



EPA Transformation Strategy

2024 - 2030

Priorities Plan for the
Environment Protection
Agency.

DEC, 2023



Disclaimer & Citation

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Acronyms

ASM	Artisanal and Small-scale Mining
ASSL	Audit Service Sierra Leone
AfDB	African Development Bank
CCA	Climate Change Adaptation
CCS	Climate Change Secretariat
CECC	Committee on Environment and Climate Change
CLA	Collaborating, Learning, and Adapting
CSO	Civil Society Organization
CSSL	Conservation Society Sierra Leone
CVCA	Climate Vulnerability and Capacity Assessment
DRM	Disaster Risk Management
DSTI	Directorate of Science, Technology, and Innovation
EDSA	Electricity Distribution and Supply Authority
EHS	Environmental Health and Safety
EPA	Environment Protection Agency
EPAT	EPA Transformation
ERA	External Relations and Advocacy
FA	Financial Affairs
FBC	Fourah Bay College
FOE	Field Operations and Extension
GCF	Green Climate Fund
GEF	Global Environment Facility
GIZ	German International Cooperation
GOSL	Government of Sierra Leone
GWP	Global Warming Potential
HoP	House of Parliament
HR	Human Resources
HRM	Human Resources Management
IMBO	Institute of Marine Biology and Oceanography
LACE	Legal Affairs and Compliance Assurance
MoA	Ministry of Agriculture
MDA	Ministry, Department, and Agency
MEA	Multilateral Environmental Agreement
MECC	Ministry of Environment and Climate Change
MFMR	Ministry of Fisheries and Marine Resources
MGCA	Ministry of Gender and Children's Affairs
MMMR	Ministry of Mines and Mineral Resources
MTCA	Ministry of Tourism and Cultural Affairs
MTNDP	Medium-term National Development Plan
NaPHA	National Public Health Agency
NASSIT	National Social Security and Insurance Trust
NDC	Nationally Determined Contributions
NDMA	National Disaster Management Agency

NLC	National Land Commission
NMA	National Minerals Agency
NRG	Natural Resources Governance
NTB	National Tourist Board
NU	Njala University
NWRMA	National Water Resources Management Agency
OHS	Occupational Health and Safety
OM	Outcome Mapping
ONS	Office of National Security
PDP	Programme Development and Performance
PI-CREF	Pres. Initiative for Climate Change, Renewable Energy, and Food Security
RAC	Refrigeration and Air Conditioning
RPI	Research, Policy, and Innovation
SLAJ	Sierra Leone Association of Journalists
SLP	Sierra Leone Police
SLRSA	Sierra Leone Road Safety Authority
WONES	Women's Network for Environmental Sustainability

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Adaptation: Changes in processes, practices, and structures to moderate potential damages or to increase benefit from opportunities associated with climate change.

Adaptive Capacity: The pool of assets that an individual, household, or community may mobilize to build resilience to climate change impacts.

Circular economy: An economy in which the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste is minimized.

Climate: Mean weather trends at a specific region, over the course of many years. It is the statistical information of weather which signifies that common atmospheric pattern, in an area over decades.

Consumption: The use of products and services for (domestic) final demand, i.e., for households, government and investments.

Climate System: The highly complex system consisting of five major components: the atmosphere (air), the hydrosphere (ocean, lake, rivers, etc.), the cryosphere (polar ice cap, sea ice, permafrost, seasonal snow cover, mountain glacier, etc.), the lithosphere/ geosphere (land) and the biosphere (ecosystems) and the interactions between them.

Climate hazards: A physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources.

Ecosystem services: Those functions and processes which ecosystems provide, and which affect human well-being. They include (a) provisioning services such as food, water, timber, and fibre; (b) regulating services such as the regulation of climate, floods, disease, wastes, and water quality; (c) cultural services such as recreation, aesthetic enjoyment, and spiritual fulfilment; and (d) supporting services such as soil formation, photosynthesis, and nutrient cycling.

Exposure: The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected.

Environmental impacts: Harmful effects of human activities on ecosystems.

Food security: A state or condition when all people, always, have physical, economic, and social access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Footprints: Footprints can measure different types of pressures including resource use (such as materials and water), pollution emissions (including emission in air) and environmental impacts (climate change, water scarcity, biodiversity losses and so forth).

Global Warming: An increase in the Earth's average surface temperature and mostly occurring due to human-made greenhouse gas emissions.

Greenhouse effect: The way heat is trapped close to the Earth's surface by greenhouse gases. These heat trapping gases can be thought of as a blanket around Earth, keeping the planet hotter than it would be without them.

Land restoration: Avoid- land degradation can be avoided by addressing drivers of degradation and through proactive measures to prevent adverse change in land quality of non-degradable land and confer resilience, via appropriate regulation, planning and management practices. Reduce- land degradation can be reduced or mitigated on agricultural forest land through application of sustainable management practices (sustainable land management, sustainable forest management). Reverse- where feasible, some (but rarely all) of the productive potential and ecological services of degraded land can be restored or rehabilitated through actively assisting the recovery of the ecosystem functions.

Mitigation: Reductions in human (anthropogenic) emissions of greenhouse gases (GHGs) by increasing the capacity of carbon sinks, e.g., through reforestation, deploying climate proofing technology including for innovative transportation, agriculture, etc, and other actions.

Paris Agreement: Requires all Parties to put forward their best efforts through Nationally Determined Contributions (NDCs), with the understanding that there will be a global stock take every 5 years to assess the collective progress towards achieving the purpose of the Agreement. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

Resilience: The ability to adapt to changes, anticipate what might happen next, and absorb shocks when they do come along.

Resources: Including land, water, air and materials, are seen as parts of the natural world that can be used in economic activities to produce goods and services.

Resource efficiency: Describes the overarching goals of decoupling — increasing human well-being and economic growth while lowering the number of resources required and negative environmental impacts associated with resource use.

Risk: Probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur.

Sensitivity: Results from dependence on the environment for livelihoods, food, shelter, and medicine; lack of access to decision making and justice, geographical context, a range of intersecting inequalities including these issues.

Vulnerability: Encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

Weather: The daily atmospheric condition, concerning various elements like temperature, precipitation, moisture, cloudiness, wind velocity and air pressure.



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Message from MECC

The EPA Transformation Strategy, 2024-2030 reflects MECC's unreserved commitment to addressing the three interconnected crises of climate change, biodiversity loss, and pollution, which have put our country's economic and social wellbeing at risk. It charts a course towards the attainment of key priorities for environment and climate change in the revised Medium-term National Development Plan (MTNDP) and the Sustainable Development Goals (SDGs).

The strategy is transformational in its method for addressing today's worsening environmental and climate crises in the country by focusing on systems- people, resources, and services. We can agree that the Agency needs to focus on systemic changes that are crucial to addressing the underlying causes of environmental change, by working collaboratively with a broad network of partners to catalyse change at scale, using their deep expertise and thought to support policy formulation and decision-making, leveraging financing, and transforming the landscape of environmental data and statistics.

Over the next 7 years, fully implementing the change strategies outlined, and exploiting the far-reaching effects of key enablers, I expect the Agency to guide synchronized actions towards natural resources management, climate change mitigation and adaptation, and pollution prevention at scale. This will accelerate action towards the achievement of key local priorities and global obligations for the environment, as well as urge swift delivery in a related set of result areas, including poverty reduction and economic growth.



**Mr. Jiwoh
Emmanuel
Abdulai**
Minister, MECC



Foreword

I am thrilled to share the next steps in the Agency's progress towards long-term, inclusive, and transformative change. This version of the strategy has been appraised and accepted by MECC, PI-CREF and key partners and stakeholders. It is organized around a 3x6 framework- *3 foundational programmes of work or pillars* (natural resources, climate change, and environmental health) and *6 supporting programmes of work or enablers* (evidence, technology, and innovation; gender-transformative programming; advocacy, communications, and brand building; systems strengthening for organizational excellence; partnerships, engagement, and financing; and policy coherence and enforcement), to enable stronger collective results. The framework acknowledges the interconnectedness of climate change, biodiversity loss, and pollution, and explains how the Agency aims to work with others, over the next 7 years, to tackle these problems.

I would like to thank all the stakeholders who offered consultation responses to help improve the draft. It was comforting to see such a positive reaction to the proposals in the plan and such obliging and perceptive suggestions on the detail and language from many individuals and organizations. These exchanges exhibit a generous amount of interest in the work of the Agency and ascertain that we will work together to accomplish inclusive, transparent, and innovative environmental outcomes. In doing so, bridging science-policy initiatives will be reinforced, accountability will be preserved through continuous learning and reflection, our partner base will be diversified, the best available technical advice and ideas will be sought, transformative partnerships will be brokered, and environmental sustainability will be achieved through local ownership and meaningful participation.

Going forward, therefore, I am dedicated to ensuring the Agency works collaboratively, openly, and transparently in conducting its business. I believe this plan provides a rich opportunity to meet, build relationships, and work with a wide range of organizations and individuals in Sierra Leone, the region, and globally. Going forward, I hope it can be a channel for raising concerns, sharing progress, and supporting our work. Thank you.

Dr. Abu-Bakar S. Massaquoi

Executive Chairman, EPASL





Executive Summary

This document presents the programme of work and sets out the results framework for the EPA for the next 7 years, along with the associated budget of **14.925 million United States Dollars**. It is based on lessons learned from previous interventions and a detailed situational analysis. The situational analysis recognizes that, in Sierra Leone:

- ✧ Environmental resources underpin economic growth and the achievement of inclusive and sustainable development.
- ✧ Environmental resources are critical for enhancing adaptation and increasing resilience to natural and human-induced shocks and stresses.
- ✧ Current economic development approaches drive large-scale loss of environmental resources and endanger human health.
- ✧ Climate change impacts on environmental resources will engender continued losses that threaten the future prosperity of communities; and
- ✧ Investments to protect and restore environmental resources should be scaled-up through urgent and adequate institutional reforms.

In response to these findings, we have developed a strategy that acknowledges the interconnectedness of climate change, biodiversity loss, and pollution, and explains how the Agency aims to work with others, over the next 7 years, to tackle these problems. The document is divided into 6 sections:

- ✧ **Section I** explains the methods and procedures followed for the development of the strategy. We have followed an Outcome Mapping process that included a situational analysis, stakeholder consultations, an intervention summit, and a validation workshop.
- ✧ **Section II** presents the findings of the situation analysis, which addresses a wide range of issues, including the potential of environmental resources; impacts of climate change, biodiversity loss, and pollution on local environmental resources; and urgent policy and institutional reforms required for effectively and equitably managing environmental resources.
- ✧ **Section III** outlines the directions of change, or ways to tackle the issues presented in Section II. It presents three delivery pathways (pillars) and six enabling conditions (enablers) for achieving the key result areas outlined in the strategy.
- ✧ **Section IV** illustrates these directions of change in a results framework, showing key levers of change and programme delivery and enlisting key assumptions, risks, and high-level outcomes. These elements embody the core areas of work and the conditions necessary for implementing the strategy.
- ✧ **Section V** presents interventions, associated budgets, and responsible parties.
- ✧ **Section VI** presents a matrix for monitoring and assessing the progress of activities and documenting outcomes of the strategy.

Broadly, the proposals and frameworks presented in this strategy offer a promise towards attaining transformative change at the organizational level by 2030. The proposals are transformative, because they show how the Agency builds on previous work, using an integrated approach that leverages partnerships and cross-sectoral initiatives, to accelerate and scale-up transformational shifts in environmental management. Besides, the proposals aim to benefit from the comparative advantage of each result area to improve cost-effectiveness and have a greater, more strategic impact. Furthermore, the proposals are transformative as they present greater ambitions, a path towards efficiency and effectiveness, and ways to optimize resources and generate consistent results, by adopting integrated approaches that target nexus issues such as sustainable food systems, just energy transitions, urban systems transformation, blue economy, resource efficiency, and circular economy.

The feedback we have received as part of the consultation on this strategy makes it clear that people and organizations believe that we can play a vitally important role in meeting these challenges. We have identified areas where environmental protection is being ineffective and will work across government and with local and international partners to implement solutions and secure timely and practicable improvements. Our promise, therefore, is to work collaboratively with a wide range of partners to achieve our objectives, and to establish a reputation as a fair, committed, and strong champion for environmental protection.

Through the implementation of this strategic plan, we will demonstrate that while our remit is focused on specific outcomes described in the EPA Act (2022)¹, we acknowledge that the environment doesn't recognize administrative boundaries. We are, thus, poised to work closely with our counterparts to support environmental protection and enhancement across the country and to ensure that the Agency and the sector keep pace with global development. These actions will be taken in line with the vision of the Agency, to ensure the sustainable use of our natural resources and contribute to poverty reduction through effective protection and sound management of the environment.

.....
¹ <chrome-extension://efaidnbmnnnibpcjpcglclefindmkaj/https://faolex.fao.org/docs/pdf/sie213862.pdf>



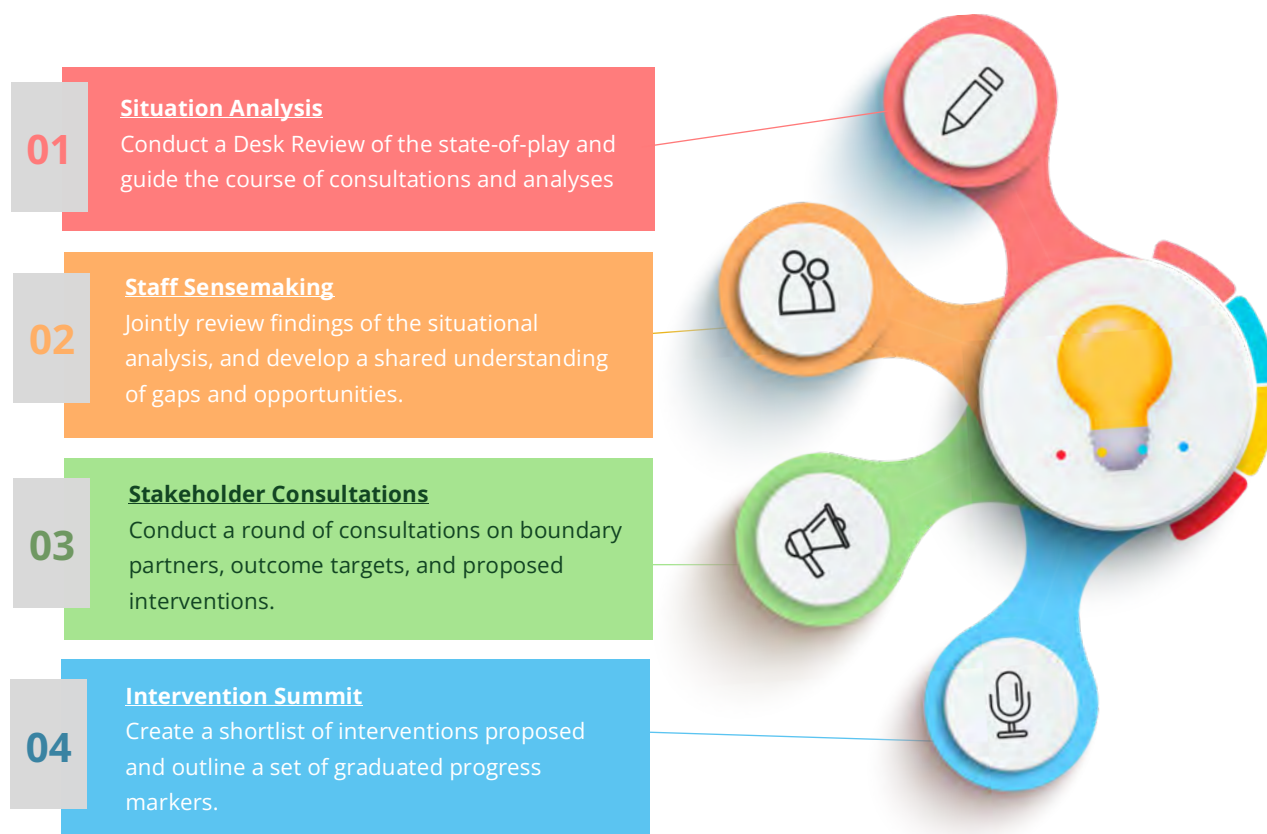
1. Strategy Development

1.1. Introduction

EPA is an agency under the Ministry of Environment and Climate Change (MECC) with a mandate to ensure compliance with and improve the effectiveness of environmental law, and effectively manage natural resources for the benefit of all citizens. Its establishment since 2008 came at a crucial time. The world has been facing significant environmental challenges and the country is already experiencing the effects of climate change, land degradation, and poor governance of natural resources. There is already a significant impact on human health and growing recognition and acceptance that the right to a healthy environment is fundamental to human wellbeing and should be enshrined in law. This section describes how the combination of our deep local experience and diverse global network, has been used to develop a strategy demonstrates our knowledge, shared experience, and creativity to help change systems and tackle the toughest challenges standing between us, national priorities in the MTNDP, and the Sustainable Development Goals (SDGs).

1.2. Outcome Mapping

We followed an Outcome Mapping (OM) process that purposely included staff of the Agency in a situational analysis and the design of interventions, to encourage ownership and maximize the use of the findings. The whole process was designed to be a consciousness-raising and consensus-building process for those working within and outside the environment and climate change sector. Four phases of planning were completed: Situational Analysis, Staff Sensemaking, Stakeholder Consultations, and Intervention Summit.



The process of sensemaking assumed that directorates of the Agency are staffed by individuals who have different interests and perspectives, and who often see information in different ways. Similarly, the two-day intervention summit helped to align the strategy with pre-existing plans and pipelined actions. The final product was validated by key stakeholders on December 19, 2023, based on responses to the following five questions:

- a. What are your dreams of success for the EPA's work in the next 7 years?
What would success look like?
- b. What new interventions should the EPA support/implement to overcome key environmental challenges and leverage successes to date?
- c. Which interventions in the list have a high feasibility? Which ones should we NOT do (or have a low feasibility)?
- d. How should the EPA work with you (partners and stakeholders) in the delivery of interventions to ensure synergy and complementarity?
- e. Which of the interventions can you support?

1.3. Stakeholder Perceptions and Feedback

Participation in the stakeholder validation workshop offered an opportunity for a frank and open dialogue about the purpose and relevance of the strategy. In general, stakeholders called for the strategy to be adequately aligned to national policies and plans to ensure a whole-of-government approach that facilitates policy coherence and consistency, drive collaboration, and ultimately, minimize duplication of effort and unnecessary costs. The purpose is to design a coordinated approach that ensures more effective decision-making, better integrated cross-sector and cross-government delivery of environmental services, better engagement with citizens and businesses, reduced cost, and increased local benefit.

More specifically, stakeholders believe that:

- ✱ The evidence, experiences, and lessons learned from working together over the years provide a stable ground to deliver the strategy.
- ✱ Building and sustaining diverse public and private partnerships can open doors for achieving progress towards the results of the strategy.
- ✱ An integrated approach, rooted in shared decision-making and problem solving and a commitment to inclusion and gender responsiveness, must live at the heart of planning to accelerate progress and achieve diversity.
- ✱ Enabling cross-governmental and non-governmental advocacy, leadership, and participation is necessary to address key structural barriers and stimulate intersectoral collaboration and coherence.
- ✱ Appropriate, first-class, and disaggregated data are critical to develop responsive and transformative interventions and effectively assess impact.
- ✱ More investments in developing the capacity of the organization to learn, reflect, and advance, including through technology and innovation, can ensure and sustain positive change and lasting impact.



Plate 1: Cross-section of stakeholders at the EPATS validation workshop on Dec. 19, 2023





2. Situation Analysis: Environmental Resources & Change

2.1. Introduction

This section presents information on the country's natural capital and how large-scale efforts to extract natural resources are growing rapidly, causing severe environmental damage and social harm. It discusses the influence climate change and pollution may have on community nature-dependent livelihoods and national economic growth more broadly. The review provides a precise and accurate picture of the state of environmental governance in the country, which has been utilized to guide the development of this strategy.

2.2. Environmental Resources: Potential and Prospects

Environmental resources are key inputs in production processes that have stimulated economic growth for decades in Sierra Leone. The country is rich in natural resources that include land, water, fisheries, wetlands, forests, wildlife, and minerals.

- ✳ The land cover is approximately 72,300 sq. km, 74% of which is cultivable. The upland areas, which represent 80% of all arable land have low fertility but are suitable for cultivating a wide variety of food and cash crops. The lowlands, which make up the rest of the arable land area, are more fertile and are suitable for high productivity under sustainable management conditions. These comprise 690,000ha of inland valley swamps, 145,000ha of bolilands, 130,000ha of grassland, and 20,000ha of mangrove swamps².
- ✳ Water resources are abundant compared to other countries in the region. The FAO AQUASTAT database estimates that the total renewable water resources available annually have remained stable at more than 160 billion cubic metres since 1977. Of this total, only 0.133% (212 million cubic meters) is withdrawn annually for human use. The available data, which has not been updated since 2007, indicates that slightly over 52% of the withdrawal is for industry, 26% is for domestic use, and 21% for agriculture agriculture³.
- ✳ Huge stocks of fisheries contribute directly to poverty reduction and economic development. The artisanal sector catches account for 80% of overall fishery production. Over 200 fish species have been identified in the Exclusive Economic Zone (EEZ)⁴. Marine and coastal ecosystems that host small pelagic fish, tuna, billfish, shrimps, and demersal fish resources, also support other rich biodiversity, including migratory birds, threatened manatees, seals, monks, marine mammals, sea turtles, porpoises, sawfish, and crocodiles⁵.
- ✳ The coastline provides a unique wetland that is home to tremendous biodiversity, including mangrove forests. There are about 105,200ha of mangrove stands along this coastline, spread across the five regions of the Sierra Leone Coastal Landscape Complex (SLCLC)- Scarcies River Estuary (13,007ha), Sierra Leone River Estuary (34,234 ha), Yawri Bay (24,505 ha), Bonthe-Sherbro River Estuary (99,854 ha) and Western Area (7,189 ha).

² Sannoh, I.J., 2015. Agricultural and rural development statistics in Sierra Leone-Key aspects of institutional arrangements & performance. *Wye City Group*, pp.3-6.

³ <https://data.worldbank.org/indicator/ER.H2O.FWAG.ZS?locations=SL>

⁴ <https://spcsrcp.org/en/sierra-leone>

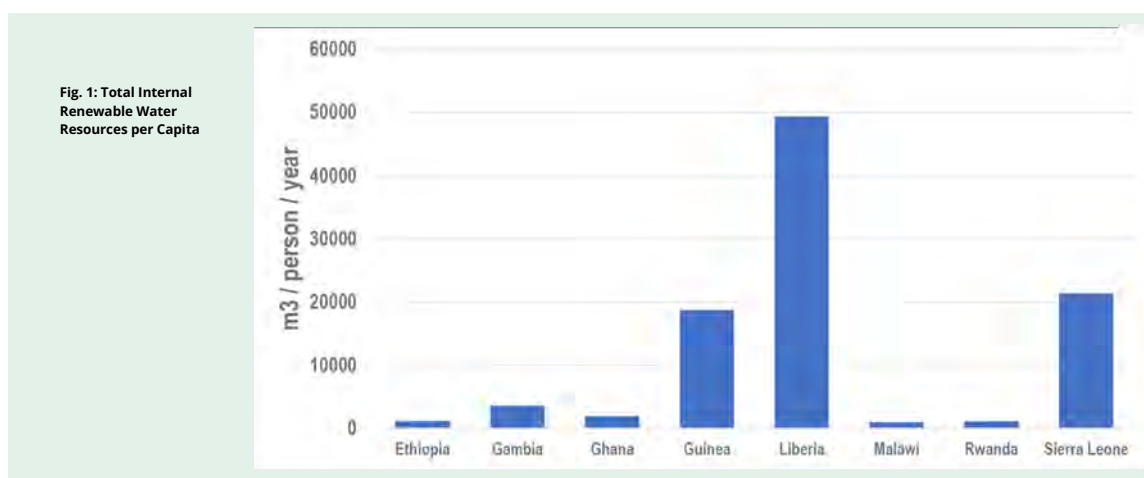
⁵ Fisheries management in data deficient industrial fisheries of Sierra Leone: Input controls and ecological risk assessment. <http://www.fao.org/fishery/static/tenure-user-rights/root/volume3/C39.pdf>

- ✳ There are rich indigenous flora and fauna including important endemic species and internationally rare and threatened species. The national forest area is made up of Gazetted Reserves (285,229 ha), which are fully under the protection and management of the Forestry Division; Proposed Reserves (33,953 ha), which are also under the protection and control of the Forestry Division but not yet legally constituted; Community Forest (33,023 ha) found mainly on customary lands in rural areas; Game Reserves (76,500 ha) found mainly in Savannah woodlands; and Plantations (about 9,800 ha), which exist in small plots scattered throughout the country⁶.
- ✳ There are approximately 147 known species of wild mammals, 172 known breeding bird species, 67 known reptile species, 35 known amphibian species, 750 species of butterflies including the giant African swallowtail, one of the largest butterflies, and about 200 known species of fish. Several species of whales and the African manatee can also be found in the country, along with 630 known species of birds, ten of which are considered endangered, including the rufous fishing-owl and the Gola malimbe. There are 67 known species of reptiles, three of which are endangered: the Nile crocodile, the slender-snouted crocodile which lives in forest streams, and the dwarf crocodile found in mangrove swamps. All the species of sea turtles can be found in the waters of Sierra Leone and both the green turtle and leatherback turtle routinely nest on the Sherbro and Turtle Islands⁷.

2.3. Environmental Resources, Adaptation, and Resilience

Historically, communities throughout the country have depended on nature for subsistence and as part of their strategies for adaptation and resilience to natural and human-induced shocks and stresses. Natural capital is needed to ensure the security of energy, food, and water, and direct reliance on natural resources is vitally important for the poor.

- ✳ Land with healthy soil resources is essential for agricultural production. The agriculture sector is the mainstay of the Sierra Leonean economy employing more than 50% of the labour force, mostly at the subsistence level. Rice is the staple food and contributes about 75% of the agricultural GDP. Annual per capita consumption of rice is among the highest in West Africa. Tree crops, including coffee, kolanut, cocoa, and oil palm, constitute the bulk of agricultural exports. The oil palm value chain contributes significantly to the economy of the country. The direct value added in 2017 was estimated at 357 million USD, with the highest share of the profits, 15% of the direct value added, going to farmers⁸.
- ✳ Water resources underpin the delivery of various ecosystem services. The relative abundance of the resource, comparable in Africa only to Guinea and Liberia, is shown in figure 1.



⁶ Food and Agriculture Organisation, 2017. The State of the World's Biodiversity for Food and Agriculture.

⁷ Food and Agriculture Organisation, 2017. The State of the World's Biodiversity for Food and Agriculture.

⁸ EU 2019, Palm Oil value chain analysis in Sierra Leone

- ✱ The fisheries sector is a key source of exports and currently accounts for about 12% of the country's GDP, as well as the livelihoods of over 500,000 people. The Tony Blair Institute for Global Change (TBIGC) estimates that fish has the potential to become Sierra Leone's second export after minerals and 50,000 more jobs could be created in the next 5 years if the sector is sustainably managed. Industrial fish and fishery products are traded in local, regional, and international markets, including within the sub-regional African countries of Guinea, Ghana, Senegal, Nigeria and international markets of Asia, Europe, and the USA. Annual revenues of about USD 6 million are generated from industrial fishing operations and related services⁹. The fisheries of Sierra Leone have an estimated capitalised economic value of USD 735 million and could potentially make an increased contribution to GDP under suitable conditions, over and above the current estimated level of 12%¹⁰.
- ✱ Wetlands and coastal resources in general benefit people in many ways. Freetown's mangroves, for example, provide a wide array of ecosystem services to the local population. Mangrove wood is particularly sought after for its high resistance to termites and salinity, and it is also used as fuel for fish smoking¹¹. Mangroves also address several risks linked to inland and coastal floods by creating buffer zones between the waterways and the settlements, and by strengthening banks against erosion¹².
- ✱ Across the coastal region, fishing and rice farming are the predominant livelihood activities. Fishing, particularly, provides a source of income and livelihoods for both fishers, fish processors, and fish traders, but also underlies a booming secondary economy of boat building, wood cutting, fish transportation, basket weaving, selling fishing gear, and petty trading. It is believed that around 40,000 artisanal fishers and their families operate more than 12,000 fishing boats that create up to 50,000 direct jobs in the sector¹³.
- ✱ Forests are reservoirs of the country's biodiversity, including its unique genetic resources and diverse ecosystems. The sector has provided between 9 and 13% of the GDP since 1985. Much of the activity of the tourism sector is based on forests, woodlands and their constituent wildlife and natural beauty. Although yet poorly developed and most focused on urban centres, ecotourism contributes to economic and social development, and to resource conservation. Revenues raised by the country from ecotourism are gradually running into billions of Leones annually.
- ✱ Logging represents a significant fraction of the country's current export and has the potential to increase as the years go by. Annually, about 6,000 containers of timber logs are exported by the timber export agent who pays US\$2,500 per container to the government consolidated fund as a National Revenue Authority (NRA) levy. The agent pays 10% of the NRA levy into a special account of the Ministry of Agriculture (MoAg) for reforestation and afforestation activities. Together, the levies translate to an annual sum of about US\$15 million from timber export and US\$1.5M for reforestation and afforestation¹⁴.
- ✱ A large share of the national energy demand, especially in the rural areas, is met by wood fuels (fuelwood, charcoal etc). Large volumes of timber are used for construction, furniture-making and other manufacture. Non-timber products derived from forests such as medicines, craft materials, and food promote health and wealth in rural areas. These activities create significant employment for the citizens, especially in fuelwood and charcoal production.

⁹ Turay, I., O'Donnell, C., Schaber, M., Corten, A., Sarre, A., Sei, S., Seisay L.D., Mustapha C., Kamara, M., Lamin P., and Lahai M. (2009). Sierra Leone Fisheries Resource Survey, Third Survey, 24 May to 13 June 2009. Cruise Report, EU funded Institutional Support to Fisheries Management Project (ISFM), 9ACP SL 19. Ministry of Fisheries and Marine Resources

¹⁰ Neilland et al., 2016. Assessing the potential contribution of fisheries to economic development: the case of post-ebola sierra leone

¹¹ Massaquoi, 2018. Feasibility report for improved fish smoking systems in the sierra leone coastal landscape complex. West Africa Biodiversity and Climate Change Program

¹² Environment Protection Agency, Sierra Leone (2014). Fifth National Report to the Convention on Biological Diversity. On Behalf of The Government of Sierra Leone.

¹³ USAID 2020. Coastal Climate Change Adaptation Plan for Sierra Leone

¹⁴ GoSL 2019, National Reforestation and Timber Governance Policy.

- ✱ A significant amount of employment is also created by commercial and industrial fuelwood producers, as well as companies working along the timber value chain. Likewise, a large part of the rural population of Sierra Leone depends on forest resources for basic subsistence needs, whether from farm forestry or from natural forests and woodlands. The provision of wood and non-wood forest products, ensuring food security and agricultural productivity, and the satisfaction of cultural and spiritual values all depend on environmental services from forests and woodlands.

2.4. Economic Development, Pollution, and Natural Capital Loss

Sierra Leone has pursued economic development strategies that depend primarily on intensive use of natural capital. Such strategies typically undervalue the multiple contributions of natural capital to human wellbeing and treat ecosystem services as economically invisible. This approach has given rise to overexploitation of natural capital and, as a result, the degradation and loss of natural resources, including arable land, biodiversity, and water.

- ✱ The agricultural sector is constrained by several factors including lack of improved inputs, labour shortages, and post-harvest losses. Most farmers have little or no access to proper storage or to knowledge needed for sustainable land management practices. Slash-and-burn cultivation in shifting areas with little or no external input is the predominant farming practice. This has degraded vast swathes of land, reducing soil fertility and undermining sustainable food production. Farmers also suffer from limited financial and other services in rural areas, preventing investment in improved farm inputs and implements, and undercutting the potential for green enterprise development. Lack of access to processing technologies and improved storage results in considerable food waste and increases the solid waste burden.
- ✱ Overreliance on pesticides and chemical fertilizers in agricultural production has severely degraded groundwater and reduced soil fertility and crop diversity¹⁵. Large-scale agricultural land leases have been blamed for land grabbing, forest loss, and women's vulnerability to various shocks and disturbances^{16,17}. For example, one oil palm production company, SOCFIN, entered into a 50-year land lease agreement with monoculture oil palm fields, paying landowners a one-time compensation of \$100 per acre. The agreement gave rise to prolonged protests and resistance.
- ✱ Land resources have also been exploited for housing, particularly in urban centres. The rush for housing has intensified with the growth in the number of urban residents, reaching 42.48% of the total population in 2019¹⁸. Urbanization has forced low-income groups to settle on marginal lands¹⁹. This has led to the emergence of numerous unplanned, informal settlements, and the entrapment of entire communities in conditions of vulnerability in precarious areas that are prone to landslides, mudslides, and flooding²⁰. The unplanned expansion of settlements has had rapid major impacts on land use, inevitably diminishing the capacity to adapt to extreme events²¹.

¹⁵ N.d. A rapid appraisal of agri-input markets in Sierra Leone

¹⁶ J. Baxter, "Who is Benefiting? The social and economic impact of three large-scale land investment in Sierra Leone: a cost-benefit analysis", ALLAT, July 2013.

¹⁷ The Oakland Institute, 2011. Understanding land investment deals in Africa: country report- Sierra Leone

¹⁸ <https://www.statista.com/statistics/455922/urbanization-in-sierra-leone/>

¹⁹ Allen, A., Koroma, B., Osuteye, E., and Rigon, A. (2017). Urban risk in Freetown's informal settlements: making the invisible visible. Urban Africa Risk Knowledge Briefing, No. 6. June 2017

²⁰ Koroma, B., Rigon, A., Walker, J., and Sellu, S.A. (2018). Urban Livelihoods in Freetown's Informal Settlements. Freetown: Sierra Leone Urban Research Centre

²¹ Environment Protection Agency Sierra Leone. (2017). Sierra Leone's Second National Biodiversity Strategy and Action Plan 2017-2026.



Plate 2: Landslide site in Freetown

- ✳ Turbocharged migration to urban centres has also worsened the waste management situation, with abandoned landfills and liquid waste posing major risks to land productivity and public health^{22,23}. Poor waste management, including a major lack of investment in infrastructure, is having significant impacts on local sanitation, ambient air quality, and the incidence of disease. Parts of the capital city are now considered moderately unsafe because recent air quality estimates have exceeded the maximum of 10 $\mu\text{g}/\text{m}^3$ ²⁴.
- ✳ Slash-and-burn agriculture has been the biggest threat to Sierra Leone's forests. Most of the change in forest cover over the years is a direct outcome of this approach to farming practiced by smallholders in rural areas. Recently, however, illegal logging erosion and exacerbated both the effects and the prevalence of landslides in the country²⁵.
- ✳ Indiscriminate timber extraction from forests across the country is creating openings in the tree canopy and exposing critical habitats to extreme events such as storms, winds, and heat. Trees in the Freetown Peninsula, which was once completely forested, are disappearing to make way for the growing population and the continued demand for construction wood²⁶. Services such as roads for the fast-growing local population in the capital as well as illegal settlements that have overtaken previously forested hillsides, are impacting the water catchment and the bays around the city.
- ✳ Indiscriminate timber extraction from forests across the country is creating openings in the tree canopy and exposing critical habitats to extreme events such as storms, winds, and heat. Trees in the Freetown Peninsula, which was once completely forested, are disappearing to make way for the growing population and the continued demand for construction wood²⁶. Services such as roads for the fast-growing local population in the capital as well as illegal settlements that have overtaken previously forested hillsides, are impacting the water catchment and the bays around the city.



Plate 3: Logging in the Kambui Forest Reserve (Credit: Abu-Bakar Massaquoi, 2015)

²² Pinka Sakoh, F., Yan, X. and Tran, Q. (2014). Assessment of Solid Waste Management in Freetown, Sierra Leone towards Sustainable Development. Journal of Applied Sciences, 14(22), 2909-2924.

²³ Kargbo, J.A. (2011). Sierra Leone: Environmental Health Concerns. Encyclopedia of Environmental Health. Freetown: Elsevier B.V

²⁴ <https://www.iamat.org/country/sierra-leone/risk/air-pollution>

²⁵ World Bank. (2017). Sierra Leone - Rapid damage and loss assessment of August 14th, 2017 landslides and floods in the western area. Retrieved from <http://documents.worldbank.org/curated/en/523671510297364577/Sierra-Leone-Rapid-damage-and-loss-assessment-of-August-14th-2017-landslides-and-floods-in-the-western-area>

²⁶ Cui, Y., Cheng, D., Choi, C. E., Jin, W., Lei, Y., & Kargel, J. S. (2019). The cost of rapid and haphazard urbanization: lessons learned from the Freetown landslide disaster. Landslides, 16(6), 1167-1176

- ✳ Agriculture deforests large swathes of land that fragment habitats and restrict wildlife to forest refugia. Furthermore, fuelwood collection and charcoal burning are depleting vital ecological resources required for breeding, foraging, and roosting. The long-term impacts of such habitat restrictions include restricted gene flow and impaired species dispersal capacity, which are critical for evolution and speciation. The colonisation of some ecosystems by birds is hampered by declining fallow periods and continued encroachment into forest reserves. Moreover, the recent large-scale land lease deals for palm oil and biofuel production are having enormous and long-lasting impacts on birdlife and will significantly affect other wildlife as they expand over time. These threats are compounded by wildlife trafficking which is enabled by weak anti-trafficking policies and legislation, inadequate enforcement of policies, weak penalties, and lack of data.
- ✳ Only 3% of the urban population has access to safely managed water services (compared to 69% with access to basic water services). Access to basic water has increased from 25% in 2000 to 47% in 2017 in rural areas, and from about 65% in 2000 to 72% in 2017. However, only 8% of people in rural areas and 27% have access in urban areas have access to basic sanitation²⁷. To achieve the Sustainable Development Goals for water, the current performance will need to increase by four-fold. Meeting these targets for both rural and urban water supply will require a considerable annual investment in infrastructure and capacity building, estimated at US\$164 million ²⁸.
- ✳ Mining processes are also very water-intensive, since water is used for operational activities such as transporting ore, separation of minerals through chemical processes, and dust suppression to reduce the impact on the environment and human health. Water is also used in ore processing to increase the quality and concentration of iron. Surface runoff from the mine site may cause erosion and also contain acid mine drainage. Tailings composed of silicon rock, other heavy metals and acid mine drainage can contaminate surface water and place significant strain on water supply efforts²⁹.
- ✳ Unsustainable fishing practices are a key threat to fisheries in Sierra Leone. Well drafted management laws have not curtailed bad practice because of a lack of enforcement capacity, especially over Illegal, Unregulated, and Unreported (IUU) fishing activities, which account for more than 26% of the total fish catch in Sierra Leone³⁰, and are believed to cost the country around 29 million USD annually³¹. Capacity challenges are also routinely cited as reasons for the poor surveillance of fishery waters, especially areas where industrial fishing activities take place.
- ✳ Changing consumption patterns that accompany urbanization exert further pressure on natural capital. With the rapid increase in urban and peri-urban population and increasing affluence in urban areas, diets that were predominantly cereal-based are increasingly protein-rich. This intensifies pressure on fisheries and mangrove forests used for smoking fish and boat building³².



Plate 4: Mining on the margins of the Gola Rainforest National Park (Credit: Abu-Bakar Massaquoi, 2015)

²⁷ GoSL 2017, WASH sector performance report

²⁸ Water Supply and Sanitation in Sierra Leone. Turning Finance into Services for 2015 and Beyond

²⁹ Sophie Thomashausen and Alpa Shah, "The Shared Use of the Mining-Related Infrastructure: A Case Study: Sierra Leone," Columbia Center on Sustainable Investment, Columbia University (2014).

³⁰ Belhabib, D., Sumaila, U.R. and Pauly, D., 2015. Feeding the poor: contribution of West African fisheries to employment and food security. *Ocean & Coastal Management*, 111, pp.72-81.

³¹ MRAG, 2005. Review of impacts of illegal, unreported and unregulated fishing on developing countries. London./Swann, J.(2002). *Fishing Vessels Operating under Open Registries and the Exercise of Flag State Responsibilities*. FAO, Rome.

³² Massaquoi, 2018. Feasibility report for improved fish smoking systems in the sierra leone coastal landscape complex. West Africa Biodiversity and Climate Change Program

- ✳ Mining and agricultural activities are modifying the coastal ecology to the extent that once-treasured roosting grounds are disappearing (see plate 6). The exploitation of zircon, gold, bauxite and one of the world's largest deposits of rutile in Yawri Bay has resulted in illegal discharge of wastewater and tailings into the coastal zone and placed a significant strain on local water resources³³. These mining activities cause rapid sedimentation of the estuary. Concentrations of three trace metals--Arsenic (As), Chromium (Cr) and Nickel (Ni)--in sub-tidal sediment samples from the estuary exceed levels of toxicity for sensitive fauna and flora species³⁴. Rutile mining has increased deforestation in the Sherbro River Estuary leading to the loss of 1.25 sq. km of mangrove forests. Additional mining operations already planned threaten further mangrove destruction.
- ✳ Potential expansions in large-scale rice farming in Bonthe District, and ongoing exploration for oil and gas in Pujehun District (both in the south), will have considerable adverse impacts on coastal biodiversity, water quality, and livelihoods. Urbanisation could also destroy coastal ecosystems if activities clogging shorelines with sediments from construction and refuse dumping are allowed to continue. The mass extraction of sand in coastal wetlands will aggravate the risks of coastal flooding by rapidly deepening the waters near the coast, increasing erosion, and preventing forests from regenerating³⁵.



Plate 5: Sand mining in Freetown
(credit: The New Humanitarian)

2.5. Climate Change and the future prosperity of communities

The loss of natural capital driven by current economic development approaches will be exacerbated by climate change, especially in the low-lying coastal landscapes³⁶. This is concerning in a country ranked the 23rd most vulnerable and 46th least ready to adapt to climate change in the world³⁷, and identified by the United Nations as one of the 50 Least Developed Countries (LDCs) characterised by social, economic, political, and environmental factors that pose a major challenge to the delivery of climate-resilient goods and services.

- ✳ Historical changes in the local climate include an average increase of 0.18°C per decade in the average annual temperature which now reaches 26.09°C, 0.8°C higher than in 1960³⁸. The mean annual precipitation was 2545.42mm for the period 1901 to 2016³⁹. Estimated future changes include an increase in the average annual temperature of between 1 to 2.5° by 2060⁴⁰ and a significant rise in the sea level of about 0.1 to 0.56m by 2100, relative to levels found between 1980 and 1999⁴¹. Rainfall change estimates vary widely in the different climate change scenarios, ranging from -27% to +29% by 2090 for rainfall in July, August, and September and from -19 to +33% in October, November, and December⁴².
- ✳ Climate change could disrupt food availability, reducing access and affecting quality. Food production is primarily rainfed, so any significant shift in the already intense rainfall pattern will further expose crop and land management, livestock, rural transport and storage, and food processing to extreme conditions, undermining sustainable food production. An increase in temperature by +1.30°C or more is likely to increase water requirements for crops, creating competition for water resources during the dry season and increasing the incidence of pest and disease outbreaks. The impacts of such competition and outbreaks will be more pronounced for vulnerable groups such as women and the disabled, particularly in rural communities.

³³ Akiwumi AF, Butler, RD (2008) Mining and environmental change in Sierra Leone, West Africa: A remote sensing and hydrogeomorphological study. Environmental Monitoring and Assessment 142(1-3):309-18 DOI: 10.1007/s10661-007-9930-9

³⁴ Clark, B Hutchings, K Mosler B & Brown E (2018) Sierra rutile project area environmental and social and health impact assessment: Specialist estuarine study. © Anchor Environmental Consultants https://iluka.com/docs/defaultsource/default-documentlibrary/515234_srl_area_1_geochemistry_specialist_reportfinal-20180223.pdf?sfvrsn=2

³⁵ Stearns, S. (2010). Sierra Leone working to save mangrove ecosystem. Voice of America, 28 March 2010

³⁶ Government of Sierra Leone, 2015. Intended Nationally Determined Contribution (INDC).

³⁷ ND-GAIN. 2018. "Sierra Leone Country Ranking." Notre Dame Global Adaptation Initiative. 2018. <https://gain.nd.edu/our-work/country-index/rankings/>

³⁸ McSweeney, C., M. New, and G. Lizcano. 2010. "UNDP Climate Change Country Profiles: Sierra Leone." UNDP. https://www.geog.ox.ac.uk/research/climate/projects/undp-cp/UNDP_reports/Sierra_Leone/Sierra_Leone.hires.report.pdf

³⁹ <https://climateknowledgeportal.worldbank.org/country/sierra-leone>

⁴⁰ UNDP 2012, Diagnostic analysis of climate change and disaster management in relation to PRSP III in Sierra Leone

⁴¹ Government of Sierra Leone. 2012. Second National Communication on Climate Change

⁴² Government of Sierra Leone 2018, Third National Communication of Sierra Leone to the United Nations Framework Convention on Climate Change

- ✳ Water resources are highly vulnerable to climate impacts. Erratic rainfall patterns will deepen water supply problems and engender water scarcity (see plate 6). Seasonal variations already occur with 40% of the protected water points suffering water shortages in the dry season⁴³, demonstrating that existing vulnerability is already acute. Additional pressures from mining and agriculture will affect water quality and further undermine the delivery of safely managed water services. Urban water is particularly vulnerable with the reservoir for 300,000 people now juggling services among 1.5 million residents in the city. Climate change will bring operational challenges and risks for a water sector that already faces severe water quality and sanitation problems. This could augment the local disease burden, increase the incidence of Malaria, which is responsible for 2,240,000 outpatient visits, and cause more deaths every year⁴⁴.
- ✳ Climate change will have especially significant impacts on coastal ecosystems and fisheries. Sea level rise, for instance, will cause the loss of coastal ecosystems due to flash floods, and give rise to saline intrusions in the dry season (see plate 7). Erosion is already a significant challenge in some coastal areas in Sierra Leone where the coastline is shifting by about 4 to 6 meters a year⁴⁵. At the same time, sandy beaches along the coastline are threatened by climate change (aggravated by mining and marine litter) These habitats are being clogged by a rising trend of sea weeds, rendering them ecologically redundant for both fauna and flora.
- ✳ Climate change has the potential to distort a range of ecosystem processes and cause permanent changes to biodiversity and habitats. In the upland areas, disaster events such as the mudslide of August 2017 which displaced 6000 people and claimed nearly 2000 lives in Freetown, and which caused a loss valued at SLL 237.37 billion (USD 31.65 million)⁴⁶, will also become more likely with increased rainfall in the coming years⁴⁷. If no action is taken, a total of 26.4km² is estimated to be lost to the sea. A World Bank analysis estimates that by 2050, sea level rise alone will cause significant losses and damage valued at \$46.8 million, with consequences for beachfront structures and beach tourism⁴⁸.



Plate 6: Jelly cans of water for sale, a result of water stress in Yeliboya, Kambia District (Credit: Abu-Bakar Massaquoi, 2017)



Plate 7: Flood-induced displacement in Sasiyek and surrounding islands in Kambia District (Credit: Abu-Bakar Massaquoi, 2017)

2.6. Environmental Resources Management: Urgently Needed Reforms

Sierra Leone urgently needs to take policy, institutional, and legal measures, and reforms to a new level if it is to win the battle to reverse the losses accrued from mismanagement of environmental resources.

- ✳ To overcome the adverse trends in agriculture, for instance, an urgent change in food production practices and use of land resources is critical. What is needed is a shift from high chemical inputs and mono-cropping to diversified agroecological systems that yield multiple goods and services. Sustainable land management that integrates a diversity of crops and land uses will contribute to achieving national targets set for Land Degradation Neutrality (LDN) by 2030. Improving soil management practices, protecting water sources in forest and non-forest areas, and reducing the excessive use of chemicals in farming and mining, will ensure efficient water use increase supply.

⁴³ Ministry of Energy and Water Resources (2012). Sierra Leone Waterpoint Mapping.

⁴⁴ USAID 2018. President's Malaria Initiative, Country Operational Plan. <https://www.pmi.gov/docs/default-source/default-document-library/malaria-operational-plans/fy19/fy-2019-sierra-leone-malaria-operational-plan.pdf?sfvrsn=6>

⁴⁵ USAID 2019. "Climate Change Adaptation Plan: A Priorities Plan for the Sierra Leone Coastal Landscape Complex

⁴⁶ World Bank Group (WBG). 2017. Sierra Leone rapid damage and loss assessment

⁴⁷ World Bank Group (WBG). 2017. Sierra Leone rapid damage and loss assessment

⁴⁸ World Bank, 2018. Sierra Leone Multi-city Hazard Review and Risk Assessment. Final Report, Vol 1-5. Technical Methodology and Summary of Results.

Table 1: National LDN targets

Target	Description
1	By 2030, promote reforestation through agro-forestry and sustainable land management practices, and the implementation of alternative livelihood schemes to restore 175 Sq. Km of originally forested land in 2000 that has changed or lost its forest cover by 2010.
2	By 2035, ensure the rehabilitation of 12,237 sq.km of land area suggested as having declined, shown early signs of decline, or stable but stressed conditions in net productivity between 2000 and 2010. This includes 353 sq.km of total land area having declined in land productivity, 2,161 sq. km showing early signs of decline, and 9723 Sq. Km showing stable but stressed conditions between 2000 and 2010.
3	By the year 2030, improve the productivity of 1,864 sq.km of land area covered by shrubs, grasslands, and sparse vegetation through controlled grazing, avoiding overgrazing, and adopting wild bush fire management practices
4	By 2030, improve the productivity of 8,464 sq.km of croplands through sustainable land management practices, agro-forestry, and the establishment of green corridors in large scale commercial farms.
5	By 2035, implement wetlands conservation measures to improve 330 Sq. Km of wetlands showing decline, early signs of decline or stable but stressed conditions in net land productivity dynamics
6	By 2023, implement land reclamation and rehabilitation programmes in the dredged mined-out areas degraded by Sierra Rutile mining Company

- ✳ To rise to the challenge, the country has started institutional reforms to give greater authority to key institutions, consolidate their functions, and improve coordination with other sectors. New policies, laws, and plans are being developed and implemented by the different sectors (see table 2), and new local and international partnerships are emerging in support of natural resources management. To be effective and efficient, these policies and programs need to be more cohesive and complementary. The transition must involve prioritizing the perspective of people on the ground, facilitating dialogue, and generating data.

Table 2: National laws, policies, and plans for environmental governance

Legislations, policies and plans	L	W1	F1	W2	F2	W3
Water and Sanitation Policy (2010)						
Reforestation and Timber Governance Policy (2020)						
National Disaster Management Agency Act (2020)						
Sierra Leone Water Company Act (2017)						
National Water Resources Management Agency Act (2017)						
Sierra Leone Meteorological Agency Act (2017)						
National Protected Area Authority and Conservation Trust Fund Act (2012)						
Statutes relating to land law (1960, 1961)						
Electricity and Water Regulatory Commission Act (2011)						
Bumbuna Watershed Authority and Bumbuna Conservation Area Act (2008)						
Environment Protection Agency Act (2008; amended in 2010)						
Fisheries (Management and Development) Amendment Act (2007)						
Environment Protection Act (2000)						
Wildlife Conservation Act (1972)						
Forestry Policy (2010)						
Draft Wildlife Conservation Act (2015)						
Draft Forestry Act (2015)						
Draft Wetlands Conservation Act (2015)						
Forestry Act (1988)						
National Tropical Forestry Action Plan (1990)						
National Environment Policy (1992)						
Coastal Climate Change Adaptation Plan (2019)						
National Adaptation Plan Framework (2019)						
National Adaptation Programme of Action (2007)						
Climate Change Communications Strategy (2020)						
Nationally Determined Contribution (2015)						
Initial National Adaptation Plan						
National Land Policy (2015)						

Legend: land-related (L or Red); water-related (W1 or Yellow); fisheries-related (F1 or Green); Wetland-related (W2 or Blue); Forest-related (F2 or Violet); Wildlife-related (W3 or Navy)

- ✱ Data is a major limitation for the required transition. Data collection about natural capital has been sporadic and often driven more by international surveys and donor requirements than by national planning processes. As a result, any attempt to understand the role of natural resources in the achievement of sustainable development is made difficult by inconsistencies in the information available in multiple, often dated, reports prepared with widely differing methodologies. Going forward, the government and its partners should give a high priority to improving the collection and analysis of data about natural capital and environmental impacts.
- ✱ Resource mobilization should be prioritized as official development assistance and conservation projects funded by the government are the main sources of investment in natural capital. Frontline environmental agencies need human and financial resources for monitoring activities and more executive authority to implement strong regulations⁴⁹.
- ✱ There is also a critical need for greater coordination among international, regional, and national actors to achieve policy objectives under related global agreements⁵⁰. Key institutions have a responsibility to reorient their foci and guide the changes required to protect and conserve natural resources.

Table 3: Key institutions responsible for natural resources management

Institutions	L	W1	F1	W2	F2	W3
Ministry of the Environment and Climate Change						
Forestry Division						
National Protected Area Authority						
Ministry of Fisheries and Marine Resources						
Environment Protection Agency						
Ministry of Water Resources						
National Disaster Management Agency						
National Water Resources Management Authority						
Sierra Leone Meteorological Agency						
Ministry of Agriculture						
Ministry of Lands and Country Planning						
National Minerals Agency						
Ministry of Mines and Mineral Resources						
Ministry of Fisheries and Marine Resources						

Legend: land-related (L or Red); water-related (W1 or Yellow); fisheries-related (F1 or Green); Wetland-related (W2 or Blue); Forest-related (F2 or Violet); Wildlife-related (W3 or Navy)

⁴⁹ Koroma, B., Rigon, A., Walker, J., and Sellu, S.A. (2018). Urban Livelihoods in Freetown's Informal Settlements. Freetown: Sierra Leone Urban Research Centre

⁵⁰ Munro, P. G. (2009). Deforestation: constructing problems and solutions on Sierra Leone's Freetown Peninsula. *Journal of Political Ecology*, 16(1), p. 104-122.

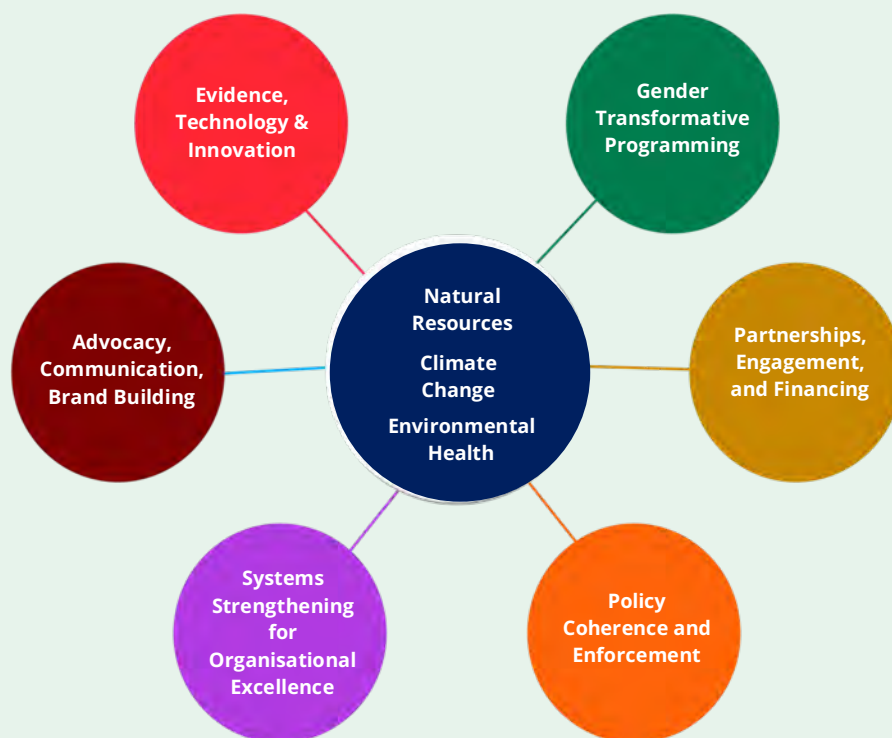


3. Directions of Change: The 3x6 Framework

3.1. Introduction

The levers for transformative programme delivery presented in the next section are motivated by 3 pillars or foundational (core) programmes of work. Each of them will be achieved through 6 enablers or supporting (sub) programmes of work. This section articulates how the integration of both programmes of work contributes to our vision and purposes for 2030.

Fig. 2: Key components of the EPAT 3x6 Framework



3.2. Foundational Programmes of Work (Pillars)

The levers for transformative programme delivery presented in the next section are motivated by 3 pillars or foundational (core) programmes of work. Each of them will be achieved through 6 enablers or supporting (sub) programmes of work. This section articulates how the integration of both programmes of work contributes to our vision and purposes for 2030.

Table 4:
Impact areas
associated with
foundational
programmes of work

Pillars	Associated impact areas	Linkages	
		GoSL priorities	SDG
Natural Resources	<ul style="list-style-type: none"> Resource conflicts and rights Natural resources management and institutions Sustainable value chains 	<ul style="list-style-type: none"> Feed Salone Human Capital Development 	14 LIFE BELOW WATER
			15 LIFE ON LAND
			12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Climate Change	<ul style="list-style-type: none"> Climate change risk measurement Climate resilience and adaptation Low-emissions development Disaster risk management 	<ul style="list-style-type: none"> Feed Salone Human Capital Development Revamping Public Service Architecture 	13 CLIMATE ACTION
			7 AFFORDABLE AND CLEAN ENERGY
Environmental Health	<ul style="list-style-type: none"> Chemicals and pollution prevention Resource efficiency and circular economy Occupational Health and safety 	<ul style="list-style-type: none"> Feed Salone Human Capital Development Revamping Public Service Architecture Tech and Infrastructure 	3 GOOD HEALTH AND WELL-BEING
			12 RESPONSIBLE CONSUMPTION AND PRODUCTION



3.2.1. Natural Resources Pillar

Natural resources like minerals, forest wealth, agrobiodiversity, water resources, wildlife, and rich traditional systems are essential for human wellbeing, because they are a key source of food and livelihoods and enable a growing range of social and economic activities. However, in Sierra Leone, challenges like shrinking common resources, inequalities, erratic climate variations, food and nutritional insecurities, biodiversity loss, and invasive technology, and expansion of human activity, have grown increasingly pronounced. What is urgently needed is a deeper understanding and characterisation of how to best protect, sustainably manage, and restore natural and modified ecosystems to address current challenges effectively and adaptively. This pillar explores the knowledge systems, values, meanings, practices, behaviours, institutional arrangements, and governance structures that can contribute to fair, equitable, and sustainable natural resource futures. Interventions address four main thematic areas:

- ✱ **Resource conflicts and rights**, to develop insights into how people construct and implement policies and laws concerning natural resources and the environment; understand the different ways by which communities create, understand, struggle over, and resolve environmental concerns; and explore the faces and drivers of inequality and pathways to fairer and more just distribution of benefits. This sub pillar also seeks and social, ecological, and institutional dimensions.
- ✱ **Natural resources management and institutions**, to identify and seek constructive engagement with the full range of actors and communities impacting ecosystems and assess their strengths and challenges in leading governance efforts.
- ✱ **Sustainable value chains**, to identify barriers and pathways to increasing productivity, employment, and value addition in food systems, while protecting and enhancing natural resources, improving livelihoods, enhancing local resilience, and adapting governance to new challenges.

Table 5: Interventions under the natural resources pillar

No.	Interventions	Outcome targets	Progress markers	Boundary partners
NR001	Develop a State of the Environment Report (SoER)	National assets are valued, monitored, and sustainably managed	Number of MDAs and CSOs using environmental statistics in the SoER generated by the Agency	MDAs, CSOs
NR002	Produce a State of the Marine Environment Report (SoMER)	National assets are valued, monitored, and sustainably managed	Number of MDAs and CSOs using environmental statistics in the SoMER generated by the Agency	MDAs, CSOs
NR003	Develop Participatory Resource Optimization Plans (PROPs) to improve governance based on SoER and SoMER	Productive land and seascapes are sustainably managed	Number of MDAs and CSOs adopting PROPs developed by the Agency	Landowners, traditional authorities, farmers, forest managers, fishers etc
NR004	Design 10 nature-based solutions to implement PROPs developed	Solutions scaled up for sustainable management of natural resources	Number of people impacted by NbS implemented. Number of Ha of landscapes under sustainable management due to NbS activities	MDAs, CSOs, Academia, development partners
NR005	Conduct a Strategic Environmental Assessment (SEA) of the Agriculture Sector	Food systems support biodiversity and environmental sustainability	Number of MoAg initiatives using knowledge and data produced by the Agency	MDAs
NR006	Address environmental issues along key commodity chains in support of the Feed Salone Strategy (based on the SEA)	Sustainable value chains are adopted Product comparability is enhanced	Number of sustainable value chains enhanced Number of farmers benefiting from value chains supported	Farmers, extension workers
NR007	Implement environmental recommendations in the One Health Integrated Pest	Food systems support biodiversity and	Number of recommendations addressed	MDAs, Academia, CSOs, One

	Management Plan in support of the Feed Salone Strategy	environmental sustainability		Health Network
NR008	Produce literature and field assessments of assets, vulnerabilities, and structures of key resource value chains (sand mining, artisanal mining, charcoal burning woodfuel cutting, etc) to develop terms of work for NEECoM	Consumer awareness and behaviours have shifted towards products and services of lower environmental footprints.	Number of reported issues addressed	Sand miners, charcoal burners, wood sellers, land grabbers, headmen, chiefs
NR009	Establish a National Environmental Enforcement Coordination Mechanism (NEECOM), its sub-structures, and develop action plans	All of government approach contributes to inclusive risk knowledge and management	Number of communities accessing information and enforcement support Number of reported acts of environmental crime resolved	Sand miners, charcoal burners, wood sellers, land grabbers, headmen, chiefs
NR010	Advocate for alternatives to wood-based scaffolding in construction	Campaigns are organized to offer alternatives to wood-based scaffolding	Number of campaigns organized	Fuelwood vendors, construction workers
NR011	Strengthen mine rehabilitation planning activities	Productive land and seascapes are sustainably managed	Number of mined- out pits reclaimed	Miners, mine owners, companies
NR012	Support the implementation of the NBSAP and other key components of the Global Biodiversity Framework	Policies and plans are aligned with international and national commitments for biodiversity conservation	Number of plans and policies that are aligned with international and national commitments	MDAs, Academia
NR013	Implement the National Plastic Policy	Plastic pollution is reduced Consumer awareness and behaviours have shifted towards products and services of lower environmental footprint	Number of people showing increased preference for products and services of lower footprint	Scavengers, waste management companies
NR014	Promote mercury reduction in Artisanal and Small-scale Gold Mining (ASGM)	All of government approach contributes to inclusive mercury risk knowledge and management	Number of MDAs and CSOs using maps generated by the Agency	MDAs, CSOs, miners, mine owners
NR015	Support oceans innovation and marine resources management (spatial planning, etc)	Productive seascapes are sustainably managed	Number of MDAs and CSOs using data generated by the Agency	Fishers, farmers
NR016	Coordinate water resource scenario planning activities	Scenario plans for watershed management are developed	Number of MDAs and CSOs using plans generated by the Agency	CRS Water Fund members, Water companies, MDAs

3.2.2. Climate Change Pillar

Climate change is the foremost challenge to achieving global sustainable development and could drag many people into grinding poverty because it continues to radically alter how poor countries pursue economic development. Sierra Leone already suffers from serious environmental problems, including deforestation, wetland degradation, insect infestation, and soil erosion. However, efforts to deal with these problems have been handicapped by a real failure to understand their nature and potential solutions. This makes protecting the environment and addressing climate change in the country an issue that needs to be studied more carefully and mainstreamed into a wider strategy for sustainable national development. This pillar shapes new and emerging research frontiers to create knowledge to shape development policy and practice for climate change management and innovation. Interventions address four main thematic areas:

- ✧ **Climate change risk assessment**, to inform the prioritization of climate investment and action by identifying current climate hazards and determining the likelihood of future hazards and their potential impacts for communities and cities.
- ✧ **Climate resilience and adaptation**, to support the government and communities in developing solutions and implementing actions to respond to current and future climate change impacts.
- ✧ **Low emission development**, to build the capacity of government agencies and city administrations for measuring and reporting emissions reductions, developing and implementing low-carbon strategies, and mobilising climate finance.
- ✧ **Disaster risk management**, to drive systematic efforts to analyse and reduce the causal factors of disasters and provide policy guidance for prioritized action to ensure communities are prepared, protected, and resilient.



Table 6: Interventions under the climate change pillar

No.	Interventions	Outcome targets	Progress markers	Boundary partners
CC001	Assess national climate governance attributes	Polymaking and decision making for climate action are informed by the latest science-based analysis	Number of assessments conducted	MDAs, Development partners, CSOs
CC002	Prepare MEA implementation status report	New knowledge shapes whole-of-government approach to MEA implementation	Number of MDAs and CSOs using data and knowledge generated by the Agency to integrate national and international commitments into plans and projects	MDAs, CSOs
CC003	Establish a Multilateral Environmental Agreement Implementation Coordination Committee (MICCom)	Institutional capacity to adopt and act on national and international commitments is enhanced	Number of MDA plans that integrate MEA commitments within budgets and programme delivery frameworks	MDAs
CC004	Develop citywide and state-wide GHG inventories	Polymaking and decision making for climate action are informed by the latest science-based analysis	Number of MDAs and CSOs using inventory data generated by the Agency	CSOs, MDAs
CC005	Establish a resource hub for climate mitigation and loss and damage	Resilient climate systems are upscaled	Number of MDA plans and projects that integrate climate mitigation and loss and damage data and knowledge within budgets and frameworks	MDAs
CC006	Develop sector-specific vulnerability assessments	Polymaking and decision making for climate action are informed by the latest science-based analysis	Number of research and practice-based initiatives undertaken to advance data, evidence, and knowledge	MDAs
CC007	Implement climate transparency activities	Transparency and accountability of governmental and non-governmental actions are strengthened	Number of climate transparency activities supported	MDAs, NGOs
CC008	Train Environmental Journalists in climate reporting	Transparency and accountability of governmental and non-governmental actions are strengthened	Number of Environmental Journalists trained	SLAJ, key MDA PROs
CC009	Implement research-to-action activities on the nexus of climate change and migration	Resilient climate systems are upscaled	Number of research and practice-based initiatives undertaken to advance data, evidence, and knowledge	farmers, fishers, traditional leaders
CC010	Prepare climate change handbooks for children	Pupils and teachers have access to climate change handbooks	Number of pupils and teachers using handbooks as a resource for nature club activities	Pupils, teachers
CC011	Implement Early Warning and Climate Information Systems (EWCIS) in support of the Feed Salone Strategy	Resilient climate systems are upscaled	Proportion of total farming population with access to EWCIS	Farmers
CC012	Climate-proof agriculture and aquaculture initiatives in the Feed Salone Strategy	Resilient climate systems are upscaled	Number of initiatives climate-proofed	Fishers, farmers, fish vendors
CC013	Climate proof transportation and energy projects	Resilient climate systems are upscaled	Number of projects climate-proofed	Energy providers, energy offtakers
CC014	Develop a Long-term Low Emissions Development Strategy (LT-LEDS)	LT-LEDS enhances ambitions in the NDC	Number of new additional NDC activities implemented	MDAs, CSOs, community leaders
CC015	Support national REDD-readiness programmes	REDD-readiness is completed on time and carbon trading possibilities are explored	Types of REDD-readiness activities supported Number of organizations using REDD+ data and knowledge generated	Farmers, forest managers, MDAs

3.2.3. Environmental Health Pillar

Current patterns of growth in Sierra Leone are not only unsustainable, but also deeply inefficient and highly unaffordable. Population growth, urbanisation, and the resulting increase in demand for land, food, and other natural resources have driven increased land degradation and deforestation, and exacerbated agrochemical use and water pollution. Despite these issues, there is limited evidence about how to green grow, what obstacles need to be addressed including how to avoid getting locked into unsustainable paths to generate immediate local benefits, and what strategy for and scale of growth would be appropriate. Research is needed to help communities and the country transition to an economy that is low carbon, efficient and clean in production, but also inclusive in consumption and outcomes, based on resilience, circularity, collaboration, and interdependence. The goal is to shape an inclusive green economy that must provide not only for jobs and income, but also for health, the environment, and our future. This pillar provides a collaborative space to develop insights into how to address complex sustainability challenges by drawing on different perspectives at the local and national levels. Interventions address three main thematic areas:

- ✱ **Chemical safety and pollution prevention**, to protect the environment by conserving and protecting natural resources while strengthening economic growth through more efficient production in industry and less need for households, businesses, and communities to handle waste. This encapsulates actions to increase efficiency in energy use, use environmentally benign fuel sources, reduce the use of water and chemical inputs, use less environmentally harmful pesticides, cultivate crop strains with natural resistance to pests, etc.
- ✱ **Circular economy and resource efficiency**, to identify and evaluate the impacts of resource-efficient, circular economy policies and provide policy guidance on and highlight policy opportunities for facilitating resource efficiency and the transition to a circular economy.
- ✱ **Occupational Health and safety**, to develop and implement strategies and regulations aimed at limiting hazards that could lead to physical or mental harm now or in the future.


Table 7: Interventions under the environmental health pillar

No.	Interventions	Outcome targets	Progress markers	Boundary partners
EH001	Develop a national plan for children's environmental health (focus on Lead Poisoning)	Pollution prevention action is supported	Number of MDAs developing plans using statistics generated by the agency	MDAs, children's groups, CSOs
EH002	Develop annual country profiles on children's environmental health	Pollution prevention action is supported	Number of profiles generated	One Health Platform, MDAs, CSOs
EH003	Prepare indoor air quality handbooks for children	Pollution prevention action is supported	Number of pupils and teachers learning about indoor air pollution	Pupils, teachers
EH004	Train technicians in chemicals safety techniques	Pollution prevention action is supported Use of harmful chemicals, products, and processes is reduced in key sectors	Number of technicians trained	Technicians, trainers
EH005	Implement regional EHS plans with councils.	Pollution prevention action is supported Land-based sources of pollution are reduced	Number of councils developing plans using statistics generated by the agency	Councilors, DHMTs
EH006	Document and disseminate best practices in healthcare waste management	Best practices are widely disseminated	Number of health workers with improved knowledge in healthcare waste management	Health workers, DHMTs
EH007	Develop technical standards for the Refrigeration and Air Conditioning (RAC) subsector	Use of harmful chemicals, products, and processes is reduced in key sectors	Number of MDAs developing and applying standards based on data and knowledge generated by the agency	MDAs
EH008	Develop guidelines for managing pollution and chemical (hazardous) events	Use of harmful chemicals, products, and processes is reduced in key sectors	Number of MDA and CSO frameworks based on data and knowledge generated by the agency	MDAs, CSOs, OneHealth Partners
EH009	Develop a training manual for RAC certification and License training programmes	Use of harmful chemicals, products, and processes is reduced in key sectors	Number of new licensees trained	RAC Licensees, licensed trainers
EH010	Develop and implement a Kigali HFC phase-down plan	National policy has shifted towards the sound management of chemicals and waste	% of HFC phased down in practices and products	MDAs, revenue collectors, importers, technicians

3.3. Supporting Programmes of Work (Enablers)

Each of the supporting programmes of work is described in greater detail in the subsections that follow. The respective impact areas show the themes (impact or result areas) on which focus is placed, and through which enabling conditions for successfully delivering all three foundational programmes of work will be created.

Table 8: Impact areas associated with enabling conditions.

Enabling conditions	Associated impact and sub-impact areas	Linkages	
		GoSL priorities	SDGs
Evidence, Technology, Innovation	<ul style="list-style-type: none"> Policy initiatives and advice Environmental statistics Tech and innovation Urban systems transformation 	<ul style="list-style-type: none"> Feed Salone Human Capital Development Revamping Public Service Architecture Tech and Infrastructure 	   
Gender Transformative Programming	<ul style="list-style-type: none"> Gender financing Gender mainstreaming Gender statistics 	<ul style="list-style-type: none"> Human Capital Development Revamping Public Service Architecture Tech and Infrastructure 	
Advocacy, Communications, and Brand building	<ul style="list-style-type: none"> Environmental communications Community outreach Corporate partnerships 	<ul style="list-style-type: none"> Feed Salone Revamping Public Service Architecture Tech and Infrastructure 	
Systems Strengthening for Organizational Excellence	<ul style="list-style-type: none"> Finance and accounts Audits HRM Administration 	<ul style="list-style-type: none"> Human Capital Development Revamping Public Service Architecture 	
Partnerships, Engagement, and Finance	<ul style="list-style-type: none"> Business development Donor relations Organizational effectiveness Grants management 	<ul style="list-style-type: none"> Feed Salone Human Capital Development Revamping Public Service Architecture Tech and Infrastructure 	 
Policy Coherence and Enforcement	<ul style="list-style-type: none"> Civil and criminal enforcement Regions and outposted offices Environmental monitoring and surveillance Licensing and permitting 	<ul style="list-style-type: none"> Feed Salone Human Capital Development Revamping Public Service Architecture Tech and Infrastructure 	

3.3.1. Evidence Technology and Innovation (ETI)

A fundamental barrier to a successful programme delivery at the Agency is the complete lack or poor quality of data. Within this context, this strategy aims to catalyze swift momentum for evidence generation and create accelerated pathways for integration into programming. The focus is on the development of tools and metrics to estimate and track impacts across institutional, social, economic, and environmental dimensions. Likewise, technology innovation and deployment are critical to transform the pace and scale of evidence-based interventions.

Table 9: Proposals for evidence, technology, and innovation

No.	Interventions	Outcome targets	Progress markers	Boundary partners
ETI01	Develop and implement a Research and Innovation Framework	Sound science, data, and knowledge are generated and shared	Number of national plans and strategies that integrate environmental statistics produced by the agency	Academia, MDAs
ETI02	Organize annual Collaborating, Learning and Adapting (CLA) workshops	Sound science, data, and knowledge are generated and shared	Number of CLA workshops organized	Partners, MDAs
ETI03	Publish annual lessons learned and best practice briefs	Annual lessons, best practices, and success stories are documented and disseminated	Number of lessons and best practices/success stories disseminated	MDAs
ETI04	Organize a terminal outcome harvesting workshop and publish key outputs	Sound science, data, and knowledge are generated and shared	Number of participants at outcome harvesting workshop	MDAs, CSOs, donor agencies
ETI05	Produce annual pulse survey reports	High quality, effective, and efficient programme performance achieved	Number of survey informants engaged	MDAs
ETI06	Implement a Student Research Internship Scheme (SRIS)	Sound science, data, and knowledge are generated and shared	Number of research papers that integrate environmental statistics produced by the agency	Academia, MDAs
ETI07	Produce country desk review reports on the 3 pillars of the strategy	High quality, effective, and efficient programme performance achieved	Number of national plans and strategies that integrate knowledge produced by the agency	MDAs, Academia
ETI08	Organize annual research seminars	Sound science, data, and knowledge are generated and shared	Number of people attending research seminars disaggregated by profession and sex	Graduate students, Academia
ETI09	Implement a Project for Urban Living Labs (PULL) to foster innovations for urban transformation (e.g., interventions on e-mobility)	Resource efficiency and circularity in key sectors are improved	Number of research and practice-based initiatives undertaken to advance data, evidence, and knowledge	Research Institutions, MDAs, NGOs, Municipality Councils
ETI10	Establish an Urban Resilience Hub (URHub)	Institutional capacity to adopt and act on national and international commitments is enhanced	Number of councils developing and implementing climate resilience plans	MDAs, NGOs, Academia, Municipality Councils
ETI11	Establish Community Resilience Resource Centres (C2RC)	People living in informal settlements and other disaster prone communities find centres useful	Number of men and women in disaster prone communities that find centres useful	Community Disaster Management Committees, MDAs
ETI12	Launch Virtual Research Advisory Groups to support multidisciplinary research at the Agency	VRAGs support research activities implemented by the agency	Number of VRAG- supported activities supported	Research Institutes, think tanks, MDAs, Academia

ETI13	Establish a pilot eco-friendly supermarket	Pilot ecofriendly supermarket is established	Number of people using supermarket services	MDAs, CSOs
ETI14	Organize annual youth climate innovation fairs	Youth climate innovation ideas are identified and incubated	Number of youth innovation projects registered with the UNDP Accelerator Hub	Youth groups, CSOs
ETI15	Design and digitize a Licensee Compliance Tracker	LCT is effective and efficient	Number and types of new data entries recorded in a year	Licensees
ETI16	Establish a digitized Grievance Redress System	Complaints are reduced by 80%	Number of reported grievances (occupational and individual) resolved	MDAs, CSOs, EIA licensees, EPA staff
ETI17	Publish 4 th National Communications	Polymaking and decision making for climate action are informed by the latest science-based analysis	Number of research and practice-based initiatives undertaken to advance data, evidence, and knowledge	MDAs, Private sector, CSOs
ETI18	Prepare a National Pollutant Inventory (NPI)	Sound science, data, and knowledge are generated and shared	Number of research and practice-based initiatives undertaken to advance data, evidence, and knowledge	MDAs, Academia
ETI19	Develop national profiles for key pollutants and chemicals (based on NPI)	National advocacy catalyzes the phase- out of most polluting products and practices	Number of profiles generated	MDAs and Local Authorities
ETI20	Assess HR needs for environmental health and safety at local government level	HR needs for environmental health are assessed	Number of councils developing and implementing climate EHS plans based on data and knowledge generated by the Agency	Councilors, healthcare workers
ETI21	Conduct risk assessment for toxic chemicals used in gold mining and Agriculture	Risk assessments are conducted	Number of risk assessments conducted	Academia, MDAs, Local Authorities
ETI22	Establish an environmental e- library	e-library services are accessible to university students and MDAs	Number of students and MDA staff with access to e-library resources	University students, MDAs
ETI23	Revise and digitize activity- specific ESHIA forms and procedures	Time for reviewing ESHIAs is halved	Number of ESHIA applications approved in a year	Companies, MDAs, international partners
ETI24	Community mapping for disaster risk reduction and management	Multiple hazards and disaster risks are mapped Community disaster preparedness is increased	Number of communities implementing DRR plans based on evidence and knowledge generated by the agency	MDAs, Communities

3.3.2. Gender Transformative Programming (GTP)

Another important determinant of success is gender-responsive programming, to ensure the gendered elements of this strategy achieve the desired speed and scale for implementation, by redressing gender inequalities, removing structural barriers, and empowering marginalized and vulnerable populations. This means working for changes in laws and policies, systems and services, distribution of resources, and behaviours and practices

Table 10: Proposals for gender-transformative programming

No.	Interventions	Outcome targets	Progress markers	Boundary partners
GTP01	Preparation of collaborative, gender-responsive project proposals	Number of community and policy level projects that address gender equality	% expenditure on programming with a focus on gender	Development Partners, Academia
GTP02	Implement a gender-sensitive Student Research Internship Scheme (SRIS)	Student dissertations include gender considerations	Number of student dissertations that address gender inequality.	University students
GTP03	Establish Community Resilience Resource Centres (C2RC)	Number of centres established	Number of women and women's groups benefiting from services at each centre	Women groups, CSOs
GTP04	Support a youth nature photography and video competition	Female journalists have effective skills for environmental communication	Number of female journalists with skills for environmental communication	Female journalists, Youth CSOs
GTP05	Train Environmental Journalists in climate reporting	Female journalists can report on climate transparency efforts	Positive shift in public opinion, attitudes, and actions because of training	Environmental journalists
GTP06	Prepare and popularize climate mainstreaming guidelines	Number of gender mainstreaming tools developed	Number of tools introduced that support gender mainstreaming	MDAs, CSOs
GTP07	Develop and disseminate gender guidelines for natural resources management	Number of gender mainstreaming tools developed	Number of tools introduced that support gender mainstreaming	MDAs
GTP08	Advocacy for policy reforms on gender equality in Artisanal and Small-scale Mining (ASM)	Number of gender advocacy tools developed	Number of tools introduced that support gender advocacy	Miners, mine operators, traditional authorities
GTP09	Support women's cooperatives: Micro, Small, and Medium Enterprises & inclusive microfinance	Innovative financing tools are introduced to empower women and women's cooperatives	Number of women and women's cooperatives benefiting from the innovative financing tools	SMEs, MDAs



3.3.3. Advocacy, Communications, and Brand building (ACB)

Learning gained through the implementation of this strategy, will provide a crucial insight into high potential opportunities for the Agency and its partners to catalyze advocacy, public engagement, visibility. In this regard, the strategy holds promise for generating ambitious cross-sectoral learning impacts, which are conducive for fostering partnerships with a wide range of stakeholders and building a visible and reputable local and global brand for the Agency.

Table 11: Proposals for advocacy, communications, and brand building

No.	Interventions	Outcome targets	Progress markers	Boundary partners
ACB01	Develop a brand building kit	Visibility of the Agency is enhanced	EPA's increased influence as per 1% of mentions in top-tier media	Mobile Network Operators (MNO)
ACB02	Implement corporate- sponsored activities (GreenerGuest, GreenRun Marathon, EcoMurals, eBillboards, Adopt-a-Street)	Private sector financial flows contribute to environmental action	Number of corporate partnerships brokered	Corporate partners
ACB03	Disseminate lessons learned & best practice briefs	Institutional capacity to adopt and act on national and international commitments is enhanced	Number of lessons, best practices, and success stories disseminated	Public, MDAs, CSOs
ACB04	Disseminate project-related fact sheets	Societal choices have shifted towards sustainable lifestyles	Positive shift in public opinion, attitudes, and actions because of fact sheets	Public, MDAs, CSOs, Communities
ACB05	Disseminate e-newsletters	Societal choices have shifted towards sustainable lifestyles	Positive shift in public opinion, attitudes, and actions because of newsletters	Public, MDAs
ACB06	Produce and disseminate short videos (including a docuseries on the environment)	Societal choices have shifted towards sustainable lifestyles	Positive shift in public opinion, attitudes, and actions because of videos	Public, MDAs
ACB07	Support School Nature Clubs activities	Societal choices have shifted towards sustainable lifestyles	Positive shift in pupils' opinion, attitudes, and actions because of nature clubs	School Nature Clubs
ACB08	Organize stakeholder forum events	Institutional capacity to adopt and act on national and international commitments is enhanced	Number of partners benefiting from knowledge resources generated by forum events Number of dialogue mechanisms created	MDAs, CSOs, donor agencies
ACB09	Organize quarterly policy and project dialogues	Societal choices have shifted towards sustainable lifestyles	Number of tailored knowledge products made available to stakeholders and partners	MDAs, CSOs, donor agencies
ACB10	Organize radio and TV talk shows	Societal choices have shifted towards sustainable lifestyles	Positive shift in public opinion, attitudes, and actions because of talk shows	Media Houses, MDAs
ACB11	Support an Environmental Journalist photography and short video contest	Environmental journalists have skills for environmental communication	Number of journalists	Environmental journalists
ACB12	Organize a national campaign on Lead Poisoning	National advocacy catalyzes the phase- out of polluting products and practices	Positive shift in public opinion, attitudes, and actions because of campaign	School children, paint vendors, paint manufacturers
ACB13	Organize model Conferences of Parties (COPs) on climate change, environmental health and biodiversity conservation	Model COPs stimulate child- oriented climate actions and decision-making	Number of children participating in model COPs	School pupils, teachers

3.3.4. Systems Strengthening for Organizational Excellence (SSOE)

A systemic challenge with resource mobilization and organizational effectiveness is the limited capacity of the Agency to robustly design and manage interventions. There are pervasive capacity gaps for developing high impact projects, maximizing the robustness of financial systems, and developing human resources. Systems strengthening, therefore, holds a promise for developing institutional mechanisms that can enable a smooth flow of operations, enrich staff competencies, and improve the way we conduct business.

Table 12: Proposals for systems strengthening.

No.	Interventions	Outcome targets	Progress markers	Boundary partners
SSOE1	Create an organization-wide dashboard for programme management	High quality, effective, and efficient programme performance achieved	% of project activities rated good and above	EPA staff
SSOE1	Develop and operationalize a MEL Strategy	High quality, effective, and efficient programme performance achieved	% of project activities rated good and above	EPA staff
SSOE2	Organize annual project quality review summits	High quality, effective, and efficient programme performance achieved	% of project activities rated good and above	EPA staff
SSOE3	Develop and implement a Human Resources Development Strategy	Majority of staff are competent to deliver services	Number of staff with competences to deliver EPA services	EPA staff
SSOE4	Automate HR, Administration, and Financial Management processes	Time taken to complete HR, administration, and financial management processes is halved	Number of businesses processes improved Average time to complete a recruitment process Number of directorates compliant with business continuity plans and processes	EPA staff
SSOE5	Procure vehicles, motor bikes, and jet skis for environmental monitoring	Assets are procured and duly registered	Number of assets in Agency register Number of environmental monitoring visits conducted in a year	EPA staff, contractors
SSOE6	Improve Office Infrastructure (construct 2 regional offices and complete the Freetown Office)	Buildings are completed and occupied by staff	% completion of buildings	Contractors
SSOE7	Develop annual procurement manuals	Annual procurement plans are submitted on time	% of agreed long standing NPPA recommendations addressed	EPA staff, NPPA
SSOE8	Prepare and publish annual audit	Timely audit reports	% of agreed long outstanding internal and external audit Recommendations addressed	EPA staff,
SSOE9	Procure field research equipment	Equipment for field	Number of MDAs and CSOs using data and knowledge generated by Agency	MDAs,

3.3.5. Partnerships, Engagement, and Financing (PEF)

Partnerships with local as well as international actors enhance ownership of the solutions proposed in this strategy. They do not only make our investments responsive to the needs of people and organizations, but also lead us to engagements with a wide range of actors, including the private sector, to harness new knowledge, exchange experiences, and strengthen mutual capacities. Accordingly, by successfully implementing this strategy, we will build stronger coalitions and further enhance engagement with local stakeholders at both project and organizational levels (drive whole-of-society involvement). Such collaborative efforts unlock innovative domestic and international financing solutions that reduce the cost of capital for environmental governance, and essentially, bridge the gap of financing local interventions that present large-scale, long-term benefits.

Table 13: Proposals for partnerships, engagement, and financing

No.	Interventions	Outcome targets	Progress markers	Boundary partners
PEF01	Develop the EPA-partnership strategy	Partnerships are enhanced Public support and political engagement for environmental action are catalyzed	Number of MDAs that have increased capacities for environmental action	MDAs
PEF02	Engage new partners for resource mobilization	Resources for project design and implementation are mobilized	Number of interagency initiatives supported	Donor agencies
PEF03	Organize annual Collaborating, Learning and Adapting (CLA) workshops	High quality, effective, and efficient programme performance achieved	Number of participants at CLA workshops	Partners
PEF04	Establish a national CSO climate change network	Partnership between government and CSOs is enhanced	Number of CSO partners that have increased capacities for climate action	CSOs

3.3.6. Policy Coherence and Enforcement (PCE)

Implementing this strategy enhances opportunities, such as using evidence generated over time for policy coherence and environmental enforcement, allowing the Agency and the sector more broadly, to go beyond incremental to transformative action. Once achieved, over the medium and long terms, policy coherence will influence systemic change in decision-making at the sector level. It will drive a whole-of-government approach spanning across Ministries, Departments, and Agencies (MDAs) and thus, strengthen institutional coordination for addressing the issues of biodiversity loss, climate change, and pollution at scale. Over the next 7 years, the Agency will develop tools and frameworks that will drive coherence and increase environmental enforcement and compliance assurance.

Table 14: Proposals for policy coherence and enforcement

No.	Interventions	Outcome targets	Progress markers	Boundary partners
PCE01	Publish source specific MRV guidelines	Source-specific MRV guidelines are published	Number of MDAs and CSOs using data and knowledge generated by the Agency	MDAs, CSOs
PCE02	Enact national legislations for EHS-related conventions	New legislations are passed (Stockholm, Basel, Rotterdam, etc.)	Number of new legislations passed	Attorney General's office, Parliament and MDAs
PCE03	Review the prohibition of the Ozone Depleting Substances regulation 2010.	Regulation on ozone substances is reviewed	Number of MDAs and CSOs adopting or applying revised regulations	MDAs, CSOs
PCE04	Sign MOAs with key MDAs to improve environmental enforcement	MOAs are signed	Number of MOAs agreed	MDAs
PCE05	Sign Environmental Charters with industry players to encourage sustainable investing	Environmental charters are agreed and published	Number of charters signed	EIA licensees, commercial banks, businesses
PCE06	Develop an abridged version of the EPA Act (2022)	Abridged version of the EPA Act (2022) is developed and disseminated	Number of copies of abridged EPA Act (2022) distributed	MDAs
PCE07	Update the training manual on environmental law	Updated training manual	Number of emerging issues incorporated into the training manual	Judiciary training Institute
PCE08	Conduct trainings on compliance processes and enforcement procedures of environmental laws	Trainings in environmental law procedures are conducted	Number of institutions undertaking review processes in response to new knowledge	Judges, Magistrates, Lawyers, Police Officers
PCE09	Undertake civil and criminal compliance and enforcement actions	Civil and compliance actions are undertaken	Number of individuals and businesses prosecuted	Police, Judiciary
PCE10	Review the Environment Protection (Mines and Mineral) Regulations 2013	Mines and mineral regulations are reviewed	Number of MDAs and CSOs adopting or applying revised regulations	MDAs, CSOs
PCE11	Develop and enact key regulations (Integrated Coastal and Marine Protection Regulations, Integrated Air Quality and Pollution Regulations, Hazardous and Toxic Chemical Regulations, Waste Management Regulations, EIA license fee regulation etc)	Regulations supporting the implementation of the EPA Act (2022) are developed	Number of regulations, policies, and laws that were revised, developed, or adopted to advance environmental governance	Parliament, Attorney General's office, MDAs
PCE12	Develop and disseminate an ESHIA Rulebook	Overall quality of ESHIA reports is improved	Number of ESHIA reports rejected by the Review Panel	MDAs
PCE13	Train staff of EPA licensees and consultants in ESHIA procedures	EHS staff of EPA licensees and accredited firms are trained	Number of EHS staff and consultants trained on procedures in the rulebook	EHS staff, ESHIA consultants
PCE14	Conduct EIA monitoring activities	Performance and compliance monitoring visits are conducted	% of agreed recommendations addressed Number of compliance trips made	EIA licensees, MDAs, CSOs, Local Authorities
PCE15	Implement the environmental components of the DRF (Disaster risk Finance) strategy	The environmental components of the DRF strategy are implemented	Number of environmental components of the DRF Strategy implemented	MDAs
PCE16	Develop Environmentally sounder and safer waste management Legal framework for Sierra Leone	Legislative and institutional reforms in the waste management sectors in Sierra Leone undertaken.	Number of Local Councils developing and implementing waste management plans using the framework developed by the agency	MDAs, Local Councils
PCE17	Publish an annual Licensee Performance Rating Scorecard	Licensees are certified for environmental performance rated good and above	Number of licensees rated good and above each year	Licensees





4. Levers for Transformative Programme Delivery

4.1. Introduction

This section presents the strategic goal and outcomes of the strategy, as well as the results framework and scales of intervention. The results areas identified will be achieved through a set of themes and entry points (pillars and enablers), and by recognizing the unique strengths and specificities of interventions, partnerships, innovations, policies, and engagements

4.2. Transformational Goal and Outcomes

The transformational goal of this strategy is **to establish the Agency as Sierra Leone's catalyst for environmental innovation, solutions, and talent generation by 2030**. The goal will be achieved through transformative actions delivered at multiple scales- ecosystems, landscapes, value chains, enterprises, cities, communities, institutions, etc. Achieving long-term success, therefore, requires planning and delivering the strategy at a systems scale, whereby the Agency can be integrated both vertically (across governance) and horizontally (across sectors). Such a transformative change in the way we work with others to produce stronger collective results, will be characterized by six main outcomes:

- ✱ A high level of public engagement with environmental issues to raise expectations of safe, healthy, and sustainable environments.
- ✱ Improvements in the scientific integrity of programmes and decision-making.
- ✱ Lower financial risk and effective workforce learning and equity.
- ✱ Meaningful efforts to reduce emissions and accelerate resilience to impacts.
- ✱ Safeguarded and revitalized natural resources and better governance to reduce risks to human health and the environment.
- ✱ Bold, fair, and firm actions to enforce environmental laws that keep violators accountable and compliant.

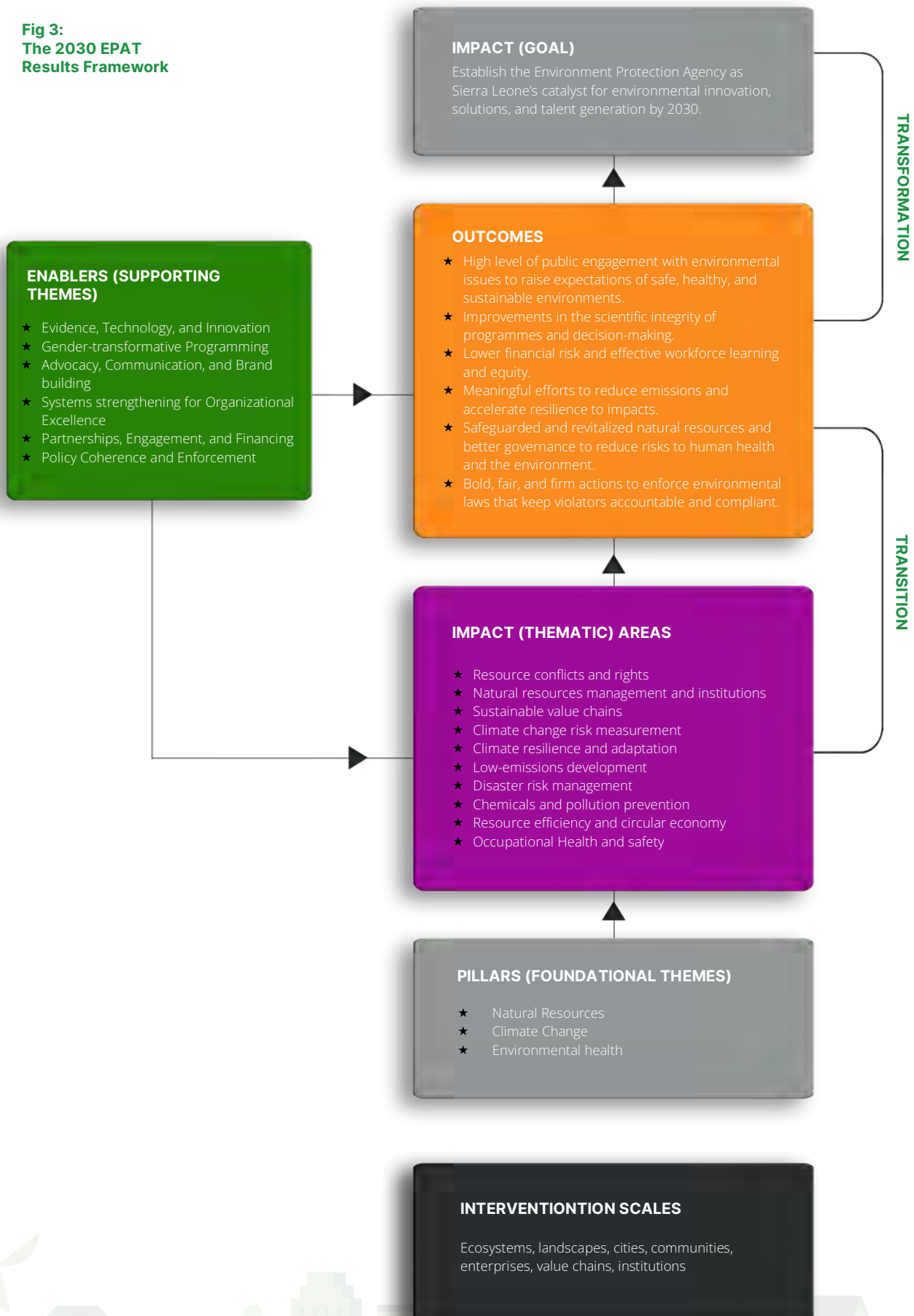
4.3. The 2030 EPAT Results Framework

To achieve the goal and outcomes presented above, a result framework has been developed to demonstrate how a combination of foundational and supporting work programmes are used to tackle the environmental resource management issues highlighted in this strategy. The impact areas presented in the framework are the results expected over the course of 7 years, based on the resources of the Agency as well as resources from external actors. The causal chain linking the results, show the changes to expect from transition (when key outputs will be delivered) to transformation (when the outcomes promised above are achieved).

Altogether, the results framework emphasizes that the Agency will:

- ✱ Use a wide range of approaches and tools to harvest innovative ideas, find the best available advice, take transformative action, and diversify its partner base to deliver concrete, long-term environmental action.
- ✱ Manage its programmes and projects adaptively, based on continuous learning, to ensure new initiatives respond to new information, stakeholder reflection, and sit on the boundary of multiple interests.
- ✱ Experiment with and incubate various ideas, innovations, and techniques through projects that meaningfully involve local stakeholders, and hence, enhance environmental sustainability through local ownership.
- ✱ Periodically gather evidence, co-produce data, and refine knowledge to maintain upward and downward accountability and enhance transparency.

Fig 3:
The 2030 EPAT
Results Framework







5. Towards 2030: Actions, Actors & Costs

5.1. Introduction

This section presents activity plans for implementing the strategy. It provides an indication of the time and level of effort that will be realistically put into achieving each intervention. The work plan characterizes the internal and external performance of the strategy, the resources the Agency will spend to implement and monitor activities, and the collaborative working arrangements envisioned.

5.2. Strategy Implementation

Each of the interventions proposed in this strategy will be implemented through the following 6 phases of planning and delivery:

- ★ **Country Desk Review:** All that is known or written on each of the proposed interventions in this strategy, at the country level, will be compiled, classified, and evaluated, to help the Agency place the intervention in the context of its contribution to the issues under review, and identify where knowledge gaps will be filled. The reviews will be separately published, or form part of funding proposals submitted to donors for relevant projects.
- ★ **Data Generation and Knowledge Co-Production:** Where the literature review cannot make a convincing case for the intervention, additional evidence will be gathered from knowledgeable stakeholders and affected communities. Data collected, qualitatively and/or quantitatively, will be used routinely during new project design, planning, monitoring, quality reviews, evaluation, and impact assessment.
- ★ **Idea Brainstorming and Framing:** Idea notes will be developed to describe each intervention in greater detail, including in terms of resources required, activities to be implemented, and results expected. A typical concept note will be 2-3 pages long, representing the collective vision of those directly responsible for implementing the intervention.
- ★ **Funding Proposal Development:** Where requested, indicating a favourable response to the idea note submitted, resources, time, and effort will be committed to preparing comprehensive documentation on the intervention proposed. The proposal will be presented in a format adopted by the Agency or required by donor and funding agencies approached.
- ★ **Progress Monitoring and Reporting:** Interventions will be implemented and concurrently tracked for progress, to improve the overall purpose of the strategy. We will use monitoring activities to inform stakeholders and citizens of progress made over time and challenges faced. Various reports providing periodic, first-hand accounts of such progress and challenges will be presented in reports targeting both local and international audiences.
- ★ **Learning, Reflection, and Adaptation:** There will be pauses in between implementation periods to reflect on progress made and challenges faced, so that implementing teams can effectively and adequately learn, innovate, and adapt. Learning will be central to enriching interventions and demonstrate quick and long-term impacts and changes.

5.3. Intervention Timeframes and Budgets

Specific timeframes, costs, and responsible parties are presented in table 15 for each of the interventions proposed in the strategy. Implementation of core activities (or foundational programmes of work) will be carried out by directorates of the Agency, namely:

- ★ Natural Resources Governance (NRG)
- ★ Programme Development and Performance (PDP)
- ★ Environmental Health and Safety (EHS)
- ★ Climate Change Secretariat (CCS)
- ★ Research, Policy, and Innovation (RPI)
- ★ Legal Affairs and Compliance Assurance (LACE)
- ★ Administration and Human Resources Management (Admin+HRM)
- ★ Financial Affairs (FA)
- ★ Field Operations and Extension (FOE), and
- ★ External Relations and Advocacy.

These interventions will be supported by a wide range of MDAs and partners, including:

- ★ Ministry of Environment and Climate Change (MECC)
- ★ Presidential Initiative for Climate Change, Renewable Energy and Food Security (PI-CREF)
- ★ Ministry of Agriculture and Food Security (MoAg)
- ★ Environment Committee in the House of Parliament
- ★ National Land Commission (NLC)
- ★ Ministry of Tourism and Cultural Affairs (MTCA)
- ★ National Tourist Board (NTB)
- ★ Ministry of Gender and Children's Affairs (MGCA)
- ★ National Water Resources Management Agency (NWRMA)
- ★ Sierra Leone Association of Journalists (SLAJ)
- ★ Ministry of Mines and Mineral Resources (MMMR)
- ★ National Disaster Management Agency (NDMA)
- ★ National Minerals Agency (NMA)
- ★ Ministry of Fisheries and Marine Resources (MFMR)
- ★ National Public Health Agency (NaPHA)
- ★ Ministry of Health (MoH), and
- ★ Directorate of Science, Technology, and Innovation (DSTI)
- ★ Min of Water Resources and Sanitation
- ★ Ministry of Trade and Industry
- ★ Sierra Leone Standards Bureau
- ★ Consumer Protection Agency
- ★ Ministry of Employment, Labour and Social Security
- ★ Sierra Leone Extractive Industries Transparency Initiative (SLEITI)

Table 15: Interventions and associated costs and timeframes

Intervention	Responsible	Timeline (2024-30)				Budget (USD)
		24-25	26-27	28-29	30	
Develop a State of the Environment Report	EPA (NRG), MECC					160,000
Produce a State of the Marine Environment Report	EPA (NRG), MECC, MFMR					80,000
Develop PROPs to improve environmental governance based on SoER and SoMER	EPA (NRG), MECC					70,000
Design and implement 10 NbS to implement PROPS developed	EPA (NRG), MECC					250,000
Conduct a Strategic Environmental Assessment of the Agriculture Sector	EPA (NRG), MoAg					50,000
Address environmental issues along commodity chains in support of the Feed Salone Strategy based on SEA	EPA (NRG, EHS), MoAg					200,000
Implement environmental recommendations in the One Health Integrated Pest Management Plan in support of the Feed Salone Strategy	EPA (NRG, EHS), MoAg					50,000
Advocate for alternatives to wood-based scaffolding in construction	EPA (NRG), HoParliament					15,000
Establish and operationalize a National Environmental Enforcement Coordination Mechanism (NEECOM) and its sub-structures	EPA (NRG, LACE), MECC					50,000
Produce literature and field assessments of key resource value chains (sand mining, artisanal mining, charcoal burning, woodfuel collection, etc) to develop terms of work for NEECOM	EPA (NRG, EHS, FOE)					20,000
Produce literature and field assessments of key resource value chains (sand mining, artisanal mining, charcoal burning, woodfuel collection, etc) to develop terms of work for NEECOM	EPA (NRG, EHS, FOE)					20,000
Strengthen mine rehabilitation planning activities	EPA (NRG LACE, FOE), NMA					100,000
Support the implementation of the NBSAP and other key components of the Global Biodiversity Framework	EPA (NRG, PDP), MECC, NPAA, FD					200,000
Implement the National Plastic Policy	EPA (NRG, LACE), MECC					150,000
Promote mercury reduction in Artisanal and Small- scale Gold Mining (ASGM)	EPA (NRG, EHS), NMA					200,000
Support oceans innovation and marine resources management (spatial planning, etc)	EPA (NRG), MFMR, IMBO					300,000
Coordinate water resource scenario planning activities	EPA (NRG, EHS, CCS), NWRMA					50,000
SUBTOTAL						1,965,000

Assess national climate governance attributes	EPA (CCS)					20,000
Prepare MEA implementation status report	EPA (CCS)					0
Establish and operationalize a Multilateral Environmental Agreement Implementation Coordination Committee (MICCom)	EPA (CCS, NRG, EHS, PDP, RPI, LACE), MECC					50,000
Develop citywide and state-wide GHG inventories	EPA (CCS,EHS)					100,000
Establish a resource hub for climate mitigation and loss and damage	EPA (CCS)					25,000
Develop sector-specific vulnerability assessments	EPA (CCS, NRG), Government					50,000
Implement climate transparency activities	EPA (CCS)					200,000
Train Environmental Journalists in climate reporting	EPA (CCS, ERA), SLAJ					30,000
Implement research-to-action activities on the nexus of climate change and migration	EPA (CCS), IOM					200,000
Prepare climate change handbooks for children and teachers	EPA (CCS, ERA)					50,000
Implement Early Warning and Climate Information Systems (EWCIS) in support of the Feed Salone Strategy	EPA (CCS), SLMet					100,000
Climate-proof agriculture and aquaculture initiatives in the Feed Salone Strategy	EPA (CCS), GCA					300,000
Climate proof transportation and energy projects	EPA (CCS), GCA					300,000
Develop a Long-term Low Emissions Development Strategy (LT-LEDS)	EPA (CCS SLMet), MECC					200,000
Support national REDD-readiness programmes	EPA (CCS), MECC					200,000
SUBTOTAL						1,825,000

Develop a national plan for children's environmental health (with focus on Lead Poisoning)	EPA (EHS), NaPHA, MoHS, USAID, UNICEF					20,000
Develop annual country profiles on children's environmental health	EPA (EHS), NaPHA, MoHS, USAID, UNICEF					100,000
Prepare indoor air quality handbooks for children	EPA (EHS)					50,000
Train technicians in chemicals safety techniques	EPA (EHS)					50,000
Implement regional EHS plans with councils.	EPA (EHS, FOE), Local Councils					150,000
Document and disseminate best practices in healthcare waste management	EPA (EHS), NaPHA, MoHS, GIZ					50,000
Develop technical standards for the RAC sector	EPA (EHS, RPI)					50,000
Develop management frameworks for pollution and chemical events	EPA (EHS), One Health Partners					50,000
Develop a training manual for RAC certification and Licenses training programmes	EPA (EHS, RPI)					30,000
Develop and implement Kigali HFC phase-down plan	EPA (EHS, RPI)					200,000
SUBTOTAL						750,000
Develop and implement a Research and Innovation Framework	EPA (RPI, PDP)					0
Organize annual Collaborating, Learning and Adapting (CLA) workshops	EPA (PDP, RPI)					60,000
Publish annual lessons learned and best practice briefs	EPA (PDP, ERA)					20,000
Organize a terminal outcome harvesting workshop and publish key outputs	EPA (PDP)					20,000
Produce annual pulse survey reports	EPA (RPI, PDP)					20,000
Implement a Student Research Internship Scheme (SRIS)	EPA (RPI)					50,000
Produce country desk review reports on the 3 pillars of the strategy	EPA (RPI)					10,000
Organize annual research seminars	EPA (RPI)					100,000
Implement a Project for Urban Living Labs (PULL) to foster innovations for urban transformation (e.g., interventions on e-mobility)	EPA (RPI, GIZ)					600,000
Establish an Urban Resilience Hub (URHub)	EPA (RPI)					50,000
Establish Community Resilience Resource Centres (C2RC)	EPA (RPI, FOE)					100,000
Establish a pilot eco-friendly supermarket	EPA (RPI, GIZ)					50,000
Organize annual youth climate innovation fairs	EPA (RPI, CCS)					100,000

Design and digitize a Licensee Compliance Tracker	EPA (RPI, LACE, FOE), DSTI					100,000
Establish a digitized Grievance Redress System	EPA (RPI, FOE, LACE), DSTI					50,000
Publish 4 th National Communications	EPA (CCS)					10,000
Prepare a National Pollutant Inventory (NPI)	EPA (EHS, RPI)					25,000
Develop national profiles for key pollutants and chemicals (based on NPI)	EPA (EHS, RPI)					10,000
Assess HR needs for environmental health and safety at local government level	EPA (EHS, RPI, FOE, HRM)					10,000
Conduct risk assessment for toxic chemicals used in gold mining and Agriculture	EPA (EHS, RPI, FOE)					10,000
Establish an environmental e-library	EPA (NRG, RPI, LACE)					50,000
Revise and digitize activity-specific ESHIA forms and procedures	EPA (RPI, LACE, ERA), DSTI					15,000
Community mapping for disaster risk reduction and management	EPA (CCS), NDMA					70,000
SUBTOTAL						1,530,000
Preparation of collaborative, gender-responsive project proposals	EPA (PDP, CCS, RPI, EHS, NRG)					100,000
Support a youth nature photography and short video competition	EPA (ERA)					20,000
Prepare and popularize climate mainstreaming guidelines	EPA (CCS, ERA)					50,000
Develop and disseminate gender guidelines for natural resources management	EPA (ERA, RPI, HRM)					50,000
Advocacy for policy reforms on gender equality in Artisanal and Small-scale Mining (ASM)	EPA (HRM, NRG, PDP)					20,000
Support women's cooperatives: Micro, Small, and Medium Enterprises & inclusive microfinance	EPA (FOE), SMEDA					50,000
SUBTOTAL						290,000
Develop a brand building kit	EPA (ERA)					5,000
Implement corporate-sponsored activities (GreenerGuest, GreenRun Marathon, EcoMurals, eBillboards, Adopt-a-Street)	EPA (ERA), MTCA, NTB, Corporate partners					100,000
Disseminate lessons learned & best practice briefs	EPA (ERA)					20,000
Disseminate project-related fact sheets	EPA (ERA)					20,000
Disseminate e-newsletters	EPA (ERA)					10,000
Produce and disseminate short videos (including a docuseries on the environment)	EPA (ERA)					50,000
Support School Nature Clubs activities	EPA (ERA)					50,000
Organize stakeholder forum events	EPA (ERA)					20,000
Organize quarterly policy and project dialogues	EPA (ERA)					100,000
Organize radio and TV talk shows	EPA (ERA)					35,000
Support a youth nature photography and short video competition	EPA (ERA)					100,000
Organize a national campaign on Lead Poisoning	EPA (ERA, EHS)					

Organize model Conferences of Parties (COPs) on climate change, environmental health and biodiversity conservation	EPA (ERA, CCS EHS, PDP, NRG)					50,000
SUBTOTAL						560,000
Create an organization-wide dashboard for programme management	EPA (PDP)					100,000
Develop and operationalize a MEL Strategy	EPA (PDP)					20,000
Organize annual project quality review summits	EPA (PDP)					50,000
Develop and implement a Human Resources Development Strategy	EPA (HRM)					100,000
Automate HR, Administration, and Financial Management processes	EPA (HRM, Admin, FA)					30,000
Procure vehicles, motor bikes, and jet skis for environmental monitoring	EPA (Admin)					700,000
Improve Office Infrastructure (construct 2 regional offices and complete the Freetown Office)	EPA (Admin, FA)					6,000,000
Develop annual procurement manuals	EPA (Admin)					35,000
Prepare and publish annual audit reports	EPA (FA)					100,000
SUBTOTAL						7,135,000
Develop the EPA-partnership strategy	EPA (PDP)					10,000
Engage new partners for resource mobilization	EPA (PDP)					20,000
Organize annual Collaborating, Learning and Adapting (CLA) workshops	EPA (PDP)					100,000
Establish a government-CSO network	EPA (CCS)					20,000
SUBTOTAL						150,000
Publish source specific MRV guidelines	EPA (CCS)					20,000
Enact national legislations for EHS-related conventions (Stockholm, Basel, Rotterdam, etc.)	EPA (LACE, EHS), MECC					100,000
Review the prohibition of the Ozone Depleting Substances regulation 2010.	EPA (LACE, RPI), MECC					15,000
Sign MOAs with key MDAs to improve environmental enforcement	EPA (LACE, CCS), MECC, PI-CREF					10,000
Sign Environmental Charters with industry players to encourage sustainable investing	EPA (CCS, PDP), PI-CREF					5,000
Develop an abridged version of the EPA Act (2022)	EPA (LACE, ERA)					10,000
Update the training manual on environmental law	EPA (LACE, EHS,)					10,000
Conduct trainings on compliance processes and enforcement procedures of environmental laws	EPA (LACE)					60,000
Undertake civil and criminal compliance and enforcement actions	EPA (LACE)					50,000
Develop and enact key regulations (Integrated Coastal and Marine Protection Regulations, Integrated Air Quality and Pollution Regulations, Hazardous and Toxic Chemical Regulations, Waste Management Regulations, EIA license fee regulation etc)	EPA (LACE, EHS, RPI, NRG), MECC, PI-CREF					50,000
Develop and disseminate an ESHIA Rulebook	EPA (FOE)					10,000
Train staff of EPA licensees and consultants in ESHIA procedures	EPA (FOE)					100,000
Conduct EIA monitoring activities	EPA (FOE)					50,000



Implement the environmental components of the DRF (Disaster risk Finance) strategy	EPA (CCS), NDMA					50,000
Develop Environmentally sounder and safer waste management Legal framework for Sierra Leone	EPA (LACE, EHS), Local Councils					50,000
Publish an annual Licensee Performance Rating Scorecard	EPA (FOE, LACE), Licensees					50,000
SUBTOTAL						640,000
GRAND TOTAL						14,925,000

6. Organizational Effectiveness

6.1. Introduction

This section presents a framework for Monitoring, Evaluation and Learning (MEL), which will support efforts at the organizational level to ensure effectiveness. Monitoring will help us understand how we are learning from and adapting to new conditions and changes. The purpose is not only to demonstrate results, but also to reflect on the processes by which they are attained and their internal effectiveness in driving successful interventions at scale. A mid-term and endline evaluation in 2027 and 2030 respectively, will be conducted to document the record of medium and long-term achievements, and seek out opportunities for improving levels of success through additional interventions and resources.

6.2. Organizational Effectiveness (MEL) Framework

Below is the MEL framework for implementing this strategy. A more detailed MEL strategy with an extensive baseline assessment and a comprehensive review of risks and assumptions will be conducted before implementation. The results of the baseline assessment will be used to tweak proposed endline targets and revise the overall ambition of the strategy.

Table 16: Interventions and associated endline targets and yearly milestones

Intervention	Endline target	Yearly Milestones				Verification
		24-25	26-27	28-29	30	
Develop a State of the Environment Report	1 report	1				Report
Produce a State of the Marine Environment Report	1 report	1				Report
Develop PROPs to improve governance based on SoER and SoMER	10 maps	3	3	3	1	Maps
Design and implement 10 NbS to implement PROPS developed	10 NbS initiatives	3	5	2		Progress reports
Conduct a Strategic Environmental Assessment of the Agriculture Sector	1 SEA report	1				SEA report
Address environmental issues along commodity chains in support of the Feed Salone Strategy based on SEA	3 activities	2	1			Progress reports
Implement environmental recommendations in the One Health Integrated Pest Management Plan in support of the Feed Salone Strategy	1 project	1				Progress reports
Advocate for alternatives to wood-based scaffolding in construction	1 campaign	1				Attendance sheets
Establish a National Environmental Enforcement Coordination Mechanism (NEECOM), its sub-structures, and develop action plans	1 natl. committee, 1 ward committee, 50 pilot chiefdom committees	25	25			Meeting minutes
Produce literature and field assessments of key resource value chains (sand mining, artisanal mining, charcoal burning, woodfuel collection, etc) to develop terms of work for NEECoM	5 value chain reports	2	3			Research reports
Strengthen mine rehabilitation planning activities	100 pilot plans	25	50	15	10	Annual ESHIA audits
Support the implementation of the NBSAP and other key components of the Global Biodiversity Framework	1 NBSAP					

Develop PROPS to improve governance based on SoER and SoMER	10 maps	3	3	3	1	Maps
Design and implement 10 NbS to implement PROPS developed	10 NbS initiatives	3	5	2		Progress reports
Conduct a Strategic Environmental Assessment of the Agriculture Sector	1 SEA report	1				SEA report
Address environmental issues along commodity chains in support of the Feed Salone Strategy based on SEA	3 activities	2	1			Progress reports
Implement environmental recommendations in the One Health Integrated Pest Management Plan in support of the Feed Salone Strategy	1 project	1				Progress reports
Advocate for alternatives to wood-based scaffolding in construction	1 campaign	1				Attendance sheets
Establish a National Environmental Enforcement Coordination Mechanism (NEECOM), its sub-structures, and develop action plans	1 natl. committee, 1 ward committee, 50 pilot chiefdom committees	25	25			Meeting minutes
Produce literature and field assessments of key resource value chains (sand mining, artisanal mining, charcoal burning, woodfuel collection, etc) to develop terms of work for NEECoM	5 value chain reports	2	3			Research reports
Strengthen mine rehabilitation planning activities	100 pilot plans	25	50	15	10	Annual ESHIA audits
Support the implementation of the NBSAP and other key components of the Global Biodiversity Framework	1 NBSAP					
Implement the National Plastic Policy	5 initiatives	2	2	1		Progress reports
Promote mercury reduction in Artisanal and Small-scale Gold Mining (ASGM)	10 pilot districts	5	3	2		Progress reports
Support oceans innovation and marine resources management (spatial planning, etc)	5 activities	1	2	2		Progress reports
Coordinate water resource scenario planning activities	5 watershed management scenario plans	3	2			Scenario plans
Assess national climate governance attributes	1	1				Research report
Prepare MEA implementation status report	1	1				Status report
Establish a Multilateral Environmental Agreement Implementation Coordination Committee (MICCOM)	16 MEA-related meetings	4	4	4	4	Meeting minutes
Develop citywide and state-wide GHG inventories	4 inventories	1	3			Inventories
Establish a resource hub for climate mitigation and loss and damage	5 capacity building initiatives	2	2	1		Training reports
Develop sector-specific vulnerability assessments	5 sector assessments	2	2	1		Research reports
Implement climate transparency activities	5 activities	2	2	1		Activity reports
Train Environmental Journalists in climate reporting	200 journalists (100 female)	50	50	50	50	Training reports

Implement research-to-action activities on the nexus of climate change and migration	4 research and project activities	2	2			Activity reports
Prepare climate change handbooks for children	1000 children (500 girls)	200	300	300	200	Handbooks
Implement Early Warning and Climate Information Systems (EWCIS) in support of the Feed Salone Strategy	10 pilot EWCIS initiatives	2	5	3		Progress reports
Climate-proof agriculture and aquaculture initiatives in the Feed Salone Strategy	10 initiatives	2	5	3		Progress reports
Climate-proof transportation and energy projects	5 projects	1	3	1		Progress reports
Develop a Long-term Low Emissions Development Strategy (LT-LEDS)	1 strategy		1			Strategy
Support national REDD-readiness programmes						Readiness reports
Develop a national plan for children's environmental health (focus on Lead Poisoning)	1 plan	1				Plan
Develop annual country profiles on children's environmental health	7 profiles	2	2	2	1	Profiles
Prepare indoor air quality handbooks for children	1000 children (500 girls)	300	300	300	100	handbooks
Train technicians in chemicals safety techniques	300 technicians (100 female)	100	100	100		Training reports
Implement regional EHS plans with councils.	4 pilot plans	2	2			Plans
Document and disseminate best practices in healthcare waste management	600 practitioners (400 nurses)	200	200	200		Best practice notes
Develop technical standards in the RAC sector	600 practitioners (400 female)	200	200	200		Technical standards
Develop management frameworks for pollution and chemical events	2 management frameworks	1	1			Frameworks
Develop a training manual for RAC certification and Licenses training programmes	1 manual	1				Training manual
Develop and implement Kigali HFC phase-down plan	3 activities	1	1	1		Activity reports
Develop and implement a Research and Innovation Framework	1 framework	1				Framework
Organize annual Collaborating, Learning and Adapting (CLA) workshops	7 workshops	2	2	2	1	Workshop reports
Publish annual lessons learned and best practice briefs	2 annual briefs	4	4	4	2	Briefs
Organize a terminal outcome harvesting workshop and publish key outputs	1 session				1	Session report
Produce annual pulse survey reports	7 surveys	2	2	2	1	Survey reports
Implement a Student Research Internship Scheme (SRIS)	35 students (15 females)	10	10	10	5	Student dissertations
Produce country desk review reports on the 3 pillars of the strategy	3 desk reviews	3				Literature review reports

Organize annual research seminars	7 seminars	2	2	2	1	Seminar reports
Implement a Project for Urban Living Labs (PULL) to foster innovations for urban transformation (e.g., interventions on e-mobility)	5 initiatives	2	2	1		Progress reports
Establish an Urban Resilience Hub (URHub)	5 capacity building initiatives	2	2	1		Training reports
Establish Community Resilience Resource Centres (C2RC)	10 centres	2	3	3	2	Activity reports
Launch Virtual Research Advisory Groups to support multidisciplinary research at the Agency	3 VRAGs	1	1	1		Student dissertations
Establish a pilot eco-friendly supermarket	2 supermarkets	1	1			Activity reports
Organize annual youth climate innovation fairs	7 fairs	2	2	2	1	Activity reports
Design and digitize a Licensee Compliance Tracker	1 database	1				Database
Establish a digitized Grievance Redress System	1 system	1				GRS
Publish 4 th National Communications	1 report	1				Research report
Prepare a National Pollutant Inventory (NPI)	1 inventory (2 updates)	3				Profiles
Develop national profiles for key pollutants and chemicals (based on NPI)	3 profiles	1				Inventory
Assess HR needs for environmental health and safety at local government level	1 report	1				Research report
Conduct risk assessment for toxic chemicals used in gold mining and Agriculture	2 assessments	2				Research reports
Establish an environmental e-library	4 e-libraries	4				Activity report
Revise and digitize activity-specific ESHIA forms and procedures	5 digital forms	5				Forms
Community mapping for disaster risk reduction and management	1 e-library	1				e-library
Preparation of collaborative, gender- responsive project proposals	30 funding proposals	10	10	10		Funding proposals
Implement a gender-sensitive Student Research Internship Scheme (SRIS)	5 contests	2	2	1		Activity reports
Establish Community Resilience Resource Centres (C2RC)	4 guidelines	4				Guidelines
Support a youth nature photography and video competition	4 competitions	2	2			Award events
Train Environmental Journalists in climate reporting	2 training events	2				Training report
Prepare and popularize climate mainstreaming guidelines	500 practitioners	250	150			Activity report
Develop and disseminate gender guidelines for natural resources management	500 women	300	200			Guidelines

Advocacy for policy reforms on gender equality in Artisanal and Small-scale Mining (ASM)	1000 women	300	400	300		Campaign report
Support women's cooperatives: Micro, Small, and Medium Enterprises & inclusive microfinance	100 women's cooperatives	30	30	30	10	Activity reports
Develop a brand building kit	1 kit	1				Kit
Implement corporate-sponsored activities (GreenerGuest, GreenRun Marathon, EcoMurals, eBillboards, Adopt-a-Street)	2 annual activities	4	4	4	2	Activity reports
Disseminate lessons learned & best practice briefs	1000 practitioners	300	300	300	100	Briefs
Disseminate project-related fact sheets	1000 practitioners	300	300	300	100	Fact sheets
Disseminate e-newsletters	5,000 practitioners	1000	2000	1000	1000	Newsletters
Produce and disseminate short videos (including a docuseries on the environment)	50 short videos, 5 documentary films	15	15	15	10	Videos
Support School Nature Clubs activities	100 clubs	30	30	30	10	Activity reports
Organize stakeholder forum events	4 annual forum events	8	8	8	4	Forum reports
Organize quarterly policy and project dialogues	2 semi-annual showcases	4	4	4	2	Meeting reports
Organize radio and TV talk shows	35 talk shows	10	10	10	5	Talk show footages
Support an Environmental Journalist photography and short video contest	10,000 people	3000	3000	3000	1000	Activity reports
Organize a national campaign on Lead Poisoning	7 model COPs	2	2	2	1	Activity reports
Create an organization-wide dashboard for programme management	1 dashboard	1				Dashboard
Develop and operationalize a MEL Strategy	1 strategy	1				Strategy
Organize annual project quality review summits	1 annual retreat	2	2	2	1	Staff retreat reports
Develop and implement a Human Resources Development Strategy	10 staff trained annually	20	20	20	10	Training certificates
Automate HR, Administration, and Financial Management processes	2 digital solutions	2				Databases
Procure vehicles, motor bikes, and jet skis for environmental monitoring	10 vehicles, 10 motor bikes, 2 jet skis	7	5	5	5	Vehicles, motor bikes, and jet skis
Improve Office Infrastructure (construct 2 regional offices and complete the Freetown Office)	3 buildings	1	2			Buildings
Develop annual procurement manuals	7 procurement plans	2	2	2	1	Procurement plans
Prepare and publish annual audit reports	7 financial and audit reports	2	2	2	1	Financial and audit reports

Procure field research equipment (tablets, drones, handheld GPS, sensors, meters, apparels, etc)						Updated asset register
Develop the EPA-partnership strategy	1 strategy	1				
Engage new partners for resource mobilization	50 new partners	20	20	10		Partnership agreements
Organize annual Collaborating, Learning and Adapting (CLA) workshops	7 workshops	2	2	2	1	Workshop reports
Establish a national CSO climate change network	300 CSOs	100	100	100		Meeting minutes
Publish source specific MRV guidelines	5 guidelines	5				Guidelines
Enact national legislations for EHS-related conventions (Stockholm, Basel, Rotterdam, etc.)	5 legislations	2	2	1		Legislations
Review the prohibition of the Ozone Depleting Substances regulation 2010.	1 regulation	1				Revised regulation
Sign MOAs with key MDAs to improve environmental enforcement	10 signed MOAs	10				MOAs
Sign Environmental Charters with industry players to encourage sustainable investing	30 signed Environmental Charters	30				Environmental Charters
Develop an abridged version of the EPA Act (2022)	1 strategy	1				strategy
Update the training manual on environmental law	500 practitioners	300	200			Activity report
Conduct trainings on compliance processes and enforcement procedures of environmental laws	1 manual	1				Training manual
Undertake civil and criminal compliance and enforcement actions	250 trainees	100	100	50		Training reports
Review the Environment Protection (Mines and Mineral) Regulations 2013	1 regulation	1				Revised regulation
Develop and enact key regulations (Integrated Coastal and Marine Protection Regulations, Integrated Air Quality and Pollution Regulations, Hazardous and Toxic Chemical Regulations, Waste Management Regulations, EIA license fee regulation etc)	5 regulations	5				Revised regulations
Develop and disseminate an ESHIA Rulebook	1 rulebook	1				Rulebook
Train staff of EPA licensees and consultants in ESHIA procedures	300 staff	100	100	100		Training reports
Conduct EIA monitoring activities	21 monitoring trips	6	6	6	3	Monitoring/ audit reports
Implement the environmental components of the DRF (Disaster risk Finance) strategy	3 activities	2	1			Activity reports
Develop Environmentally sounder and safer waste management Legal framework for Sierra Leone	1 framework	1				framework
Publish annual Licensee Performance Rating Scorecards	7 scorecards	2	2	2	1	Scorecard

Annex 1: Participants at Validation Workshop

Annex 2: Agenda for Strategy Launch Event





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