierra Leone's Green Growth pathway to low emissions carbon development strategy by the year 2018.

In presenting its INDC, Sierra Leone reaffirms its commitment to combat climate change according to the multilateral rules based climate regime that requires the participation of all countries, and to strive towards sustainable development, as well as its solidarity with the most vulnerable countries.

Multiple stakeholders were consulted during the preparation of the INDC, including non-governmental organizations, academia, civil society organisations, media and representatives from private industry of all economic sectors, through workshops and consultations at the national level.

Contribution

Sierra Leone's INDC includes both conditional mitigation and adaptation components based on her national circumstances and in line with decisions 1/CP.19 and 1/CP.20

Mitigation Component of the INDC

Mitigation perspectives of Sierra Leone are presented based on strategic documents developed in and for Sierra Leone which include the National Communications, the NAPA and other strategic documents. This INDC is a strategic document concretizing Sierra Leone's shift in its development path from brown to green economy and to achieve sustainable development, based on its own socio-economic and development priorities.

The current national circumstances of Sierra Leone, the emissions and mitigation potentials of greenhouse gases from Sierra Leone, the projected climate scenarios, the impacts of climate change on the national and sectoral economies of Sierra Leone are discussed and they served as crucial inputs into the development of the INDC.

The VISION of the Sierra Leone INDC is to create a new era for a harmonious relationship between the economy, environment, social and long term sustainability; shifts to a green economy and provides for the identification and implementation of various mitigation and adaptation measures. The goal of the INDC and the accompanying action plan is to prepare the government and people of Sierra Leone to limit their carbon footprint; reduce or minimize risks by improving adaptive capacity, adapt by reducing vulnerability to climate change impacts and increasing the resilience and sustainable wellbeing of all citizens; and to leverage new opportunities and facilitate collaboration in-country and with regional and global communities. The negative biophysical and socio-economic impacts of climate change will be minimised and the population will be well positioned to harness new opportunities presented by climate change through the implementation of low-emissions and climate resilient development policies and programs.

Conditional Contribution

Sierra Leone's INDCs is framed **in terms of desired outcomes**. Through this INDC, Sierra Leone is committed to implementing specific emissions-reduction actions, such as policies or mitigation actions like advancing a feed-in tariff for renewable energy technologies, phasing out fossil fuel subsidies, or converting to no-tillage agricultural practices.

As a country whose **emission levels are relatively low already**, Sierra Leone could not commit to a certain outcome or result—for example, reducing emissions to a specific level (a greenhouse gas outcome). The domestic situation Sierra Leone faces i.e being solely dependent on fuel imports to meet its minimum energy needs, reducing emissions further than BAU can only be achieved through country wide LEDs which the country has already adopted.

It is against this backdrop, that this INDC intends to maintain the emission levels of Sierra Leone relatively Low (close to the world average of 7.58 MtCO₂e) by 2035 or neutral by 2050 by reducing her carbon footprint and by following green growth pathways in all economic sectors. It further aims to strengthen the Sierra Leone's resilience to climate change and its adaptive capacity, particularly in vulnerable economic sectors and communities through the implementation of the LECRDS and NCCAP.

Sierra Leone hopes to realize this intention through international support in the form of finance, investment, technology development and transfer, and capacity building.

This would require substantial donor support estimated to about \$ 900 million.

Long term global contribution:

Sierra Leone intends to also present an intensity based reduction target by 25 to 35 percent, by 2050 in phases (2020-2030, 2030-2050) compared to 1990 including use of international credits well as the vision to hold per capita emissions in Sierra Leone's average world level in the longer term. These unavoidable emissions will have to be eventually compensated through sinks or removals.

Priority climate change response strategies have been identified and included in the INDC. The following strategies are in the area of mitigation of greenhouse gas emissions.

These strategies include:

- Strategy 1:** Institutionalization of coordination, monitoring, reporting and verification of climate change issues by strengthening the Environment Protection Agency for effective and efficient provision of technical policy advice to the Government and people of Sierra Leone for relevant decision making in transitioning to green economic growth.
- Strategy 2:** Transformation of the National Meteorological Services of Sierra Leone into an Agency and strengthening of Climate Change Early Warning System of Sierra Leone
- Strategy 4:** Promotion of energy efficiency, enhanced management (improved transmission and distribution) and expansion of the energy mix through uptake of renewable

energy sources (Solar, Wind, Hydro, Biomass) particularly in the rural areas of Sierra Leone.

Strategy 5: Enhancement of waste management systems at all levels to reduce pollution and greenhouse gas emissions under the category so as to improve health of both humans and animals and reduce global warming.

Strategy 6: Diversification of economic growth through strengthened transport sub-sector, particularly the infrastructure to contribute to the reduction of regional and global emissions of greenhouses and build a stable economy.

Strategy 7: Adoption and application of climate-smart and conservation agriculture that allow minimum disturbance and year-round maintenance of soil and soil cover, including the use of leguminous crops to boost soil nitrogen; adoption of new crops, crop rotation and/or crop varieties and adjusting the time of planting/harvesting; introduction of integrated soil-fertility management systems that cater to the nutritional needs of the crop without polluting the environment; and integrated water management practices.

Already, in a bid to significantly contribute towards the reduction of the sources and potential sources of GHG emissions or enhancing carbon sinks, Sierra Leone, following a mitigation assessment, and drawing upon the strategic direction of Vision 2035, Sierra Leone, proposed to undertake the following appropriate which were it's Internationally communicated pre-2020 GHG emissions reduction plans under the Copenhagen Accord (GoSL, 2012): Thus Sierra Leone is already mitigating GHG emission which has not yet been quantified for CERs.

1. Establishment of the national secretariat for climate change (NSCC) Setting/developing air, water and soil quality standards, and ensure regular assessments and monitoring through control programs.
2. Expanding clean energy utilization (e.g. solar, mini-hydro electric power, LPG, biomass stoves etc).
3. Development of energy efficiency programmes through sensitization and awareness raising campaigns. Sustainable production of charcoal a reduce dependence on firewood.
4. Development of alternative energy sources such as bio-fuels from sugarcane, corn, rice husk, etc.
5. Developing agricultural and urban waste incineration programmes for energy production.
6. Improved waste management through composting and recycling of waste.
7. Development and enforcement of regulations on regular maintenance of vehicles (vehicle emission testing): formulation of transport plans.
8. Improved and promoting use of public transport (e.g. road, rail and water) for passengers and cargo to reduce traffic congestion and GHG's emissions.
9. Setting/developing air, water and soil quality standards, and ensure regular assessments and monitoring through control programs.

As reported to the 2009 COP 15 meeting in Copenhagen, Sierra Leone, through its relevant Ministries, will put modalities into place to fully exploit the Carbon Trading and Payments for Ecosystems Services (PES). This will involve the formulation of relevant policy guidelines and institutional framework for a ‘Quick Start’ implementation of REDD, REDD+ and non-REDD Carbon projects. There were also plans for the establishment of management and regulatory structures for all climate change related issues¹.

Information to facilitate clarity, transparency and understanding

Scope and coverage:

Geographic coverage

The geographic coverage is complete. No region in Sierra Leone has been left uncovered by the inventory.

Sectors (sources and sinks)

All sources or removals of direct GHG gases, included in the IPCC Guidelines (Energy, Industrial Processes, Agriculture, Forestry and other Land Use (AFOLU) and waste sector). In particular, Sierra Leone target covers all greenhouse gases included in the 1990 and 2000 inventories under INC and SNC.

The general gaps in the completeness are mainly due to lack of activity data and the non-occurrence of the activity in Sierra Leone.

Gases covered: Carbon dioxide (CO₂), Methane (CH₄) and Nitrous Oxide (N₂O) are prioritized.

Base year for gases covered: all 2000/1990(not relevant where reference level is applied)

Time frames/period for implementation

2030-2050

Sierra Leone supports the inclusion of international aviation and shipping on the basis of future internationally agreed rules applicable to all Parties (currently not included in Sierra Leone’s INDC)

Fairness and ambition

Sierra Leone is of the view that the key factors in determining the fairness of a contribution should include historical responsibility and respective capability to address climate change. The UNFCCC also recognizes that the extent to which developing countries will meet their obligations under the Convention will depend on the level of support in terms of finance, technology and capacity building available.

¹ The actualization of these plans will be ascertained during the CSP mission to the country.

GHG emissions are projected to increase to about 4.8MtCO_{2e} q in 2015 and to about 6.6MtCO_{2e} in 2030, by the US EPA which is far less when compared to the global average of 7.58 MtCO_{2e}.

The country's capability to implement this contribution is also subject to limitations; with poverty alleviation and sustainable economic development being the key national objectives. Increasing the per-capita GDP growth equitably above the current levels of 4.1% is therefore a priority.

The country has a very small emissions profile (<0.1% of global emissions and per capita emissions less than 0.2tCO₂/ year. However, Sierra Leone is determined to continue playing her own part in addressing climate change by communicating a fair and ambitious contribution.

Although Sierra Leone as one of the least developed countries does not have absolute emission reduction targets, it has chosen the option of a green growth and low emission carbon development strategy (LECRDS) to achieve this objective.

This will involve implementing the priority mitigation and adaptation actions in the NCCAP to achieve a low carbon climate resilient development in line with Vision 2035.

It is against this backdrop that Sierra Leone considers this conditional contribution as fair and ambitious in light of the country's national circumstances.

Gender perspective

Pillar eight (8) of Sierra Leone's five year development plan considers Gender and Women's Empowerment.

The policies and actions include a cross-cutting human rights and gender perspective in order for the measures to be implemented to take into account women as important decision makers regarding energy consumption. They also emphasize the importance of implementing them such that they do not exacerbate the impacts of climate change that already have disproportionate adverse effects based solely on gender.

In addressing climate change issues, public entities are required to undertake public awareness and consultations, and ensure gender mainstreaming.

Planning processes:

Sierra Leone's planning process on mitigation and adaptation hinges on the NCCP, LECRDS, NCCAP and the NAPA. The four shall hopefully be reviewed every five years to inform the Medium Term Plan. The adaptation actions will further amplified in the NAP which Sierra Leone hopes to develop.

Mitigation and adaptation actions are implemented across the various sectors at both the national and district council government levels. The Environment Protection Agency (EPA-SL) coordinates the country's climate change affairs through the National Climate Change secretariat (NCCS).

The planning process also takes cognizance of the absence of a Climate Change law that may propose several institutional reforms to enhance coordination of climate change adaptation and mitigation. These reforms may include:

- Review, revise the already adopted (by cabinet concurrence) current Draft Climate Policy into a comprehensive Climate Policy;
- Establish the enabling legislative framework to implement the LECRDS and NCCAP actions:
- Establish and/or strengthen the high-level National Climate Change Council (NCCC), in the Office of the President; and
- Support the already established National Climate Change Secretariat as the primary national government agency for climate change response.
- Establish a Sierra Leone Climate Fund to be a financing mechanism for priority climate change actions and interventions.

National implementation:

Sierra Leone elaborated a draft for consultation at national level of its national climate policy. It will include measures that allow emission reductions by 2035 to be achieved mainly domestically.

The proposed measures to achieve the commitments will build on existing measures and strategies. The existing legal frameworks will have to be revised accordingly. These revisions are subject to approval by Parliament.

Long term global contribution:

Sierra Leone intends to present an intensity based reduction target by 25 to 35 percent, by 2050 in phases (2020-2030, 2030-2050) compared to 2000/1990 including use of international credits well as the vision to hold per capita emissions in Sierra Leone's to $1 - 1.5 \text{ t CO}_2 \text{ eq}$ in the longer term. These unavoidable emissions will have to be eventually compensated through sinks or removals.

Assumptions and methodological approaches

Sierra Leone's supports internationally agreed rules for accounting and reporting of greenhouse gas emissions. As they are yet to be agreed, Sierra Leone's INDC is based on the following assumptions and methodological approaches:

The IPCC Revised 1996 Guidelines for National Greenhouse Gas Inventories and the Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories were used to calculate the GHG emissions and removals as described in the Second National Communication. Emissions of carbon dioxide from the combustion of biomass are assessed but not counted towards the contribution.

Future contribution from the mining/extractive sector has not been included in the accounting.

Global warming potentials

The carbon dioxide equivalent was calculated using the 100 year global warming potentials in accordance with the IPCC 2nd Assessment Report.

Approaches to land sector emissions

This includes emissions from the land use, land use change and forestry (LULUCF) sector. Relevant national policy documents and the FAO's Global Forest Resource Assessment 2010 for Agency Sierra Leone were used. A global land -use data approach was used, as described in the 2003 IPCC Good Practice Guidance for LULUCF. A state and transition model consistent with the 1996 Revised IPCC Guidelines was used to calculate fluxes of CO₂ to (or from)the atmosphere and biomass carbon pools is the same as outlined in the1996 Revised IPCC Guidelines. There is significant uncertainty in the BAU emission and mitigation potential estimates for this sector and work is underway to update and improve these estimates.

Contribution of international market based mechanisms

Sierra Leone supports the inclusion of the international Carbon Markets such as CDM in a post 2020 agreement on climate change and proposes that such instrument be tied to an appropriate MRV system to be used to help finance low carbon and climate resilient infrastructure investments.

Sierra Leone considers that certain low emission development options mentioned in the INDC or additional actions could be entirely or partially be funded by the transfer of international carbon assets while taking into account environmental integrity and transparency.

Avoidance of double counting

Sierra Leone intends to include the above mentioned carbon assets in accounting for its emission reduction commitment.

For the CDM under its current use and operation it is assumed that only the acquiring Party will account for the emission reductions covered by the credits acquired from the host Party.

Beyond this, Sierra Leone supports the reform of the CDM in the context of host country Parties having also emission reduction commitments/contributions. For new market mechanisms, Sierra Leone supports the elaboration of UNFCCC rules for avoiding double counting of emission reductions, or otherwise appropriate.

Reference Point

BAU emissions in the target year

Business as usual (BAU) emissions is estimated to be 6.6 **MtCO₂e** by 2030. This excludes downstream exploitation in the mining/extractive sector.

BAU projection methodology

The BAU projection methodology is detailed within the NCCAP and the Second National Communication (SNC), including key assumptions, drivers and methodologies for each sector. The base year is 1990. All the petroleum products consumed in Sierra Leone are imported basically from the international market. For hydro energy, the BAU projection contained in the NCCAP and SNC has been revised to be consistent with the current level of hydro deployment since the INC was published. This is based on the premise that, Sierra Leone currently has only 90 MW of installed capacity, of which 86% is for Freetown; electricity generated from the hydro-electric facility at Bumbuna, completed in 2009, accounts for 62% of power generated and oil-powered facilities the remainder.²

Sierra Leone has over 20 hydro potential sites of which the Bumbuna Dam is the only one that has been tapped. This dam, which has been completed, has a capacity of 50MW. This was considered as the most **viable mitigation option** for the electricity sector. If five of these hydro potentials including Bumbuna are utilized, it may result in almost zero emission for the electricity sector.

The Adaptation Component of the INDC

The INDC is developed to take the efforts (adaptation) needed to respond to climate change in Sierra Leone to another stage beyond identification to implementation. Under the INDC the strategies identified have been translated into adaptation actions to enable Sierra Leone to take decisive and sustainable actions in addressing the adverse impacts of climate change on the national economy and move the country into a green and resilient economy. The Action Plan includes (a) prioritised activities that will support Sierra Leone to transition to a low-carbon and climate-resilient economy; (b) information on financing the INDC; (c) mobilisation of resources and (d) monitoring, reporting and verification of impacts on the citizens and economy of Sierra Leone due to the implementation of the strategy and action plan.

Implementation of the INDC of Sierra Leone is contingent on the existence of solid climate change policy, climate change legal framework and a well-established institutional structure with well-defined roles and responsibilities of institutions and individuals. In Sierra Leone both the climate change policy and the institutional structure are in their infancy stages. However, there is currently no climate change law. Given the cross-cutting and overarching role that policy, legislative and institutional reform can play in enabling Sierra Leone's climate change response, priority actions are envisaged and have been identified for the implementation of the INDC. These priority actions include:

1. Review, revise and adopt the current Draft Climate Policy into a comprehensive Climate Policy;
2. Establish the enabling legislative framework to implement the LECRDS and NCCAP actions:

² MEWR Energy Strategy 2012

3. Establish and/or strengthen the high-level National Climate Change Council (NCCC), in the Office of the President; and
4. Establish a National Climate Change Secretariat as the primary national government agency for climate change response.

Jointly implemented, these actions constitute a comprehensive package that facilitates climate change mainstreaming and effective INDC implementation.

Establishment of partnerships with organizations, communities, and other partners would be crucial as sustainable means to face the challenges of global climate change and adapt to its impacts. Additionally, new partnerships specific to climate change should be forged to provide the enabling environments for closer working relations on a range of science and adaptation tools for decision making.

Priority climate change response strategies have been identified and included in the INDC. These strategies are in the area of adaptation to the impacts of climate change.

- Strategy 1:** Estimation, in a sustainable manner, of Sierra Leone's contribution to global warming and climate change; assessment of the impacts of climate change on Sierra Leone's economy and people; and analysis and contextualization of the possibility of national and sectoral climate change integrated plans providing guidance for the development and investment pathways of the country and choice of investments.
- Strategy 2:** Management of rangelands and pastures by managing grazing systems and grazing intensity, fire management and pasture rehabilitation.
- Strategy 3:** Integrated management of crops and Livestock management including the modification herd composition: variation of species/breeds; and adaptation of grazing management practices to increase soil carbon. Reduction of greenhouse gas emissions from livestock by improving animal nutrition, breed selection and manure management.
- Strategy 4:** Restoration of degraded lands with high production potential; application of erosion control, soil and water conservation, organic amendments, perennial or deep root crop systems; and improvement of land and soil, including drainage, desalinization, addition of gypsum to renovate sodic soils.
- Strategy 5:** Management of coastal and fisheries resources through promotion of non-destructive fishing techniques to maintain resilience of marine ecosystems; aquaculture in areas inundated by rising sea levels.
- Strategy 6:** Promotion and facilitation of early warning and disaster preparedness through strengthening and improvement of climate early warning systems, drought

contingency plans, response to drought and flooding, sensitisation and awareness-raising, and promotion of weather-indexed risk insurance.

Strategy 7: Strengthen integration of climate change adaptation into the health Sector.

Strategy 8: Strengthen the adaptive capacity of the most vulnerable groups and communities through social safety nets and insurance schemes.

Strategy 9: Enhance the resilience of the tourism value chain.

Strategy 10: Create enabling environment for the resilience of private sector investment, demonstrate an operational business case.

Strategy 11: Integrate climate change adaptation into the mining/extractive sector

Strategy 12: Mainstream climate change adaptation in land reforms.

The Loss and Damage Component of the INDC

These priority actions include:

5. Adopt the current Disaster risks reduction Policy into a comprehensive Climate Policy;
6. Establish the enabling legislative framework to implement the DMD policy and action plan:
7. Establish and/or strengthen the high-level National DMD Council (NCCC), in the Office of the Vice President; and
8. Establish a National DMD agency as the primary national government agency for climate change response.

Jointly implemented, these actions constitute a comprehensive package that facilitates preparedness and response to disasters and effective INDC implementation.

Resourcing Mobilisation Strategy for the INDC (LECRDS and NCCAP)

Means of implementation

The realisation of the bold ambitions and actions identified in the Sierra Leone INDC will require substantial financial resources, investment, technology development and transfer, and capacity-building to fully realize her intended contribution.

To succeed in this ambitious intention, Sierra Leone will need to access both public and private sources and from both within Sierra Leone and overseas. The cumulative expenditure commitment estimates in the INDC is about **900 Million US Dollars**. Further analysis will be necessary to refine the required investment cost and determine the domestic support.

Barriers to Raising the necessary capital

Raising the necessary capital is currently impeded by a number of barriers some of which include policy and regulatory weaknesses, difficulties in accessing commercial finance and technical capacity shortcomings. For sustainability, it is recommended to create a stand-alone dedicated Sierra Leone Climate Fund (SLCF). The SLCF would focus both on mitigation and adaptation activities; it would evolve in a phased manner starting with providing grant financing before evolving to offer a wider palette of financing instruments; it would aim to catalyse private sector funding through interacting with other financial intermediaries (e.g. commercial banks); and its governance structure would allow broad and equal representation from the government, civil society and the private sector leading to improved capacity of the Government to absorb international public climate finance.

A Resource Mobilization Strategy is proposed with the ultimate objective of raising the resources needed to implement the Strategy and Action Plan. Utilizing detailed information about current donors and funding patterns, this document aims to provide a strategy on how the Government of Sierra Leone can mobilize resources for activities planned to address its INDC at the national and sub-national levels. The document provides information about distribution of funds and highlights the importance of improving capacity to deliver and absorb funding at country level. It is recommended that resources should be mobilized both domestically and internationally. For this reason, the SLCF should be designed to have three (3) windows: (1) Domestic Climate Finance; (2) International (Bilateral and Multilateral) Climate Finance; and (3) Private and Market Climate Finance. Detailed information on the structure and management of these Funds are contained in the underlying text in this document.

International cooperation is an important and necessary prerequisite for leveraging of inputs for the implementation of the INDC. Enhancing international cooperation, linking with international and regional programs, receiving international supports in terms of experience and technology relating to climate change mitigation and adaptation in different areas of the economy will enhance implementation and monitoring and evaluation. International cooperation with bilateral governments and multilateral organizations and institutions are required in order to mobilize resources such as knowledge, experiences and funds for implementation of the INDC, promote international collaboration in scientific and technological activities, and effectively apply and transfer climate friendly technologies.

Capacity building needs for the implementation of the INDC of Sierra Leone have been identified as (a) for gathering, processing, and providing and communicating meteorological and socio-economic data and information; (b) improving National GHG Inventories and Assessments of GHG Mitigation and Climate Change Adaptation Technologies; and improving climate Vulnerability (impacts and adaptation) Assessment

Monitoring, Reporting & Verification of Implementation of the INDC

Finally, the monitoring, reporting and verification of the implementation of the INDC of Sierra Leone have been articulated with the objective of tracking the transition of Sierra Leone to a low carbon and climate resilient economy. It will be necessary to develop and apply an integrated framework for measuring, monitoring, evaluating, verifying and reporting results of response (mitigation and adaptation) actions and the synergies between them. Effective implementation of the INDC is highly dependent on the internal “feedback” generated through monitoring, reporting and verification (MRV) processes. The framework must be able to assess the effectiveness of investment in mitigation and adaptation actions because the mobilization and continuation of financial and technological support are contingent on the effectiveness of the MRV framework. National, bilateral and multilateral financial partners and other providers of finance need the results of MRV systems to validate the effectiveness of funds they provide. Therefore, securing further financial support for the implementation of the INDC will be dependent on the successful establishment and implementation of a MRV framework.

For effective and efficient monitoring, reporting and verification, criteria with quantitative and qualitative indicators disaggregated according to gender and covering various sectors and levels of the national economy need to be developed and utilized in the monitoring process. Particular attention should be paid to coverage of the activity whether it be at the grassroots level community, sub-national and/or national; agriculture, water resources, ecosystem, etc; local level, middle-level and high-level decisions-makers and national policy-makers. The monitoring and evaluation criteria must also include the assessment of the impacts of the activity on the community and at the national levels such as change in knowledge and awareness on climate change, improvement in the livelihoods and influence on decision and policy making at the local and national levels.

In this INDC Sierra Leone will choose to consider what emissions reductions can be achieved with available resources and those to be undertaken if additional resources were available.