

REPUBLIC OF LIBERIA



INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (INDC)

<p>Preamble</p>	<p>Liberia's INDC presents a context for the global effort to create a new international climate agreement by the end of the Paris Climate Summit in December 2015, in order to limit temperature increase to 2°C. Liberia recognizes the current and future threats of climate change and has been taking initiatives toward addressing these threats. Liberia ratified the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol in 2002, and has implemented a number of climate change related programs. Liberia developed its National Adaptation Programme of Action in 2008 followed by its Initial National Communication to the UNFCCC in 2012. A National Adaptation Plan (NAP) is currently being developed as a means of identifying Liberia's medium and long-term adaptation needs. A National Climate Change Policy is also being developed to ensure that a qualitative, effective and coherent climate change adaptation process takes place, and to serve as the pillar for comprehensive sectoral strategies and action plans. Additionally, Liberia is currently implementing Reducing Emissions from Deforestation and Forest Degradation (REDD+) readiness activities.</p> <p>Liberia's INDC includes one component on mitigation and one on adaptation. The extent of implementation of the intended contributions on mitigation and adaptation stated here are conditioned upon the provision of adequate means of implementation by the international community (financial resources, capacity building and the transfer of technologies). It does not constitute an international obligation to Liberia. For Liberia, the INDC presents a platform to integrate its Low Carbon Development Strategy into the country's long-term sustainable development Vision by 2030 (Agenda for Transformation).</p>
<p>National Situation and Policy Context</p>	<p>Liberia covers an area of 111,369 square km (11,137,000 ha), with 13.5% covered by water and the remaining 86.5% consisting of land. The coastline of Liberia is, an estimated 565-km in length. Despite substantial forest loss over the years, Liberia is a net carbon sink and still has significant forest, estimated around 30% of total land in 2009 by FAO. Additionally, Liberia holds around 40% of the remaining West African moist forest (Upper Guinean Forest).</p> <p>Liberia's population was put at 3.5 million in 2008 and it is projected to increase to 10.3 million by 2058, with more than 70% of the population living in coastal cities including Monrovia, the country's capital. Amidst immense recovery efforts since 2005, Liberia remains one of the least developed countries. More than half of the country's population lacks access to basic social services and high levels of unemployment. Majority of Liberians use biomass as the primary source of energy. In 2004, it was estimated that over 95% of the population relied on firewood and charcoal for cooking and heating needs and palm oil for lighting. In 2009 it was estimated</p>

that 70% of the urban population use charcoal for cooking as compared to 5% of the rural population; 91% of the rural population use firewood for cooking as compared to 21% of the urban population.

In 2012, Liberia took a significant step towards transforming the country into a middle income nation by adopting the Vision 2030. To achieve the Vision 2030, the Agenda for Transformation (AfT) was also adopted as a framework for meeting the country's expectation for social development, sustained and accelerated growth, reflected in 5 pillars (Peace, Justice, Security and Rule of Law; Economic Transformation; Human Development; Governance and Public Institutions; Cross-Cutting Issues including environment and gender). Attaining the middle income country status by 2030, the economy was projected to maintain the GDP growth rate of 8.3% for two decades considering 2012 as the base year. However, the more recent assessment of the economy revealed that the real GDP growth for 2014 declined from 2.5% to 0.7% as a result of the slow pace of economic activities in the traditional sectors, exacerbated by the outbreak of the Ebola Virus Disease (EVD). With the gradual resumption of economic activities, the estimated GDP growth rate for 2015 is 4.5%. Liberia's economic growth to a large extent relies on its natural resources, particularly agriculture, minerals and timber.

In 2013, Liberia submitted its Initial National Communication (INC) on climate change to the United Nations Framework Convention on Climate Change (UNFCCC). The INC contains a national inventory of anthropogenic emissions by sources and removals by sinks of GHG, as well as a description of steps to be taken by the country to contribute in achieving the objective of the Convention. The table below shows that in the absence of Land Use, Land-Use Change and Forestry (LULUCF), Liberia's total national GHG emissions for the year 2000 is estimated to be 8,022 Gg of equivalent CO₂. Of the four non-LULUCF sectors responsible for the country's sources of GHGs, the Energy sector is the most significant, accounting for about 67.5% of the national total. This is trailed closely by the agriculture sector's contribution of about 31.9%. The waste sector accounts for 0.6%.

GHG Emissions by Sector (without LULUCF), 2000		
GHG Source and Sink Categories	Total Gg CO ₂ Equiv.	Sector Share (%) (without LULUCF)
Energy	5,414	67.5
Industrial processes	NO	NO
Solvent and other product use	NE	NE
Agriculture	2,562	31.9
LULUCF	-96,811	
Waste	46	0.6
Other (please specify)	NO	NO
Total without (LULUCF)	8,022	100
Total (with LULUCF)	-88,789	
Note: LULUCF – Land Use Change and Forestry		

The GHGs of concern in Liberia from the three mentioned sectors are mainly Methane (CH₄), contributing 51.6%; Carbon dioxide (CO₂), contributing 44.5%; Nitrous oxide (N₂O) contributing 3.9%. Other important gases for consideration include Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

However, Liberia has started to implement some mitigation strategies in the energy and transport sectors to further limit its greenhouse gas emissions. In a separate study on the costs

	and benefits of land placed under different uses in Liberia, it was projected that the implementation of a low-carbon development strategy in Liberia will save an estimated 11.7 million tons of CO₂ per year , while generating \$58.7 million in revenues annually. The study also estimated the total costs to around \$22.0 million per year, resulting in an estimated net benefit of \$36.7 million per year to Liberia.
Planning Process	In the preparation of Liberia's INDC, several national laws, policies, programs, plans and strategies were given consideration, including National Energy Policy and the National Low-Carbon Economic Analysis paper. Most importantly, the planning process of Liberia's INDC draws largely on Liberia's Agenda for Transformation. Liberia has ensured that key relevant stakeholders (Government agencies and ministries, civil society, local leaders, private sector, women groups, youth and student representatives, non-government organization) were included and fully participated in its INDC preparation process.
Fairness and Ambition	Liberia's contributions to global greenhouse gas (GHG) emissions stand at 1.89 Mt CO₂ eq. , representing 0% of the global total. It is equally important to note that Liberia is categorized as a GHG sink if the LULUCF sector is considered . However, Liberia is committed to do more to further cut down on its GHG emissions provided the international community supports Liberia with the appropriate means of implementation. On the other hand, projections show that Liberia's future climate will change in line with global changes. The changes will greatly affect the country due to its high vulnerability owing to its low economic base, dependence on rain-fed agriculture, increasing coastal erosion, exposure to epidemics and huge reliance on biomass energy, plus the low capacity to adapt at the community and national levels.
Timeframe for Implementation	The timeframe for implementation of the INDC mitigation and adaptation actions is up to 2030 in line with Liberia's Agenda for Transformation (AfT).
Means of Implementation	<p>To fully implement Liberia's INDC mitigation and adaptation interventions, there is a need for adequate, predictable, and sustainable financial, technological, and capacity support and mechanisms provided by various sources. Further studies will be conducted in the future to determine an estimated cost of implementing Liberia's INDC. Liberia intends to mobilize funds from the private sector, bilateral and multilateral sources and all other sources, mechanisms and instruments. Liberia also plans to develop a tracking system to analyse the support (finance, technology transfer and capacity building) for implementation.</p> <p>Liberia does not rule out the inclusion of international carbon market mechanisms such as the Clean Development Mechanism (CDM) in a post 2020 climate agreement. We propose that such an economic instrument, supported by an appropriate accounting system (MRV), can be used to help finance certain low-carbon and climate-resilient infrastructure investments. Liberia considers that some low carbon development options in the INDCs, or additional actions, could be financed in full or in part, through the transfer of international carbon credits/assets (results-based financing), taking into account environmental integrity and transparency.</p> <p>Liberia recognizes the system of Monitoring, Reporting and Verification (MRV) as a fundamental pillar of its INDC for the purpose of transparency and accountability. The MRV system for the INDC will build upon existing structures for monitoring and evaluation (M&E) and intersectoral coordination. In this regard, the country will require further support to ensure that its MRV system is strengthened (institutional arrangement and responsibilities, indicators, methodologies) in order to track progress toward the implementation of INDCs including non-GHG co-benefits.</p>

I. MITIGATION

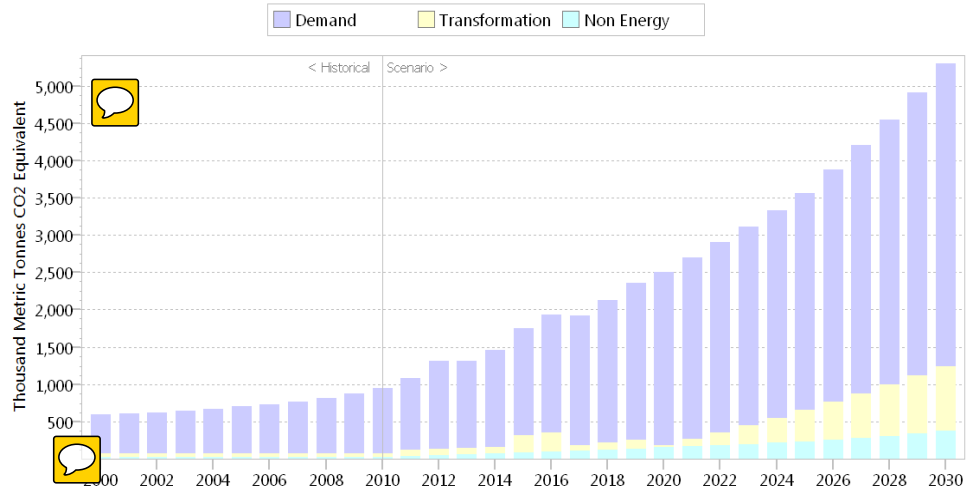
<p>Mitigation and Emission Reduction</p>	<p>Mitigation Targets</p> <p>The energy sector is the highest contributor of GHG in Liberia emanating mainly from the use of traditional fuels such as firewood, charcoal and palm oil and the use of fossil fuels, especially petroleum products. To reduce the reliance on traditional fuel and increase the use of modern and renewable energy sources, the National Energy Policy (2009) was developed with a set of goals targeted at maximizing efficiency, minimizing costs and adverse environmental impacts as principle of extending energy access to all Liberians. Most recently, Liberia's Initial National Communication (2013) reinforces the National Energy Policy with additional long-term targets and related activities, which includes:</p> <ul style="list-style-type: none"> • Reducing GHGs by at least 10% by 2030 • Improving energy efficiency by at least 20% by 2030 • Raising share of renewable energy to at least 30% of electricity production and 10% of overall energy consumption by 2030 • Replacing cooking stoves with low thermal efficiency (5-10%) with the higher-efficiency (40%) stoves. <p>The long-term strategy of Liberia is to achieve carbon neutrality by 2050. The strategic options for mitigation considered under the INDC are the energy sector (electricity, transport) and the waste sector. The Waste Sector focuses on solid waste disposal on land. In 2000, the waste sector accounted for about 0.60% of Liberia's national total CO₂ eq emissions. A significant subcategory is CH₄ emissions from solid waste disposal sites (SWDS) on land, which contributed 91.7%. CH₄ mitigation targets will include landfill recovery, waste incineration with energy recovery, composting of organic waste, controlled wastewater treatment, and recycling and waste minimization.</p>
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Business-As-Usual Scenario Assumptions

I. Business-As-Usual High Growth Scenario

Environment: OneHundred Year Global Warming Potential

Scenario: BAU (High Growth and Transformation to 2015), Fuel: All Fuels, GHG: Selected GHGs...



Mitigation Scenario 1: 30% Renewable Generation

Under BAU Scenario

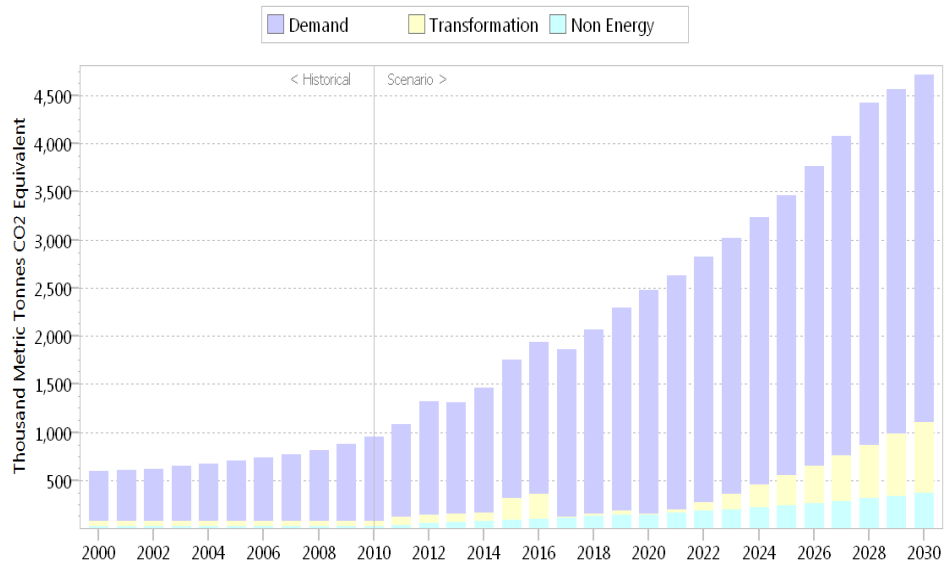
- Total Generation (2030 Projected)
- WAPP Imports: 378,000 MWh
- Diesel: 171,000 MWh
- HFO: 824,000 MWh
- Hydro: 402,000 MWh
- Total Generation: 1,775,000 MWh
- Total Generated after 20% T&D losses: 1420 MWh
- Renewable Energy is 22.6% of generation in this scenario

Under 30% Renewable Scenario

- Total Generation (2030 Projected)
- WAPP Imports: 378,000 MWh
- Diesel: 143,000 MWh
- HFO: 689,000 MWh
- Hydro: 367,000 MWh
- Biomass: 198,000 MWh
- Total Generation: 1,775,000 MWh
- Total Generated (after losses): 1420 MWh
- Renewable Energy is 31.8% of generation in this scenario with Hydro and Biomass

The main difference: In the 30% renewable scenario, we assume a 30 MW biomass project comes online. Additionally, if Transmission & Distribution (T&D) losses are higher than 20%, more renewable generation will be needed to meet the 30% goal.

Environment: OneHundred Year Global Warming Potential
 Scenario: Upper Bound of supply Alternatives, Fuel: All Fuels, GHG: Selected GHGs...



Mitigation Scenario 2: 20% Energy Efficiency (EE)

The total consumption of firewood and charcoal equates to about 67.5 million Gigajoules in 2010

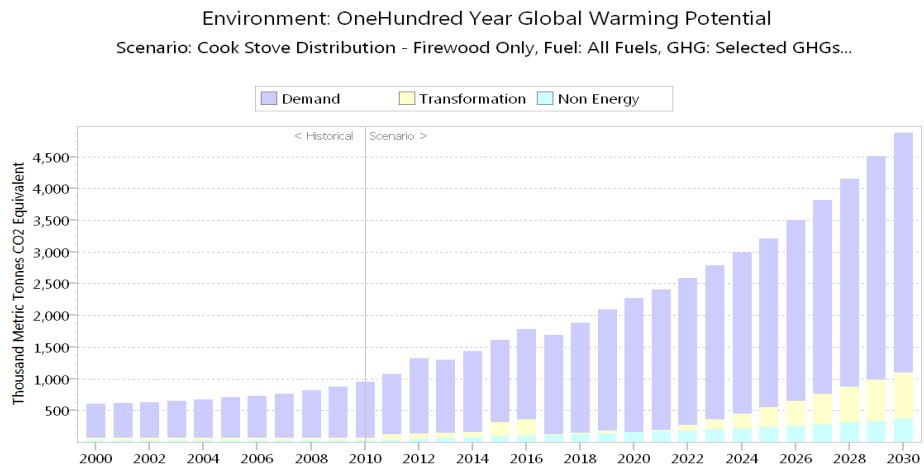
- 91% of this consumption is from firewood and this percentage is projected to remain constant until 2030.

We ran two scenarios, the first that reduced firewood use by 20% and the second that reduced both firewood and charcoal each by 20%

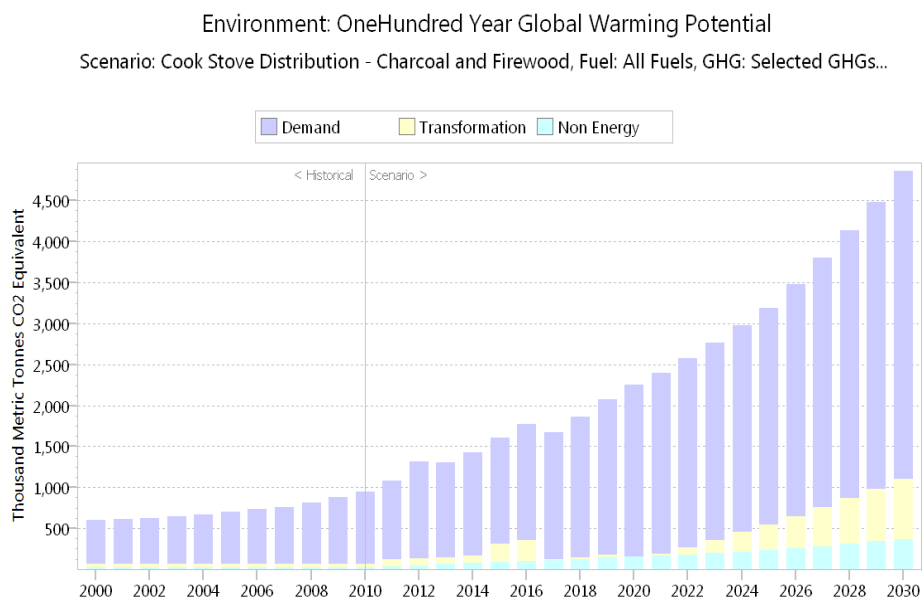
- Scenario A:** 2030 Projected Firewood Consumption: 9,379,790 cubic meters or 103.2 million Gigajoules since this will have the greatest impact
- Scenario B:** 2030 Projected Firewood Consumption: 9,379,790 cubic meters or 103.2 million Gigajoules AND 2030 Projected Charcoal Consumption: 342,629 metric tons or 9.9 million Gigajoules

While there are two scenarios presented, all of the other follow-on mitigation scenarios (3 and 4) use the results from Scenario 2A.

Mitigation Scenario 2A: 20% Energy Efficiency (EE) – Firewood Only



Mitigation Scenario 2B: 20% Energy Efficiency (EE) – Firewood and Charcoal



Mitigation Scenario 3: 5% Biofuel Use in Transport

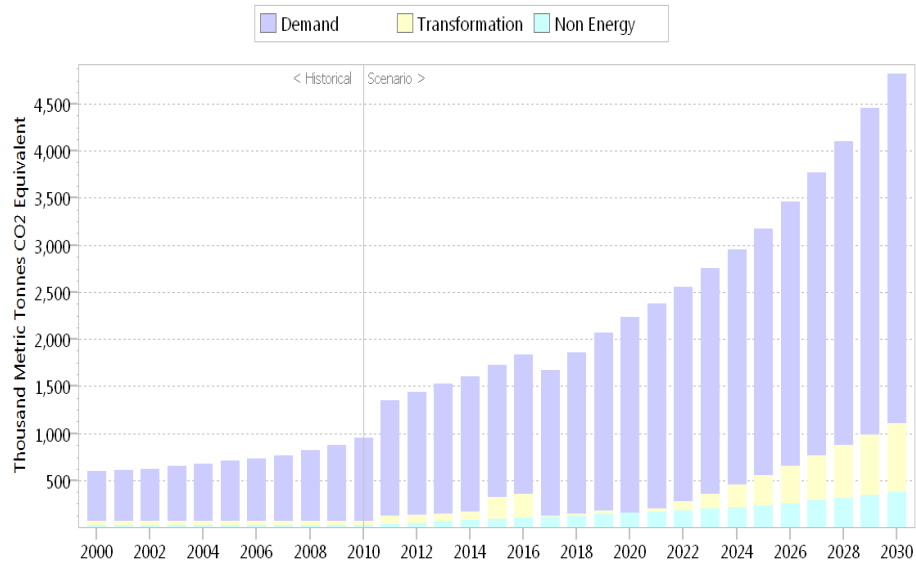
For the purposes of this analysis, it was assumed that 5% palm oil biodiesel will be used with both gasoline and diesel

- This assumes that oil palm trees used will be wild or grown by large farms or through subsistence farming
- Further analysis is needed to determine the total emissions resulting from the cultivation of oil palm, milling and refining processes, and transport and esterification (conversion from palm oil to biodiesel) in Liberia.
- For this analysis we will assume everything is produced sustainably

According to several studies, if the production process is managed appropriately, there could be significant reduction in GHG emissions from palm oil biodiesel, mostly in CO₂, CH₄ and N₂O emissions. For the purposes of this analysis, we have assumed a 40% reduction in GHG emissions resulting from palm biodiesel use (over fossil fuel).

Environment: OneHundred Year Global Warming Potential

Scenario: Biofuel Use 5%, Fuel: All Fuels, GHG: Selected GHGs...



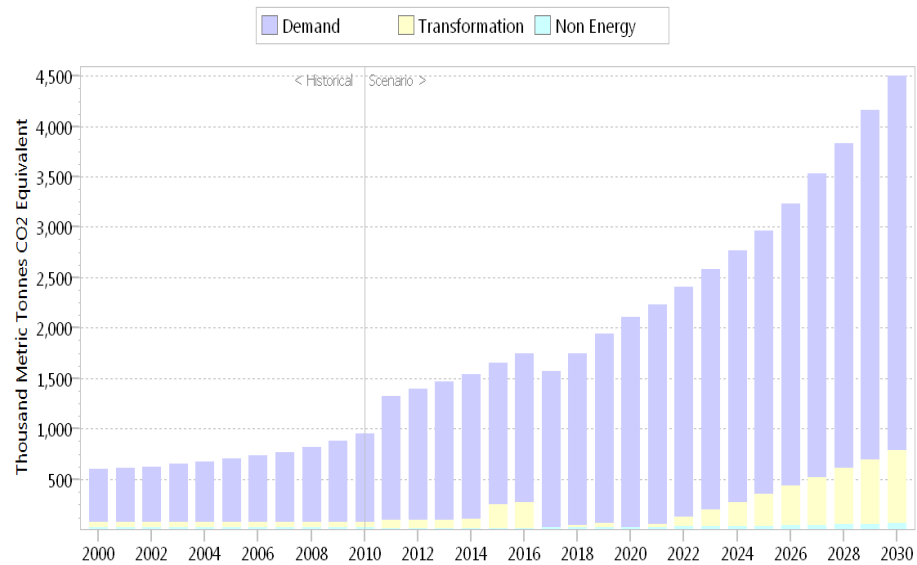
Mitigation Scenario 4: Waste Sector (Landfill Gas)

Calculated methane emissions generated by landfill based on total waste generation in Monrovia (table 3.15 of INC) and waste profile of landfill (table 3.16 of INC)

Based on these calculations, assumed that most of this methane gas can be captured and either used to fuel vehicles on biogas or can be piped in for use in a power generation facility. Doing either can reduce emissions by roughly 90%.

Environment: OneHundred Year Global Warming Potential

Scenario: Monrovia AD Plant, Fuel: All Fuels, GHG: Selected GHGs...



Mitigation Summary

Total GHG emissions can be reduced using all of the above strategies from the BAU Trajectory by 15% (797 000 tCO₂e) in 2030. The following are the 2030 projections—

- BAU Emissions: 5,302,000 tCO₂e
- With Mitigation Scenario 1: 30% RE Goal: 5,161,000 tCO₂e
- With Mitigation Scenario 2A: Firewood Cookstove Distribution: 4,879,000 tCO₂e
- With Mitigation Scenario 3: 5% Biofuel Use: 4,821,000 tCO₂e
- With Mitigation Scenario 4: Monrovia Landfill Gas Plant: 4,505,000 tCO₂e

Under BAU emissions will be 5,302,000 tCO₂e by 2030 and if all four scenarios were implemented, emissions would be 4,505,000 tCO₂e with a total potential of reducing 797 000 tCO₂e by 2030 (see figure below).

	<p style="text-align: center;">Impact of Mitigation Scenario on Emissions</p> <table border="1"> <thead> <tr> <th>Scenario</th> <th>Emissions (Thousand tCO₂e)</th> </tr> </thead> <tbody> <tr> <td>BAU Emissions</td> <td>5 302</td> </tr> <tr> <td>Mitigation Scenario 1: 30% RE Goal</td> <td>5 161</td> </tr> <tr> <td>Mitigation Scenario 2A: Firewood Cookstove Distribution</td> <td>4 879</td> </tr> <tr> <td>Mitigation Scenario 3: 5% Biofuel Use</td> <td>4 821</td> </tr> <tr> <td>Mitigation Scenario 4: Monrovia Landfill Gas</td> <td>4 505</td> </tr> </tbody> </table> <p style="text-align: right;">15 % (797,000 tCO₂e)</p>	Scenario	Emissions (Thousand tCO ₂ e)	BAU Emissions	5 302	Mitigation Scenario 1: 30% RE Goal	5 161	Mitigation Scenario 2A: Firewood Cookstove Distribution	4 879	Mitigation Scenario 3: 5% Biofuel Use	4 821	Mitigation Scenario 4: Monrovia Landfill Gas	4 505
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Scope and Coverage	<p>The GHGs of concern are mainly Methane (CH₄), Carbon dioxide (CO₂) and Nitrous oxide (N₂O). The sectors covered are energy, transport and waste</p>												
Assumptions and Methodological Approaches	<p>The implementation of the mitigation interventions will require availability of financial resources, technology development and transfer, and capacity building from the international community. The outcome of the Paris new agreement under the Convention is expected to be in full conformity with equity and common but differentiated responsibilities; and the contributions forthcoming from developed country Parties will be in a balanced manner in the context of a global and comprehensive agreement for the period beyond 2020.</p> <p>With regard to the methodological approach, the Revised 1996 IPCC Guidelines and the guidelines in IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, 2000 (IPCC GPG) were used to calculate the GHG emissions and removals as described in the Initial National Communication. The basic assumptions are as follows:</p> <ul style="list-style-type: none"> • 2011 – First Scenario Year • 2030 – Target Year • GHGs – CO₂, CH₄ and N₂O • Historical emissions (up to Year 2010) came from the Options for Development of Liberia’s Energy Sector Report and the Initial National Communications (INC) • Each subsequent mitigation scenario is built on the one before it. • For example, the 30% renewable generation scenario leads to a certain reduction in GHG emissions, and the next scenario – 20% energy efficiency scenario on cook stove distribution – layers additional GHG reductions on top of the 30% renewable scenario. 												
Planned Mitigation Actions	<p>Below are proposed mechanisms in key sectors aiming to facilitate Liberia’s INDC. It is prudent to note that these were developed with the view to implement upon the provision of means of implementation by the international community. For Mitigation, Liberia will focus on the following sectors orientation and specific actions:</p>												

	<p>Energy:</p> <ol style="list-style-type: none"> 1. Strengthen implementation and coordination mechanisms to improve climate change mitigation actions. 2. Implement quantitative and qualitative research and improve systematic priority sequencing between National Energy Policy, Low Carbon Economy, and National Vision 2030 developmental goals. 3. Strengthen institutional and individual capacity in renewable energy technology and management. 4. Implement and strengthen policy that promotes private investment in renewable energy (hydro, biomass and solar etc). 5. Rehabilitate existing hydro-power plants and build new hydro-power plants to increase hydro-power production capacity. 6. Produce and distribute 280,543 energy saving cook stoves that use fuel wood and 308,004 energy saving cook stoves that use charcoal by 2030. 7. Implement large scale biomass projects to generate about 30 MW by 2030. <p>Waste:</p> <ol style="list-style-type: none"> 1. Strengthen institutional and individual capacity for waste management. 2. Develop waste management infrastructure. 3. Implement and strengthen policy that promotes private investment in waste management. 4. Capture methane gas emitted from landfills and used for fuelling vehicles, cooking at home or generation of power. <p>Transport:</p> <ol style="list-style-type: none"> 1. Mainstream climate change into existing transport management plan to strengthen emission control. 2. Strengthen institutional capacity for developing strategies for integrated transport services; developing technical and safety standards and the enforcement of policies including emission control. 3. Improve the quality and reliability of transport infrastructure and services. 4. Develop emission reduction and tracking system of pollutants from vehicles. 5. Blend up to 5% of palm oil biodiesel with both gasoline and diesel by 2030 for vehicles.
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II. ADAPTATION

Impacts and Vulnerability	<p>Vulnerability and adaptation assessments conducted have revealed that Liberia is faced with climate change and variability leading to extreme events, which have negative impact on agriculture, forestry, health, energy and other sectors. Climate change impacts are marked by irregular patterns of rainfall, flooding, high temperature, and coastal erosion. These factors result to crops and livestock losses that intensify food insecurity and loss of income. For the most part, women and children are particularly vulnerable to the impacts of climate change. However, their unique knowledge and perspectives also provide opportunities for inclusive, equitable and efficient adaptation responses and coping strategies. The limited supporting infrastructures increase the vulnerability of the population. Coastal areas in Liberia are the most populated and economically vibrant areas. Sea erosion continues to pose increasing threats to the shorelines of coastal cities including major infrastructures and investments. It can also lead to displacement, loss of lives and properties and can severely undermine national security.</p>
Area/sector for Adaptation Actions	<p>The three priority areas for adaptation based on Liberia's NAPA are:</p> <ul style="list-style-type: none"> a) Agriculture- Enhancing resilience to increasing rainfall variability through the diversification of crop cultivation and small ruminants rearing; b) Building of a national hydro-meteorological monitoring system and improved networking for the measurement of climatic parameters; and c) Building of coastal defence walls to reduce the vulnerability of urban coastal areas. <p>The long-term adaptation initiatives will include fishery, health, and transport, all with an integrated gender-responsive approach to ensure progress toward efficient and effective adaptive capacity and resilience.</p>
Planned Actions	<p>The Agenda for Transformation (AfT), the country's national development document, recognizes climate change adaptation and mitigation under Pillar V as a cross cutting issue. However, there are challenges linked to the adequate means of implementation.</p> <p>As for sectoral development documents, climate change is integrated in the Food and Agriculture Policy and Strategy (2008) of the Ministry of Agriculture where there is a focus on food security, sustainable agriculture and climate change resilience. A Climate Change Gender Action Plan (CCGAP) was developed by the Government of Liberia in 2012. It provides a framework for enhancing gender equality in both climate adaptation and mitigation activities including decision-making processes, capacity building, implementation of policies and measures to ensure that climate change vulnerabilities are addressed with gender equity and youth development. As for other sectors, integration of climate change in the development planning and implementation processes will be undertaken when the capacities of the sectoral ministries are upgraded.</p> <p>In the short, medium and long terms, Liberia plans to implement adaption actions under different sectors as follows:</p>

Agriculture

- Develop and promote drought-resistant, flood- tolerant and early maturing crop species.
- Intercropping, irrigation and the optimization of lowland/swamp farming.
- Pest control including fencing of farms against rodents, birds scarescrows, regular weeding, and the use of high echoing bells.
- Develop climate resilient crop/agroforestry diversification and livestock production systems.
- Create a platform for knowledge and experience sharing on best adaptation practices.
- Develop and implement agriculture and hydrological technology models and scenarios for planning.
- Establishment of a gene bank of climate resilient varieties of indigenous food crops.

Energy

- Protection of water catchments around hydro-power sources such as the St. Paul River Basin.
- Strengthening of transmission and distribution infrastructure for public utilities to ensure climate resilience (i.e. flooding).

Health

- Strengthen integrated disease surveillance response systems and emergency preparedness to prevent, mitigate, and respond to epidemics.
- Strengthen preventive measures to restrict preventable disease transmission.
- Develop early warning systems for climate- driven infectious diseases.
- Integrate climate change considerations into existing health policies and strategies, taking into account gender-differentiated impacts and responses.
- Conduct research on health vulnerability and impact, and develop scenarios to facilitate adequate planning.

Forestry

- Increase awareness and strengthen participation of local dwellers in forest conservation.
- Protection of forest and biodiversity rich forest zones.
- Increase the amount of forested land through reforestation of degraded lands.

Coastal Zone

- Develop and implement Coastal Zone policy, strategy and management plan.
- Construct hard structures such as sea walls or revetment.
- Manage and conserve coastal mangrove ecosystem.
- Facilitate technology transfer and training of institutional and local experts in coastal zone management and monitoring.

	<p><u>Fishery</u></p> <ul style="list-style-type: none"> • Strengthen institutional and local capacity and monitoring systems for fishery management. • Develop and implement climate smart fishery systems to enhance the adaptive capacity and resilience of fisher communities. • Identification and conservation of endangered fish species. <p><u>Transport/Infrastructure</u></p> <ul style="list-style-type: none"> • Implement and reinforce design standards and planning codes for roads and other infrastructure to cope with flooding, sea level rise and windstorm. • Strengthen early warning systems and evacuation planning for intense rainfall events and floods. • Install signs high above the ground that can alert pedestrians and motorists of unsafe zones, such as low-lying areas. • Maintain and upgrade roads with appropriate drainage systems to cope with flooding. • Improve and enhance public transport services.
Implementation of Adaptation Actions	<p>In Liberia, many sectoral policies have not mainstreamed the impacts of climate change. These include energy, hydrology/meteorology, health, transport and disaster. An overarching climate change policy is currently being developed which will serve as the pillar for comprehensive sectoral strategies and action plans. This policy will enable better coordination of climate change work in the country and provide opportunities for cooperation and collaboration between the government and people of Liberia; as well as with development partners, international and regional institutions, intergovernmental organizations and experts.</p> <p>The current National Adaptation Programme of Action (NAPA) pilot projects implementation framework started in 2010: The coastal pilot project in Grand Bassa Buchanan, with a length of 600meters had a budget of 3.3million USD; the agriculture adaptation pilot project had a budget of 2.6million (begun in 2012). The third pilot project (monitoring climate information and services to enhance adaptation in climate change) started in 2014 with a budget of 7million USD. All of these projects were due to be implemented in four years from the starting date, with a grant from GEF/ Least develop fund budget of 13million USD. The completion of these projects will depend on the availability of funding. The NAP will detail the medium and long term adaptation program of the country as well as the projected timeframe for implementation. However, the time frame for the implementation of the proposed adaptation actions in this INDC will be up to 2030.</p>