



# Assessment of the National Transport Master Plan of Liberia, 2012

## Initiative for Climate Action Transparency – ICAT Assessment of the National Transport Master Plan of Liberia, 2012

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**This report was written and realized by: Spencer S. Taylor, Jr., (National Expert) Climate Change, Environment, and Sustainable Development.**

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# Acronyms and abbreviations

<b>AfT</b>	<b>: Agenda for Transformation</b>
<b>AU</b>	<b>: African Union</b>
<b>BAU</b>	<b>: Business as Usual</b>
<b>EPA</b>	<b>: Environment Protection Agency</b>
<b>GHGs</b>	<b>: Greenhouse Gases</b>
<b>GoL</b>	<b>: Government of Liberia</b>
<b>ICAT</b>	<b>: Initiative for Climate Action Transparency</b>
<b>MDGs</b>	<b>: Millennium Development Goals</b>
<b>MFDP</b>	<b>: Ministry of Finance and Development Planning</b>
<b>MoT</b>	<b>: Ministry of Transport</b>
<b>MPW</b>	<b>: Ministry of Public Works</b>
<b>MoJ</b>	<b>: Ministry of Justice</b>
<b>NDCs</b>	<b>: Nationally Determined Contributions</b>
<b>NTA</b>	<b>: National Transit Authority</b>
<b>NTMP</b>	<b>: National Transport Master Plan</b>
<b>NTPS</b>	<b>: National Transport Policy and Strategy</b>
<b>PAPD</b>	<b>: Pro-Poor Agenda for Prosperity and Development</b>
<b>PRS</b>	<b>: Poverty Reduction Strategy</b>
<b>SDGs</b>	<b>: Sustainable Development Goals</b>
<b>UNFCCC</b>	<b>: United Nations Framework Convention on Climate Change</b>
<b>WRI</b>	<b>: World Resources Institute</b>

# Definition of key concepts

## *1.1. Greenhouse gasses (GHGs)*

Greenhouse gasses are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of thermal infrared radiation emitted by the Earth's surface, the atmosphere itself, and by clouds (IPCC, 2001) (1).

## *1.2. Climate change*

The United Nations Framework Convention on Climate Change (UNFCCC), in its article 1, defines climate change as “changes which are attributed directly or indirectly to human activity, altering the composition of the world atmosphere, and which add to the natural climate variability observed during comparable periods.” (UNFCCC, 1992) (2).

## *1.3. Sustainable transportation*

Sustainable transportation is the capacity to support the mobility needs of a society in a manner that is the least damageable to the environment and does not impair the mobility needs of future generations (3).

## *1.4. Nationally determined contributions (NDCs)*

Nationally determined contributions represent the commitments of each country to reduce greenhouse gas emissions and adapt to climate change (UNFCCC, 2017a) (4).

## *1.5. ICAT assessment guides*

ICAT assessment guides are a series of methodologies for assessing the GHG, sustainable development and transformational impacts of policies and actions in an integrated and comprehensive manner across all levels of governance (5).

## *1.6. Paris agreement*

Paris Agreement is a legally binding international treaty on climate change adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels (UNFCCC, 2015) (6).

## *1.7. Sustainable development goals (SDGs)*

Sustainable development goals, also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. The 17 SDGs are integrated—they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability (UNDP) (7).



## Abstract

Countries and cities across the world are becoming more engaged in tackling climate change, ensuring sustainable development, and contributing to the achievement of international agreements. Liberia is no exception, as it is one of the countries that are most susceptible to the adverse effects of climate change and the same time to poverty. The Government of Liberia (GoL) has shown leadership in taking several initiatives to address the issue of climate change and its impacts. This headway has been demonstrated through the ratification of several international agreements and the implementation of several climate change programs and plans. However, climate change mitigation actions in the transport sector are less common as rapid urbanization and increased fossil fuel consumption have respectively increased vehicle traffic and the sector's contribution to greenhouse gas emissions. The transport sector of Liberia does not have a well-established overarching policy framework with objectives that seek to integrate and provide solutions for these underlying deficiencies.

The National Transport Master Plan (NTMP) of 2012 is Liberia's most relevant transport development plan. It has helped to improve road infrastructure, connectivity, and accessibility. However, it has not proven to be a very useful policy framework to achieve GHG reduction targets. It has also proven inadequate in tackling the challenge of climate change and managing the environmental, social, and safety risks engendered by increased fossil fuel consumption. This inadequacy is primarily because the plan prioritizes infrastructure development (roads and bridges) as its main policy objective. These limitations are fundamental impediments for the transport sector to achieve its proposed Nationally Determined Contribution (NDC) target of reducing GHG emissions by 15.1% and are also obstacles to achieving the GoL's long-term sustainable development goals as well as the sector's target of carbon neutrality by 2050.

To begin addressing these problems, the NTMP was selected and duly assessed. Its results accentuate the need for the GoL through the Ministry of Transport, EPA, and other sectoral arms to develop and implement more robust, transformational, and pragmatic transport policies and actions such as: improving fuel and vehicle efficiency, incentivizing the introduction of battery electric vehicles (BEVs) and improving engine performance in all motorized vehicles - from public transport to private transport, from goods haulage on lorries, to mini passenger vehicles. Setting emissions standards, introducing fees and rebates, and promoting green public procurement are measures that would considerably mitigate carbon emissions in the road transport sector and thereby improve sustainable development.

This report, in its all-inclusive introduction, begins by detailing the progress and transformation of the transport sector both globally and nationally. It reviews the transport mitigation targets identified in Liberia's revised NDC and appraises the corresponding policy propositions that would assist government and stakeholders achieve the transport sector's NDC targets. The study establishes the linkage between the NTMP and other national, regional, and international development initiatives. It also describes the current policy environment of the transport sector. It then applies the ICAT methodology guide for assessing sustainable development impacts to qualitatively assess the specific impacts and goals captured in the NTMP. Finally, the assessment provides workable suggestions to accelerate actions, enhance cross-sectoral coordination, and M&E application that would lead Liberia's transport sector toward a low-carbon pathway and subsequently to a carbon neutral system in the nearest future.

**Keywords:** Climate change, National Transport Master Plan, Sustainable transportation, Sustainable development, ICAT methodology guides, Liberia.

# Introduction

Transport is an important enabler of Liberia sustainable development objectives of ending extreme poverty and promoting shared prosperity (PAPD, 2018) (8). The National Transport Master Plan (NTMP) is the framework transport development plan of Liberia. It was established in 2012 to support the Government of Liberia's Poverty Reduction Strategy (PRS). This plan complements Liberia's developmental drive following the massive destruction and collapse of the country's infrastructure and economy resulting from the prolonged civil unrest, which lasted between 1989 and 2003 (NTMP, 2012). The NTMP had been well-aligned with the Millennium Development Goals (MDGs), which formed the global framework for development at the time of its inception. The NTMP stands as a policy document that focuses on implementing road rehabilitation programmes in the transport sector. The vision of the NTMP is to promote efficient, safe, affordable, sustainable and people-centered transport system for all Liberians (NTMP, 2012) (9).

Since the Plan came into effect, the transport sector of Liberia has benefited from economic reforms, particularly in the last few years. These include: the introduction of dedicated road funds managed by national road fund secretariat, the restructuring of railways and ports, and the introduction of private sector management in their operations. These reforms have had relatively positive impacts in terms of improved infrastructure, connectivity, accessibility, service delivery, and reduction of public sector fiscal burden.

With the adoption of the UNFCCC's Paris Agreement<sup>1</sup>, and the Sustainable Development Goals (SDGs)<sup>2</sup> in 2015, the development context for the transport sector has changed both on the global and national levels. Next to continued economic development, the transformation of the transport sector towards a low greenhouse gas emissions framework has become an important factor for the sector's development.

This shift in priority can be observed both at a global and at a national level. At a global level, the importance of transport in promoting a low-carbon, inclusive and people-centered sustainable development has long been recognized, starting at the Earth Summit in Rio de Janeiro in 1992 (10). Twenty years later, the main outcome document of the Rio+20 Conference on Sustainable Development – “The Future We Want” – reaffirmed the role of transport in sustainable cities and human settlements and confirmed the scope for the concept of sustainable transport, stating that:

*“We recognize the importance of the efficient movement of people and goods, and access to environmentally sound, safe and affordable transport to improve social equity, health, resilience of cities, urban-rural linkages and productivity of rural areas. We support the development of sustainable transport systems, including energy-efficient multi-modal transport systems, notably public mass transport systems, clean fuels and vehicles, as well as improved transport systems in rural areas (11).”*

Likewise, at the national level, the overarching policy context for the transport sector has evolved significantly since the adoption of the NTMP in 2012. Most importantly, Liberia, like many other

<sup>1</sup> The Paris Agreement, under the UNFCCC, is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. (<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>)

<sup>2</sup> The Sustainable Development Goals are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. The 17 Goals were adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development which set out a 15-year plan to achieve the Goals. (<https://www.un.org/sustainabledevelopment/development-agenda/>)

countries of the international community, has adopted specific low-carbon targets, actions, and measures for the transport sector in its updated Nationally Determined Contributions (NDC) under the Paris Agreement (12). Within the updated NDC, the Government of Liberia committed to reducing the transport sector's greenhouse gas emissions (GHG) by 15.1% below the business-as-usual (BAU) level by 2030 through several mitigation actions and measures. The mitigation options outlined in the NDC include the introduction of more energy-efficient vehicles (including electric vehicles) and the transformation of buses and private vehicles to compressed natural gas, amongst others.

After successfully updating its NDC in 2021, the country currently moves toward implementing the actions and measures that underpin the updated NDC targets. A central aspect of this process is to ensure that the existing policy environment provides sufficient basis for the responsible agencies to implement the actions and measures outlined in the NDC. Some of the policies that currently provide the overarching regulatory basis and framework for introducing new sectoral actions and measures date back to a time prior to the adoption of the Paris Agreement in 2015. This context suggests that updates or a recalibration of some of the core policies might be required to create the right enabling environment for NDC implementation. Thus, this report aims at supporting this process by assessing to what degree the current policy environment in the transport sector supports implementation of the transport-related low-carbon, GHG reduction targets in the NDC and where national policy, regulatory and financial frameworks can be improved to lead to reduced GHG emissions in the transport sector.

The NTMP currently forms the central policy document governing the transport sector in Liberia. The assessment focuses on the NTMP and analyzes how it can be utilized to reduce GHG emissions and achieve SDGs. Next to the question- "to what degree the current NTMP can support NDC implementation," the assessment is also analyzing its main achievements as well as its performance against key sustainable development priorities. In this context, the report also provides an assessment "to what degree the implementation of the actions and measures in the updated NDC would bring additional SDG benefits above those that already have been delivered by the NTMP in its present form."

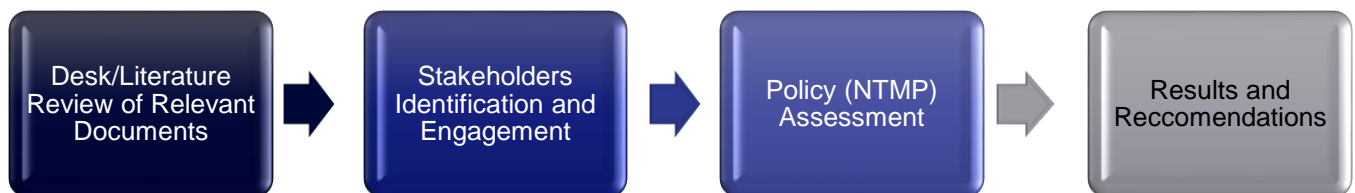
Against this backdrop, the present report reviews the NTMP with the objective to inform future transport policies, guide institutions and programs in their transport policy processes and provide policymakers with a better understanding of the requirements for successful policy development and implementation.

# Section I. Methodological approach

The study uses an exploratory ex-post policy assessment approach described in the ICAT methodology guide for assessing sustainable development impacts which employs a comprehensive list of impact categories. This methodology is part of a series developed by the Initiative for Climate Action Transparency (ICAT) to help countries assess the impacts of policies and actions. It is intended to be used in combination with other ICAT assessment guides and can be used in conjunction with other guidance (5). As part of the assessment, we identified a targeted group of stakeholders and policymakers from five (5) line ministries and agencies: (Ministry of Transport, Ministry of Public Works, Ministry of Finance and Development Planning, Ministry of Justice, and National Transit Authority) related to the development and implementation of the NTMP to provide a comprehensive and robust range of information and insights (Annex 1). This information (input and feedback) were collected using an initial structured open questionnaire coupled with the staging of several all-inclusive stakeholder interview engagements (Annexes 2 & 3). Stakeholder consultations were then concluded with the completion of a follow-up questionnaire (Annex 4).

The challenges, limitations, and transformation of the transport sector, and analyses of key systemic sustainable development goals deliberated in the introduction, are based on extensive literature reviews. The first section of the assessment describes the applied methodology. The second section provides a general stock of knowledge on how NDCs can accelerate transport decarbonization and promote low carbon economy to achieve sustainable development. It recapitulates the transport targets presented in Liberia’s revised NDC and the corresponding policies that aim to fulfil them. This section also describes the current policy environment of the transport sector and establishes the linkage between the NTMP and other national, regional and international development initiatives. The third section applies the ICAT methodology guide for assessing sustainable development impacts to qualitatively assess specific impacts and goals captured by the NTMP.

The assessment also proposes appropriate recommendations to accelerate actions, enhance cross-sectoral coordination, and M&E application that would lead Liberia’s transport sector toward a low-carbon pathway, compatible with the goals and principles of sustainable development. The results from the assessment were established on information gathered from in-depth review of relevant literatures and interviews with key stakeholders and policy makers (technicians, focal points, experts, and high-level officials) involved with the development and implementation of the Master Plan.



*Figure 1: Workflow used to develop the study*

# Section II. Description of the NDC targets, measures and actions in the transport sector

## 1. Nationally determined contributions (NDCs) and how they can be used to accelerate decarbonization of the transport sector and promote sustainable development

Nationally determined contributions (NDCs) are at the heart of the Paris Agreement and the achievement of the long-term climate goals. They embody efforts by each Party to reduce national emissions and adapt to the impacts of climate change. Domestic climate mitigation actions taken by countries will determine whether the world achieves the long-term goals of the Paris Agreement and reaches global peaking of greenhouse gas (GHG) emissions as soon as possible (4).

The NDCs implementation and long-term emission reduction strategies have an important role to play in transforming the transport sector, especially in developing countries, where emissions are projected to soar the most. Therefore, transformative, pragmatic and ambitious actions in the transport sector, undertaken in support of climate objectives, should at the same time also enable prosperity and economic growth in support of the Sustainable Development Goals (SDGs) (7).

## 2. Review of the transport targets identified in Liberia's revised NDC and corresponding policies that aim to fulfil them

Liberia as a country submitted its revised NDC to the UNFCCC in August 2021, with the purpose of guiding actions and policymaking to reduce its GHG emissions and to adapt to climate change. The NDC presents a platform to integrate Liberia's Low Carbon Development Strategy into the country's medium-term development agenda (Pro Poor Agenda for Prosperity and Development), as well as its long-term sustainable development vision by 2030 (Liberia's Rising- Vision 2030). Within the document, Liberia committed to reducing its economy-wide greenhouse gas emissions by 64% below the projected business-as-usual level by 2030, through a combination of the following (12):

- Unconditional GHG reductions of 10% below BAU, resulting in an absolute emissions level of 11,187 Gg CO<sub>2</sub>e in 2030;
- With an additional 54% reduction conditional upon international support, which would result in an absolute emissions level of 4,536.64 Gg CO<sub>2</sub>e in 2030.

In fulfilment of its NDC commitments under the Paris Agreement, Liberia identified several adaptation and mitigation targets in nine (9) key sectors – Agriculture, Forests, Coastal zones, Fisheries, Health, Transport, Industry, Energy, and Waste – as well as cross-cutting targets for urban green corridors.

For the road transport sector of Liberia, which is responsible for about 43% percent of the total energy sector GHG emissions, the government committed to reducing its emissions by 15.1% below BAU levels by 2030 through the implementation of several of mitigation and adaptation actions (Table 1) (12).

Table 1: Transport mitigation and adaptation targets, actions and policy measures presented in Liberia's revised NDC

Mitigation Targets
<ul style="list-style-type: none"> <li>• Reduction of 16.9 GgCO<sub>2</sub>e in 2030 by the introduction of electric vehicles with focus on tricycles/kekehs (for private use);</li> <li>• Reduction of 32.3 GgCO<sub>2</sub>e in 2030 by supporting the transformation of National Transit Authority (NTA) buses and private vehicles (cars and taxis) to Compressed Natural Gas (CNG); by 2030.</li> </ul>
Mitigation Actions and Policy Measures
<ul style="list-style-type: none"> <li>• Financial measures through: <ul style="list-style-type: none"> <li>• The implementation of a vehicle labelling system which is an information system which registers the level of GHG emissions for each vehicle by 2025.</li> <li>• The implementation of a fee / rebate programme through which the government levies fees on relatively high GHG-emitting vehicles and provides rebates on lower emitting vehicles by 2025.</li> <li>• The enforcement and adaptation of registration taxes, with and the enforcement of the 10% tax on luxury vehicles and the integration of a tax on transit vehicles by 2025.</li> </ul> </li> <li>• Consumer information campaigns through heightened driver awareness about better ways of driving cars through eco-driving, speed reduction and use of well-adjusted motors, electric and Compressed Natural Gas vehicles and promotion of public transport using bus transport network and car sharing; (Linked to Health sector).</li> <li>• Promote diesel particulate filters for road and off-road vehicles.</li> <li>• Continuation of road upgrading and construction.</li> <li>• Support the implementation of infrastructure that foster the development of a bus public transport network for Monrovia.</li> <li>• Design a transport interchange hub program by 2025.</li> <li>• Review of the institutional framework by 2025.</li> <li>• Setting up of a sustainable transport policy by 2025.</li> </ul>
Adaptation Targets
<p>In the Transport sector, Liberia commits to the following adaptation targets:</p> <ul style="list-style-type: none"> <li>• Support the implementation of infrastructure that foster the development of a bus public transport network for Monrovia <ul style="list-style-type: none"> <li>• Ensure low-income population to reach jobs, education and healthcare services, improving their access to economic and social opportunities.</li> </ul> </li> </ul>
Adaptation Actions and Policy Measures
<ul style="list-style-type: none"> <li>• Continuation of road upgrading and construction <ul style="list-style-type: none"> <li>• Risk mapping of climate stress vulnerability of transport infrastructure – future investment should be guided by such risk mapping.</li> <li>• Updating design and construction standards and materials to ensure that future infrastructure is more resilient to anticipated climate and extreme weather events.</li> <li>• Integration of climate change into infrastructure design practices</li> </ul> </li> <li>• Review of the institutional framework by 2025 <ul style="list-style-type: none"> <li>• Include in the sectoral strategies and policies at the national level climate adaptation strategies and policies.</li> </ul> </li> </ul>

Source: Liberia's revised NDC, 2021

The extent of implementation and achievement of the identified targets are mainly conditioned upon the provision of adequate financial resources, capacity building and technology transfer, etc. by the international community. This condition does not, however, constitute an international obligation to Liberia. The GoL is also committed to unconditionally support the implementation and achievement of the overall targets through other financial mechanisms including the traditional budgetary allocation to the environment sector (12).

### 3. Policy environment of the transport sector

#### *3.1. Liberia national development strategies and linkage to regional and global development initiatives*

After decades of deterioration of Liberia's economy and fourteen years of civil war, the Government of Liberia has made significant strides in rebuilding the country and expanding the economy through the introduction of a broad set of policies and strategies aiming to foster peace, accelerate reconstruction and development, and build strong systems of governance. These policies and strategies articulate Liberia's long-term vision of socio-economic development, "Liberia Rising, 2030," (13) which is well-aligned with regional and global development goals and initiatives. The current Pro-Poor Agenda for Prosperity and Development (PAPD) 2018/2023 aligns with the Agenda 2063 (14), the Agenda 2030 (7), and the Paris Agreement (6), which are poised to achieve rapid, inclusive, and sustainable development objectives. The Agenda for Transformation (AfT) 2012/2017 (15), and the Poverty Reduction Strategy (PRS) 2008/2011 (16), also align with the objectives of the Kyoto Protocol (KP) and the Millennium Development Goals (MDGs) (Annex 6) (17).

As in all sectors, the development pathway of the transport sector is guided by the country's development strategy. The design and implementation of the National Transport Master Plan (NTMP) was fundamentally informed and piloted by the objectives of the PRS and the MDGs. Many other national development plans and initiatives which contain transport-related actions including the Nationally Determined Contributions (NDCs), National Adaptation Program of Action (NAPA), National Adaptation Plan (NAP), Liberia Initial National Communication (LINC), the National Policy and Response Strategy on Climate Change (NPRSCC) amongst others were all guided and informed by the country's overall development strategies. These initiatives have long been in support of the global collective effort, aiming to control harmful greenhouse gas emissions responsible for climate change. They seek to achieve the balance of environmental costs and benefits for all unsafe transport-related activities in the country.

#### *3.2. Current policy environment of the transport sector*

The current policy framework for the transport sector in Liberia consists of the National Transport Policy and Strategy (NTPS), which was developed and approved in 2008 and updated in 2018, and the National Transport Master Plan (NTMP), which was approved in 2012. Besides these two policies whose primary objectives are to enhance accessibility and connectivity for the socio-economic growth and development of Liberia, there is no integrated transport policy interventions that seek to address multiple sustainable development objectives such as GHG emissions reduction, health, and environmental sustainability.

In the context of climate change, health, and environment, transport mitigation actions are generally contained in ad hoc programmes, action plans, and initiatives such as the NDC, NAPA, and NAP rather than in formal policies and strategies. These programs are largely funded by development partners and have not been mainstreamed in Liberian government-funded initiatives but can be more considered as support and capacity building initiatives. As such, transport mitigation actions are not core aspects of the current government policies and strategies.

# Section III. Policy impact assessment and analysis

## 1. Assessment of the Liberia National Transport Master Plan “NTMP” (2012 – 2017)

### 1.1. Synopsis of the Plan

In 2008, a framework was developed for implementing programmes of rehabilitation- a plan which gave rise to the conception of the first “National Transport Policy and Strategy” (NTPS), from which the “National Transport Master Plan” (NTMP) was born in 2012. The NTMP is a programme strategy whose regulations are mainly geared towards promoting economic efficiency and social benefits. It followed the Millennium Development Goals (MDGs) exercise, during which time transport was not specifically considered. By then, MDGs had been strongly identified with “basic needs provisioning,” and since transport has often been equated with infrastructure, it has not been classified as a distinct basic need.

The NTMP originated from the fourth pillar “Rehabilitating Infrastructure and Delivering Basic Services” of the Government of Liberia’s Poverty Reduction Strategy (PRS) programme, published in 2008. Within this pillar are several components, two of which center on “roads and bridges,” and “transportation.” The primary goal of government’s intervention in the roads sub-sector is to ensure that all roads are serviceable year-round to enhance accessibility and connectivity for the socio-economic growth and development of Liberia. The projected road deliverables of the PRS (2012 – 2017) specified in the NTMP (9), are the construction, rehabilitation and maintenance of primary, secondary, urban and feeder roads, as well as bridges. (See Annex 5) for numerical details.

The Master Plan development process raised several issues concerning the refinement, and a suitable strategy for the implementation of the Government’s transport policy. The Plan sets out recommendations in the following areas: “intermodal policy,” Government’s wider development plans, which consider the aspect of “environmental risks,” and “regulations” to promote economic efficiency. Recognizing that sufficient time is needed for policies to have an impact, and appreciating the cyclical nature of political changes, it was proposed that the NTMP document which was valid for ten (10) years, be periodically revised and updated around every 5 years. Unfortunately, since its inception in 2012, the NTMP has not been updated. The NTMP’s provisions were important in informing other planning initiatives- particularly those now focusing on internal development corridors (9).

### 1.2. NTMP assessment results gathered from a holistic multi-stakeholder consultation approach and the review of relevant literature

Following several engagements with several relevant stakeholders including: technicians, experts, specialists and other high-ranking officials from five (5) line ministries and agencies (MoT, MPW, MFDP, MoJ, NTA) who were involved with the development and implementation of the National Transport Master Plan, the following responses were appropriately collected, analyzed and evaluated to ensure correspondence and consistency with the policy documents.

- The NTMP is a strategic plan which falls in the categories of setting standards and implementing regulations and infrastructure programmes. It entails the development of land, sea, and air



transport systems in the country (18).

- Key stakeholder groups affected by the policy are: Transporters, urban community, rural community, business people, farmers and investors (19). The initial operations of the Plan were projected to climax in 2017.
- The key objectives of the NTMP mentioned by stakeholders are: “to rehabilitate, reconstruct and maintain primary/secondary, feeder and neighborhood roads;” “to improve the transport sector through effective systems and infrastructure for quality service provision;” “to improve urban and rural transport;” and “to build human resource capacity (20).”
- There are several measures and interventions the NTMP seek to achieve including: the prioritization of investment programmes, setting-up of international transit charges, promotion of public-private-partnerships, axle load control, strategic planning, the expansion of urban transport services to be promoted by the National Transit Authority, road safety and the establishment of a dedicated unit/arm/fund seeking to recover costs for mitigating environmental damage and air pollution. Many of these interventions are yet to be implemented. However, few of them were successfully accomplished and are currently in effect (Table 2) (18) (19).

Table 2: Status of specific interventions targeted by the NTMP

Intervention	Objective	Status
The prioritization of investment programmes	<ul style="list-style-type: none"> <li>To improve prioritization for public transportation projects in an environment of limited funding and tough choices;</li> <li>To make available and support funding for inadequate resource project costs.</li> </ul>	Transport investment programme priorities improved. Investment in road transport programmes is prioritized
Setting-up of international transit charges	<ul style="list-style-type: none"> <li>To promote international trade and a competitive domestic private sector.</li> </ul>	Transit charges established but not yet officially launched. Due to limited-service provision and oversight, transit charges are determined by private businesses.
Promotion of public-private-partnerships	<ul style="list-style-type: none"> <li>To address the limited funding resources for transport infrastructure or development projects of the public sector thereby allowing the allocation of public funds for other local priorities;</li> <li>To encourage the private sector's participation, reduce government's expenditure and to improve the delivery of public facilities</li> </ul>	PPT operations are launched and in effect, but with limited-service provision. PPTs have been established between the National Transit Authority and many private-owned businesses
The enactment of transport infrastructure design and policy for road users	<ul style="list-style-type: none"> <li>To guide in the construction of road infrastructure per national and international standards</li> </ul>	Infrastructure plan designed and program for road users launched. The road development and transport facilitation programme within the Mano River Union guides this intervention
The expansion of urban transport services to be promoted by the National Transit Authority	<ul style="list-style-type: none"> <li>To stimulate construction and interconnection of primary and secondary roads;</li> <li>To promote the building of major penetration routes into the interior from Monrovia and from ports in the southeast</li> </ul>	Urban transport operations are in effect, but with limited-service provision. (Public buses are provided to ease rural and transportation burden)
The establishment of the National Road Safety Secretariat	<ul style="list-style-type: none"> <li>To provide effective collection and analysis of road safety data;</li> <li>To estimate present costs to the economy- "with" and "without" mitigating measures, hence leading to an effective programme for accident reduction.</li> </ul>	Unit successfully established and currently functioning, guided by the National Road Safety Action Plan.
Establishment of the National Road Fund Authority	<ul style="list-style-type: none"> <li>A ring-fenced structure established to collect or raise monies from fuel levy dedicated for the sole purpose of routine road maintenance.</li> </ul>	Entity successfully established and currently in effect, guided by the National Road Fund Act of Liberia
Establishment and implementation of Axle Load Control	<ul style="list-style-type: none"> <li>This regulation calls for heavy vehicles to be charged to their Gross Vehicle Weight (GVW) and axle configuration for the sole purpose of covering costs of repairing the structural damage to rehabilitated roads.</li> </ul>	Unit successfully established and operations officially launched guided by the Axle Load Law for protecting public roads and bridges from rapid deterioration and destruction, 2015
Establishment of an environmental unit	<ul style="list-style-type: none"> <li>A dedicated unit/arm/fund seeking to recover costs for mitigating environmental damage and air pollution.</li> </ul>	Unit yet to be established

Source: Stakeholder engagement (18), (19)

- The NTMP implementation strategy is generally well-aligned with the overarching national transport policy objectives to which it makes explicit reference. Its alignment with national, regional and global objectives can be captured in specific goals and targets. These targets and interventions are established around specific pillars crafted by national government (Annex 7).
- The Plan, in addition to funding and technical expertise, requires good leadership and effective coordination. The recommended organizational and operational framework for implementation centers on: a “Steering Committee,” chaired by the Minister of Transport and composed of Government Ministers and other important stakeholders; and an “Implementation Coordination Committee,” chaired by a MPW coordinator and composed of technical personnel from important line ministries and the agencies they control (18), (19).
- The relevant line ministries and agencies responsible for the implementation of the policy include: (18)
  - Ministry of Transport – Policy development and regulation
  - Ministry of Public Works – Infrastructure development
  - Ministry of Justice – Regulation enforcement
  - National Transit Authority – Public service delivery
  - Ministry of Finance and Development Planning – Resource allocation
- The NTMP’s implementation is concentrated at the national, subnational, and city levels, with its operations being implemented within the political jurisdiction and geographical limits of Liberia (19). There are no consistent enforcement or compliance mechanisms or procedures accompanying the implementation of the Plan (21).
- Concerning monitoring, reporting and verification procedures associated with implementing the Plan, “some measures were carried out but not at defined intervals (19).” Since the inception of the National Plan in 2012, the major gaps identified as principal impediments to the successfully delivery of strategic anticipated outcomes include: “the challenge of inadequate sectoral coordination,” “lack of progress-tracking system” and “limited financial support (18) (19).”

*1.2.1. Coverage performance of the NTMP in the context of achieving NDC targets, actions, and measures*

The NTMP prioritizes infrastructure development – construction, rehabilitation and maintenance of roads and bridges. It has made some progress that can be built upon for achieving actions and measures proposed in the NDC. These measures which are mainly associated with socio-economic benefits include: the enforcement of registration taxes on luxury and transit vehicles; and continuation of road upgrading and construction amongst others.

However, the NTMP in its current form is not well positioned for achieving targets relating to the reduction of GHG emissions, and for managing the environmental, social and safety risks engendered by increased fossil fuel consumption in the transport sector. The Plan currently lacks actionable provisions that would achieve all the transport GHG mitigation targets proposed in the updated NDC document. As it stands, the current NTMP provisions do not cover most of the transport mitigation actions and measures. The implementation of a vehicle labelling system to register GHG emissions levels,

the implementation of fees / rebate programme to promote low-emitting vehicles, the promotion of diesel particulate filters, and the review of institutional framework and setting up of a sustainable transport policy, for example are extensively doubtful to be achieved by the current NTMP. The successful achievement of these would require further policies either through updating the NTMP or adopting complementary programmes (Table 3).

These inadequacies basically leave the Plan hard to achieve of reaching the proposed transport mitigation targets of 15.1%GHG reduction presented in Liberia's revised NDC, and are also obstacles to achieving the GoL's long-term sustainable development goals as well as the sector's goal of carbon neutrality by 2050 (22).

Table 3: Degree to which the NDC targets, actions, and measure are covered by the NTMP

NDC Measure	Degree of coverage by NTMP Fully/Partially/Not covered	Assessment
The implementation of a vehicle labelling system which is an information system that registers the level of GHG emissions for each vehicle by 2025	Not covered	The Ministry of Transport is yet to implement a vehicle labelling system which registers the level of GHG emissions. Furthermore, data catalogued by the current system are limited and insufficient to accurately calculate vehicle emissions for future policy development.
The implementation of fees / rebate programme through which the government levies fees on relatively high GHG emitting vehicles and provides rebates on low-emitting vehicles by 2025	Not covered	Fee on relatively high GHG emitting vehicles and rebate on lower GHG emitting vehicles are not in proper perspectives. The practice is inversely done as taxes and fees levied on recent, low GHG emitting vehicles are quite high.
The enforcement and adaptation of registration taxes, with and the enforcement of the 10% tax on luxury vehicles and the integration of a tax on transit vehicles by 2025.	Partially covered	The NTMP has duly set the stage for the enforcement and collection of vehicle registration taxes and fees-(with enforcement done at least twice a year). Increased tariffs on luxury vehicles are also being promoted but this tax mechanism is yet to be simulated on transit vehicles.
Consumer information campaigns, through heightened driver awareness about better ways of driving cars through eco-driving. Additionally, speed reduction and the use of well-adjusted motors, electric and Compressed Natural Gas (CNG) vehicles and promotion of public transport, using of the bus transport network and car-sharing; (Linked to Health sector).	Partially covered	The Ministry of Transport has not begun championing consumer information campaigns to heighten driver awareness about eco-driving, and use of well-adjusted motors, electric and Compressed Natural Gas (CNG) vehicles. Implementing this approach would minimize fuel consumption and thus reduce carbon emissions.  The NTMP, on the other hand, promotes speed reduction, which is currently being championed by the Road Safety Secretariat; it also promotes public transport and car-sharing through public transport and urban traffic management initiatives, which are intended to reduce traffic congestion.
Promote diesel particulate filters for road and off-road vehicles.	Not covered	Neither the NTMP nor the NTPS calls for the promotion of diesel particulate filters or other technologies to remove soot from the exhaust of a diesel engine. Supporting this campaign would have significant impacts on emissions reduction from diesel vehicles.

Continuation of road upgrading and construction.	Partially covered	<p>Road upgrading and construction continue to be the focus of the NTMP and the current government's agenda, as only roads provide access to all parts of the country; and many trips made by other modes inevitably use roads for their initial and final legs.</p> <p>The projected road deliverables specified in the NTMP are still ongoing, including:</p> <p>The NTMP is currently implementing the collection of fuel levy of US\$0.10 cents on each litre of fuel for recovering the costs of the routine road maintenance of rehabilitated roads. With an estimated 72 million liters of road fuel sold annually, a total revenue of US\$29 million, is projected to be generated from this charge system by 2030 exclusively for routine roads maintenance.</p> <p>The NTMP has also put in place an equitable system for repairing structural damage to rehabilitated roads by levelling an annual heavy truck license fee of US\$1,000 per year, as well as penalty charges. This system raises US\$ 1.5 million annually and is projected to generate a total revenue of nearly US\$ 1.3 million by 2030 for road maintenance. These schemes come with accrued infrastructure and service benefits to both road users and the government.</p>
Support the implementation of infrastructure that foster the development of a bus public transport network for Monrovia.	Partially covered	The NTMP is supporting the implementation of road infrastructure that foster the development of urban bus public transport network for Monrovia, implemented by the Ministry of Public Works.
Design a transport interchange hub program by 2025.	Not covered	The Ministry of Transport, in collaboration with the National Transit Authority, are yet to design a transport interchange hub program. This plan, when designed and implemented, would ease the flow and management of passengers and goods within and between urban areas.
Review of the institutional framework by 2025.	Partially covered	<p>The NTMP mandates regular review of the institutional framework of the Plan. It has been recommended that the Plan be revised after every 5 years. Unfortunately, this recommendation is yet to be implemented.</p> <p>However, sectoral-coordination meetings amongst line ministries and agencies responsible for the revision and implementation of the new sustainable transport policy are underway.</p>

<p>Setting up of a sustainable transport policy by 2025.</p>	<p>Not covered</p>	<p>The NTMP recommends the need for speedy improvement of the current transport policy. It suggests that government adopts policies that would center on making optimum use of the limited resources available.</p> <p>The realization of this course of action would have potentially a high impact on setting Liberia’s transport sector on the path of achieving its NDC’s commitment, and largely, its goal of providing efficient, safe, affordable, sustainable and people-centered transport for all Liberians.</p> <p>It is important to note that the achievement of the transport targets proposed in the revised NDC will depend on the adoption and implementation of appropriate strategies, actions and measures endorsed by the sustainable transport policy.</p>
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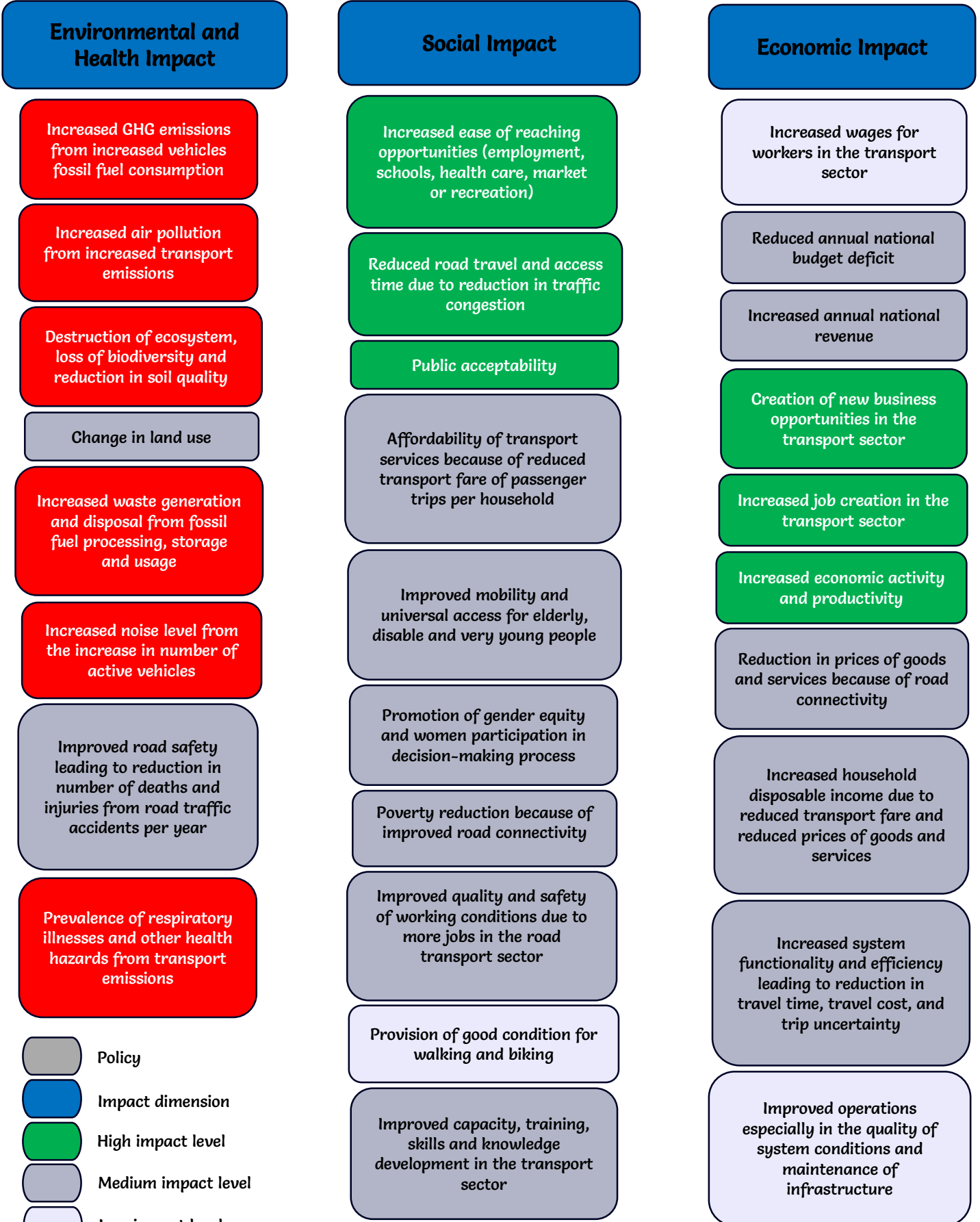
## 2. Analysis of the NTMP’s performance against the SDGs

This subsection assesses the performance of the NTMP against the impact dimensions of the SDGs. The analysis drawn from the information presented in Figure 2 confirms that the NTMP performs relatively well in achieving some socio-economic targets including improved mobility, increased ease of reaching opportunities, reduced road travels and access time due to reduction in traffic congestion, poverty reduction, creation of new business opportunities in the transport sector, increased job creation, increased economic activities and productivity, and increased annual national revenue amongst others.

On the other hand, the analysis reveals that the NTMP performs poorly in achieving any target relating to environmental sustainability and the promotion of decent healthy. Additionally, this expert analysis points out that the implementation of planned activities and outcomes delivered by the NTMP, contributes to increased GHG emissions from increased fossil fuel consumption, increased air pollution, destruction of ecosystems and biodiversity, reduction in soil quality and the prevalence of respiratory diseases and other health hazards from transport emissions.

The assessment analyses were done using responses gathered from technicians, specialists and officials at various line ministries and agencies that were involved with the formulation, implementation, and regulation of the NTMP (Annex 1). However, due to the scarcity of real time quantitative data, we employed the ICAT methodology of assessing sustainable development impacts, coupled with the review of extensive literature to complete the analyses. The major impacts of the NTMP identified at various degrees are illustrated in Figure 2; whereas the nature of specific impacts and impact category are presented in Table 4

## National Transport Master Plan



- Policy
- Impact dimension
- High impact level
- Medium impact level
- Low impact level
- Negative impact

Figure 2: Assessment of the performance of the NTMP compared to SDG Impacts

Source: Adapted from ICAT Guide for Assessing SD Impacts

Table 4 presents the nature of specific impacts and the corresponding impact category captured by the NTMP. The analysis drawn from the assessment reveals that almost all of the specific impacts and corresponding impact categories which are identified under the environmental and health dimension of the SDGs are not captured or achieved by the NTMP. The specific impacts identified under corresponding impact category, including climate change mitigation, air quality, noise and health impacts of air pollutions, waste generation, alternative fuel consumption, respiratory illness and death are all found to be of negative nature. This confirms how few of the SDG environment and health aspects are considered by the NTMP. The analysis was completed based on stakeholder consultation and the review of relevant literature (Table 4).

Table 4: Nature of specific impacts captured by the NTMP

Dimension	Impact category (Targeted SDGs)	Specific impact(s) identified	Nature of impact “Positive” “Moderate” “Negative”	Methods/ sources used
<b>Environmental and Health</b>	Climate change mitigation	Increased GHG emissions from increased vehicles fossil fuel consumption	Negative	Literature review
	Air quality, noise and health impacts of air pollution	Increased Air and noise pollutions from increased transport emissions	Negative	Literature review
	Biodiversity and ecosystems protection; Soil quality	Destruction of ecosystem, loss of biodiversity and reduction in soil quality	Negative	Literature review
	Land use change	Change in land use (mix)	Moderate	Literature review
	Waste generation	Increased waste generation and disposal from fossil fuel processing, storage and usage	Negative	Literature review
	Alternative fuel consumption	Increased consumption of fossil fuel due to lack of effective policy enforcement mechanism to promote the use of clean, alternative fuel	Negative	Literature review
	Road safety	Improved road safety leading to reduction in number of deaths and injuries from road traffic accidents per year	Moderate	Stakeholder consultation
	Respiratory illness and death (SDG 3)	Prevalence of respiratory illnesses and other health hazards from transport emissions	Negative	Literature review
<b>Social</b>	Mobility and Universal access	Improved mobility and universal access for elderly, disable and very young people	Positive	Stakeholder consultation
		Increased ease of reaching opportunities (employment, schools, health care, market or recreation)	Positive	Stakeholder consultation
		Reduced road travel and access time due to reduced traffic congestion	Positive	Stakeholder consultation



		Affordable passenger trips per household	Positive	Stakeholder consultation
		Public acceptability	Positive	Stakeholder consultation
		Improved condition for walking and biking	Moderate	Stakeholder consultation
	Traffic congestion	Reduced traffic congestion because of good road connectivity	Positive	Stakeholder consultation
	Capacity, skills and knowledge development	Improved capacity, training, skills and knowledge development in the transport sector	Positive	Stakeholder consultation
	Quality and safety of working conditions	Improved quality and safety of working conditions due to more jobs in the road transport sector	Positive	Stakeholder consultation
	Poverty	Poverty reduction because of improved road connectivity	Positive	Stakeholder consultation
	Gender equality	Promotion of gender equity and Participation of women in decision-making process in the transport sector	Positive	Stakeholder consultation
<b>Economic</b>	Functionality and efficiency	Increased system functionality and efficiency leading to reduction in travel time, travel cost, and trip uncertainty	Positive	Stakeholder consultation
	Operation	Improved operations especially in the quality of system conditions and maintenance of infrastructure	Moderate	Stakeholder consultation
	Jobs	Increased job creation in the transport sector	Positive	Stakeholder consultation
	Revenue	Reduced annual national budget deficit;	Positive	Stakeholder consultation
		Increased annual national revenue	Positive	Stakeholder consultation
	Income	Increased household disposable income due to reduced transport fare and reduced prices of goods and services	Positive	Stakeholder consultation
	Wages	Increased wages for workers in the transport sector	Moderate	Stakeholder consultation
	New business opportunities	Creation of new business opportunities in the transport sector	Positive	Stakeholder consultation
	Economic activity and productivity	Increased economic activity and productivity	Positive	Stakeholder consultation
	Prices of goods and services	Reduction in prices of goods and services because of road connectivity	Positive	Stakeholder consultation

Source: Adapted from WRI (2014) presented in the ICAT Guide for Assessing Sustainable Development Impacts

Transport is a necessary pre-requisite that enables inclusive economic growth, poverty reduction, social progress, and an overall improved quality of life (23). The improvement of roads in Liberia has to some extent contributed positively to the sustainable development goals of the country. These upgrades provide the means for all to reach greater opportunities, while at the same time, providing job opportunities, accessibility, and ensuring inclusiveness and social equality (23). The advancements of primary and secondary roads are key influences on pre- and post-disaster management, but yet contribute immensely to climate change. Table 5 below presents the principal SDGs, targets and specific elements captured by the NTMP.

Table 5: SDGs, targets and specific elements captured by the NTMP

Goal	Target	Specific element captured
<b>SDG 1:</b> End poverty in all its forms everywhere (Poverty reduction)	<p><b>Target 1.1:</b> Target 1.1 - by 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day</p> <p><b>Target 1.5b:</b> create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions.</p>	<ul style="list-style-type: none"> <li>• Reduced poverty through economic efficiency - by lowering costs and enhancing opportunities;</li> <li>• Contributed immensely to achieving sustainable economic growth, improving access to services and markets, and enhancing social well-being of communities, building productive capacity, as well as promoting trade and regional and global integration;</li> <li>• Improved road safety which has generated employment and created opportunities and long-term benefits for low-income earners and communities (18) (19);</li> </ul>
<b>SDG 2:</b> End hunger, achieve food security and improved nutrition and promote sustainable agriculture (Agricultural productivity)	<b>Target 2.3:</b> By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.	<ul style="list-style-type: none"> <li>• Increased agricultural productivity and food security;</li> <li>• Increased food-transit connections and value chains which are vital to keep consumer prices affordable;</li> <li>• Increased outreach of extension workers due to improved access in remote areas;</li> <li>• Increased opportunities for small-scale cooperative transportation ventures, local production and consumption chains, the development of mobile “farmers” markets and the increased use of Information and Communication Technologies (ICT) in agricultural transport;</li> <li>• Increased farmers household’s income and savings through time, energy and cost;</li> <li>• Reduced delays resulting in spoilage of agricultural products (18) (19).</li> </ul>
<b>SDG 3:</b> Ensure healthy lives and promote well-being for all at all ages (Road Safety)	<b>Target 3.6:</b> By 2020, halve the number of global deaths and injuries from road traffic accidents.	<ul style="list-style-type: none"> <li>• Improved transport networks have built the potential to increase road safety - e.g. through people-centered planning or pedestrian-oriented development patterns;</li> <li>• Provided affordable, reliable and efficient transportation which is a vital pre-condition for accessing health care especially in remote areas (20).</li> </ul>
<b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).	<b>Target 9.1:</b> Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.	<ul style="list-style-type: none"> <li>• The resilient and improved transport infrastructure have somewhat enhanced social and economic resilience as well as meeting security and emergency response needs;</li> <li>• Provided means to easily manage pre- and post-disaster evacuation (22).</li> </ul>
<b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)	<b>Target 11.2:</b> By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.	<ul style="list-style-type: none"> <li>• Ensured access to services, goods and opportunities;</li> <li>• Contributed to city planning, promoting safer options for active mobility (walking and cycling);</li> <li>• Contributed to affordability for the urban poor and improved accessibility of all, including for people with disabilities, women, elderly and other vulnerable groups;</li> <li>• Promoted urban inclusiveness, involving women more in the planning and implementation of transport interventions (18) (19).</li> </ul>

The outcomes and deliverables of the NTMP have also contributed **negatively** to Liberia’s sustainable development goals and targets.

- Road expansion and reconstruction have increased freight transport in urban areas which has major implications for fossil fuel consumption, congestion and pollution. These upgrades have had serious impact on crop yield (food security), public health and climate change resulting in extreme events such as floods and droughts.
- Road construction and suburban sprawl have contributed to the loss of prime farmlands near cities– food supplies must now come from increasingly distant locations.

### 3. Analysis of how the NDC implementation could improve Liberia Transport Sector’s performance against the SDG targets (Potential co-benefits of NDC and SDGs)

The Transport Sector of Liberia has a critical role to play in supporting the achievement of the climate change mitigation targets and Sustainable Development Goals (SDGs) of the country. Transport sector connections in NDC and SDG implementations are conjointly-supportive (i.e. implementation of a low-carbon transport measure could support the implementation of sustainable development objectives and vice versa). Should the transport mitigation and adaptation actions and measures presented in the NDC be well implemented, the sector would not only contribute significantly to the achievement of Liberia’s ambitious NDC target but would also improve the sector’s overall performance against the country’s SDG targets.

Furthermore, beyond the direct mitigation benefits of climate action (i.e. the reduction of GHG emissions), the implementation of transport NDC’s actions and measures, will correspondingly have by far mostly positive impacts and generate additional sustainable development benefits (i.e. socioeconomic and environment benefits) such as increased energy security, reduced air pollutions/better air quality, reduced traffic and parking congestion, and increased public health outcomes amongst others- all of which spur prosperity and wellbeing.

Table 6 below reveals additional SDG benefits, besides GHG emission reduction, that the country stands to accrue from the implementation of the transport mitigation and adaptation actions and measures presented in the revised NDC. The implementation of any of the mitigation measures will most likely have positive impacts on SDG 9 about infrastructure and SDG 11 about sustainable cities (Table 6). See Annex 8 for details on specific targets.

*Table 6: Additional SDG impacts/benefits to be achieved from implementing transport NDC actions and measures.*

NDC Measure	Goal	Target
The implementation of a vehicle labelling system which is an information system that registers the level of GHG emissions for each vehicle by 2025	<b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).	<b>Target 9.1</b>
	<b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)	<b>Target 11.2</b> <b>Target 11.6</b>
	<b>SDG 13:</b> Take urgent action to combat climate change and its impacts Climate Change Adaptation & Mitigation)	<b>Target 13.1</b> <b>Target 13.2</b>

	<b>SDG 17:</b> Strengthen the means of implementation and revitalize the global partnership for sustainable development	<b>Target 17.19</b>
The implementation of fees / rebate programme through which the government levies fees on relatively high GHG emitting vehicles and provides rebates on low-emitting vehicles by 2025	<p><b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p><b>SDG 12:</b> Ensure sustainable consumption and production patterns (Fuel subsidies)</p> <p><b>SDG 13:</b> Take urgent action to combat climate change and its impacts Climate Change Adaptation &amp; Mitigation)</p>	<p><b>Target 9.1</b></p> <p><b>Target 11.2</b> <b>Target 11.6</b></p> <p><b>Target 12.c</b> <b>Target 12.3</b></p> <p><b>Target 13.1</b> <b>Target 13.2</b></p>
The enforcement and adaptation of registration taxes, with and the enforcement of the 10% tax on luxury vehicles and the integration of a tax on transit vehicles by 2025.	<p><b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p><b>SDG 12:</b> Ensure sustainable consumption and production patterns (Fuel subsidies)</p> <p><b>SDG 13:</b> Take urgent action to combat climate change and its impacts Climate Change Adaptation &amp; Mitigation)</p>	<p><b>Target 9.1</b></p> <p><b>Target 11.2</b> <b>Target 11.6</b></p> <p><b>Target: 12.c</b></p> <p><b>Target 13.1</b> <b>Target 13.2</b></p>
Consumer information campaigns, through heightened driver awareness about better ways of driving cars through eco-driving. Additionally, speed reduction and the use of well-adjusted motors, electric and Compressed Natural Gas (CNG) vehicles and promotion of public transport, using of the bus transport network and car-sharing; (Linked to Health sector).	<p><b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p><b>SDG 12:</b> Ensure sustainable consumption and production patterns (Fuel subsidies)</p> <p><b>SDG 13:</b> Take urgent action to combat climate change and its impacts Climate Change Adaptation &amp; Mitigation)</p>	<p><b>Target 9.1</b></p> <p><b>Target 11.2</b> <b>Target 11.6</b></p> <p><b>Target: 12.c</b></p> <p><b>Target 13.1</b> <b>Target 13.2</b></p>
Promote diesel particulate filters for road and off-road vehicles.	<p><b>SDG 3:</b> Ensure healthy lives and promote well-being for all at all ages (Road Safety) (Air pollution)</p> <p><b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p><b>SDG 13:</b> Take urgent action to combat climate change and its impacts Climate Change Adaptation &amp; Mitigation)</p>	<p><b>Target 9.1</b></p> <p><b>Target 11.2</b></p> <p><b>Target 11.6:</b></p> <p><b>Target 13.1</b> <b>Target 13.2</b></p>

<p>Continuation of road upgrading and construction.</p>	<p><b>Goal 8:</b> Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <p><b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p>	<p><b>Target 8.5</b> <b>Target 8.a</b></p> <p><b>Target 9.1</b></p> <p><b>Target 11.2</b> <b>Target 11.6</b></p>
<p>Support the implementation of infrastructure that foster the development of a bus public transport network for Monrovia.</p>	<p><b>SDG 7:</b> Ensure access to affordable, reliable, sustainable, and modern energy for all</p> <p><b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p><b>SDG 13:</b> Take urgent action to combat climate change and its impacts Climate Change Adaptation &amp; Mitigation)</p>	<p><b>Target 7.3</b></p> <p><b>Target 9.1</b> <b>Target 11.2</b></p> <p><b>Target 11.6:</b> <b>Target 13.1:</b></p> <p><b>Target 13.2:</b></p>
<p>Design a transport interchange hub program by 2025.</p>	<p><b>SDG 3:</b> Ensure healthy lives and promote well-being for all at all ages (Road Safety) (Air pollution)</p> <p><b>Goal 7:</b> Ensure access to affordable, reliable, sustainable, and modern energy for all</p> <p><b>SDG 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p><b>SDG 13:</b> Take urgent action to combat climate change and its impacts Climate Change Adaptation &amp; Mitigation)</p>	<p><b>Target 3.6</b> <b>Target 3.9</b></p> <p><b>Target 7.3</b></p> <p><b>Target 9.1</b> <b>Target 11.2</b></p> <p><b>Target 11.6:</b> <b>Target 13.1:</b></p> <p><b>Target 13.2:</b></p>
<p>Review of the institutional framework by 2025.</p>	<p><b>Goal 17:</b> Strengthen the means of implementation and revitalize the global partnership for sustainable development</p>	<p><b>Target 17.9</b> <b>Target 17.14</b> <b>Target 17.17</b></p>

## Conclusion

As the development context for the transport sector has changed both on the global and at national levels, transport is no longer limited to providing services and improving infrastructure for the mobility of people and goods. It is now classified as a cross-cutting accelerator that can fast-track progress towards other crucial goals such as eradicating poverty in all its dimensions, reducing inequality, empowering women, and combatting climate change. As such, the sector is vital for achieving the Agenda 2030 and the Paris Agreement (24).

Despite the vital contributions made by Liberia's Transport Sector in terms of improving connectivity, promoting trade, economic growth, and employment, it is however implicated as a significant source of greenhouse gas emissions due to rapid urbanization and increased fossil fuel consumption. The increasing growth of transport emissions is mainly associated with road vehicles, which represent approximately 43% of the total energy sector's emissions in Liberia (25). Furthermore, the overall intermediate outcomes of Liberia's transport environment at the sector level, in comparison to other countries in Africa and the rest of the world, remain characterized by very low efficiency, high costs, sub-optimal services, low safety, and scanty policy objectives and implementation environment. These effects reflect the inadequacy of policy frameworks and a weak capacity to manage the environmental, social, and safety risks engendered by increased fossil fuel consumption. The current policy frameworks for Liberia Transport Sector, which consist of the National Transport Policy and Strategy (NTPS), and the National Transport Master Plan (NTMP), are generally insufficient to remedy the current realities and achieve the transport targets outlined in the updated NDC.

The NTMP, which currently provides the overarching regulatory basis and framework for introducing new sectoral actions and measures, dates back to a time prior to the adoption of the Paris Agreement in 2015. During this time, the transport sector was not specifically considered. It had often been equated with infrastructure and has not been classified as a distinct basic need. As such, the development strategy of the NTMP follows this provisioning and principally focuses on promoting economic efficiency and social benefits. Some of the socio-economic benefits achieved by the NTMP include improved road connectivity, reduced traffic congestion, creation of jobs and new businesses in the transport sector, poverty reduction, and increased national revenue, amongst others. However, the NTMP poorly captures targets relating to mitigation of transport GHG emissions. Its implementation contributes to amplified GHG emissions from increased fossil fuel consumption, increased air pollution, destruction of ecosystems and biodiversity, reduced soil quality, and the prevalence of respiratory diseases and other health hazards.

The NTMP in its current form cannot achieve the country's NDC commitment of mitigating transport GHG emissions by 15.1% below the business-as-usual (BAU) level by 2030 (12). It also insufficiently reflects Liberia's long-term vision (Liberia Rising Vision 2030), the sustainable development goals of the current national government's agenda (PAPD), and the sector's goal of achieving carbon neutrality by 2050. This suggests that for Liberia to achieve its commitment made to the Paris Agreement and the 2030 Agenda for Sustainable Development, its transport sector needs to update or recalibrate some of its core policies and strategies, including the NTPS and NTMP to create the right enabling environment for NDC implementation.

The implementation of the transport NDC's actions and measures will not only provide direct GHG emission reduction benefits but will also have by far positive impacts and generate additional sustainable development benefits (i.e. socioeconomic and environmental benefits) such as: increased energy security, reduced air pollutions/better air quality, reduced traffic and parking congestion, and

increased public health outcomes amongst others- all of which spur prosperity and wellbeing.

Hence, an integrated transport policy intervention that addresses multiple sustainable development objectives such as GHG emission reductions, health, and environmental sustainability is required.

## Recommendations

The assessment results have uncovered that, besides the emerging realities of accelerating urbanization, and increased fossil fuel consumption, which are significant parts of the climate problem, the implementation of the NTMP and the development prospects of the Liberian transport sector are hindered and beset by several challenges. These challenges include: dissociated and scanty policy objectives, inadequate prioritization framework, inadequate human resources capacity, lack of information and information systems, weak monitoring & evaluation, a weak link in the transport policy process, and unaffordability of transport strategies. As such, the existing policy environment of Liberia's transport sector is insufficient to provide appropriate solutions for these strangling challenges.

For Liberia to meet its international commitments and to address the challenges mentioned herein, this assessment recommends that:

- The GoL, through the Ministry of Transport, and collaborating partners regularly update or recalibrate some of the core transport policies, including the NTPS and NTMP, to create the right enabling environment for NDC and SDG implementations. As it is now very critical, the update or recalibration should address the recommendations for policy adjustment made in sections 8.3.4 and 8.3.5 of the NTMP, which concern the mitigation of increasing vehicle emissions and the resulting environmental and health damages. The GoL should also harmonize transport policies to meet specific sustainable development targets of the sector; thus, the need to mainstream transport NDC targets, actions, and measures in the NTMP is ever critical. Implementing these recommendations would more likely achieve Liberia's NDC targets.
- The Ministry of Transport, in partnership with the EPA and other stakeholders, develop and implement a more robust, integrated, coherent, and coordinated set of transport policies and strategies. These policies must seek solutions to ending extreme poverty, promoting shared prosperity, mitigating transport emissions, and the impacts of climate change in/on the transport sector.
- The NTMP, even when updated, may not be sufficient to achieve the NDC targets, actions, and measures in the long run, given that its overarching policy objective may be broadly extensive. This insufficiency may also pose difficulties in achieving specific SDG targets. As such, complementary policies, actions, and measures geared toward improving fuel and vehicle efficiency, incentivizing the introduction of battery electric vehicles (BEVs), improving engine performance in all motorized vehicles, setting emissions standards, introducing fees and rebates, and promoting green public procurement are required to complement the NTMP in mitigating carbon emissions in the road transport sector and thereby improving the sector's performance against SDG targets.
- The Ministry of Transport, EPA, and relevant stakeholders, regularly conduct multi-objective and integrated transport performance studies against pro-poor, pro-growth, and cross-cutting themes like environment, poverty, gender equality, education, health, and social services. These interventions have been limited and somewhat absent in the transport sector, as they are cardinal in informing transport policies and strategies as well as in planning investments.



- The consolidation of knowledge-based decision support systems to inform policy and decision-making relating to impacts, costs, benefits, and potential trade-offs be embarked upon.
- The causal link between transport and high-level national outcomes must be properly established, and efforts to track performance against such objectives should not further strain the already capacity-constrained monitoring and evaluation processes.

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20. Wonasue, Samuel A. Coordinator of the Road Safety Secretariat, Ministry of Transport. Stakeholder engagement - Objectives, socio-economic impacts and benefits of the policy. Monrovia, March 3, 2022.

21. Kaba, Baba. Director of Research, Statistics and Information Management, Ministry of Transport. Stakeholder engagement - Establishing legislation, enforcement & compliance mechanisms/procedure, penalties and significance of the NTMP. Monrovia, April 14, 2022.

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# Annexes

## Annex 1: List of interviewees

Name	Job title	Subject expounded on	Interview date
<b>Wilmot B. Cherue</b>	Director of Planning, Policy and Special Projects, Ministry of Transport in Monrovia.	Description of specific interventions, implementation strategy, responsible entities, gaps identified and specific intend of the NTMP	April 1, 2022
<b>Joefta Timanywa</b>	Environmental Specialist, Ministry of Public Works in Monrovia.	Environmental and health impacts, monitoring, reporting, and verification procedures associated with the NTMP	April 1, 2022
<b>Albert M. Sherman</b>	Assistant Director of Meteorology/NDC Focal Point, Ministry of Transport in Monrovia	Alignment of the Plan's objectives with that of the transport sector targets (mitigation and adaptation) proposed in Liberia's NDC.	March 8, 2022
<b>Samuel A. Wonasue</b>	Coordinator of the Road Safety Secretariat, Ministry of Transport in Monrovia.	Stakeholder engagement - Objectives, socio-economic impacts and benefits of the NTMP.	March 3, 2022
<b>Baba Kaba</b>	Director of Research, Statistics and Information Management, Ministry of Transport in Monrovia.	Establishing legislation, enforcement & compliance mechanisms/procedure, penalties and significance of the NTMP	April 14, 2022
<b>Mr. Mulbah Sayka and Mr. Oliver Arkoi</b>	Analysts, Ministry of Finance and Development Planning in Monrovia	SDGs and targets the policy sought to achieve, alignment of the NTMP with other national, regional, and international development plans and strategies	May 5, 2022

## Annex 2: Stakeholder Questionnaire

**Initiative for Climate Action Transparency (ICAT) Liberia Project  
Policy Impact Assessment (Liberia National Transport Master Plan, 2012)  
Stakeholder Questionnaire**

Information	Description	Response
<b>Title of policy</b>	Policy name	
<b>Type of policy</b>	<p>Select the type of policy, such as those presented below or categories of policies that may be more relevant to the policy being assessed.</p> <p>Example:</p> <ul style="list-style-type: none"> <li>• Regulations and standards</li> <li>• Taxes and charges</li> <li>• Subsidies and incentives</li> <li>• Voluntary agreements or actions</li> <li>• Information instruments</li> <li>• Emissions trading programmes</li> <li>• Research, development and deployment policies</li> <li>• Public procurement policies</li> <li>• Infrastructure programmes</li> <li>• Implementation of technologies, processes or practices</li> <li>• Financing and investment</li> </ul>	
<b>Description of specific interventions the policy seek to achieve</b>	<p>The specific intervention(s) carried out as part of the policy, such as the technologies, processes or practices implemented to achieve the policy:</p> <p>Example:</p> <ul style="list-style-type: none"> <li>• <b>Financial incentives:</b> The policy provides a financial subsidy of up to 30% of project/benchmark cost for rooftop solar projects. It also provides concessional loans to solar rooftop project developers.</li> <li>• <b>Eligible technology:</b> Grid-connected rooftop and small solar power plants with installed capacity of 1–500 kW</li> <li>• <b>Eligible sectors:</b> Residential (all types of residential buildings), institutional (schools, health institutions), social sectors (community centers, welfare homes, old age homes, orphanages, common service centers), commercial and industrial facilities</li> <li>• <b>Contract and payment duration:</b> Up to 30% of the eligible financial assistance and services charges at the time the proposal is sanctioned; the remaining 70% after successful commissioning of projects after sample verification on submission of requisite claims.</li> <li>• <b>National budget allocated to the policy:</b> Approximately \$750 million</li> <li>• <b>Other enabling actions under the policy:</b> » Training and capacity-building of stakeholders involved in the programme, such as government staff, utilities, regulatory commissions, banks and workers » Development of online portal for rooftop solar systems development programme, and registration of partners, approvals and project monitoring.</li> </ul>	
<b>Status of the policy</b>	<p>Whether the policy is planned, adopted or implemented:</p> <ul style="list-style-type: none"> <li>• Ex-ante (forward-looking/to be implemented)</li> <li>• Ex-post (backward-looking / adopted, currently in effect or has been implemented)</li> </ul>	
<b>Date of implementation</b>	The date the policy comes into effect (not the date that any supporting legislation is enacted)	
<b>Date of completion (if relevant)</b>	If relevant, the date the policy ceases, such as the date a tax is no longer levied or the end date of an incentive scheme with a limited duration (not the date that the policy no longer has an impact)	
<b>Implementing entity</b>	The entity or entities that implement(s) the policy, including the role of various	

<b>or entities</b>	local, subnational, national, international or any other entities	
<b>Objectives and intended impacts or benefits of the policy</b>	The intended impact(s) or benefit(s) of the policy Example: (The purpose stated in the legislation or regulation)	
<b>Level of the policy</b>	The level of implementation, such as national level, subnational level, city level, sector level or project level	
<b>Geographic coverage</b>	The jurisdiction or geographic area where the policy is implemented or enforced, which may be more limited than all the jurisdictions where the policy has an impact	
<b>Sectors targeted</b>	The sectors or subsectors that are targeted Example: (Energy supply (grid-connected solar PV))	
<b>Other related policies</b>	Other policies that may interact with the policy being assessed	
<b>Relevant SDGs the policy target.</b>	SDGs the policy focuses on or contributes to. Example: The policy is focused primarily on SDG 3 (Good health and wellbeing), SDG 7 (Affordable and clean energy), SDG 8 (Decent work and economic growth), SDG 9 (Industry, innovation and infrastructure), SDG 11 (Sustainable cities and communities), SDG 12 (Responsible consumption and production) and SDG 13 (Climate action), while also contributing to other SDGs	
<b>Is the policy in line with relevant targets proposed in the NDC?</b> Yes      No  <b>(If yes, list specific targets)</b>	NDC target in the energy sector: <b>Reduce GHG emission by 15.1% below BAU levels by 2030.</b>  (Mitigation/Adaptation targets) <ul style="list-style-type: none"> <li>• Introduction of electric vehicles with focus on kekehs for private use.</li> <li>• Supporting the transformation of National Transit Authority (NTA) buses and private vehicles to compressed Natural Gas (CNG) by 2030.</li> <li>• Support the implementation of infrastructure that foster the Development of a bus public transport network for Monrovia.</li> </ul>	
<b>Specific intended targets, such as intended level of indicators</b>	Target level of key indicators, if applicable. Example: (The policy aims to install 40,000 MW of rooftop solar PV by 2022. The policy will lead to increased solar power generation in the country, contributing to greater energy independence, and increased jobs in the solar PV installation and maintenance sectors. Solar energy will also provide quick alternative power during any severe climate changes)	
<b>What are the gaps identified since the date of implementation of the policy?</b>	Example: Financial constraint, Sectorial coordination, favorable environment for investment etc.	
<b>Title of establishing legislation, regulations or other founding documents</b>	The name(s) of legislation or regulations authorizing or establishing the policy (or other founding documents if there is no legislative basis). Example: (National renewable energy law)	

<b>Monitoring, reporting and verification procedures</b>	<p>References to any monitoring, reporting and verification procedures associated with implementing the policy.</p> <p>Example: (Monitoring and evaluation studies of the policy will be carried out during the implementation period, as follows:</p> <ul style="list-style-type: none"> <li>• At the primary level of monitoring, channel partners are responsible for monitoring parameters such as end-use verification and compliance. They are also responsible for compiling statistical information, such as number of companies involved in the installation.</li> <li>• National monitors would be involved, for data on number of companies and employees active within the sector.</li> <li>• National monitors, consultants, institutions, civil society groups, corporations with relevant experience, and other government organizations would be involved, for ground verification/ performance evaluation on a random sample basis.</li> <li>• Electricity generation data should be available at the beneficiary level. However, for projects above 5 kW, the system providers would also make generation data available to the government at specified intervals.</li> <li>• For projects 50 kWp and above, 100% field inspection is required.)</li> </ul>	
<b>Enforcement mechanisms</b>	<p>Any enforcement or compliance procedures, such as penalties for non-compliance. Example: (If evidence is presented that the applicant's information is incorrect, distributed funds will be paid back)</p>	
<b>Reference to relevant documents</b>	<p>Information to allow practitioners and other interested parties to access any guidance documents related to the policy (e.g. through websites) Example: For more information, see: <a href="http://mnre.gov.in/solar/schemes/">http://mnre.gov.in/solar/schemes/</a></p>	
<b>Broader context or significance of the policy</b>	<p>Broader context for understanding the policy.</p> <p>Example: The current energy mix mainly consists of imported fossil fuels. Coal remains a dominant source of power generation in India. BMI Research forecasted in 2017 that coal will contribute 66% to India's power generation mix in 2025, and electricity generation from coal will increase by 5.8% between 2016 and 2025. In 2000, 67% of emissions in India were from energy generation and use. India plans a rapid increase in the renewable energy share in the national electricity generation mix, including plans to install 175 GW of renewable generation capacity by 2022. Solar is projected to contribute 100 GW of installed capacity by 2022, from the current 4 GW. Recent auctions have resulted in record low tariffs of Rs 3 (US\$ 0.0446) per kWh. Rooftop solar has significant potential to contribute to national energy supply. Rooftop solar installed capacity reached 525 MW in 2015. This accounts for less than 10% of the installed utility scale solar capacity and a very small portion of the total power consumption in the country. The government's target of 40 GW of solar rooftop capacity by 2022 has injected increased ambition into the sector.</p>	
<b>Key stakeholders</b>	<p>Key stakeholder groups affected by the policy.</p> <p>Example: (Households, institutions (schools, health institutions), businesses, project developers, workers, utilities, banks, energy access programmes, women's organizations and cooperatives, microcredit institutions, and others)</p>	
<b>Other relevant information</b>	<p>Any other relevant information.</p> <p>Example: (Various implementation models are possible under the policy:</p> <ul style="list-style-type: none"> <li>• solar installations owned and operated by consumers</li> <li>• solar rooftop facility owned by consumers but operated and maintained by a third party</li> <li>• solar installations owned, operated and maintained by a third party</li> <li>• solar lease model, with sale of electricity to the grid</li> <li>• solar installations owned by the utility or distribution company).</li> </ul>	

**Source:** Adapted from WRI (2014); Liberia Revised NDC 2021. Examples adapted from India's Ministry of New and Renewable Energy.

## Annex 3: Follow-up Questionnaire

**Initiative for Climate Action Transparency (ICAT) Liberia Project  
Policy Impact Assessment (Liberia National Transport Master Plan, 2012)  
Follow-up Questionnaire (face-to-face)**

Dimension	Impact category	Brief description of specific impacts	Relevant Yes/No	Significant Yes/No
<b>Environmental and Health</b>	Climate change mitigation	The policy reduces GHG emissions by replacing fossil fuel energy with solar energy		
	Air quality, noise and other health impacts of air pollution	Reduces air and noise pollutions		
	Biodiversity and ecosystems protection; Soil quality	The policy protects ecosystem, biodiversity and increased soil quality		
	Land use change	The policy positively affects land use change		
	Waste generation	Reduced waste generation and disposal from fossil fuel processing, storage and usage		
	Alternative fuel consumption	Reduces the consumption of fossil fuel due to effective policy enforcement mechanism to promote the use of clean, alternative fuel		
	Road safety	Policy improves road safety leading to reduction in number of deaths and injuries from road traffic accidents per year		
	Respiratory illness and death	Reduces the prevalence of respiratory illnesses and other health hazards from transport emissions		
<b>Social</b>	Mobility and Universal access	The policy improves mobility and universal access for elderly, disable and very young people		
		Increases ease of reaching opportunities (employment, schools, health care, market or recreation)		
		Reduces road travel and access time due to reduced traffic congestion		
		Reduces passenger fare of trips per household		
		Public acceptability		
		Improve condition for walking and biking		
	Traffic congestion	The policy reduces traffic congestion because of good road connectivity		
	Capacity, skills and knowledge development	Improves capacity, training, skills and knowledge development in the transport sector		
Quality and safety of working conditions	Improves quality and safety of working conditions due to more jobs in the road transport sector			



	Poverty	Reduces poverty because of improved road connectivity		
	Gender equality	Promotion of gender equity and Participation of women in decision-making process in the transport sector		
<b>Economic</b>	Functionality and efficiency	Increases system functionality and efficiency leading to reduction in travel time, travel cost, and trip uncertainty		
	Operation	Improves operations especially in the quality of system conditions and maintenance of infrastructure		
	Jobs	The policy increases job creation in the transport sector		
	Revenue	Reduces annual national budget deficit;		
		Increases annual national revenue		
	Income	Increases household disposable income due to reduced transport fare and reduced prices of goods and services		
	Wages	Increases wages for workers in the transport sector		
	New business opportunities	Creation of new business opportunities in the transport sector		
	Economic activity and productivity	Increases economic activity and productivity		
Prices of goods and services	Reduction in prices of goods and services because of road connectivity			

*Source: Adapted from ICAT Guide for Assessing Sustainable Development Impacts*

**Annex 4: Pictorials from engagement with stakeholders**



*A). Engagement with Mr W. Cherue, Director of Planning, Policy and Project at the Ministry of Transport in Monrovia on Friday April 1, 2022*



*B). Engagement with Mr Joefta Timanywa, Environmental Specialist at the Ministry of Public Works in Monrovia on Friday April 1, 2022*



*C). Engagement with Mr A. Sherman, Asst. Director of Meteorology/ NDC Focal Point, Ministry of Transport in Monrovia on Tuesday March 8, 2022*  
Picture courtesies: Spencer S. Taylor, Jr./ICAT/EPA @ 2022



*D). Engagement with Mr S. Wonasue, Coordinator of Road Safety Secretariat, MOT in Monrovia on Thursday March 3, 2022*

## Annex 5: Road deliverables of the PRS-II (2012-2017)

Roads & Bridges	PRS-II Outputs (2012 – 2017)
Construction, rehabilitation & maintenance of Primary, Secondary and Urban Roads	8,174.79 mi (13156.04 km)
Construction and rehabilitation of Feeder Roads	2,092.38 mi (3,367.36 km)
Construction and maintenance of Bridges	165 bridges

Source: Ministry of Public Works Data (9)

## Annex 6: Alignment of the PRS, Aft, PAPD, AU Agenda 2063, and the SDGs.

Poverty Reduction Strategy 1990 – 2015	Agenda for Transformation 2012 - 2017	Pro-poor Agenda for Prosperity and development 2018-2023	Sustainable Development Goals for 2030	Agenda 2063 Aspirations
<p><b>Vision and principle:</b> Moving toward rapid, inclusive and sustainable growth and development.</p>	<p><b>Vision and principle:</b> A united people and a progressive nation meeting core expectation of stability, equity, and democracy.</p>	<p><b>Vision and principle:</b> A united people and a progressive nation meeting core expectation of stability, equity, and democracy.</p>	<p><b>Vision and principle:</b> “...resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind.”</p>	<p><b>Vision and principle:</b> Building an integrated, prosperous and peaceful Africa, driven by its own citizens representing a dynamic force in the international arena.</p>
<p><b>Pillar I:</b> Security</p> <p><b>Goal:</b> To create a secure and peaceful environment, both domestically and in the sub-region, which is conducive to sustainable, inclusive, and equitable growth and development</p>	<p><b>Pillar I:</b> Peace, Security and Rule of Law</p> <p><b>Goal:</b> Create an atmosphere of peaceful co-existence based on reconciliation and conflict resolution and providing security, access to justice, and rule of law to all</p>	<p><b>Pillar I:</b> Power to the People.</p> <p><b>Goal:</b> To empower Liberians with the tools to gain control of their lives; reaching the furthest first and leaving no one behind</p>	<p><b>Goal 1:</b> No poverty</p> <p><b>Goal 2:</b> Zero hunger</p> <p><b>Goal 3:</b> Good health and well-being</p> <p><b>Goal 4:</b> Quality education</p> <p><b>Goal 5:</b> Gender equality</p> <p><b>Goal 8:</b> Decent work and economic growth</p> <p><b>Goal 10:</b> Reduced inequalities</p>	<p><b>Aspiration 1:</b> A prosperous Africa based on inclusive growth and sustainable development</p> <p><b>Aspiration 6:</b> An Africa whose development is people-driven, relying on the potential offered by African People, especially its women and youth and caring for children</p>
<p><b>Pillar II:</b> Economic revitalization</p> <p><b>Goal:</b> to firmly establish a stable and secure environment and to be on an irreversible path toward</p>	<p><b>Pillar II:</b> Economic Transformation</p> <p><b>Goal:</b> To transform the economy so that it meets the demands of</p>	<p><b>Pillar II:</b> The Economy and Jobs.</p> <p><b>Goal:</b> A stable macroeconomic environment enabling private</p>	<p><b>Goal 2:</b> Zero hunger</p> <p><b>Goal 5:</b> Gender equality</p> <p><b>Goal 6:</b> Clean water and</p>	<p><b>Aspiration 1:</b> A prosperous Africa based on inclusive growth and sustainable development</p> <p><b>Aspiration 2:</b> An integrated</p>

<p>rapid, inclusive and sustainable growth and development.</p>	<p>Liberians through development of the domestic private sector-using resources leveraged from FDI in mining and plantations; providing employment for a youthful population; investing in infrastructure for economic growth; addressing fiscal and monetary issues for macroeconomic stability; and improving agriculture and forestry to expand the economy for rural participation and food security.</p>	<p>sector-led economic growth, greater competitiveness, and diversification of the economy</p>	<p>sanitation <b>Goal 7:</b> Affordable and clean energy <b>Goal 8:</b> Decent work and economic growth <b>Goal 9:</b> Industry, innovation and infrastructure <b>Goal 10:</b> Reduced inequalities <b>Goal 11:</b> Sustainable cities and communities <b>Goal 12:</b> Responsible consumption and production <b>Goal 13:</b> Climate action <b>Goal 15:</b> Life on land <b>Goal 17:</b> Partnerships for the Goals</p>	<p>continent, politically united, based on ideals of Pan-Africanism and the Vision of Africa’s Renaissance <b>Aspiration 6:</b> An Africa whose development is people-driven, relying on the potential offered by African People, especially its women, youth, and children <b>Aspiration 7:</b> as a strong, united and influential global player and partner <b>Corresponding new deal peace building and state building goals (PSG):</b> <b>PSG 4:</b> Economic Foundation <b>PSG 5:</b> Revenue and Services</p>
<p><b>Pillar III:</b> Governance and rule of Law <b>Goal:</b> To build and operate efficient and effective institutions and systems, in partnership with the citizens, that will promote and uphold democratic governance, accountability, justice for all, and that will strengthen peace.</p>	<p><b>Pillar III:</b> Human Development <b>Goal:</b> To improve quality of life by investing in more accessible and higher quality education; affordable and accessible quality healthcare; social protection for vulnerable citizens; and expanded access to healthy and environmentally-friendly water and sanitation services.</p>	<p><b>Pillar III:</b> Sustaining the Peace. <b>Goal:</b> A more peaceful and unified society that enables economic transformation and sustainable development</p>	<p><b>Goal 5:</b> Achieve Gender equality and empower all women and girls <b>Goal 16:</b> Promote peaceful and inclusive society for sustainable development, provide access to justice for all and build accountable and inclusive institutions at all levels</p>	<p><b>Aspiration 3:</b> An Africa of good governance, democracy, respect for human rights, justice and rule of law <b>Aspiration 4:</b> A peaceful and secure Africa <b>Aspiration 5:</b> An Africa with a shared cultural identity, common heritage, values and ethics <b>Aspiration 6:</b> An Africa whose development is people driven, relying on the potential offered</p>

				by people, especially its women and youth and caring for children
<p><b>Pillar IV:</b> Infrastructure and basic services</p> <p><b>Goal:</b> To quickly embark upon the rehabilitation of infrastructure and the rebuilding of systems to deliver basic services to create the conditions and linkages needed to achieve broad-based growth and poverty reduction.</p>	<p><b>Pillar IV:</b> Governance and Public Institutions</p> <p><b>Goal:</b> In partnership with citizens, create transparent, accountable and responsive public institutions that contribute to economic and social development as well as inclusive and participatory governance systems.</p>	<p><b>Pillar IV:</b> Governance and Transparency.</p> <p><b>Goal:</b> An inclusive and accountable public sector for shared prosperity and sustainable development</p>	<p><b>Goal 1:</b> No poverty;</p> <p><b>Goal 5:</b> Gender Equality;</p> <p><b>Goal 9:</b> Build resilient infrastructure, promote sustainable industrialization and foster innovation;</p> <p><b>Goal 11:</b> Make cities inclusive, safe, resilient and sustainable;</p> <p><b>Goal 15:</b> Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss;</p> <p><b>Goal 16:</b> Promotion of peaceful and inclusive society for sustainable development, and building effective and accountable institutions at all levels;</p> <p><b>Goal 17:</b> A successful sustainable development agenda requires partnerships between governments, the private sector and civil society.</p>	<p><b>Aspiration 2:</b> An integrated continent politically united and based on the ideals of Pan Africanism and the vision of African renaissance</p> <p><b>Aspiration 3:</b> An Africa of good governance, democracy, respect for human rights, justice and the rule of law</p> <p><b>Aspiration 6:</b> An Africa whose development is people-driven, relying on the potential offered by African People especially its women, and youth and caring for children</p> <p><b>Aspiration 7:</b> Africa as a strong, united, resilient, and influential global partner and player</p>
	<p><b>Pillar V:</b> Cross-cutting issues</p> <p><b>Goal:</b> Mainstreaming Cross Cutting Issues across all sectors</p>			

	<p>for society's overall productivity and well-being, with particular emphasis on the vulnerable segment of the country's population (Women, Children, People with Disabilities and Youth)</p>			
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Source: PAPD, 2018

## Annex 7: Goals of the National Transport Master Plan and linkages to national, regional and global development objectives and targets

“*The National Transport Master Plan*” (NTMP) focuses on several strategic objectives, including: rehabilitation, reconstruction and construction of primary/secondary, feeder and neighborhood roads; improve the transport sector through effective systems and infrastructure for quality service provision; improve urban and rural transport; and build human resource capacity. The National Transport Policy and Strategy noted that to accomplish these objectives, Liberia needed:

1. A “*National Transport Master Plan (NTMP)*,” and
  2. An effective “Road Maintenance Management System.”
- The NTMP placed particular emphasis on reconstruction and rehabilitation of roads
  - One of the most important features of this Plan has been the prioritization of infrastructure rehabilitation.
  - The development and implementation of a modern “Road Maintenance Management System” and “Capacity Development and Training” were recommendations proffered - with focus on the Ministry of Transport (MoT) and Ministry of Public Works (MPW) (9).

Poverty Reduction Strategy 1990 – 2015	Agenda for Transformation 2012 – 2017	Pro-poor Agenda for Prosperity and Development 2018-2023	Corresponding SDGs and Target for 2030	Corresponding Agenda 2063 Aspirations
<p><b>Pillar II:</b> Economic Revitalization</p> <p><b>Sector:</b> Private sector investment</p> <p><b>Goal:</b> To create a strong enabling environment for private sector investment and exports in non-traditional activities.</p> <p><b>Target:</b> To reduce or eliminate unnecessary business regulations and administrative requirements for MSMEs to operate effectively and efficiently</p>	<p><b>Pillar II:</b> Economic Transformation</p> <p><b>Sector:</b> Private sector development</p> <p><b>Goal:</b> Promote and sustain private sector development through enhanced economic competitiveness and diversification, increased value addition and an improved administrative and policy environment</p> <p><b>Target:</b> To ensure rapid growth of MSMEs that will lead to</p>	<p><b>Pillar I:</b> Power to the People</p> <p><b>Sector:</b> Private sector development</p> <p><b>Goal:</b> To empower Liberians with the tools to gain control of their lives; reaching the furthest first and leaving no one behind</p> <p><b>Target:</b> enhanced access to social safety nets through social assistance, scaled-up cash transfer, and inclusion through work opportunities to reduce vulnerability and</p>	<p><b>Goal 1:</b> End poverty in all its forms everywhere (Poverty reduction)</p> <p><b>Target 1.5b:</b> create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions</p>	<p><b>Aspiration 1:</b> A prosperous Africa based on inclusive growth and sustainable development</p> <p><b>Aspiration 2:</b> An integrated continent politically united and based on the ideals of Pan Africanism and the vision of African renaissance</p>



	<p>increased employment and wealth creation and reduced Poverty</p> <p><b>Target:</b> Reduce impediments to expansion of employment and production, especially of tradable goods, and assure worker safety and environmental protection.</p>	<p>extreme poverty among disadvantaged groups and regions</p>		
<p><b>Pillar IV:</b> Infrastructure and basic services</p> <p><b>Sector:</b> Roads and bridges</p> <p><b>Goal:</b> To ensure that all roads are pliable year-round, to refurbish select public buildings, and to build the capacity necessary for a sustained road maintenance program.</p> <p><b>Target:</b> Design and implement a road safety initiative including side brushing, and fabricate and install road safety signs on city streets;</p> <p><b>Target:</b> Ensure that environmental impact studies are conducted and that sound environmental practices are followed in all the projects</p> <p><b>Pillar IV:</b> Infrastructure and basic services</p>	<p><b>Pillar II:</b> Economic Transformation</p> <p><b>Sector:</b> Infrastructure</p> <p><b>Goal:</b> Improve accessibility ‘year-round’ and connectivity of roads and bridges; and Ensure that Liberians nationwide have reliable, safe, affordable and efficient transport services</p> <p><b>Target:</b> Improve the efficiency, transparency, environmental sustainability, and safety of transport services nationwide, including alternate modes (e.g. rail and water).</p>	<p><b>Pillar II:</b> Economy and jobs</p> <p><b>Sector:</b> Infrastructure transformation (roads)</p> <p><b>Goal:</b> A stable macroeconomic environment enabling private sector-led economic growth, greater competitiveness, and diversification of the economy</p> <p><b>Target:</b> More expansive national road network, reducing the cost of transport and doing business, supporting the generation of decent employment opportunities, reduction of traffic congestion and transit and transforming the living conditions of the poor and the vulnerable through better access to social services.</p>	<p><b>Goal 3:</b> Ensure healthy lives and promote well-being</p> <p><b>Target 3.6:</b> By 2020, halve the number of global deaths and injuries from road traffic accidents;</p>	<p><b>Aspiration 1:</b> A prosperous Africa based on inclusive growth and sustainable development</p> <p><b>Target 1.1.4.10:</b> At least 70% of the population indicate an increase in access to quality basic services (water, sanitation, electricity, transportation, internet connectivity)</p>

<p><b>Sector:</b> Transportation</p> <p><b>Goal:</b> To improve the Liberian transport sector through policy, systems and infrastructure development that create access to reliable, affordable and efficient services.</p> <p><b>Target:</b> Improvement of the transport sector through effective systems and infrastructure for quality service provision.</p> <p><b>Target:</b> Restoration and expansion of national air capacity as quickly as possible to international standards</p>				
<p><b>Pillar II:</b> Economic Revitalization</p> <p><b>Sector:</b> Food and agriculture</p> <p><b>Goal:</b> To revitalize the food and agricultural sector to contribute to shared, inclusive, and sustainable economic growth and development; provide food security and nutrition; increase employment and income; and measurably reduce poverty.</p> <p><b>Target:</b> To develop more competitive, efficient, and sustainable food and agricultural</p>	<p><b>Pillar II:</b> Economic Transformation</p> <p><b>Sector:</b> Agriculture and food security</p> <p><b>Goal:</b> Promote a robust, competitive and modernized agriculture sector supportive of sustainable economic growth and development</p> <p><b>Target:</b> Increase agricultural productivity, value-added and environmental sustainability, especially for smallholders including women and youth.</p> <p><b>Target:</b> Increase access to</p>	<p><b>Pillar II:</b> Economy and jobs (More competitive and diversified economic sectors)</p> <p><b>Sector:</b> Agriculture</p> <p><b>Goal:</b> A stable macroeconomic environment enabling private sector-led economic growth, greater competitiveness, and diversification of the economy</p> <p><b>Target:</b> By 2023, A more competitive and diversified agricultural sector that promotes value chains and market linkages for food self-</p>	<p><b>Goal 2:</b> End hunger, achieve food security and improved nutrition and promote sustainable agriculture</p> <p><b>Target 2.3:</b> By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land,</p>	<p><b>Aspiration 2:</b> An integrated continent politically united and based on the ideals of Pan Africanism and the vision of African renaissance</p> <p><b>Aspiration 6:</b> An Africa whose development is people-driven, relying on the potential offered by African People, especially its women, youth, and children</p> <p><b>Target 6.17.1.2:</b> Equal economic rights for women, including the rights to own and inherit property, sign a contract, save, register and manage a business and own and operate a bank account by 2025.</p> <p>2. At least 20% of rural women have</p>

<p>value chains and linkages to markets.</p> <p><b>Target:</b> To improve food security and nutrition, especially for vulnerable groups such as pregnant and lactating women and children under five</p>	<p>machinery, fertilizer, storage, credit, training, technical assistance, market information, and improved technologies and related services— through farmer groups and nuclear farms.</p>	<p>sufficiency, increased exports, job creation, and livelihood opportunities.</p>	<p>other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment</p>	<p>access to and control productive assets, including land and grants, credit, inputs, financial service and information</p>
<p><b>Pillar IV:</b> Infrastructure and basic services</p> <p><b>Sector:</b> Transportation services</p> <p><b>Goal:</b> To improve the Liberian transport sector through policy, systems and infrastructure development that create access to reliable, affordable and efficient services.</p> <p><b>Target:</b> Improvement of the transport sector through effective systems and infrastructure for quality service provision</p> <p><b>Target:</b> To improve urban transit in Monrovia and its environs</p> <p><b>Target:</b> restoration and expansion of national air capacity to international standards</p> <p><b>Target:</b> Restoration of viable, self-sustaining activities at physically more robust national ports</p>	<p><b>Pillar II:</b> Economic transformation</p> <p><b>Sector:</b> Infrastructure</p> <p><b>Goal:</b> Improve accessibility ‘year-round’ and connectivity of roads and bridges; and Ensure that Liberians nationwide have reliable, safe, affordable and efficient transport services</p> <p><b>Target:</b> Improve the efficiency, transparency, environmental sustainability, and safety of transport services nationwide, including alternate modes (e.g., rail and water)</p> <p><b>Target:</b> Continuous improvement of management and facilities at seaports and airports.</p> <p><b>Target:</b> Improve road connections between all regions of Liberia, especially for southeast counties; open more</p>	<p><b>Pillar II:</b> Economy and jobs</p> <p><b>Sector:</b> Infrastructure transformation (Air and sea transport)</p> <p><b>Goal:</b> A stable macroeconomic environment enabling private sector-led economic growth, greater competitiveness, and diversification of the economy</p> <p><b>Target:</b> By 2023, Construction and rehabilitation of stronger and more competitive air and sea transport system supporting economic transformation and job creation.</p>	<p><b>Goal 9:</b> Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure)</p> <p><b>Target 9.1:</b> Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all</p>	<p><b>Aspiration 10:</b> World class infrastructure across Africa</p> <p><b>Aspiration 12:</b> Capable institutions and transformed leadership in place at all levels</p>

	secondary and feeder roads; and keep roads usable year-round			
<p><b>Pillar IV:</b> Infrastructure and basic services</p> <p><b>Sector:</b> Roads and bridges</p> <p><b>Target:</b> Design and implement a road safety initiative including side brushing, and fabricate and install road safety signs on city streets;</p> <p><b>Target:</b> Ensure that environmental impact studies are conducted and that sound environmental practices are followed in all the projects</p> <p><b>Pillar IV:</b> Infrastructure and basic services</p> <p><b>Sector:</b> Transportation</p> <p><b>Target:</b> Improvement of the transport sector through effective systems and infrastructure for quality service provision.</p> <p><b>Target:</b> Improvement of urban transit in Monrovia and its environs.</p> <p><b>Target:</b> Restoration and expansion of national air capacity as quickly as possible to international standards</p>	<p><b>Pillar II:</b> Economic Transformation</p> <p><b>Sector:</b> Infrastructure</p> <p><b>Goal:</b> Improve accessibility ‘year-round’ and connectivity of roads and bridges; and Ensure that Liberians nationwide have reliable, safe, affordable and efficient transport services</p> <p><b>Target:</b> Improve the efficiency, transparency, environmental sustainability, and safety of transport services nationwide, including alternate modes (e.g. rail and water).</p>	<p><b>Pillar II:</b> Economy and jobs</p> <p><b>Sector:</b> Infrastructure transformation (roads)</p> <p><b>Goal:</b> A stable macroeconomic environment enabling private sector-led economic growth, greater competitiveness, and diversification of the economy</p> <p><b>Target:</b> More expansive national road network, reducing the cost of transport and doing business, supporting the generation of decent employment opportunities, reduction of traffic congestion and transit and transforming the living conditions of the poor and the vulnerable through better access to social services.</p>	<p><b>SDG 11:</b> Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</p> <p><b>Target 11.2:</b> By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p>	<p><b>Aspiration 1:</b> A prosperous Africa based on inclusive growth and sustainable development</p> <p><b>Target 1.1.4.10:</b> At least 70% of the population indicate an increase in access to quality basic services (water, sanitation, electricity, transportation, internet connectivity)</p> <p><b>Aspiration 10:</b> World class infrastructure across Africa</p>

Sources: PRS, 2008 (16); NTMP, 2012 (9); AfT, 2012 (15); PAPD, 2018 (8)

### Annex 8: Table 6: Additional SDG impacts/benefits to be achieved from implementing transport NDC actions and measures.

NDC Measure	Goal	Targets
<p>The implementation of a vehicle labelling system which is an information system that registers the level of GHG emissions for each vehicle by 2025.</p>	<p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</p> <p>SDG 13. Take urgent action to combat climate change and its impacts (Climate Change Adaptation &amp; Mitigation)</p> <p>Goal 17 –Strengthen the means of implementation and revitalize the global partnership for sustainable development</p>	<p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p> <p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p> <p>Target 13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</p> <p>Target 13.2: integrate climate change measures into national policies, strategies, and planning</p> <p>Target 17.19 - by 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries</p>
<p>The implementation of fees / rebate programme through which the government levies fees on relatively high GHG emitting vehicles and provides rebates on low-emitting vehicles by 2025.</p>	<p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</p>	<p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 By 2030, provide access to safe, affordable, accessible</p>

	<p>SDG 12. Ensure sustainable consumption and production patterns (Fuel subsidies)</p> <p>SDG 13. Take urgent action to combat climate change and its impacts (Climate Change Adaptation &amp; Mitigation)</p>	<p>and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p> <p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p> <p>Target: 12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities</p> <p>Target 12.3: By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses</p> <p>Target 13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</p> <p>Target 13.2: integrate climate change measures into national policies, strategies, and planning</p>
<p>The enforcement and adaptation of registration taxes, with and the enforcement of the 10% tax on luxury vehicles and the integration of a tax on transit vehicles by 2025.</p>	<p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</p> <p>SDG 12. Ensure sustainable consumption and production patterns (Fuel subsidies)</p>	<p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p>

	<p>SDG 13. Take urgent action to combat climate change and its impacts (Climate Change Adaptation &amp; Mitigation)</p>	<p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p> <p>Target: 12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities</p> <p>Target 12.3: By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses</p> <p>Target 13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</p> <p>Target 13.2: integrate climate change measures into national policies, strategies, and planning</p>
<p>Consumer information campaigns, through heightened driver awareness about better ways of driving cars through eco-driving. Additionally, speed reduction and the use of well-adjusted motors, electric and Compressed Natural Gas (CNG) vehicles and promotion of public transport, using the bus transport network and car-sharing; (Linked to Health sector).</p>	<p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</p> <p>SDG 12. Ensure sustainable consumption and production patterns (Fuel subsidies)</p> <p>SDG 13. Take urgent action to combat climate change and its impacts (Climate Change Adaptation &amp; Mitigation)</p>	<p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p> <p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p>

		<p>Target: 12.c Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities</p> <p>Target 12.3: By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses</p> <p>Target 13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</p> <p>Target 13.2: integrate climate change measures into national policies, strategies, and planning</p>
<p>Promote diesel particulate filters for road and off-road vehicles.</p>	<p>3. Ensure healthy lives and promote well-being for all at all ages (Road Safety) (Air pollution)</p> <p>Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all</p> <p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p>SDG 13. Take urgent action to combat climate change and its impacts (Climate Change Adaptation &amp; Mitigation)</p>	<p>Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents</p> <p>Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination</p> <p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p>



		<p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p> <p>Target 13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</p> <p>Target 13.2: integrate climate change measures into national policies, strategies, and planning</p>
<p>Continuation of road upgrading and construction.</p>	<p>Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</p>	<p>Target 8.5: by 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value</p> <p>Target 8.a: increase Aid for Trade support for developing countries, least developed countries, including through the Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries</p> <p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p> <p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p>

<p>Support the implementation of infrastructure that foster the development of a bus public transport network for Monrovia.</p>	<p>Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all</p> <p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all)</p> <p>SDG 13. Take urgent action to combat climate change and its impacts (Climate Change Adaptation &amp; Mitigation)</p>	<p>Target 7.3 – double the global rate of improvement in energy efficiency by 2030</p> <p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p> <p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management</p> <p>Target 13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</p> <p>Target 13.2: integrate climate change measures into national policies, strategies, and planning</p>
<p>Design a transport interchange hub program by 2025.</p>	<p>3. Ensure healthy lives and promote well-being for all at all ages (Road Safety) (Air pollution)</p> <p>Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all</p> <p>SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Sustainable infrastructure).</p> <p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Sustainable (urban) transport for all) (Sustainable cities)</p> <p>SDG 13. Take urgent action to combat climate change and its impacts</p>	<p>3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents</p> <p>3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination</p> <p>Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>Target 11.2 : By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving</p>

	Climate Change Adaptation & Mitigation)	<p>road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p> <p>Target 11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.</p> <p>Target 13.1: Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries</p> <p>Target 13.2: integrate climate change measures into national policies, strategies, and planning</p>
Review of the institutional framework by 2025.	Goal 17 –Strengthen the means of implementation and revitalize the global partnership for sustainable development	<p>Target 17.14 - enhance policy coherence for sustainable development</p> <p>Target 17.17 - encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships</p>