



The Clearing-House Mechanism of the Convention on Biological Diversity

Document status **Draft** Generated on 14 FEB 2020 15:56

6 TH
National Report for
the Convention on
Biological Diversity

Table of contents

Section I. Information on the targets being pursued at the national level	3
Section II. Implementation measures, their effectiveness, and associated obstacles and scientific and technical needs to achieve national targets	30
Section III. Assessment of progress towards each national target	61
Section IV. Description of national contribution to the achievement of each global Aichi Biodiversity Target	112
Section V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation	129
Section VI. Description of the national contribution to the achievement of the targets of indigenous peoples and local communities	134
Section VII. Updated biodiversity country profile	137

Sixth National Report

Section I. Information on the targets being pursued at the national level

Country

Sierra Leone

National Targets

Strategic Output A1 - Effective Public Education and Awareness Programs Delivered and Improving People's Attitudes and Behavior Towards Biodiversity Conservation.

Rationale for the National Target

One of the greatest challenges to biodiversity conservation in Sierra Leone is the lack of knowledge and awareness about the benefits of managing biodiversity, especially amidst the difficult economic situation the country finds itself. It is among the least developed economies in the world and a large majority of its people depend on the natural systems for their survival. For instance over 60% of the country's population are engaged in subsistence slash-and-burn agriculture and unemployment rates are high, especially among the young people. Consequently, resource exploitation is indiscriminate and sometimes driven by greed. This strategic output would ensure that people at all levels acquire the basic understanding on the importance of biodiversity to the survival of current and future generations, and how they can contribute to conserving biodiversity and sustaining the services it provides.

Aichi Targets being addressed

Target 1

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

1. Awareness of biodiversity values

Sub-Aichi Targets or Target components

2. Integration of biodiversity values

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[Tacugama website](#)
[Awoko News Website](#)
[EPA-SL website](#)

Strategic Output A2 - Ensure that Sound Policy, Legislative and Institutional Measures for Biodiversity Conservation, including International Conventions are in place and Operational

Rationale for the National Target

Over several decades, Sierra Leone has developed policies and legislation geared towards proper management of biodiversity and genetic resources, but some of these are now outdated and out of phase with current approaches in conservation. The indiscriminate and illegal exploitation of genetic resources has been perpetrated because of the weakness in policies, legislation and regulations that govern the conservation of biodiversity in the country. The target is aimed at ensuring that the necessary regulatory mechanisms are put in place and implemented by government and partners are effective and yielding the desired results for biodiversity.

EN

[Aichi Targets being addressed](#)

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development

and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 3

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

2. Integration of biodiversity values

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and CBOs were consulted during the consultation process.

EN

Other relevant website address or attached documents

[World Bank website](#)
[World Bank website](#)

Strategic Output A3 - All Development, Extractive and Related Projects are Preceded by Sound Environment and Social Impact Assessments

Rationale for the National Target

Although the pace of national development is comparatively slow, there is a need for current and future infrastructural development initiatives to be backed by strong environmental considerations in terms ensuring that the conservation needs of species and ecosystems are incorporated into

EN

these development plans. The same applies to mining, logging and other extractive investments that affect species and ecosystems. The target will ensure that all development and extractive investments are designed with serious consideration on their adverse impacts on the environment and how these could be limited or mitigated. The Environmental Protection Agency Sierra Leone is taking the lead in ensuring that this target is achieved.

Aichi Targets being addressed

Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

4. Use of natural resources

Sub-Aichi Targets or Target components

5. Loss of habitats

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[EPA-SL website](#)

Strategic Output A4 - A Workable Mechanism for Mobilizing Incentive Measures for Biodiversity Conservation Established and Being Implemented.

Rationale for the National Target

It is a fact that Sierra Leone is a poor country and is among the least developed countries of the world. There is therefore a high dependence of the rural population on natural systems for survival. Most of the people living close to the biodiversity resources are poor peasant farming communities who have very little livelihoods options. Implicitly, incentive for biodiversity conservation is a must, if a balance between livelihood needs and conservation is to be achieved.

Aichi Targets being addressed

Target 3

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.

Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

3. Incentives

Sub-Aichi Targets or Target components

4. Use of natural resources

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during

EN

the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

Strategic Output B1 - The Conservation of Forest Biodiversity Significantly Enhanced through Effective Law Enforcement and Program Implementation.

Rationale for the National Target

Forests and their biodiversity components constitute the most important ecosystem in Sierra Leone because of the livelihoods and ecosystem services they provide. It is estimated that 60% of Sierra Leone's land area was originally covered in closed forest, but recent estimates suggest that less than 5% now remain. Much of the closed forests have been replaced by farm bush fallow at various stages of succession. The conservation of forest will contribute significantly to enhancing and promoting biodiversity issues and address the conservation needs of most of the threatened species in the country.

Aichi Targets being addressed

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

5. Loss of habitats

Sub-Aichi Targets or Target components

2. Integration of biodiversity values

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[Patriot Vanguard website](#)
[BirdLife International website](#)

Strategic Output B2 - The Conservation of Coastal and Marine Biodiversity, including Fisheries is Prioritized in National Programmes, Policies and Legislations.

Rationale for the National Target

Sierra Leone's coastal and marine ecosystems and biodiversity has been under threat from various pressures, ranging from over-fishing to mangrove clearing and coastal erosion. Concrete action to protect and/or conserve the huge and undiscovered biodiversity and economic potential along the 520 kilometers of coastline together with its 200 nautical miles of exclusive economic zone (EEZ) is being seriously pursued by government. The target is to ensure that the once neglected, but very important resource-rich and threatened ecosystem is brought to the forefront of biodiversity conservation in Sierra Leone.

Aichi Targets being addressed

Target 6

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that over-fishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 7

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

6. Sustainable fisheries

Sub-Aichi Targets or Target components

7. Areas under sustainable management

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[World Bank website](#)

<http://www.factfish.com/statistic-country/sierraleone/marineprotectedareas>

[WABiCC website](#)

Strategic Output B3 - Ecological Restoration and Recovery of Species and Ecosystems under Threat is Significantly Improved

Rationale for the National Target

Almost all natural ecosystems in their original natural forms in Sierra Leone are under varying forms and degrees of threat; forests, inland wetlands, coastal wetlands, savanna woodland etc, are threatened mainly by anthropogenic factors. Closed primary forests have been reduced by almost 90% whilst wetland resources are being depleted (through mining and over-exploitation) at an alarming rate and woodlands ecosystems dominated by *Pterocarpus erinaceus* are being decimated through logging. As ecosystems are being degraded, species that are vulnerable are increasingly exposed to local extinction pressures. The situation is compounded by the high unemployment rate among young people, limited viable alternative livelihoods, weak law enforcement and the low level

EN

of development of the country. The target is aimed at reducing the threat to species and ecosystem to the minimum acceptable levels and there are mechanisms in place to sustain conservation gains made.

Aichi Targets being addressed

Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 11

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

5. Loss of habitats

Sub-Aichi Targets or Target components

11. Protected areas

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Strategic Output B4 - Pollution Levels and Spread of Alien Species (Flora and Fauna) are Controlled and Well Managed.

Rationale for the National Target

At the moment pollution is not considered as one of the major threats to Sierra Leone's biodiversity because of the country's low level of industrial development. However, the necessary precautionary measures are needed to control current levels and potential pollution sources, including regulatory mechanisms and consultations with existing small to medium scale industries. The target is to ensure that natural ecologies and indigenous biodiversity are protected and conserved in the midst of industrial and other economic activities.

Aichi Targets being addressed

Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Target 8

By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Target 9

By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

8. Pollution
9. Invasive Alien Species

Sub-Aichi Targets or Target components

4. Use of natural resources

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Strategic Output C1 - The Conservation Status of Protected Areas (Parks, Forest Reserves, Game Reserves and Sanctuaries) and the Wildlife therein Significantly Improved

Rationale for the National Target

Effective protection and conservation of ecosystems is better achieved in protected areas in Sierra Leone. The higher the protection status of a site the greater the chance for its ecosystem and wildlife to be protected. The rationale for this target is to improve on the protection status of a significant number of its protected areas, because most of them are at the lower end of the protection scale based on the relevant legislative provisions. To achieve this, new legislation and regulations are being formulated, whilst old and outdated ones are being reviewed. This target will stimulate the formulation of additional legislation that would favor the establishment and/or upgrading of more protected areas.

Aichi Targets being addressed

Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 11

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

5. Loss of habitats
11. Protected areas

Sub-Aichi Targets or Target components

12. Preventing extinctions

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[Sierra Express Media website](#)
[BirdLife International website](#)

Strategic Output C2 - The Ecological Integrity of Inland and Freshwater Ecosystems Significantly Improved through Sound Conservation Actions.

Rationale for the National Target

The need for the conservation and protection of inland and freshwater wetlands ecosystem is a priority to Sierra Leone. Lake Sonfon and Mamunta-Mayosso Wildlife Sanctuary, both of which are sites of biodiversity importance based on the Important Bird Areas published by the Conservation Society of Sierra Leone and Forestry Division (MAFFS). Other inland wetlands and lake systems country require serious and urgent management interventions. These include two lakes in the south (Mape and Mebesi) and a number of river systems that support the livelihoods of communities adjacent to them. Most of these inland and freshwater ecosystems are threatened by mining and lack of a proper management system. This target is aimed at establishing a proper and sustainable system of managing the resources of inland and freshwater ecosystem and enhance the livelihoods and ecosystem services to surrounding communities.

EN

Aichi Targets being addressed

Target 6

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that over-fishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 7

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Target 11

By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

7. Areas under sustainable management
11. Protected areas

Sub-Aichi Targets or Target components

6. Sustainable fisheries

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[Awoko website](#)

Strategic Output C3 - In-Situ Conservation for Species and Ecosystems in Protected Areas Enhanced by At Least 30%, Leading to Improved Conservation Status of Threatened Species and Habitats.

Rationale for the National Target

Sierra Leone has over 100 species of global conservation concern from various taxa, including 27 species of mammals, 30 species of birds and 34 species of herpetes, based on the IUCN Red List of Threatened Species 2019. A significant proportion of these species, especially mammals and birds are found in protected areas and so the need for the necessary mechanisms to be put in place to enhance the condition of their habitats, thus improving on their population size. This strategic output is being pursued in consonant with the CITES and CBD conventions, and the Medium Term National Development Plan 2019-2023, which pays a lot of premium on in-situ species and ecosystems conservation for promoting ecotourism.

Aichi Targets being addressed

Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Target 13

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

12. Preventing extinctions

Sub-Aichi Targets or Target components

13. Agricultural biodiversity

Relevant documents and information

EN

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

Strategic Output C4 - In-Situ Conservation Outside Protected Areas Enhanced by at Least 20%, Significantly Improving the Status of Habitats for Rare and Threatened Species.

Rationale for the National Target

Whilst protected areas accounts for a significant proportion of threatened species, studies have shown that a good number of the populations of these species occur outside protected areas. For instance there were more breeding sites of White-necked Picathartes *Picathartes gymnocephalus* discovered outside the boundaries of the Gola Forest Reserve than inside reserve boundaries. Also a good number of chimpanzee companies occur outside protected areas. Therefore, the need for encouraging conservation in habitats with little or no protection is justifiable, and could trigger the declaration of more protected areas.

Aichi Targets being addressed

Target 6

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that over-fishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

6. Sustainable fisheries

12. Preventing extinctions

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Strategic Output C5 - Ex-Situ Conservation Programmes Designed, Supported and Implemented with Tangible Results.

Rationale for the National Target

Ex-situ Conservation is a new phenomenon in Sierra Leone, but there are evidences of successful schemes that could be replicated for species that need special attention to help stabilize their population and protect them from extinction pressures. The Chimpanzee Rehabilitation Center is a typical example, where over 90 rescued chimpanzee are housed and being introduced to semi-wild environment. Tacugama is actively involved in law enforcement to rescue and rehabilitate chimpanzees into their natural habitat. Chimps occur both in an outside protected areas and victims of the bush meat trade, human-wildlife conflict and the illegal wildlife trade. The targets would intensify focus on addressing the conservation needs of species found outside PAs, particularly threatened ones.

Aichi Targets being addressed

Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Target 13

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 12. Preventing extinctions
- 13. Agricultural biodiversity

Sub-Aichi Targets or Target components

- 6. Sustainable fisheries

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Strategic Output D1 - Plant Resources for Agricultural are Effectively Harnessed and Managed for the Benefit of Biodiversity and People.

Rationale for the National Target

This strategic output is very relevant to the development of the agricultural potential and food security in Sierra Leone. Despite its huge agricultural capacity, the country still lack the potential to feed itself and be able to export the excesses. The harnessing of plant resources would enhance the diversification of agricultural production that would lead to improved livelihoods of the vast majority of the rural population. The target is consistent with the 2008 National Agricultural Development Plans and the Medium Term National Development Plan 2019-2023.

Aichi Targets being addressed

Target 13

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14

EN

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

13. Agricultural biodiversity

Sub-Aichi Targets or Target components

14. Essential ecosystem services

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[SLARI website](#)

Strategic Output D2 - Animal Resources for Agricultural Husbandry are Effectively Harnessed and Managed for the Benefit of Biodiversity and People.

Rationale for the National Target

The development of animal husbandry is yet at a low level in Sierra Leone. This is creating serious pressure on wildlife because bush meat consumption is very common in rural communities. The options for meat protein is limited, expensive and unavailable for most people, thus the need to enhance livestock rearing using locally available resources and potential viable inputs from external sources. There are already trials to interbreed cattle from the Sahel region with local breeds to

EN

create a hybrid that would resist certain diseases that cause morbidity in cattle like sleeping sickness. The output is relevant to the need for innovations in the use of available animal resources to address some of the perennial issues associated with food provisioning in the country.

Aichi Targets being addressed

Target 13

By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

13. Agricultural biodiversity

Sub-Aichi Targets or Target components

14. Essential ecosystem services

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[SLARI website](#)

Strategic Output D3 - Land Resources for Agriculture are Effectively Harnessed and Managed for the Benefit of Biodiversity Conservation and People.

Rationale for the National Target

Land is a very important resource for development and agriculture in Sierra Leone. However, the existing land tenure system and to some extent, political influence tend to create some level of impediments to organised agricultural development in the country that would also cater for biodiversity conservation needs. The target is consistent with the National Agricultural Development Plans and the Medium Term National Development Plan 2019-2023.

Aichi Targets being addressed

Target 5

By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 7

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 5. Loss of habitats
- 7. Areas under sustainable management

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[FAO website](#)

Strategic Output D4 - Indigenous Knowledge and Intellectual Property Rights Well Harnesses within Local Communities and Producing Beneficial Results.

Rationale for the National Target

The use of indigenous knowledge is only at grassroots levels and has not been well organised at the national level. The academic input in harnessing indigenous knowledge is still at an embryonic stage. There is need for research and the formulation of legislation at the local and national level to regulate and manage indigenous knowledge and the recognition and use of intellectual property. This output correlates neatly with the Nagoya Protocol which deals with access and benefit sharing for genetic resources.

Aichi Targets being addressed

Target 1

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 16

By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation. Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

Target 17

By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Target 18

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

16. Nagoya Protocol on ABS
18. Traditional knowledge

Sub-Aichi Targets or Target components

1. Awareness of biodiversity values
2. Integration of biodiversity values

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Other relevant website address or attached documents

[CBD Website](#)

Strategic Output E1 - Diverse Capacities for Effective Implementation of National Biodiversity Programs Built and Being Utilized.

Rationale for the National Target

Capacity development at all levels of governance for conservation is an ongoing process in Sierra Leone. Technical and resource capacities are required at national and local levels to ensure sustainable management of biodiversity programs and achieve effective conservation. Capacity is particular needed on recent technological application to biodiversity conservation. This target is of utmost importance to promoting conservation from the scientific and technological angle, which is currently grossly inadequate in Sierra Leone.

EN

[Aichi Targets being addressed](#)

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 16

By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

15. Ecosystem resilience

Sub-Aichi Targets or Target components

2. Integration of biodiversity values

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and community-based organizations (CBOs) were involved in the consultation process.

EN

Strategic Output E2 - Public Participation on Biodiversity Conservation Significantly Improved and Making Positive Impacts.

Rationale for the National Target

For biodiversity conservation in Sierra Leone to be effective the public involvement should be effective, especially in terms of implementing education and awareness programs and enhancing law enforcement. Co-management and private reserve concepts are being pursued in this direction, as part of the steps to ensure public participation. This strategic output is consistent with the domestication and implementation of the CITES and CBD conventions in Sierra Leone.

EN

Aichi Targets being addressed

Target 1

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Target 14

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Target 18

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Target 19

By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 1. Awareness of biodiversity values
- 18. Traditional knowledge
- 19. Biodiversity knowledge

Sub-Aichi Targets or Target components

- 14. Essential ecosystem services

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and

EN

CBOs were consulted during the process.

Other relevant website address or attached documents

[Tacugama Chimpanzee Sanctuary website](#)
[Tiwai Island website](#)

Strategic Output E3 - Planning for Biodiversity Conservation Becomes a Significant Part of Sectoral Program of Activities.

Rationale for the National Target

Biodiversity is becoming a vital component in development planning in Sierra Leone, particularly its potential role attracting investment in the tourism sector and other related sectors. Also the problems of overlapping mandates among MDAs is serious stifling progress in the implementation of some actions, policies and legislative processes geared towards conservation. This output is aimed at mainstreaming biodiversity conservation in all sectoral planning and activities and to ensure that there is consistency and collaboration among MDAs for the greater good.

Aichi Targets being addressed

Target 2

By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Target 17

By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

EN

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

2. Integration of biodiversity values
17. NBSAPs

Sub-Aichi Targets or Target components

4. Use of natural resources

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and CBOs were consulted during the process.

EN

Other relevant website address or attached documents

[Ministry of Planning and Economic Development \(MOPED\) website.](#)

Strategic Output E4 - Access to Technology and Handling of Biotechnology is Made Effective and Beneficial to Local Biodiversity Programs

Rationale for the National Target

The use of technology and technological information for biodiversity conservation in Sierra Leone is a new concept in Sierra Leone. Proper understanding of what technology is applicable to national local situations is required to ensure effective use of technology for the purpose of species and ecosystem conservation. The country to a large extent lack the basic requirements for engaging in more recent technological approach to effect conservation and contribute to international processes associated with international control and verification mechanisms.

Aichi Targets being addressed

Target 18

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Target 19

By 2020, knowledge, the science base and technologies relating to biodiversity, its values,

EN

functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

- 18. Traditional knowledge
- 19. Biodiversity knowledge

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and CBOs were consulted during the process.

EN

Strategic Output E5 - Financial and Budgetary Resources for Biodiversity Programs Mobilized and judiciously utilized.

Rationale for the National Target

Holistic and effective biodiversity conservation in Sierra Leone can only be achieved if the financial resources are available and well channeled for the desired purpose. There was a serious lack in financial resources for conservation, but the situation is improving and should be enhanced in order to sustain the gains that have been made. The target is consistent with the Medium Term National Development Plans 2019-2023.

EN

Aichi Targets being addressed

Target 17

By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

Target 20

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

Level of application

Jurisdiction

National / Federal

Relevance of National Targets to Aichi Targets

Aichi Target components

17. NBSAPs
20. Resource mobilization

Relevant documents and information

As applicable to all others, this strategic output was developed and agreed upon during the NPSAP (2017-2026) consultations, including an all-inclusive stakeholders validation process. All relevant ministries, departments and agencies, together with NGOs and CBOs were consulted during the process.

EN

Section II. Implementation measures, their effectiveness, and associated obstacles and scientific and technical needs to achieve national targets

Enhancing of the Management and Operations of Protected Areas through the Sierra Leone Biodiversity Conservation Project

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

The Government of Sierra Leone (GoSL) recognized the threats to environment and acknowledged the importance of sustainable management of Sierra Leone's natural resources--forests, wildlife, biodiversity, soil, water, land, fisheries and mineral resources--for achieving future economic growth in its second Poverty Reduction Strategy (PRS), which represented the Government's overarching development strategy for the period 2008-2012. The PRS also emphasizes the need to strengthen the linkages between poverty reduction and management

EN

of the environment as a key challenge to reducing poverty in Sierra Leone. However, GoSL's capacity to effectively conserve Sierra Leone's biodiversity assets was severely stretched. Multiple donors and aid agencies were active in the sector, and all projects emphasized the importance of responding to immediate threats as a matter of urgency, as well as developing capacity. The Joint Country Assistance Strategy (CAS 3) FY10-FY13 acknowledged the effective management of natural resources and the environment as a challenge the country was facing and refers to the Biodiversity Conservation Project (BCP) under CAS objective 2 – promoting inclusive growth. The BCP was also listed as one of the projects to leverage additional funding outside International Development Assistance (IDA. 3). The BCP was built on existing Government and donor initiatives and was designed to complement and strengthen current conservation efforts, such as the new demarcation of the Western Area Peninsula Forest Reserve, funded by European Union (EU) or the conservation of the Gola Forest National Park, funded by EU and the NGO Royal Society for the Protection of Birds (RSPB). BCP emphasized building the capacity of governmental institutions and personnel to carry out their mandates effectively through engaging local communities, local Government, and other key stakeholders to participate in conservation planning and management. Unlike previous or other on-going projects during appraisal, the BCP was targeting simultaneously three priority conservation sites aiming on the development of mechanisms for sharing best practice more broadly, in a nation-wide context with an existing network of 48 forest reserves and conservation sites. The three sites were Outamba Kilimi National Park (OKNP), Loma Mountains National Park (LMNP) and Kangari Hills Non-Hunting Forest Reserve (KHFR). These sites were among the identified eight national priority sites in the National Biodiversity Strategy and Action Plan (NBSAP). The project was expected to lay a foundation to mainstream biodiversity in national and district development planning, and to scale up and replicate successful outcomes across the country, during and after project implementation.

The BCP was funded by Global Environmental Facility (GEF) and implemented by the National Protected Areas Authority (NPAA). The project was a follow-up of the identification of priorities for conservation based on a number of processes, including the IBA Program and the KBA Program and other priority setting processes. A grant of US\$ 5 million was provided to the Government of Sierra Leone, through the World Bank, for project implementation geared towards improving the conservation and protection status of the three protected areas (PAs) mentioned. The project enhanced the the management and logistic support to the three protected areas in the following ways:

- (i) Construction of reserve infrastructure such as office complex, ranger outposts, visitor centers and nature trails.
- (ii) Increase in the number of staff assigned to the PA and provision of logistical support in the form of transportation and accommodation facilities.
- (iii) Community collaboration and CAP support;
- (iv) On the job training provided to field staffs to improve their skills in modern conservation management practices like the use of GPS and camera trapping methods.

A few specific achievements include the construction of: (i) one office complex and five ranger outposts at OKNP; (ii) one office complex and three ranger outpost at KHFR; and (iii) one office,

research base camp and one outpost at LMNP. The Visitor Centre at OKNP has running water and toilet facilities and two visitor huts constructed. Five permanent trails ranging from 2 km to 10 km were done at each conservation site.

During the course of the project implementation, best practices for conservation site management was generated that are now the accepted and adopted formats for NPAA system-wide implementation include conservation site reports, standardized CAP assessment formats, standardized management plans, and biodiversity monitoring formats and maps (including field data collection during law enforcement patrol activities). Additionally, through BCP implementation, information-sharing meetings between site managers and District Forestry Officers (DFOs) have intensified across different sites in the country, leading to peer-reviewing of processes and progress and exchange of ideas and experiences across the board, thereby enhancing management practices for conservation.

In terms of progress on coordination, policies and legislation, the project facilitated inter-agency collaboration and the update and improvement in three main outputs, as follows:

- (i) The outdated 1972 Wildlife Conservation Act and the 1988 Forestry Act were revised through a thorough consultative process, lead by a barrister-at-law, and assisted by renowned conservation and forestry experts in the country. The team also drafted the first ever Wetland Conservation Act. All three legislative documents were validated at national level with wide input from different institutions and individuals across the country, mainly targeting relevant stakeholders from all MDAs, NGOs and civil society. The documents were finalized and ready to be approved by the Minister of Agriculture, Forestry and Food Security, and submitted to Parliament for endorsement, which is still pending.
- (ii) Inter-agency coordination was enhanced through semi-annual steering committee meetings were conducted following the establishment of the steering committee. This has enhanced coordination between NPAA and other agencies especially the Mineral Agency responsible for issuing license to mining companies to explore and mine minerals in the country.
- (iii) MAFFS quarterly peer-review meetings approved annual work plan and budget for the implementation of the project.

As a means of ensuring sustainability and a workable exit strategy for the project, management plans were developed for all three PAs, respectively through a wider and transparent consultation with local community stakeholders, local government authorities and other institutions. These plans resulted in the first ever participatory management actions ever for these PAs and they are being utilized and constitute the main reference material for the Community Action Plans (CAP) that provide support for sustainable community livelihoods. CAPs were developed through needs assessment surveys to identify programs that will enhance community welfare, while conserving protected area resources. Besides the direct economic benefits they might generate (from the supply resources like tree crops), the local communities are beginning to realize that they can improve their welfare if the nearby PAs are managed well. For instance, solar power installation has improved their social lives by providing lighting in their community meeting places and charging up their mobile phones, which enhances communication within and outside their local areas.

Biodiversity conservation considerations have been substantively incorporated within each of the revised District Development Plans, although not necessarily as a separate chapter. The District Councils were part of the National Steering Committee and the Conservation Site Management Committee. The district development officers (and the environment and social officers) were part of the management planning process and learnt the skills of developing management plans. Chieftom by-laws were developed for each of the chieftoms for the conservation of biodiversity and effective law enforcement.

The main beneficiaries of the BCP were the rural households in communities adjacent to protected areas. Being extremely poor, especially in the case of the difficult-to-reach areas of Outamba Kilimi National Park (OKNP) and Loma Mountain National Park (LMNP), these households were often lacking access to basic social infrastructure such as schools, health centers, drinking water, etc. The case of Kangari Hills Non-Hunting Forest Reserve (KHFR) is slightly different, since this conservation site is close to a relatively good road system enabling trade and easier access to markets for rural products and next to a vibrant mining sector in the surroundings of the Kangari Hills that provides jobs outside of agriculture. Another main beneficiary was the Forestry Division and the new National Protected Area Authority (NPAA) at the headquarters in Freetown, District Council level and conservation site level; but also other Government staff within the District Councils, such as personnel of the Policy Evaluation, Monitoring and Statistics Division (PEMSD) and Planning Departments of the District Councils. Traditional authorities, such as Paramount, Section and Town Chiefs were also beneficiaries as they are the crucial stakeholders for land use and conservation within and adjacent to protected areas. They received targeted training and funds to cover the incremental costs of their participation in BCP-supported meetings and events.

National Target(s)

Strategic Output C1 - The Conservation Status of Protected Areas (Parks, Forest Reserves, Game Reserves and Sanctuaries) and the Wildlife therein Significantly Improved
Strategic Output C3 - In-Situ Conservation for Species and Ecosystems in Protected Areas Enhanced by At Least 30%, Leading to Improved Conservation Status of Threatened Species and Habitats.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been effective

tools or methodology used for the assessment of effectiveness above

The implementation of the BCP has improved the conservation status of the targeted protected areas in a number of ways. The status of the Loma Mountains Non-hunting Forest Reserve was upgraded to a National Park, whilst the capacity for effective monitoring and administration of the Outamba-Kilimi National Park and the Kangari Hills Non-Hunting Forest Reserve were greatly enhanced. Over 50 field staff and rangers received relevant training and logistic support, and rangers outposts were built in all three targeted PAs to effectively carryout surveillance and

EN

monitoring activities. For instance, the OKNP staff number almost doubled from 17 to presently 32; LMNP staff increased from 17 to 29. NPAA's financial budget exceeds also by far the previous GoSL budget allocation for the Wildlife Unit of the Forestry Division and salaries for newly contracted staff are above previous contracts. The Training Needs Assessment, organized under the BCP, has given valuable recommendations for upgrading the skills and knowledge base of the new, exclusively young and inexperienced site staff. Hence, it is likely that NPAA can continue and even enlarge management operations to the three pilot and other sites, although potential future budgetary constraints may slow or limit the Authority's rate of progress. The reserve boundaries were reassessed and re-demarcated for clarification and to resolve disputes with adjacent communities.

The most important monitoring and evaluation tool to measure Project outcomes was the Management Effectiveness Tracking Tool (METT), which was applied four times at all three conservation sites. The METT provides a means to track overall progress in improving the quality of protected area management across a broad range of variables. The METT was developed by the IUCN World Commission on Protected Areas and is now used in many protected area projects (including those supported by the World Bank and the Global Environmental Facility (GEF).

From the project evaluation, it is understood that in practice and beyond the Project cycle period, mechanisms are in place to continue M&E, as Conservation Site (CS) managers are able to: (i) elaborate their quarterly work plans and budgets; (ii) elaborate their monthly reports in Power Point format; and (iii) present, discuss and evaluate results in monthly monitoring meetings in Makeni. A data monitoring system based on monthly GPS data from the field is being used in the GIS unit of the NPAA. Further, satellite images and the Arc-GIS software acquired during the Project period are also being utilized within the newly-established NPAA, and are important tools to update information on the Protected Area system, such as to determine more accurately the boundaries and surface areas of existing and newly proposed conservation areas.

Relevant websites, links, and files

[The World Bank website](#)

Other relevant information

A very relevant and necessary intervention of the BCP is the review of the outdated and outmoded 1972 Wildlife Conservation Act and the drafting of the first ever Wetlands Conservation Act. The review process incorporated expertise from the legal, academic and management sectors. The need for the review was obvious long over due because the regulations were only only applicable decades ago and the fines were ridiculous because of the progressive devaluation of the national currency, the Leones over the years. However, the reviewed and drafted acts are still to be enacted by Parliament and because of the delay for almost five years now, there would be need for further review of the draft documents.

EN

Obstacles and scientific and technical needs related to the measure taken

One of the challenges to the review and enactment process of these pieces of legislation is that of overlapping mandates, wherein the conflicting roles within and across their respective acts and policy documents is creating serious disputes among government ministries, departments and agencies in the discharge of their respective duties. Some of these disputes have stalled the process on the finalization and implementation of vital legislation relevant to biodiversity conservation, such as the enactment of the reviewed 1972 Wildlife Conservation Act, the reviewed 1988 Forestry Act and the drafted Wetlands Conservation Act. The widespread illegal hunting and logging were impediments to achievement of some of the goals, but the use of GIS mapping and increase intensification of surveillance activities by rangers was very instrumental in reducing the pressure; however, this needs to be sustained to achieve the long-term objective of the project.

EN

Enhancing forest conservation through capacity building for REDD implementation at the Western Area Peninsula Forest

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

The Western Area Peninsula Forest REDD project was a four-year project funded by the European Union and is being implemented in what is now the Western Area Peninsula National Park (WAPNP) declared in the Statutory Instrument No. 6 of 2013) by the Environmental Forum for Action (ENFORAC), Welthungerhilfe (WHH) and the Forestry Division of the Ministry of Agriculture Forestry and Food Security (MAFFS). Additional partners include the Ministry of Lands, Country Planning and Environment (MLCPE) which have been involved to ensure planning permissions for construction and house settlements are not approved within the forest reserve boundaries. Encroachment from building construction has been identified as a key barrier to forest protection and therefore the Ministry is now directly involved with the process to ensure WAPNP forest boundaries are respected.

The project had two main objectives: 1) to protect the Western Area Peninsula Forest Reserve and its watershed and promote its sustainable use for the benefit of the adjacent population; and 2) to introduce participatory processes in decision making on the sustainable use of natural resources. Another important objective is to protect the Guma Valley and the Congo Dam, which supplies water to the entire population of Freetown (about 2 million people). WAPNP is now sustainably managed and protected by trained forest guards, some of them recruited from the nearby villages.

EN

REDD+ has been identified as a sustainable financing opportunity for WAPNP and activities have started for the development of a REDD+ project in the reserve. A pre-feasibility study was completed in 2012 and based on this initial work, project partners together with experts from Fourah Bay College (University of Sierra Leone) embarked on the process of developing a Project Design Document (PDD) to be validated under the Verified Carbon Standard (VCS). In 2013 efforts to establish a biodiversity baseline and monitoring system was completed, as

well as ground truthing surveys to complement previous remote sensing assessments for the purpose of developing a carbon stock inventory.

The main identified drivers of deforestation in the WAPNP are: (i) rapid urbanization and land grabbing; and (ii) farming, fuel wood consumption for energy purposes and for smoking fish, and stone mining. The project area is on state owned land surrounded by many local communities and a carbon rights agreement including a benefit sharing plan for the project stakeholders was developed during the PDD development phase. In terms of ensuring additional co-benefits are achieved, the project is introducing alternative livelihood programs in the surrounding communities. This is done for example by planting local woodlots and tree farms to provide for household energy and for fish smoking, and by introducing local farmers to agroforestry techniques. More than 200,000 tree seedlings were planted in the buffer zones and the number is increasing as a result of agroforestry practices by the MAFFS. Additionally, the project has implemented water supply systems for five surrounding communities, thus benefiting hundreds of thousands of people in the environs.

National Target(s)

Strategic Output C1 - The Conservation Status of Protected Areas (Parks, Forest Reserves, Game Reserves and Sanctuaries) and the Wildlife therein Significantly Improved
Strategic Output C3 - In-Situ Conservation for Species and Ecosystems in Protected Areas Enhanced by At Least 30%, Leading to Improved Conservation Status of Threatened Species and Habitats.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been partially effective

tools or methodology used for the assessment of effectiveness above

The Western Area Peninsula Forest National Park is in a very unique situation. It is found in close proximity to capital city Freetown, where the population is estimated at 1.5 million and growing, mainly due to rural-urban migration. Therefore the hunger for land is growing, thus accelerating the encroachment into reserve areas. Despite the gains the project made in demarcating the reserve boundary, the encroachment rate is increasing unabated, and law enforcement is weak because of corrupt means of land acquisition.

The tools of monitoring mainly involved regular meetings, reviews and peer-reviewed reports. A mid term project review and evaluation and an end of project review and evaluation were conducted to monitor progress on project indicators. The report and reviews indicated significant achievements on the project, but there were a few areas of concern, particularly weak law enforcement, which resulted in encroachment even into the re-demarcated boundaries of the park

EN

Other relevant information

Under the project, the Biological Sciences Department carried out a biomass and carbon stock assessment of the WAPFNP and the Banana Island. The study marked the first attempt at

EN

assessing the REDD and REDD+ potential for the national park and trade-able carbon credits in the park.

Obstacles and scientific and technical needs related to the measure taken

Some more training and expertise if need on carbon stock assessment and carbon-trading processes are required for staff of the Forestry Division and NPAA. Once its is manifested that funds could be made available through carbon trading mechanisms, more forest and wildlife rangers could be assigned to the park to address law enforcement issues to protect the forest estate and biodiversity.

EN

Gola Rain Forest National Park REDD Project - towards a sustainable management of the park for biodiversity and local communities.

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

The Gola Rainforest National Park (GRNP) REDD project is the first REDD+ project in Sierra Leone. The project area covers over 70,000 hectares of Upper Guinea forest, an internationally recognized biodiversity hotspot and the largest remaining tract of forest in Sierra Leone. The project area provides a critical refuge for a number of endangered species and provides a range of ecosystem services including watershed protection and local climate stabilization and is an important source of natural resources for nearby local communities. The 7 Chiefdoms surrounding the National Park are the customary landowners of the project area and the project zone which surrounds the project area and where approximately 85 communities live, which amounts to an estimated 23,500 people. In the 1920s, the management of the current project area was assigned to the Government, when the Gola Forest Reserves were created as production Forest Reserves. In 2011, the reserves became the Gola Rainforest National Park (GRNP). This was an important milestone which paved the way for the REDD+ project. The Park is Sierra Leone's second national park and its first rainforest park. The REDD+ project is being developed to meet the Climate Community and Biodiversity (CCB) Standards and the Verified Carbon Standard (VCS). The project joint validation started in September 2013.

EN

The vision for the project is to “act as a catalyst for peace, prosperity and national pride in Sierra Leone, ensuring that the globally important habitats, biodiversity and environmental services of the GRNP and wider Gola landscape are conserved and that neighbouring communities are active environmental stewards of the natural resource base that underpins and enhances their livelihoods”. To facilitate the achievement of the project's vision and ensure that the project achieves net positive benefits for climate, communities and biodiversity, project activities will be built on three key areas of focus:

1) Conservation strategy and effective management for the GRNP: the aim was to strengthen the conservation strategy and effective management of the GRNP so that the project can encourage the building of national policies and regulations as well as inform relevant regional

and international platforms with best practices in the field of conservation.

2) Sustainable natural resource management: the aim was to enable local people to become environmental stewards of the natural resource base that underpins their livelihoods through education, capacity building, land use planning and activities that enhance the socio-economic benefits derived from the sustainable use of the project zone's forests and agricultural land.

3) Research and monitoring: the aim was to develop and maintain a comprehensive social and biodiversity database and monitoring system to ensure the availability of accurate, relevant and timely information to inform and enhance project management and the effective delivery of outcomes, using adaptive management processes.

The activities surrounding sustainable natural resource management have been developed in coordination with the villages in the project zone and are designed to improve livelihoods whilst addressing and reducing the local drivers of deforestation. Engaging local communities in both management actions and livelihood activities is central to the project as it will ensure the permanence of the project. Activities will include developing sustainable farming practices which intensify the production of rice which is the staple food crop in the region, rehabilitating and improving production, harvesting, learning post-production techniques, and marketing of plantation crops such as cacao. Furthermore, internal savings and lending co-operatives were established to support alternative livelihood strategies; land use management plans for community areas in the project zone and co-management areas within the project area were developed to ensure the holistic management and impact of the programme.

The early stages of conservation work in the now Gola Rainforest National Park REDD Project was funded by the UK Department for Environment Food and Rural Affairs (DEFRA) Darwin initiative, the Global Conservation Fund (an initiative set up by Conservation International), and the RSPB. For the years 2007-2012 the conservation programme was funded by the European Union and the French Global Environment Facility (Fonds Français pour l'Environnement Mondial - FFEM). Since 2012 the development of the REDD+ project has been funded by the RSPB and the EU through the 'Across the River- a Transboundary Peace Park for Sierra Leone and Liberia' project. The aim was to create a long-term sustainable financing source for the park through REDD+ and until carbon revenues become available the RSPB temporarily supported on-going conservation management actions.

Stakeholder engagement and participation

The GRNP project has adopted and followed the principles of Free, Prior and Informed Consent (FPIC) in developing the REDD+ project. A stakeholder engagement plan was developed and implemented; this began in January 2012 with a series of consultative meetings from Paramount Chief level to forest edge communities to develop an understanding of climate change and REDD+ and to gain approval for beginning the project development process. Consultations and meetings were conducted throughout the project zone in accordance with best practice for social impact assessment, in Mende, the local language and using appropriate methodologies and tools. Community engagement and consultation is a key part of the project and regular road shows, radio programs, workshops, school events as well as traditional meetings and forums all form on-going means of communicating and engaging with a full range of local stakeholders from Paramount Chiefs to school children and farmers throughout the

project zone and Chiefdoms.

Land tenure arrangements and carbon rights

The GRNP is situated on customary lands of which the surrounding chiefdoms and local communities are the customary owners. In 2007 a 'community benefits and payment agreement' was signed between the project implementers, the government and the local communities. This concession agreement enables local government, landowners, and communities to be compensated in exchange for forgoing their rights to any activities (farming, hunting, logging etc.), without changing the nature of the land ownership. As such the forest remains in customary ownership with management rights assigned to the Forestry Division of the Ministry of Agriculture Forestry and Food Security (MAFFS). The Forestry Division is the management authority for all Forest Reserves and National Parks in Sierra Leone, including the project area. Carbon agreements have been signed between the traditional landowners and the Government of Sierra Leone, which now holds the carbon rights of the project area. As expected, the project proponent entered into a joint venture agreement with the Government to manage the project area (the GRNP) and own the rights to sell the carbon credits that are created by the project for the lifetime of the carbon project.

Forest Management

The project signed a benefit sharing agreement with the 7 Chiefdoms surrounding the project area. This agreement provided the high level link between the GRNP project's support to community activities and the Chiefdoms' cooperation in support of the deforestation mitigation efforts of the project. The agreement outlines the roles and responsibilities of each party and the activities and benefits that the project provided to incentivise communities to adopt sustainable development practices that reduce deforestation in the project zone and offsite zone. Before project activities are implemented in the villages of the project zone, agreements were made between the participants and the project that outlined the activities and the responsibilities of each of the parties to provide again a direct link between the support provided and the conservation efforts. The project area is now established as a National Park and as such is protected by legislation. However, as seen in other Forest Reserves throughout Sierra Leone, legislation alone is not enough to prevent deforestation and so the project built the capacity of locally hired rangers to prevent illegal activities within the project area to ensure the integrity of the project area and preserve its unique biodiversity.

Reference levels

Ground truthing surveys and community surveys throughout the reference region established the baseline deforestation rate for the project through the interpretation of satellite images from 2001, 2007 and 2011 (the historical period), this rate was then used to model deforestation in the baseline scenario. The outcome of the model shows that, without the project, 1285 hectares of forest would be lost annually from the project area.

Safeguards

The project followed the principle of FPIC, devised and implemented a grievance mechanism

and consulted with a full range of affected stakeholders during project development and at key decision making points and continue to do so throughout the implementation of the project. All the project activities in the project zone and the development of the benefit sharing agreement were developed with local stakeholders and were designed to reflect local interests, needs and practices to ensure that co-benefits are achieved for local communities and stakeholders. A comprehensive social monitoring plan was developed that measured the outputs, outcomes and impacts of the project to compare to the socio-economic baseline information that was collected by project partners comprising a social science team from Cambridge and Wageningen Universities.

Biodiversity conservation was effective through the patrols of the rangers in the project area which will prevent illegal deforestation and hunting activities and through the team's integrated conservation and development activities in the project zone. Such actions did help to maintain and enhance the forests of the project area and the important forest matrices that exist in the project zone thus enabling the preservation of habitat critical for wildlife connectivity.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been effective

tools or methodology used for the assessment of effectiveness above

The GRNP is one of the PAs that are well managed in Sierra Leone, thanks to the the technical and funding support provided by the RSPB and its partners. Monitoring mechanism are standard methodologies used internationally. The GRNP project used a methodology from the Verified Carbon Standard to quantify the carbon stocks and net emission reductions following a comprehensive analysis of satellite imagery. The research team received extensive training on the techniques required to set up and sample biomass plots in forest and post-deforestation areas and conducted monitoring, verification and reporting with the support of the RSPB throughout the implementation of the project. Regular meetings of national partners with inputs from international partners are ongoing, whilst peer-reviewed research and survey reports were and are being used to monitor the impacts and outcomes of the project.

EN

Relevant websites, links, and files

[REDD website](#)

Other relevant website address or attached documents

[REDD website](#)

Promoting and Sustaining the Conservation of Wetlands in Sierra Leone through implementation of the Wetlands Conservation Project

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

Between 2010 and 2016, the Ministry of Agriculture and Forestry and Food Security (MAFFS) through the World Bank/GEF supported two conservation projects in Sierra Leone: The Sierra Leone Biodiversity Conservation project (SLBCP) and the Sierra Leone Wetlands Conservation Project (SLWCP). The SLBCP was focused on terrestrial conservation ecosystems to strengthen national frameworks for biodiversity conservation and conservation site planning and management. Despite the terrestrial focus of the SLBCP, places like Outamba-Kilimi National Park (OKNP), has Lake Idrissa (a wetland of national importance), situated within the park and so it is protected under the OKNP management plan. The Sierra Leone Wetland Conservation Project (SLWCP) was on the other hand implemented to improve the strategic and operational conservation management of wetlands in Sierra Leone.

The project was funded through a US\$ 1.8 million grant by the World Bank and implemented by the National Protected Areas Authority. The SLWCP developed strategic plans for wetland conservation and piloted wetland conservation site planning and management in Mamunta-Mayosso Wildlife Sanctuary (MMWS - inland Wetland) and the Sierra Leone River Estuary (SLRE - a coastal wetland). Through these interventions, biodiversity and socio-economic assessments were conducted the Wetlands Conservation Act was drafted, management plans were developed for the MMWS and SLRE, conservation site management committees and enhancing local awareness on wetlands conservation. The key achievements of the project are detailed as follows:

- A Strategic Plan for wetland conservation has been developed. Additionally, a draft Wetlands Act has been produced through a completed national consultation and validation process. The Act is however awaiting concurrence among other government agencies before it is tabled in Parliament;
- An updated wetlands inventory was carried out and report has been developed, and finalized in March 2016 including 11 wetland sites.
- Management Plans (MPs) for MMWS and SLRE were produced in a participatory process over several months including all relevant stakeholders, such as village and traditional authorities and district council representatives. Participatory Rural Appraisals were organized in cluster villages. The MPs were drafted and presented and validated by the stakeholders. This was done in several meetings at District Council and Chiefdom levels, as larger gatherings were banned from 2014 on. The five years MPs (for MMWS 2014-2018 and for SLRE 2016-2020) contain Action Plans for thematic areas, such as Biosphere Reserve creation for SLRE, community development, enhancement of site surveillance and protection or Research and Monitoring plans.
- The ecological condition in MMWS-inland wetland has been greatly enhanced by stopping logging and farming activities in core zones. Only few farming activities done in the buffer areas and fishing activities are done in lakes within the Sanctuary every one or two years.
- Community action plans (CAPs) were developed based on needs assessment surveys to identify programs that will enhance community welfare, while preserving wetland area resources. Women benefited more than men in

EN

general as many CAP activities were related to preferences women such as vegetable trainings, groundnuts, and gardening:

- MMWS: 100% households for MMWS were targeted under CAP and have received support for conservation linked activities. Some activities, such as drying floors and solar installations were benefiting whole communities, rather than individual households; see table 5 in Annex 2.
- SLRE: The CAP targeted 28 communities comprising 3,439 HH with a total population of 23,850 people. 1,575 HH form direct beneficiaries of CAP supported activities which corresponds to 46% of HH targeted under CAP;
- Two districts (Tonkolili and Port Loko) included a chapter on wetlands conservation in their draft District Development Plans Chiefdom by-laws updated to include existing wetland conservation laws and regulations.
- Cooperation for creating understanding of the roles and responsibilities, especially where mandates overlap, led to the MoU between MAFFS and MFMR contributes to improved collaboration at SLRE and other coastal areas.

Wetlands management was a new component of government conservation strategies and was not given sufficient attention to promote its interventions. Despite the fact that WCP was a successful pilot project, the government lacked the resources to replicate its approach in other wetland sites. Government relied on donor funded programs (such as WABiCC) to implement the SLWCP approach.

National Target(s)

Strategic Output C1 - The Conservation Status of Protected Areas (Parks, Forest Reserves, Game Reserves and Sanctuaries) and the Wildlife therein Significantly Improved

Strategic Output C2 - The Ecological Integrity of Inland and Freshwater Ecosystems Significantly Improved through Sound Conservation Actions.

Strategic Output C3 - In-Situ Conservation for Species and Ecosystems in Protected Areas Enhanced by At Least 30%, Leading to Improved Conservation Status of Threatened Species and Habitats.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been effective

tools or methodology used for the assessment of effectiveness above

Most of the tangible benefits of the project went to the local communities, who derived significant benefits from water and vegetation conservation in PAs, and therefore high interest to preserve natural resources, in the following ways:

(a) Linked to these benefits from PA resources is the local population's high awareness and willingness to protect water bodies: as much as 93% of the household heads rated forests and vegetation in MMWS as 'very important' (for SLRE it was 67%). Similarly, about 98% of MMWS households rated the water bodies as 'very important' (for SLRE 82%).

(b) The project benefited highly from synergistic effects and familiarity with the BCP, which

EN

started two years earlier than WCP and leveraged efficiency in administration, procurement, and replication (with certain adoptions) of successful practices.

(c) Project target indicators related to MMWS were over-achieved. This was due to its small size, small population, easy access and administrative as well as cultural homogeneity. The MMWS is proven to have the ideal conditions in terms of efficient execution of activities, efficient communication and piloting best practices. For the more spatially SLRE, the chosen approach focused on specific (geographic and thematic) areas and core areas in order to increase ownership and to have a meaningful impact. A continued effort in this direction is still required, such as the proclamation of a Biosphere Reserve and specific actions for each core cone.

The Project Management Team (PMT) took the lead role in M&E by producing quarterly reports and managing data inflow from the sites and from central Government. Monitoring and evaluation was undertaken mainly using the Management Effectiveness Tracking Tool (METT) was one of the applied methods which fed into periodical adaptations of the Results Framework. The Forestry Division (FD), later NPAA, had to ensure that consolidated M&E reports were submitted on time to the World Bank at regular intervals and was performed at the following levels:

- The NSC, which was constituted already under the BCP, oversaw and approved the annual work plan and budget in 2013. The PMT had to adapt its M&E formats to the Ministry formatting. This was not only necessary for the annual NSC meeting, but also for the regular quarterly reporting overseen by the Ministry and required through its Policy Evaluation, Monitoring and Statistics Division (PEMSD), as the WCP was integrated in the monitoring system of the Ministry.
- PMT was based in Makeni and served as a hub for monitoring the sites and forwarding issues from and to the National Protected Areas Authority in Freetown. Monthly meetings for planning, reporting, information exchange, identification of shortfalls and bottlenecks and harmonization were organized, integrating the two Site Managers and District Forestry Officers (DFO).
- At the conservation sites, three monitoring activities were carried out on a regular basis: (i) weekly meetings at the sites within the CSMT, (ii) monthly technical coordination meetings with participation of Site Managers, DFO and DC-representatives at Makeni office, and (iii) the METT exercise, as a participatory annual monitoring meeting to measure project progress from the point of view of the key stakeholders around the sites.

Other relevant information

The drafting of the first ever Wetlands Conservation Act for Sierra Leone was a key output of the project. Prior to the project wetlands conservation was not of foremost national biodiversity priority. The objective of the drafting of the act was to raise the profile of wetlands and incorporate the conservation needs of wetlands ecosystems into national policies and legislation. This was borne out of the realization by government and other stakeholders about the declining status and wetlands due to the indiscriminate exploitation of the resources in

EN

them. The drafting of the Act was done through thorough consultations with the important group of stakeholders, from government to NGOs, civil societies and local communities. The drafted act still awaits parliamentary enactment.

Obstacles and scientific and technical needs related to the measure taken

Internal Project factors which gave rise to challenges during the course of implementation of the project were related to coordination between financial management and implementing staff within PMT. The Financial Management and Procurement functions of this project were performed by the PCU of the Rural and Private Sector Development Project (RPSDP), which had the combined responsibility for managing financial and procurement transactions for the project. The financial management reporting was not in line with the quarterly technical reporting sequences of PMT, which at times made it difficult to obtain cost-control information on time.

The technical expertise of the project staff in handling some of the high-vel technical issues of the project was an initial challenge, but this was addressed by some internal training arrangements made possible by some of the expatriate staff.

EN

Strengthening Leadership for Conservation in Sierra Leone and Liberia through Research and Training on the Western Chimpanzee, Pan troglodytes verus (MENTOR-PACE) at Njala University, Sierra Leone"

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

INTRODUCTION

This project was funded by *US Fish and Wildlife Services Great Apes Conservation Fund Grant Agreement No F13AC00835*, and implemented by Njala University (NU), in collaboration with the Forestry Division (MAFFS) and the Gola Forest National Park. The project started in August 2013 and was completed in ended in September 2017. The long-term goal of the MENTOR-PACE project is to strengthen wildlife conservation leadership in Sierra Leone and Liberia. This was achieved through a targeted conservation action and training programme focused on the Western Chimpanzee as a flagship species in the two countries, and across the Upper Guinea forest ecosystem.

Specific objectives of the project are:

1. To train and mentor a cadre of professionals for effective leadership in wildlife conservation and management

EN

2. To establish a foundation for Chimpanzee conservation science at Njala University
3. To facilitate collaborative exchanges on Chimpanzee conservation between professionals in Sierra Leone and Liberia

The project initially envisaged to commence in October 2014, was delayed due to a major outbreak of the *Ebola Virus Disease* (EVD). Both Liberia and Sierra Leone were affected by this outbreak, which spilled over from Guinea in mid-2014 and last nearly a fully year. As a result of actions undertaken by the governments and development community at that time, all research and academic activities across the two countries were suspended indefinitely. This affected the timing and sequencing of MENTOR-PACE activities as reflected in this final report.

Success of the programme depended on the extent to which staff and candidates were able to move between the university campus and field sites, and between the two countries. This was no longer possible by then, especially when the EVD crisis in both Liberia and Sierra Leone (and Guinea) between 2014 and 2015. The USFWS was granted an extension and the project resumed once normalcy resumed in the two countries. Therefore, a request for extension was formally submitted as soon as dates for reopening of academic and research institutions were announced.

ACHIEVEMENT AND OUTPUTS OF MENTOR-PACE PROGRAMME ACTIVITIES

Objective 1 - Developing a Cadre of Wildlife Conservation Professionals

Activity a. - Design an 18-month Programme. - The tasks included the following: i) Create a Programme Committee to oversee the design process; ii) Organize an expert workshop to design and structure the Programme; and iii) Finalize the Programme and schedule implementation

Status - Successfully completed

Outputs

Programme Committee was constituted to include the following: - Dr. Aiah Lebbie, Head of Biological Sciences (Leader and Chairman); Mr. Ibrahim Abu-Bakarr, Lecturer (Project Manager and Secretary); Mr. Alhajie H. Kamara, Lecturer and Acting Head of Wildlife Management; Mr. Emmanuel K. Alieu, Lecturer; Mr. Brima M. Koroma, Lecturer; and Ms Nancy Gelman (Representing USFWS). The expert workshop was held that produced a detailed curriculum and delivery plan for the entire programme (see Attachment 1 for Workshop Report).

Activity b - Recruitment of Candidates: The tasks included the following: i) Establish profile of candidates for the Programme; ii) Conduct targeted advertisement of the Programme; iii) Conduct face-to-face interviews and select successful candidates

Status - Successfully completed

Outputs

Despite delays from EVD crisis, the course was advertised and generated considerable interest in both countries. A total 23 prospective candidates from Sierra Leone and Liberia expressed interest, of which 12 submitted formal applications with all supporting documents by the deadline. The Programme Committee reviewed the applications and recommended the best candidates for face-to-face interviews. A final group of 8 fellows were then selected and confirmed with their respective home institutions.

Activity c - Plan and organize logistics for the 18-month Programme - The tasks included the following: i) Complete logistical arrangements; ii) Purchase and prepare equipment; iii) Confirm schedules for all staff and resource persons; iv) Put in place emergency and contingency plans.

Status - Successfully Completed

Outputs

All equipment were purchased in time for start of the program, and with full approval by the USFWS, a full two-year schedule was produced for the programme.

Objective 2 - Foundation for Chimpanzee Research and Monitoring at Njala University

Activity a - Identify long-term priorities for Chimpanzee conservation - The tasks included the following: i) Consultation with civil society organizations; ii) Consultation visits to selected communities, and iii) Expert workshop to synthesize priorities.

Status: - Successfully Completed

Outputs

Consultation with civil society organizations was initiated by the project team, as part of the recruitment process for MENTOR-PACE. Project staff from Njala University visited the offices of several prospective partner institutions in Sierra Leone and Liberia and discussed overall premise of the programme. There was considerable interest in this approach, which was further reinforced at the start of the training. The success of this task was further enhanced by participation of fellows and staff in the Great Apes Survival Partnership (GRASP) Regional Meeting for West-Africa (12-13 April 2016; Monrovia, Liberia). The meeting generated important ideas for advancing conservation of the Western Chimpanzee, and helped to position the MENTOR-PACE program and NU as a major partner for development of Regional Action Plan.

Activity b - Mobilize and engage Njala University Staff - The tasks include the following: i) Develop guidelines for staff engagement in targeted research, ii) Solicit proposals for the targeted research activities, and iii) Evaluate proposals for selection.

Status - Successfully Completed

Outputs

The original plan for this activity was to have individual staff members conducting their own research. However, due to work load resulting from the delay caused by EVD crisis, it was decided that staff members work together with the MENTOR-PACE fellows on research projects. During the second phase of the programme, the fellows were divided into three groups; two groups each comprising of two fellows and one group comprising of three fellows. To each group was assigned two supervising staff members. Each group was requested to submit a written proposal for their research. A power point presentation in the presence of all staff and other invited guests were made by each group for further discussion and input. Final draft copies of the proposals were then submitted by each group to the Program Committee. The Program Committee finally evaluated and decided on the proposals, based on consistency with the objective for strengthening institutional capacity at Njala University as well as potential to support successful delivery of the training Programme.

Activity c - Establish partnerships and institutional links - The tasks included the following: (i) Consultation with the prospective partners, (ii) Develop and secure agreement on options for joint activities, and iii) Establish working modalities.

Status - Partially Completed

Outputs

Consultation with prospective partners was initiated immediately after the inception workshop. The Project Manager held preliminary discussions with heads of the Gola Rain Forest National Park, STEWARD programme, and the Environmental Foundation for Africa. As a result, representatives from these institutions made significant contributions toward the curriculum development. However, the tasks on developing and securing agreement on options for joint activities and establishing working modalities were not pursued further as a result of the EVD outbreak.

Objective 3 - Collaborative exchanges between professionals in Sierra Leone and Liberia

Activity a - Scoping and consultation on exchange visit - The tasks included the following: i) Establish contacts with universities in Liberia, ii) Undertake scoping visit to Liberia, and iii) Develop Terms of Reference.

Status - Partially Completed

Outputs

The project manager and a colleague from Njala University made a preliminary scoping and consultation visit to Liberia in July 2014 to engage directly with potential partners. During the visit, all relevant institutions with offices in the capital Monrovia were contacted to acquaint them with MENTOR-PACE and discuss potential interests for participation in the programme. A detailed report on outcome of this visit was prepared and shared with the Programme Committee including the USFWS (see Attachment 8).

Activity b - Organize the exchange visit - The tasks included the following: i) Identify and prepare staff for the visit, ii) Complete logistical arrangements for travel and hosting in Liberia, and iii) Synthesize ideas and lessons from the visit.

Status: Partially Completed

Outputs

Tasks under this activity were largely affected by the EVD outbreak, which constrained formal exchanges and interactions between Liberia and Sierra Leone. However, the Great Apes Survival Partnership (GRASP) Regional Meeting presented an opportunity for NU staff to visit key entities in Liberia (see Attachment 6). While the informal interactions were very useful, exchange visits could not take place. But with the links now in place, NU will continue to explore opportunities.

CONCLUSIONS

The MENTOR-PACE programme has been an innovative and inspiring initiative for all who were involved. Njala University is grateful for the Cooperative Agreement with USFWS that made the programme possible. NU staff have continued to pursue opportunities that are emerging as a result of the programme. For example, the Project Manager and three MENTOR-PACE fellows participated in a workshop to develop an Action Plan for the Western Chimpanzee. Major outcomes of the workshop were updated information on current knowledge, creation of a collaborative network and development of a government-endorsed, draft regional conservation action plan to guide conservation, education and research across the entire range of the Western Chimpanzee.

National Target(s)

Strategic Output B3 - Ecological Restoration and Recovery of Species and Ecosystems under Threat is Significantly Improved

Strategic Output C3 - In-Situ Conservation for Species and Ecosystems in Protected Areas Enhanced by At Least 30%, Leading to Improved Conservation Status of Threatened Species and Habitats.

Strategic Output C4 - In-Situ Conservation Outside Protected Areas Enhanced by at Least 20%, Significantly Improving the Status of Habitats for Rare and Threatened Species.

Strategic Output E1 - Diverse Capacities for Effective Implementation of National Biodiversity Programs Built and Being Utilized.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been effective

tools or methodology used for the assessment of effectiveness above

A post-implementation evaluation was done during which the evaluator had consultations with all stakeholders, including the trainees, the trainers and the employers of the trainees. The key

EN

indicators used in the evaluation were

(i) the impacts the training acquired had created on the job performance and delivery of the graduate trainees after the training.

(ii) what added value the training had brought into the general job delivery of the agency, department or organisation where the graduate trainee works.

Other relevant information

NA

EN

Obstacles and scientific and technical needs related to the measure taken

More of this training is needed for more personnel in management and field operations levels in the protected area system. In fact, the trainees indicated that they benefited immensely from the academic and practical experiences during the studies, but there were limitations which they think should be addressed during subsequent programs, including more emphasis on practical application of theories and concepts in wildlife management.

EN

Towards the Implementation of the Nagoya Protocol in Sierra Leone: Development of Environmental Policy and Communication Strategy for the Nagoya Protocol.

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

Background

Sierra Leone ratified the Nagoya Protocol in November 2016 and became a party in September 2017, joining many other nations of the world to recognise the importance of fair access to and benefit sharing of genetic resources. Prior to that, in 2015 the EPA as the Focal Point of the Convention on Biological Diversity implemented the preparation of two documents namely:

(1) Review of National Environmental Policies towards Access and Benefit Sharing from Genetic Resources In Sierra Leone; and (2) National Communication Strategy and Action Plan for Access and Benefit Sharing from Genetic Resources in Sierra Leone. Both documents were developed through a country-wide consultation process, involving stakeholders from central government, local government, traditional leaders, indigenous communities, civil society and resources exploiters. The documents paved the way for the subsequent ratification and ascension to the Nagoya Protocol. This report highlights the process and key elements of both documents.

Review of National Environmental Policies towards Access and Benefit Sharing from Genetic Resources in Sierra Leone: Challenges and Opportunities for Implementing the Nagoya Protocol.

Fair access to biological resources and equitable sharing of benefits deriving from their

EN

utilization is one of the three key components of the Convention on Biological Diversity (CBD). There is an urgent need for Sierra Leone to develop a specific Access and Benefit Sharing (ABS) strategy, which will address actual access to resources as well as to related indigenous knowledge and property rights. The strategy should also identify means of encouraging fair and equitable benefit distribution.

In order to determine the relevance of and ratification of the Nagoya Protocol, existing acts, legislation and policies were examined with reference to their provisions (i.e. whether they addressed the issue of access, fair and equitable benefit sharing of genetic resources), scope, prior informed consent, mutually agreed terms on benefit-sharing, compliance, and monitoring and enforcement in the implementation of the ABS measures. Reports and studies on ABS measures (design and implementation) from different countries were then consulted to guide ABS policy and legal developments.

In light of the adoption of the Nagoya Protocol, it is important that a national framework for access and benefit sharing from the use of genetic resources and associated traditional knowledge of Sierra Leone could be beneficial nationally, sub-regionally, and also for its indigenous and marginalized local communities. The review has highlighted the following - Rationale for a National ABS Framework, Biological resources and associated traditional knowledge in Sierra Leone, draws upon practical experience with ABS in highlighting where regulatory gaps exist with regards to the right of access to biodiversity resources, what the strengths and weaknesses of different approaches to ABS are, and where international rules will be of assistance; examines the relevant laws and policies and their provisions on scope, prior informed consent, mutually agreed terms on benefit-sharing, compliance, and monitoring and enforcement in the implementation of the ABS measures. It also presents conclusions on the main legislative challenges to implementing the Nagoya Protocol on ABS.

The following obligations are meant to guide the process of implementation of the Nagoya Protocol once it has been ratified based on the provisions of the Protocol

- Designation of ABS National Focal Point (NFP) and Competent National Authority (CNA). Almost all CBD Parties have an ABS NFP and are thus in compliance with the institutional obligation of the Protocol. In most legislation, this is designated as a CNA. Regulations sometimes provide for the designation of several CNAs. A CNA can be responsible for granting access for commercial purposes, another for non-commercial purposes. The functions of the CNA and the ABS NFP can be performed by the same authority.

- Establish an ABS Clearing-House Mechanism

Several regulations provide for the establishment of a register of information about permits issued and related documents. Framework Agreement on Access to biological and genetic resources calls for the creation of a Regional Clearing House to implement the Agreement. A proper ABS Clearing House mechanism remains the main place for Biodiversity Information Sharing Services.

Other Considerations

- A national ABS measure should contain a clear compliance related provision. The Protocol only predicates that checkpoints may be established to monitor and enhance transparency

on the utilization of genetic resources. However, adequate compliance mechanisms should be included within the framework of the national measures in order to give effect to the compliance provisions of the Protocol. (As the compliance provisions of the Protocol will largely be informed by the type of measures that countries will adopt at the national level).

- Ownership of genetic resources will have to be fleshed out in order to meet the Protocol's obligation related to genetic resources owned by ILC. Users of genetic resources need to be sure that a provider has the authority to provide such resources. Such authority does not, in many cases, rest only with the government, but also with those who have private or other rights or tenure over the land or resources. Therefore, questions of ownership and tenure, invariably, have an important bearing on the practicalities of ABS and are important elements of national legislation and policy that governments can use to "determine access" to resources. These questions will have to be fleshed out in the implementation of the Nagoya Protocol.

- ABS measures should include laws obliging their private company users of genetic resources from other countries to share a fair and equitable part of the benefits arising out of utilization of genetic resources. It is crucial in this regard to put in place measures so as to ensure that MAT have been agreed to, and to facilitate access to justice when such is not the case. More work should be undertaken towards the development of model contracts/clauses which would contribute to ensuring the fair and equitable sharing of benefits.

- Implementing the provisions of Article 8 (Special Considerations) will require legal and institutional work. It's necessary to differentiate between commercial and non-commercial research, provision of specific procedures for access and utilization of all the genetic resources for food and agriculture and this particular consideration is expressly addressed in the ABS measure. Specific measures (e.g. exemptions, facilitate procedures or quicker response times) should be developed in the context of an ABS system. However, more general legislation regarding emergencies could also apply.

National Communication Strategy and Action Plan for Access and Benefit Sharing from Genetic Resources in Sierra Leone

Having been ratified by nearly every country in the world (over 190 ratifications) , the Convention on Biological Diversity (CBD), establishes as one of its three key objectives the fair and equitable sharing of benefits derived from the access to and use of biodiversity, thus regulating the access to these resources (and associated knowledge) and subjecting it to the laws of the country, and to a fair and equitable sharing of the benefits with the country providing the genetic resources (CBD, 2001). A national communication strategy on access and benefit sharing of genetic resources is one of the most controversial public policy issues both in the international and national context. In this light therefore, access, utilization, and conservation of genetic resources and their proper conservation and use remain a major concern. Sierra Leone, being a signatory to the convention on Biological Diversity is obliged in meeting and or addressing this third most crucial objective, hence it is imperative to develop a national communication strategy to address this process.

Since the entry into force of the CBD, a large number of member countries to the Convention, including Sierra Leone, continue to face challenges in the adoption and implementation of functional national ABS laws and measures. Although the basic concept is as old as the CBD,

the community of ABS practitioners is still in a learning process, regarding both implementation and communication. In October 2010, a new internationally agreed framework – the Nagoya Protocol – to implement the ABS principles of the Convention was adopted at the tenth CBD Conference of the Parties (COP 10). Since then, the focus has turned to national implementation – and this is indeed a very new task for many people in many countries.

ABS involves many expert issues (e.g., biology, technology, law, justice, economics, politics, ethics, culture, etc.), and touches upon a variety of sectors and markets such as agriculture, horticulture, pharmaceuticals, cosmetics, biotechnology, and others. The concept works at different levels and with a great diversity of stakeholders: from policy makers and legal experts, via scientists, business people and NGOs, to indigenous and local communities. Furthermore, there is a great deal of interdependence between the Nagoya Protocol on ABS and other international agreements, for example in the context of the World Trade Organisation (WTO) and the World Intellectual Property Organisation (WIPO), the Food and Agriculture Organisation (FAO), the World Health Organisation (WHO) or the Convention on International Trade in Endangered Species (CITES).

In light of the adoption of the Nagoya Protocol, several countries have established provisions on ABS for biological and genetic resources in their laws or administrative structures. These countries have chosen a wide range of mechanisms to regulate access to biological and genetic resources and benefit sharing at the national level. Some have developed new stand-alone laws on ABS, while others have amended, revised or updated existing general biodiversity related laws to introduce and give effect to ABS components. Yet others like Sierra Leone have promulgated administrative guidelines as they are still in the process of considering legislative options. The “Communication, Education and Public Awareness (CEPA)” approach that is often used in the context of the CBD and other multilateral environmental agreements including such a relatively new and complex concept, ABS, is only possible with good strategic communication. Therefore, well designed communication strategy is essential for implementing ABS systems (establishing ABS policies, regulations, institutions and mechanisms) at the national level, so as to manage the associated social change effectively and efficiently.

The document provides an overview of communication considerations, approaches and methods for the different phases of ABS implementation. It has been developed using Access and Benefit-sharing Strategic Communication for ABS - A Conceptual Guide and Toolkit for Practitioners, as a guide; whilst the action plan was formulated by reviewing the Sierra Leone’s National Strategic Action Plan with respect to Fair Access to Genetic Resources and Equitable Sharing of Benefit and other documents related to environmental resources, with reference to the Biodiversity Strategy and Action Plans of other countries.

This communication strategy document is for:

- (i) people who are formally in charge of national ABS implementation, such as Focal Points or National Competent Authorities,
- (ii) people who are otherwise involved in ABS implementation, such as officers in Ministries that are concerned with ABS, as well as industry, the science community, interested NGOs and other civil society groups,
- (iii) anyone else who has a need to communicate about ABS.

The purpose of this document is to:

- (i) help ABS experts and practitioners understand the relevance of strategic communication;
- (ii) assist people in charge of ABS with guidance and communication tools that support implementation of ABS and the Nagoya Protocol;
- (iii) support people and organisations involved in ABS to communicate their interests.

The document is divided into two parts.

Part 1 (Strategic Communication for Access and Benefit-Sharing): This section offers advice about the role, relevance and use of communication for implementing Access and Benefit-sharing (ABS) systems at the national level. It also provides an overview of the following:

- (i) Fields of Action for ABS implementation with their policy objectives, proposed actions, communication-related activities and relevant strategic groups.
- (ii) Strategic Communication for the Fields of Action, detailing the relevant steps structured along four main stages of a policy cycle -
 - Assessment - involves analysis Situational Analysis, Stakeholder Analysis and defining Communication Objectives;
 - Planning- deciding on who to involve (Participation of Strategic Groups) and what media to choose (Drafting the Communication Strategy and Selecting of Communication Channels);
 - Production- Producing Media and Preparing Dialogues (Messages);
 - Action and Reflection - Managing the multi-channel Communication Strategy and Monitoring and Evaluation of what has been achieved.

Part 2 (The Action Plan): The objective of the Action Plan is to facilitate the effective implementation of the provisions of the Convention relating to access to genetic resources and benefit-sharing, and in particular the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising Out of their Utilization, taking into account their voluntary nature.

National Target(s)

Strategic Output A2 - Ensure that Sound Policy, Legislative and Institutional Measures for Biodiversity Conservation, including International Conventions are in place and Operational

Strategic Output D4 - Indigenous Knowledge and Intellectual Property Rights Well Harnessed within Local Communities and Producing Beneficial Results.

Strategic Output E2 - Public Participation on Biodiversity Conservation Significantly Improved and Making Positive Impacts.

Assessment of the effectiveness of the implementation measure taken in achieving desired outcomes

Measure taken has been partially effective

tools or methodology used for the assessment of effectiveness above

Measure taken has been effective because it lead to the ratification and subsequent ascension to the full membership of the Nagoya Protocol. Other aspects of the policy and communication strategy developed are being pursued by the relevant departments within the EPA-SL, the

EN

Forestry Division and the National Protected Areas Authority. A number of meetings have been held already on the implementation of the Nagoya Protocol, which culminated in the preparation of the Interim National Report in April 2019. Further consultations are planned at various levels, which will contribute to assessing progress on the domestication of the Protocol.

Other relevant information

The EPA-SL is planning to embark on a nation-wide sensitization drive on the Nagoya Protocol, particularly targeting indigenous people and local communities. The purpose is educate local people of the provision in the protocol that is consistent with the conservation of their natural resources and the concepts of fair access and benefit sharing. Prior to Sierra Leone's ascension to the Nagoya Protocol, very little or no consultations were held with local communities on the exploitation of biological resources; the concepts of prior informed consent (PIC) and mutually agreed terms (MAT) were virtually far-fetched. The increasing awareness on the ideals and provisions of the Protocol is creating greater understanding and confidence among stakeholders, especially local communities on benefit sharing for the use of biological resources.

EN

The REDD project implementation at the Gola National Park was the only exception to the use of PIC and MAT in the involvement of local communities even prior to the country's membership to the Nagoya Protocol. As reported about the implementation of the Gola REDD project, the project adopted and followed the principles of Free, Prior and Informed consent (FPIC) in developing the REDD project. A stakeholder engagement plan was developed and implemented, which this began in January 2012 with a series of consultative meetings from Paramount Chief level to forest edge communities to develop an understanding of climate change and REDD+ and to gain approval for beginning the project development process.

Obstacles and scientific and technical needs related to the measure taken

The key challenges to the implementation of the policy and communication strategy is the lack of commitment from individuals, firms and companies that exploit genetic resources. At present there is indiscriminate exploitation of the hardwood *Pterocarpus erinaceous* from savanna woodlands in the north of the country. There is also a weak capacity in the country for the application of technologies that support the effective implementation of the Protocol, especially in DNA analysis and Natural Resource Accounting in order to develop the basis for fair application of the provision of the Protocol at local, national and international levels.

EN

Climate change vulnerability assessment in mangrove regions of Sierra Leone.

Measures taken to contribute to the implementation of your country's national biodiversity strategy and action plan

This report is the summary report of work implemented by West African Biodiversity and Climate Change (WABiCC) project, funded by the United States Aid for International

EN

Development (USAID). The project is implemented in collaboration with the National Protected Areas Authority (NPAA). The purpose of this coastal climate change vulnerability assessment (VA) is to understand the factors that contribute to the vulnerability and resilience of communities and mangrove ecosystems in coastal Sierra Leone. The goal is to inform the design of project interventions, including climate adaptation activities under the WABiCC project. The work was led by the Center for International Earth Science Information Network (CIESIN) at Columbia University, and included a team of field researchers drawn from WABiCC staff, Fourah Bay College (University of Sierra Leone), Njala University, the National Protected Areas Authority (NPAA), Environmental Protection Agency (EPA), the Ministry of Agriculture, Forestry and Food Security, the Ministry of Lands, Country Planning and Environment, the Ministry of Fisheries and Marine Resources, Conservation Society of Sierra Leone and other stakeholders. This study is the most comprehensive assessment to date of the vulnerability of fishing communities in Sierra Leone - and perhaps for all of coastal West Africa.

APPROACH

A preliminary scoping mission in February 2016 concluded that the communities that will be most adversely impacted by the effects of climate change such as sea level rise and increased storm intensity are coastal fishing villages that are located in or near mangroves. Furthermore, studies suggest that the mangroves themselves, important to coastal resilience, will be adversely affected by climate change. Thus, the VA focuses on coastal fishing communities like the one captured on the front page. Given that the study was aimed at informing adaptation strategies at the community level, a bottom-up approach and gained some degree of generalizability and scalability of the recommendations by studying mangrove forests and populations in the four primary mangrove regions in Sierra Leone (from north to south); Scarcies River Estuary (ScRE), Sierra Leone River Estuary (SLRE), Yawri Bay (YB), and Sherbro River Estuary (Figure 1). The VA seeks to determine the relative vulnerability of fishing communities and ecosystems (sometimes referred to in the literature as the coupled socio-ecological system) through household surveys, participatory rural appraisals and mangrove forest inventories.

The VA was carried out in 12 clusters comprising one mangrove transect and two villages distributed across the four regions. A total of 261 household interviews were conducted addressing a variety of issues related to economic assets, well-being, livelihoods, food security, fish harvesting and processing, use of mangroves, and awareness of climate change issues. Participatory Rural Appraisals (PRAs) were also conducted in each settlement, with separate male and female participants for a total of 96 group meetings. Finally, 12 mangrove transects were inventoried, assessing mangrove health in the form of species mix, biomass density, and water depth. Three teams of 12 experts were trained then deployed to the field. The training included a review of methods as well as hands-on testing and refinement of the instruments in the Sierra Leone River Estuary (SLRE).

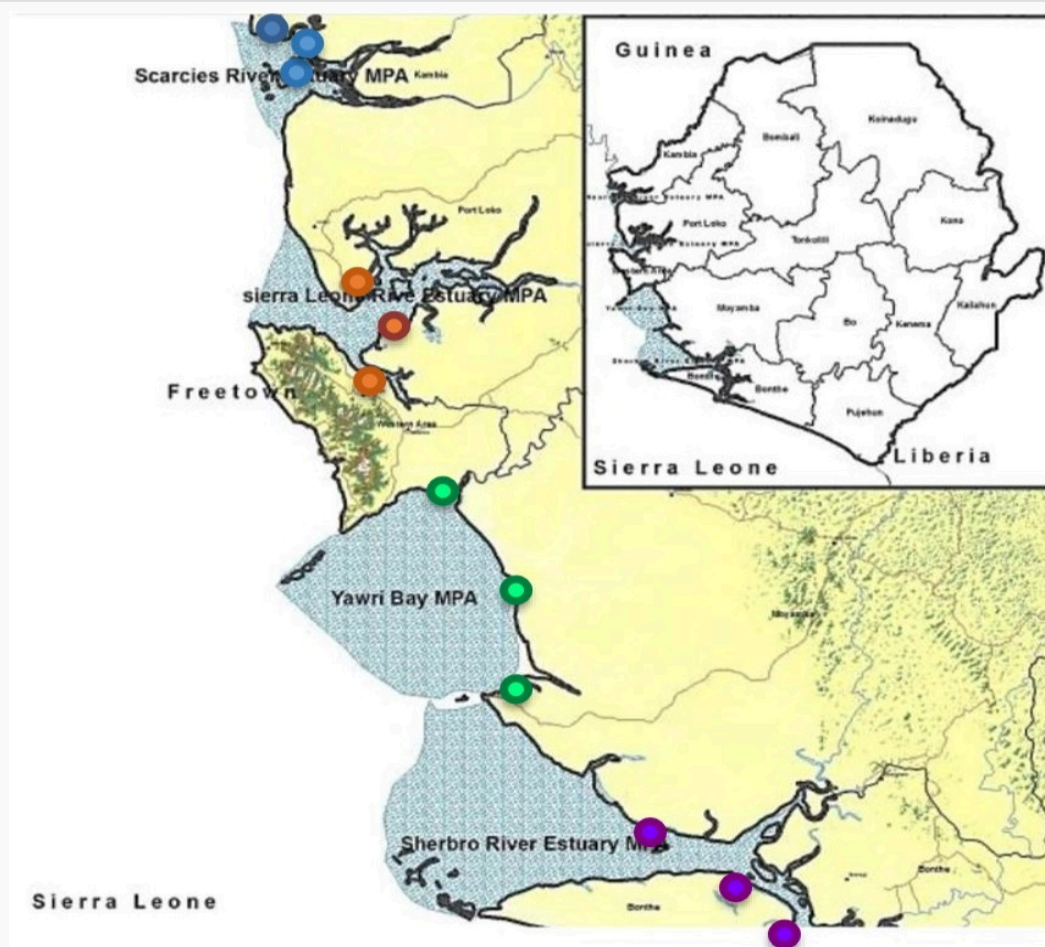


Figure 1 - The four estuarine networks in Sierra Leone where the vulnerability assessment was carried out.

MAIN FINDINGS

SOCIO-ECONOMIC CHARACTERISTICS OF THE POPULATIONS

The demographic characteristics of the populations surveyed are comparable to those of rural populations of Sierra Leone as a whole, as inferred from national census and Demographic and Health Survey (DHS) results. The socio-economic analyses show very high poverty levels and low education levels. Around 60% of the respondents (adults) reported no education and those levels reached 70% for women. Eighty-five percent of the respondents fell in the severely food insecure category of the USAID Household Food Insecurity Access Scale 1, and this rate reached 100% in some locations. Access to clean water and adequate sanitation is generally low. Although sanitation conditions are comparable to national results for rural areas, they might affect the coastal populations more strongly as space is limited, and the potential for contaminating water supplies and surrounding water bodies is high.

Similarly, while reported levels of access to improved water sources are comparable to national levels, experience shows that these are often outside of the villages and water is actually

brought in containers, which means that the water can easily become contaminated. As expected, livelihood strategies are dominated by fishing and related activities but the overall diversification is low, with a median value of 1.9 activities per household and 30% reporting only one activity. Diversification is larger in smaller settlements, indicating that households need to engage in more activities to insure their subsistence. Fish smoking is mostly carried out by women and, based on interviews, may actually cost more than is received in compensation through commercialization. The absence of alternative fish preserving methods means that these households have few choices but to engage in smoking. Around 30% of the households engage in farming but the rates strongly vary according to location, ranging from over 85% to none in several locations.

Access to savings and credit is low. Only 25% of the households had engaged in any type of savings scheme, and less than 10% of households had accessed credit in the past year. The highest frequencies of credit are linked to micro-credits from NGOs and local credit rotation schemes. Access to saving schemes significantly depends on the size of the settlements with 46% of respondents having accessed saving schemes in larger locations and only 18% in smaller. Overall, the population has low access to information. About 30% of the surveyed households indicated having constrained access to schools and markets, and more than 40% have limited or no access to health centers.

In some small villages access to all three vital resources is severely constrained. Over 90% of the respondents indicated not reading a newspaper but 60% indicated listening to the radio, although this percentage drops dramatically in small villages. Yet, nearly two thirds of the respondents own or have access to a cell phone. Access to aid and social networks appears to be low as well, with 40% of respondents stating they have not received any aid of any kind in the past year and 40% not participating in any groups and associations other than religious. The survey was conducted in July, which corresponds to the 'hunger season' – a period from June to late fall, before the new harvest, when the staple food is rare and expensive and sea conditions make the catch low thus reduce fishermen income. The results may have been affected by the timing of the survey.

CLIMATE AND ENVIRONMENT

Sierra Leone enjoys a tropical climate with a prolonged and abundant rainy season from May to November. Due to the orientation of the coast and main mountain ranges the coastal regions are among the wettest regions in Africa receiving close to 3000mm of rainfall per year. Rainfall varies on inter-annual and decadal time scales but the variations are low compared to the total amounts received, with a coefficient of variation of the order of 11%, and no clear, significant trend in rainfall is observed. Temperatures, on the other hand, have risen at the rate of 0.14 oC. Climate change projections indicate no or small tendency of rainfall increase and a consistent increase in temperatures. Thus, if managed properly water resources should not be a threat to Sierra Leone while temperature change may affect ecosystems and agricultural systems in the long term. High winds and floods are the main climate/weather-related disaster with high impacts reported by the communities. However, while the majority (63%) of the respondents said they have heard about climate change and believe it is happening, more than one third indicated they did not consider this to be a major concern for their community.

The low ranking of climate and environmental issues in the spectrum of current preoccupations was further confirmed in focus group discussions, where participants emphasized other development issues (poverty, food security, and access to markets, among others) and is characteristic of many communities in developing countries. Total mangrove cover in Sierra Leone is estimated to have decreased by approximately 25% since 1990, but very unequally among regions: while the decrease reaches 46% in the Scarcies River Estuary, due to widespread conversion of the land to rice farms, mangrove cover has marginally increased in Yawri Bay and Sherbro River Estuary (SRE) and significantly increased in Sierra Leone River Estuary (SLRE) due to reforestation efforts. *Avicennia germinans* is the dominant species in all the regions, except the SRE, where *Rhizophora racemosa* dominates. Despite deforestation, the remaining mangroves in the Scarcies region are in good health, with high species diversity, mature forest and high regeneration level, indicating high regeneration potential should human pressures be lowered or better managed.

The Sherbro area is on the opposite end of the spectrum, with lowest species diversification, highly dominated by *Rhizophora racemosa*, with the oldest trees and lowest regeneration rates, showing high commercial potential but low current regeneration potential. SLRE has the youngest forests, a sign of past and current exploitation of the forest, while the Yawri Bay has fewer adult trees but the highest number of seedlings, both showing signs of good potential for regeneration and sustainability. Mangroves are perceived mainly as a source of fuel wood, with 70% of the households reporting a reliance on mangrove wood for cooking and smoking fish, and this proportion reached 100% in several smaller localities. Approximately 48% of respondents have noticed a decrease in mangrove cover in the past decade, but nearly 30% could not tell the difference.

There is a shared perception that the decrease is linked to human activities rather than changes in climate, and nearly two thirds of respondents stated a willingness to participate in conservation/restoration activities. According to the focus groups, most natural resources (farmland, fishing grounds, mangroves, other forests, and sand) are open access. A small minority of focus group participants mention traditional or government restrictions, with the highest being traditional restrictions for farm land. This view of natural resources as essentially open access may influence behaviors around resource capture, and under such circumstances there can be little incentive for conservation and sustainable management. Eighty-seven percent of respondents engaged in fishing activities indicated the resource has decreased and linked it to over-fishing and bad fishing practices (too many fishermen and trawlers, and the catching of juveniles) rather than to changes in the environment.

AGGREGATED WEALTH AND VULNERABILITY MEASURES

The highest proportions of households in the highest category of the wealth index are found in the urban and peri-urban settlements of Tombo, Tssana, Dip-eye Water, Bonthe and York Islands. Villages with high proportions of households in the lowest wealth index category exist in all four regions. Those are usually the smallest and most remote villages. Scores on a community vulnerability index combining various socio-economic and climate impact factors show limited degree of spatial organization. Highest exposure levels are recorded in the Scarcies River Estuary, while Yawri Bay and SLRE have lowest exposure levels (owing

to higher ground) but highest sensitivity levels, independently of locality size. Villages in the Scarcies and SLRE are composed of households with all five levels of adaptive capacity, independently of settlement size and accessibility. Yawri Bay and Sherbro settlements show a very contrasting adaptive capacity picture, with larger and more accessible settlements dominated by households with higher adaptive capacity while smaller, more remote villages are dominated by households with lowest adaptive capacity.

An ecosystem vulnerability index comprises indicators of mangrove quality and health together with anthropogenic pressures and community readiness to engage in conservation activities. As with the community vulnerability index, it shows limited spatial clustering. The SLRE and Yawri Bay regions have marginally lower vulnerability, but transects within each region show highly variable levels of vulnerability. An overall vulnerability index combining the community and ecosystem indices shows higher vulnerability in the Scarcies and Sherbro regions, linked to high exposure (Scarcies) and low adaptive capacity (Sherbro), while SLRE and Yawri Bay have somewhat lower overall vulnerability, despite higher sensitivity of the communities.

ADAPTATION SOLUTIONS

Climate-related stressors rank relatively low among community concerns, which instead are dominated by concerns over lack of resources and education, constrained access to markets, food insecurity, health problems and inadequate shelter. Adaptation solutions spontaneously listed in focus groups fall into four categories: reforestation and climate awareness, infrastructure, livelihood and financial strategies, water and sanitation, and health, broadly corresponding to exposure, adaptive capacity and sensitivity in the vulnerability framework. Building resilience in the region will require attention to not just environmental remediation, but also to awareness building/access to information and meeting basic needs. Focus group participants ranked from low to high their preference, the degree of difficulty, the ability of the community to organize, and need for external assistance associated with each solution.

The most desirable solutions were also deemed by the respondents to be most difficult and most likely to need external support. Among such solutions the highest ranked were: reforestation, house improvements, drainage systems (to mitigate flooding), local water supplies, river embankments, and expansion of farming and fishing. They address mainly exposure and, to some extent, sensitivity of the populations. Highly preferred, easy to implement solutions with little dependency on external assistance include: savings schemes, climate awareness, improving farming, improving roads and building schools. These mostly address adaptive capacity.

Preferences change when villagers considered modified climatic conditions, such as a potential increase in the amplitude and/or frequency of harmful climatic events. Reforestation, drainage system and increase in fishing activities all showed a strong decrease in preference for at least 50% of participants, indicating that these solutions are not seen as very effective to address potentially increased occurrence or magnitude of disasters. Strong increase in preference under climate change scenarios was recorded for: sturdier homes, saving groups, improved water supplies, and health facilities. This shows that solutions leading to more secure and healthier living conditions would be the priority for the majority of the respondents.

RECOMMENDATIONS

Based on the findings of this study the following set of recommendations were made:

- Improve Sierra Leone's capacity to monitor environmental conditions and projected impacts of climate change. This includes building the capacity of the Meteorological Agency of Sierra Leone to provide quality information about past, current and future climate conditions based on local data; monitoring of physical and chemical properties of water and its levels in the coastal areas; and developing research to assess climate impacts on ecosystems and economic sectors tailored to Sierra Leone's context.
- Improve natural environment management practices, focusing on sustainable, community-based mangrove management that recognizes the variety of ecosystem services mangrove provides and accounts for different mangrove vulnerabilities in different regions; and on improvement of coastal water quality as well as of the coastal dynamics. Build a national mangrove management system based on the pilot systems developed in different communities, following a bottom-up approach.
- Lower the exposure to climate/weather disasters, in particular to heavy winds and floods, through early warning systems, and through supporting community in better understanding potential changes in disaster risk and, where relevant, support community organizations to establish protective infrastructures (drainage, higher embankments, wind barriers) and/or increase their capacity to combat the disasters, such as fires due to heavy winds, and mitigate their effects.
- Lower the sensibility of the populations through support to livelihood diversification, improved food security, health, sanitation and housing conditions. Design specific portfolio of actions focusing on female headed-households, given current very low education levels and very limited livelihood opportunities available to women.
- Increase the adaptive capacity of the populations through climate impacts, sea level rise and related risks awareness building and improved access to information (including early warning systems), education and financial instruments targeting specifically populations in the mangrove areas. Several interventions are akin to standard development interventions but the selection was based on communities' preferences, given their current status, capacities and current and projected climate impacts. Given very high levels of exposure and overall vulnerability of the fishing communities living within the mangrove areas in Sierra Leone such standard development interventions are a prerequisite to building resilience of these communities in the wake of changing climate conditions.

National Target(s)

Strategic Output B2 - The Conservation of Coastal and Marine Biodiversity, including Fisheries is Prioritized in National Programmes, Policies and Legislations.

Strategic Output B3 - Ecological Restoration and Recovery of Species and Ecosystems under Threat is Significantly Improved

tools or methodology used for the assessment of effectiveness above

The result of the study is now being used to implement the other components of the WABiCC project, particularly improving on the resilience of coastal communities to climate change

EN

through working with local communities to conserve mangroves.

Relevant websites, links, and files

[WABiCC website](#)

Other relevant information

The climate change vulnerability assessment that was done has led to the identification of priorities for conservation of the mangrove regions in Sierra Leone. Currently, WABiCC is undertaking consultations with local communities to carry out resource mapping and develop a co-management plan, which will address key conservation priorities, particularly mangroves in the Sherbro River Estuary (SRE). Application for the Ramsar designation of SRE, which holds over 50% of the mangrove vegetation in Sierra Leone is being pursued as one of the key expected outcomes of the project.

EN

Other relevant website address or attached documents

[WABiCC website](#)
<http://www.>

Obstacles and scientific and technical needs related to the measure taken

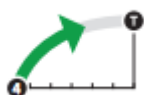
The key obstacle to this assessment is the weak human and other resources capacity within Sierra Leone to carry out further monitoring of the situation over time and reassess vulnerability after the WABiCC project.

Training opportunities for relevant government staff and members of local communities on data collection, GIS and basic data analysis methodologies is required to improve on and sustain assessment and monitoring activities.

EN

Section III. Assessment of progress towards each national target

Strategic Output A1 - Effective Public Education and Awareness Programs Delivered and Improving People's Attitudes and Behavior Towards Biodiversity Conservation.



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

15 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Public education and awareness about environmental and conservation issues is a priority for the achievement of sustainable management of biodiversity resources. All conservation-oriented programs and projects have education and awareness component, which is one of the key mechanisms that would influence the behavior and consumption patterns of local communities, resource users and resource exploiters. In fact, environmental awareness were incorporated into the national strategies such as the Agenda for Prosperity (PRSP III) and the Medium Term National Development plan 2019 - 2023, which falls within the implementation period for the NBSAP 2017-2026. Since 2011 several actions have been taken at various levels and by various stakeholders to promote public awareness about the environment and conservation.

Well designed and focused conservation education and public awareness raising programs for wildlife and their habitats have been implemented or under implementation in the country. These are summarized in the following paragraphs:

- With support from the U.S. Agency for International Development and the U.S. Fish and Wildlife Service, PCI Media Impact (a leader in entertainment-education) has partnered with civil society organizations in Sierra Leone to implement its signature “My Community” methodology to raise public awareness for wildlife conservation (www.pcimediaimpact.org).
- Among the key activities of the Conservation Society of Sierra Leone include conservation education, public awareness, communication partnerships and linkages with other environmental conservation organizations and agencies (www.birdlife.org).
- Working in close collaboration with NPAA and the Forestry and Wildlife units in the Ministry of Agriculture and Forestry, Tacugama Chimpanzee Sanctuary (TCS) has an established Environmental Education Programme designed to promote awareness raising for local communities, school teachers and pupils in protecting their environment and wildlife (www.tacugama.com). A major conclusion of the National Chimpanzee Census was that “more than half of Sierra Leone’s chimpanzees are living outside of protected areas” (Brncic et al. 2010). Therefore in 2011, TCS founded the

EN

Tacugama Community Outreach Programme (TCOP) that works with rural communities living near known wild chimpanzee populations towards achieving sustainable natural resource management and wildlife conservation. TCOP team is presently working in 42 rural communities in Freetown and Moyamba and Pujehun districts.

- The Environmental Foundation for Africa (EFA) Biodiversity and Renewable Energy Learning Center created for the promotion of environmental advocacy, education outreach, knowledge management and best practice demonstrations.
- The Environment Protection Agency (EPA) undertake series of environmental education and awareness programs including:
 - Village to village environmental campaign
 - Me and my environment
 - Weekly radio and television
 - National communication strategy on the implementation of Nagoya Protocol developed a protocol from the 3rd objectives of the convention.

EN

Indicators and Activities

Indicator(s) used in this assessment

- Policy and decision making at various governance and opinion sectors influenced by widespread and clear understanding of the issues affecting biodiversity conservation.
- A significant proportion of the public, particularly local communities' attitude and behavior influenced by improved awareness of biodiversity issues.
- Significant positive impacts on biodiversity conservation made through the dissemination of simple and comprehensible biodiversity conservation messages through cultural and traditional methods like drama, traditional songs.

EN

Any other tools or means used for assessing progress.

A number of reports are available for every programs and activities organised. These peer-reviewed reports are used overtime to assess the level of achievement of the activity. The number of people who participate in radio programs and activities relating to environmental awareness is used as indications of the degree to which education and awareness is disseminated and being used by the public. Every district now has a radio station and environmental education and awareness programs and discussions are aired on a regular basis. Environmental jingles and adverts are common in most radio stations and from feed backs and calls made, the public is progressively adhering to environmental messages. There is greater awareness among the public

EN

about climate change and its effect on agriculture, water supply and the general environment.

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

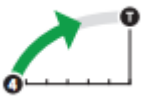
The assessment is based on the practical on-the-ground observations and feed backs obtained from institutions and field staff.

EN

Adequacy of monitoring information to support assessment

No monitoring system in place

Strategic Output A2 - Ensure that Sound Policy, Legislative and Institutional Measures for Biodiversity Conservation, including International Conventions are in place and Operational



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Sierra Leone has been very forthright in formulating the relevant legislation that would govern the

EN

conservation of biodiversity. Since 2011, the government and its agencies have formulated many policies, legislation and regulations relevant to addressing various issues and challenges in the environment and sustainable use of biodiversity. The following policy and legislative steps were taken during the period 2011 to 2020 and more are expected to be done by 2026:

- The EPA-SL Act of 2008 was reviewed in 2010, giving more powers to the agency to implement the provision of the Act. This includes the power to stop or suspend the operations of any company in breach of the environmental standards within which they should operate.
- In 2011, the Forestry Division of the Ministry of Agriculture, Forestry and Food Resources commenced the implementation of the 2010 Wildlife and Conservation Policy and the 2010 Forestry Policy, which were developed through support from the World Bank. Most of the relevant MDAs and civil society organisations whose mandates and activities impinge on the environment participated in the process.
- In 2012 the National Protected Areas Authority was established with a clear mandate to administer protected area and increase the number of areas under protection in the country.
- In 2015, with the implementation of the Sierra Leone Biodiversity Conservation Project and the Wetlands Conservation Project, the 1972 Wildlife Conservation Act and the 1988 Forestry Act were reviewed. The purpose is to upgrade the contents of the acts, update the regulations and fines and incorporate modern and contemporary biodiversity conservation concepts that have proven success elsewhere. A Wetlands Conservation Act was also drafted, as the first ever attempt at legislating the management of wetlands and related resources.
- A Fisheries and Aquaculture Act has been drafted and awaits final validation and enactment by the legislature.

Indicators and Activities

Indicator(s) used in this assessment

- At least two implementable legislation passed enhancing biodiversity conservation through exerting control on indiscriminate resource exploitation and use.
- The intricate linkage between urbanization and biodiversity conservation is well addressed in a number of policies, legislative and regulatory framework.
- Policy direction established for the administration and internalizing international biodiversity conventions and agreement.
- At least two more relevant international conventions or agreement signed or ratified by 2026.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

All progress on this target or strategic output is being monitored from the information gather from the indicators. Action and processes involved in formulation of policies and legislation are in most instances participatory and so can be monitored easily and readily.

EN

Adequacy of monitoring information to support assessment

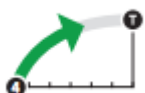
Monitoring related to this target is adequate

Monitoring system for the target

The EPA provides the overarching responsibility for monitoring policies and legislation that relates to the environment. However, each of the MDAs have their specific mandate in terms of the implementation and monitoring of the target. There is also the Parliamentary oversight committee that provides guidance for effective and governance and their responsibility is to ensure that the respective policies and legislation are followed by the implementing agency.

EN

Strategic Output A3 - All Development, Extractive and Related Projects are Preceded by Sound Environment and Social Impact Assessments



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

The establishment of the Environment Protection Agency, Sierra Leone is one of the significant steps taken by the government to address issues relating to environmental impacts from development and extractive projects. The EPA-SL Act of 2008 was strengthened by an amendment process in 2010, which gave the agency additional powers to ensure adherence to the provisions of the Act across the board. The EPA was empowered by the amendment act to carry out routine checks and monitoring of the activities of industries, companies and projects that impact the environment. Up to date, three out of five provincial headquarter towns now have regional offices of the EPA and are implementing measures to regulate activities that impact the environment and species. The powers given to the EPA has a strong correlation with the provisions of the Mines and Minerals Act of 2009, which considers environmental protection as a strong element in the implementation of the Act. Due to the empowerment of the EPA, the agency was able to suspend the operations of five industries due to their non-adherence to stipulated environmental standards.

EN

Indicators and Activities

Indicator(s)used in this assessment

- The function of EPA creates concrete and verifiable impacts in environmental management across the country.
- Revised/amended Mining Policy and Act available and being implemented.
- No part or all of any forest reserve, a forest zone or a any biodiversity sensitive marine/aquatic zone is offered for mining concession.
- Concrete environmental control objectives for large-scale and artisan projects achieved with verifiable evidence.
- A updated monitoring plan available and is being implemented.

EN

Any other tools or means used for assessing progress.

Progress on this target is also assessed through the number of companies or development project that are complying with the relevant legal provision on carrying out environmental impact assessment.

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

Information of the indicators of achievement of the strategic output was based on reports obtained from the EPA that are readily available and can be accessed from the repository of the EPA. Once the the impact assessment document has been approved, public disclosure meetings and consultations are held to accord opportunity to persons or community affected to raised concerns that may not have been adequately covered and to get general consensus from the public for the implementation of the recommendations of the assessment prior to the start of the project.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

Monitoring system for the target

There is already a system in place by the EPA to monitor the performance of companies and development projects in environmental compliance. The includes the periodic reassessment of environmental impacts and status of the ecology in and around areas affected and the institution of a system of annual renewal of license. An environmental compliance appraisal mechanism is available which is used to assess whether operations license could be renewed by the EPA.

EN

Strategic Output A4 - A Workable Mechanism for Mobilizing Incentive Measures for Biodiversity Conservation Established and Being Implemented.



2019 - Progress towards target but at an insufficient rate

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

Progress towards target but at an insufficient rate

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Incentive measures for biodiversity conservation are only limited for few instances outlined here. The Nagoya Protocol (access and benefit sharing), which has been adopted by the Government of Sierra Leone makes provision for local communities to negotiate and determine incentives for genetic resources management. The concept of incentives are key to the development of co-management plans for Mamunta-Mayosso (in 2015) and Tiwai Island (ongoing) by the NPAA and the Tiwai Island Advisory Committee, respectively, in collaboration with NGOs and the university. The administration of the Gola Forest National Park, through the support of the Royal Society for the Protection of Birds (RSPB) is operating a successful incentive scheme for the adjacent communities using proceeds accrued from ecotourism and other non-extractive pro-conservation schemes. In each of these incentive measure described there is provision of employment opportunities for local people, especially the youths, in terms of serving as tour guiders, rangers are integral pro-conservation incentives that have motivated the respective community for sustainable management of their biodiversity.

EN

Indicators and Activities

Indicator(s) used in this assessment

- Private sector investment into beneficial biodiversity conservation activities increase significantly due to attractive incentive measures.
- Managers and rangers of forest reserves are highly motivated and is creating positive impact on forest biodiversity.

EN

Any other tools or means used for assessing progress.

None

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

All information are obtained from the level to which each of the indicators have been achieved.

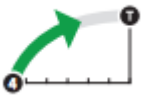
EN

However, the monitoring of incentive measures has not been effective.

Adequacy of monitoring information to support assessment

No monitoring system in place

Strategic Output B1 - The Conservation of Forest Biodiversity Significantly Enhanced through Effective Law Enforcement and Program Implementation.



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Sierra Leone's forest is home to much of its biodiversity and so the spate of deforestation the greatest threat to the country's biodiversity endowment. A large proportion of the remaining closed forest is now confined to small patches of protected areas, the largest being the 74,000 ha Gola Forest Reserve, which was upgraded to a National Park in December 2011, through the collaborative effort of the RSPB, Forestry Divisions and the Conservation Society of Sierra Leone (CSSL), with support from other national and international partners. The conservation of forest resources is very key to the maintenance of biodiversity and ecosystem services and the livelihood and survival of local communities. This is consistent with the ideals of the Convention of Biological Diversity, the African Union Convention on the Conservation of Nature and Natural Resources and the CITES Convention, all of which has been ratified by the Government of Sierra Leone.

EN

The country is pursuing very strong policies and regulations on forest biodiversity conservation as reflected in the emphasis on the protection of forest resources in protected areas. Unprotected forest areas are catered for the 1988 Forest Act, with the introduction of the concept of co-management with local communities and the possibility of establishment of private reserves in the ongoing revision of the forestry act. The Gola Forest National Park, the largest patch of closed lowland moist forest in Sierra Leone, covering a little over 74,000 ha, was established in 2011 and was launched by the President of Sierra Leone at that time.

The Sierra Leone Biodiversity Conservation Project funded by the World Bank was implemented between 2011 and 2016. The project enhanced forest biodiversity conservation and built capacity for the management of three forest reserves, namely; Loma Mountain forest reserve and the Kangari Hills Forest Reserve. The former was upgraded to a national park in 2015 by a declaration by the Minister of Agriculture, Forestry and Food Security. In both protected areas, monitoring surveillance and law enforcement has been made effective by enhance training and increasing the number and efficiency of rangers. The rangers posted to each of these reserves increased by over 200% as a result of the project implementation.

In 2012 a biodiversity and carbon index assessment was done for the Western Area Peninsula Forest, which culminated into the declaration of the forest as a National Park. The German NGO, Welthunger Hilfe (WHH) was very instrumental in providing the much-needed finance and technical support for the implementation of the project. Other collaborating partners were the Biological Sciences Department of Fourah Bay College (USL). the Environmental Foundation for Africa and Conservation Society of Sierra Leone. The establishment of the National Protected Areas Authority in 2012 by an act of parliament is one of the huge steps taken to protect forests in Sierra Leone.

Indicators and Activities

Indicator(s) used in this assessment

- The number of forest rangers increased by at least 50% its current size
- Surveillance time for forest rangers increased by 50%.
- Forest rangers receive regular in-service military-type training at least once a year
- Lucrative non-timber forest products like bee keeping and edible mushroom farming among others introduced into non-carbon forest resource exploitation schemes.
- At least one pro-biodiversity enterprise established and functioning in one forest reserve each year.
- 50% or more of all major forest reserves inventoried for tree biomass and other resources
- Potential for REDD+ funding or carbon trading achieved in some of the major

EN

forest

- Strong control and heavy taxation on power saw use, reduced the rate of forest loss by at least 40%.

Any other tools or means used for assessing progress.

Reports of meetings and consultations held during negotiations and planning for the improvement in forest conservation are available and are used to assess progress. The number of forest guards or rangers have increased considerably in other forests reserve and more effective surveillance by rangers has resulted in reduced rate of deforestation and poaching in these reserves.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence based on comprehensive indicator information is high. Much of the information is obtained from reports of activities that were implemented in various projects and programs, which can be obtained from the relevant supervising MDAs, such as the Forestry Division, the NPAA and the Gola Forest National Park

EN

Adequacy of monitoring information to support assessment

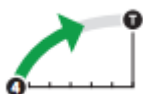
Monitoring related to this target is adequate

Monitoring system for the target

No organised and formal monitoring system exists, but written reports on indicators and feedback from field staff are the key mechanisms for monitoring.

EN

Strategic Output B2 - The Conservation of Coastal and Marine Biodiversity, including Fisheries is Prioritized in National Programmes, Policies and Legislations.



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

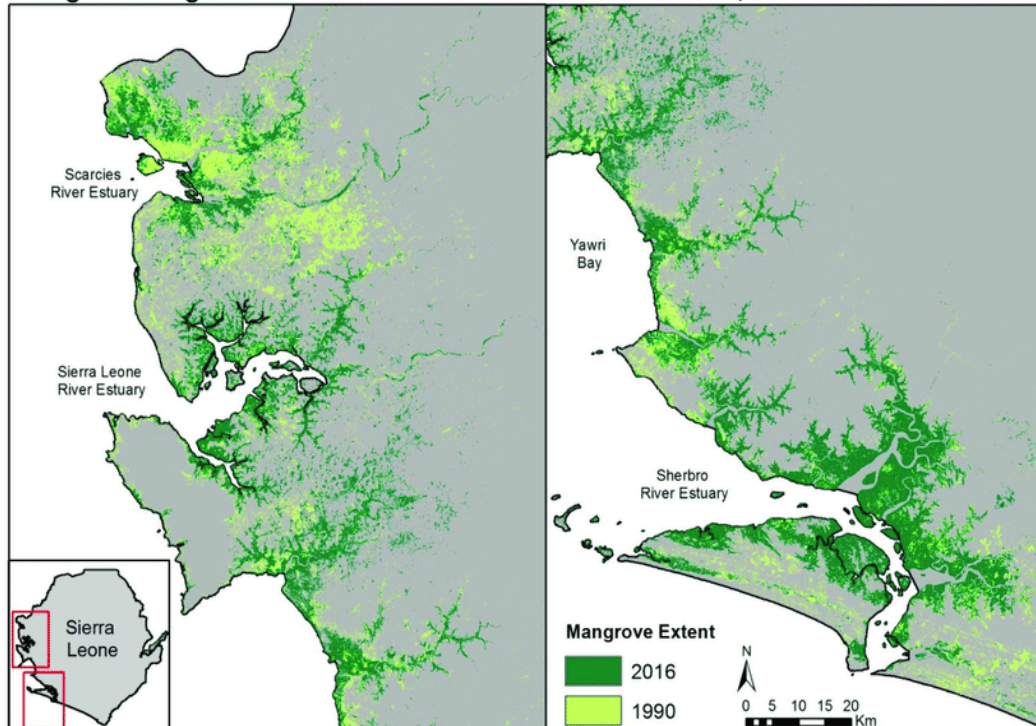
20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Sierra Leone's coastal and marine ecosystems and biodiversity has been under threat from various pressures, ranging from over-fishing to mangrove clearing and coastal erosion. Concrete action to protect and/or conserve the huge and undiscovered biodiversity and economic potential along the 520 kilometers of coastline together with its 200 nautical miles of exclusive economic zone (EEZ) is being seriously pursued by government. In pursuance of that goal, the Ministry of Fisheries and Marine Resources (MFMR) through an institutional capacity development support to the MFMR by the European Union (EU) declared the establishment of four Marine Protected Areas. These MPAs are the Scarcies River Estuary, Sierra Leone River Estuary, Yawri Bay and Sherbro River Estuary, which together hold 182,792 ha of mangrove forests in Sierra Leone and constitute the biggest sources of marine and coastal biodiversity resources in the country. In 2016, West African Biodiversity and Climate Change (WABiCC) project carried out a study of changes in mangrove cover since 1990 and the figure below shows that total mangrove cover in Sierra Leone is estimated to have decreased by approximately 25% since 1990, but very unequally among regions: while the decrease reaches 46% in the Scarcies River Estuary, due to widespread conversion of the land to rice farms, mangrove cover has marginally increased in Ywari Bay and Sherbro River Estuary and significantly increased in SLRE due to reforestation efforts. This situation clearly justified the coastal resilience project WABiCC is implementing.

EN

Change in Mangrove Extents in Low Elevation Coastal Zone, Sierra Leone - 1990-2016



The WABiCC project is currently the largest coastal biodiversity conservation project being implemented primarily to conserve and protect the mangrove resources and build resilience for the impacts of climate change in coastal Sierra Leone. In addition to the estimation of the mangrove cover and resource mapping and training, the project is developing a co-management plan that is aimed at addressing community resource and livelihood needs and at the same time ensure that mangroves and other biodiversity components are well conserved. Another key expected output of the project is to designate the Sherbro River Estuary (which contains 54% of the country's mangrove stock and supports over 20,000 migratory congregatory birds) a Ramsar site, which will enhance its international profile and potentially mobilize more resources to support its conservation. The estuary incorporates the Turtle Islands archipelago, where the United States Fisheries and Wildlife is supporting the Reptile and Amphibian Programme, Sierra Leone (RAP-SL) to work with local communities to conserve marine turtles and their habitats.

A Wetlands Act, Sierra Leone's first attempt at legislating wetlands protection was drafted in 2015. The document, which addresses the conservation legislative needs of all forms of wetlands, including coastal areas and mangroves forests, awaits final review and enactment into law. The Government of Sierra Leone through the MFMR has enacted a Fisheries and Aquaculture Act of 2018 and the necessary processes are being followed to implement the provisions of the Act. Both Fisheries and Aquaculture Act and the draft Wetlands Act are consistent with the Medium Term National Development Plan 2019-2023 and the Agenda for Prosperity (Poverty Reduction Strategy Paper - PRSP III), which considers the development of sustainable fisheries and aquaculture and

the proper management of wetlands resources as potential for poverty alleviation in Sierra Leone.

Indicators and Activities

Indicator(s) used in this assessment

- Status of at least two coastal and marine biodiversity-sensitive site improved.
- Relevant aspects of the FAO code of conduct being implemented at ministerial and community levels is leading to improved fishing practices.
- Proposed Marine Pollution Act reviewed, enacted and being applied to address emerging challenges with detectable improvements in marine ecology.
- At least one more viable coastal/marine ecosystem declared for protection.
- Management plans for each of the four MPAs produced by 2025.
- A Management Committee set up within the MFMR for the promotion of the management of MPAs

EN

Any other tools or means used for assessing progress.

Reports from meetings and consultation during the process are available. The level of collaborations between IMBO and the MFMR has increased. The two institutions are collaborating in a number of research and surveys, particularly from the West Africa Fisheries and Program funded by the World Bank. The NPAA is collaborating with WABiCC to conserve mangrove along coastal Sierra Leone.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is high. The information and evidence of implementation of the activities aimed at achieving the target are obtainable from MFMR, NPAA and WABiCC.

EN

Adequacy of monitoring information to support assessment

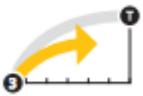
Monitoring related to this target is adequate

Monitoring system for the target

There is no formal or organised monitoring system in place, but the target or strategic output is monitored from reports from meetings, workshops and consultations held.

EN

Strategic Output B3 - Ecological Restoration and Recovery of Species and Ecosystems under Threat is Significantly Improved



2019 - Progress towards target but at an insufficient rate

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

Progress towards target but at an insufficient rate

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Almost all natural ecosystems in their original natural forms are threatened in Sierra Leone; forests, inland wetlands, coastal wetlands, savanna woodland etc. Closed primary forests have been reduced by almost 90% whilst wetland resources are being depleted (through mining and over-exploitation) at an alarming rate and woodlands ecosystems dominated by *Pterocarpus erinaceus* are being decimated through logging. As ecosystems are being degraded, species that are vulnerable are increasingly exposed to local extinction pressures. The situation is compounded by the high unemployment rate among young people, limited viable alternative livelihoods, weak law enforcement and the low level of development of the country. The restoration of ecosystems under threat is one of the key focus of government in the establishment of the NPAA in 2012.

A number of efforts are being pursued to restore ecosystems, including protection of zones within protected areas that will allow natural regeneration, as exemplified by the significant regeneration that has taken place in Gola Rain Forest National Park in areas that were previously under timber

EN

concession and in Loma Mountains National Park, since their respective upgrades to national park status. However, there are huge challenges in reserves that a close to urban settlements and mining areas, including the Western Area National Park (near the capital Freetown), Kambui Hills Forest Reserve (near the eastern city of Kenema), Kangari Hills Non-hunting Forest Reserve (adjacent to a major gold mining location) and Nimini Hills Forest Reserve (also affected by gold mining). The NPAA and Forestry Division have been engaged in mangrove rehabilitation, through the US Fish and Wildlife funded WABiCC project at Sherbro River Estuary; the project incorporates the conservation needs of the West African Manatee and marine turtles among others. Outside protected areas, there is commitment from government to engage in reforestation programs, including the annual tree planting exercise on June 5 (World Environment Day) during which thousands of trees are planted in various locations across the country.

EN

Indicators and Activities

Indicator(s) used in this assessment

- At least three additional areas of critical ecosystem needing protection identified through surveys and desk studies.
- At least two more viable terrestrial ecosystem identified and steps taken to designate them for protection
- At least one species-focused and one ecosystem-focused ecological research conducted bi-annually and research findings applied successfully.
- At least 10% of threatened critical ecosystems restored
- Management plan for at least one threatened species developed biannually and being implement.

EN

Any other tools or means used for assessing progress.

Progress in being assessed through periodic reports and reviews produced during the implementation of the respective projects and actions. The NPAA has field staff and rangers who provide regular feedback and reports on activities and challenges from the field. There are regular intra- and inter-agency meetings where updates on progress and challenges at the field and administrative levels are discussed and necessary steps are instituted.

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

The level of confidence is medium (~60%) because the reports available are authentic to some and expert opinion is based on feedback mainly from field staff including forest guards and rangers.

EN

Adequacy of monitoring information to support assessment

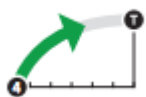
Monitoring related to this target is adequate

Monitoring system for the target

No monitoring system in place, but progress is being monitored through peer-reviewed reports and inter-agency meetings.

EN

Strategic Output B4 - Pollution Levels and Spread of Alien Species (Flora and Fauna) are Controlled and Well Managed.



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

The EPA-SL has made positive effort to identify pollutants and control pollution in the country. Consultations with small to medium scale industries in 2015 and ongoing consultations are meant to control industrial pollution and sources of ecological contamination into streams and the general environment.

EN

On alien species, most indigeneous ecologies are susceptible to invasiveness of alien species.

From observation, most invasive species are introduced accidentally or deliberately. *Chromolaena odorata* a weedy shrub is proliferating into viable terrestrial agro-ecological and destroying crop viability and yield. It is hampering early establishment of natural vegetation during fallow succession that is required for nutrient replenishment, and so impinging negatively on the livelihood of rural farming communities. In some farming communities the species is referred to as rebel weed and is suspected to cause mortality among sheep and goats, when consumed by these animals. A few research has been carried out that point to the negative impacts of the proliferation of *C. odorata*, but no systematic effort yet taken to address the problem.

The use of exotic plants in ecological restoration programs, particularly the Acacia species was very common in the 1990s to 2000s, but following research findings pointing to the adverse ecological effects they have on indigenous ecology, there is now a growing tendencies towards the use of local species for such restoration schemes. Most restoration schemes now focus on the use of fruit trees because of the combined ecological and economic benefits they provide to the environment and people. The EPA has drafted a policy on the deliberate or accidental introduction of exotic species through ballast water and other mechanisms.

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence of the assessment is high. A number meeting, workshop and study reports are available on pollution and invasive species.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

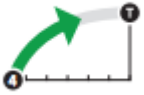
Monitoring system for the target

The EPA-SL has a monitoring plan for monitoring and evaluating pollution levels from industrial and other activities.

The Sierra Leone Agricultural Research Institute has a monitoring system in place to monitor the presence and ecology of invasive flora and fauna. Also there are *ad hoc* university research geared towards understanding the biology and ecology of a few invasive flora and fauna.

EN

Strategic Output C1 - The Conservation Status of Protected Areas (Parks, Forest Reserves, Game Reserves and Sanctuaries) and the Wildlife therein Significantly Improved



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

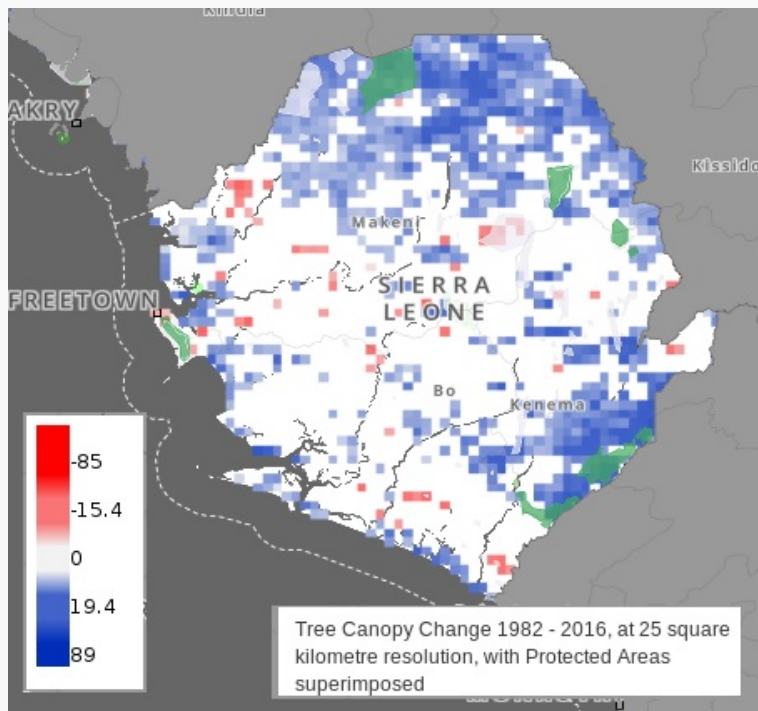
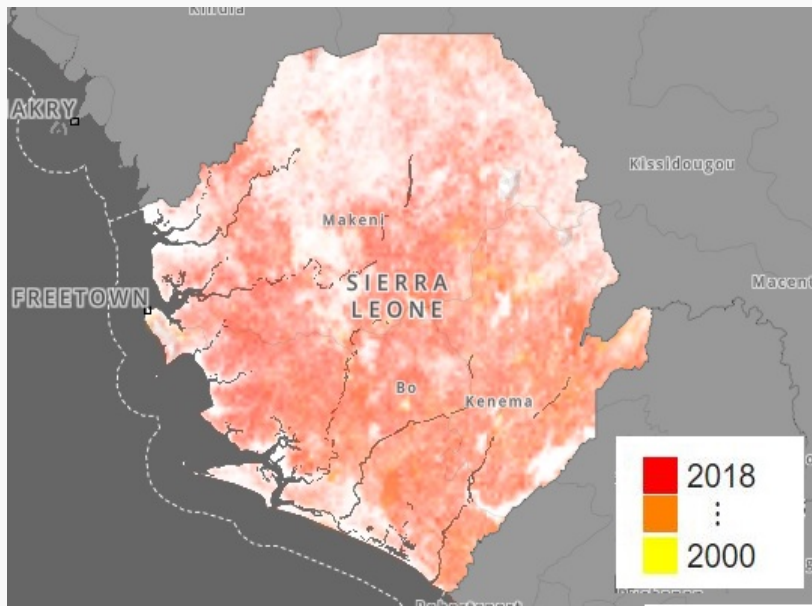
Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

There is no doubt that protected areas have played a significant role in safeguarding Sierra Leone's biodiversity. The country has an existing network of 48 reserve areas with 15 designated protected areas, covering 284,591 hectares (Government of Sierra Leone 2011). This includes four national parks, two wildlife sanctuaries and a collection of forest reserves, representing about 4% of the land area. It is proposed that an additional 36,360 hectares of land will be provided for conservation, thereby increasing the current protected area to 4.5% of the land area. However, this increase is still less than both the Sub-Saharan (5.9%) and global (6.2%) averages. The maps indicate that forest loss (top), which is consistent with forest cover change (bottom) occurred over the last 25 years (1982 - 2016), but much less so in areas that have been kept and conserved as protected areas (green areas) at various levels of legal protection.

EN



During the implementation of the Sierra Leone Biodiversity Conservation Project, management plans for three conservation PAs (Kangari Hills Non-hunting Forest Reserve, Loma Mountains Non-hunting Forest Reserve and Mamunta-Mayosso Wildlife Sanctuary) were developed through wider and transparent consultation with local community stakeholders, local government authorities and other institutions. These plans resulted in the first participatory management actions ever for these conservation sites. These management plans are being utilized and constitute the main reference material for the Community Action Plans (CAPs) that provide support for community

livelihoods.

CAPs were developed through needs assessment surveys to identify programs that will enhance community welfare, while conserving protected area resources. Besides the direct economic benefits they might generate (from the supply of CAP materials like tree crops), the local communities are beginning to realize that they can improve their welfare if the nearby PAs are well managed. For instance the solar installation has improved their social lives by providing lighting in their community meeting places and charging up their mobile phones, thereby improving communication to these once remote communities.

Survey and research work aimed at identifying species conservation priorities and additional sites for protection indicate an increase in species diversity for the past 10 years for mammals including bats and terrestrial small mammals. A recent study in the Bumbuna Phase II Impact Assessment recorded three bat species for the first time in Sierra Leone, raising the total number for the country to 85 and a couple of undescribed non-volant small mammals. In a rapid survey of rodents and shrews in Gola Raiforest National Park, four new species of shrews (one of which was new to science) and one new rodent species (*Colomys gosling*) were recorded for Sierra Leone. Amphibian diversity increased from 55 to 65 species. There were no differences in the species diversity for reptiles and birds although there was an increase in the number of threatened bird species from 28 to 30 and decrease in the number threatened amphibian species from 18 to 7, based on recent IUCN threat assessment.

Indicators and Activities

Indicator(s) used in this assessment

- At least one PhD and two MSc thesis and several under graduate research reports produced on biodiversity themes
- An updated inventory of the wildlife of Sierra Leone available and is a valuable reference material.
- Training courses at certificate and undergraduate level for wildlife inventory and management conducted in at least two tertiary institutions.
- At least 20 forestry and wildlife officers receive relevant training to the required academic level.
- A resource centre for wildlife data and management is established, well resourced and hosted by the NPAA.

EN

Any other tools or means used for assessing progress.

Pair-review meetings are held

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is high. Most of the reports come directly from field staff and are verified by routine field visits and pair-review consultations.

EN

Adequacy of monitoring information to support assessment

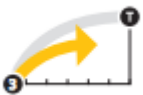
Monitoring related to this target is adequate

Monitoring system for the target

Processes that constitute steps towards the upgrading of the status of protected areas are closely monitored by the relevant technical staff in the Forestry Division, the NPAA and the EPA. Research and survey reports are produced and sometimes peer-reviewed to cross-check vital information, whilst regular reports are sent in by field staff and rangers.

EN

Strategic Output C2 - The Ecological Integrity of Inland and Freshwater Ecosystems Significantly Improved through Sound Conservation Actions.



2019 - Progress towards target but at an insufficient rate

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

Progress towards target but at an insufficient rate

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Two major projects have addressed some conservation challenges in inland and freshwater ecosystems in Sierra Leone. The Wetlands Conservation Project (WCP), which was implemented between 2012 and 2016 targeted the Mamunta-Mayosso Wildlife Sanctuary (MMWS) and the Sierra Leone River Estuary (SLRE), a Ramsar Site. At the MMWS, the key outcomes of the project are the collaborative re-demarcation of the boundaries of the reserve with the communities and the development of a co-management plan, with full community involvement in the entire process. The key outputs were: (a) the boundary was demarcated with beacons and trees and is known to the local dwellers; (b) agreements with cattle herders and chief authorities have led to better protection of the site, and (c) the number of staff is adequate to the size of the PA. Local communities were beneficiaries of training in the management of their natural endowment. For the SLRE, a management plan was developed and a memorandum of understanding between the NPAA and the MFMR to establish common understanding on overlapping mandates, with the aim of promoting the conservation interest of the SLRE. The Conservation Society of Sierra Leone is leading other partners in building a conservation program for Lake Sonfon (the largest lake in the country), with support from BROT (Bread for Life), a German NGO.

EN

Indicators and Activities

Indicator(s) used in this assessment

- The exploitation of wetlands resources well controlled and is beneficial to biodiversity and people.
- The involvement of local communities in inland wetlands management is significantly improving inland aquatic biodiversity.
- At least two proposals funded for research into inland aquatic ecosystems
- Innovative, sustainable and pro-conservation activities are generating private ventures in 30% of all wetlands
- Water quality significantly improved through incentive driven environmentally friendly farming practices.

EN

Any other tools or means used for assessing progress.

The tools used for monitoring are implementation reports and peer-reviewed meetings and consultations.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is higher because it is based on peer-reviewed implementation reports and meetings.

EN

Adequacy of monitoring information to support assessment

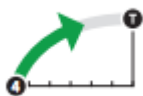
Monitoring related to this target is adequate

Monitoring system for the target

The NPAA has the overall role of monitoring the target, but works in collaboration and in consultation with other agencies and consultants through various mechanisms of monitoring, The NPAA also carries out routine auditing of the activity implementation by their field staff, based on reports submitted.

EN

Strategic Output C3 - In-Situ Conservation for Species and Ecosystems in Protected Areas Enhanced by At Least 30%, Leading to Improved Conservation Status of Threatened Species and Habitats.



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

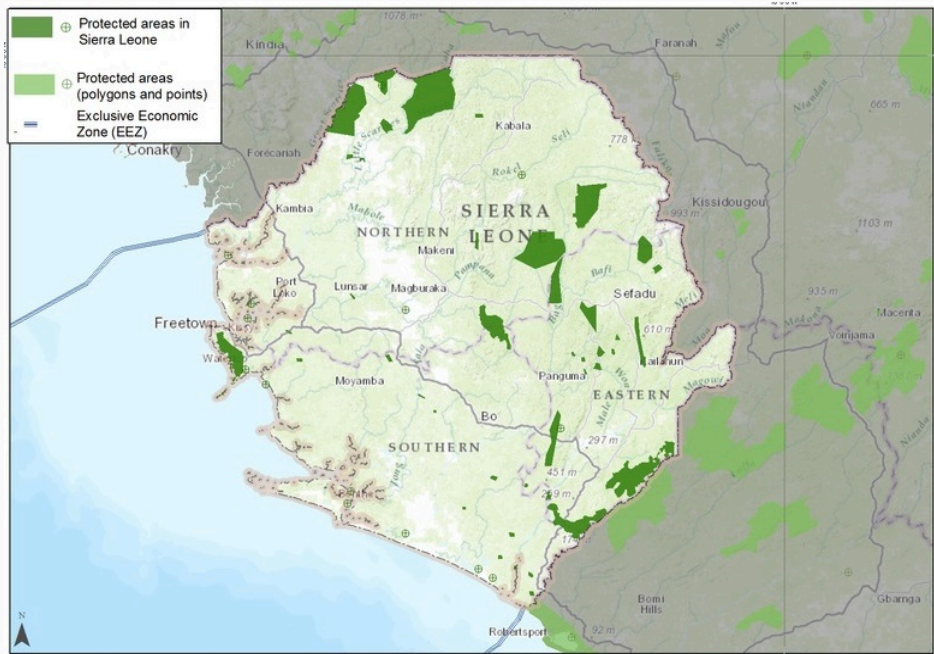
20 Dec 2019

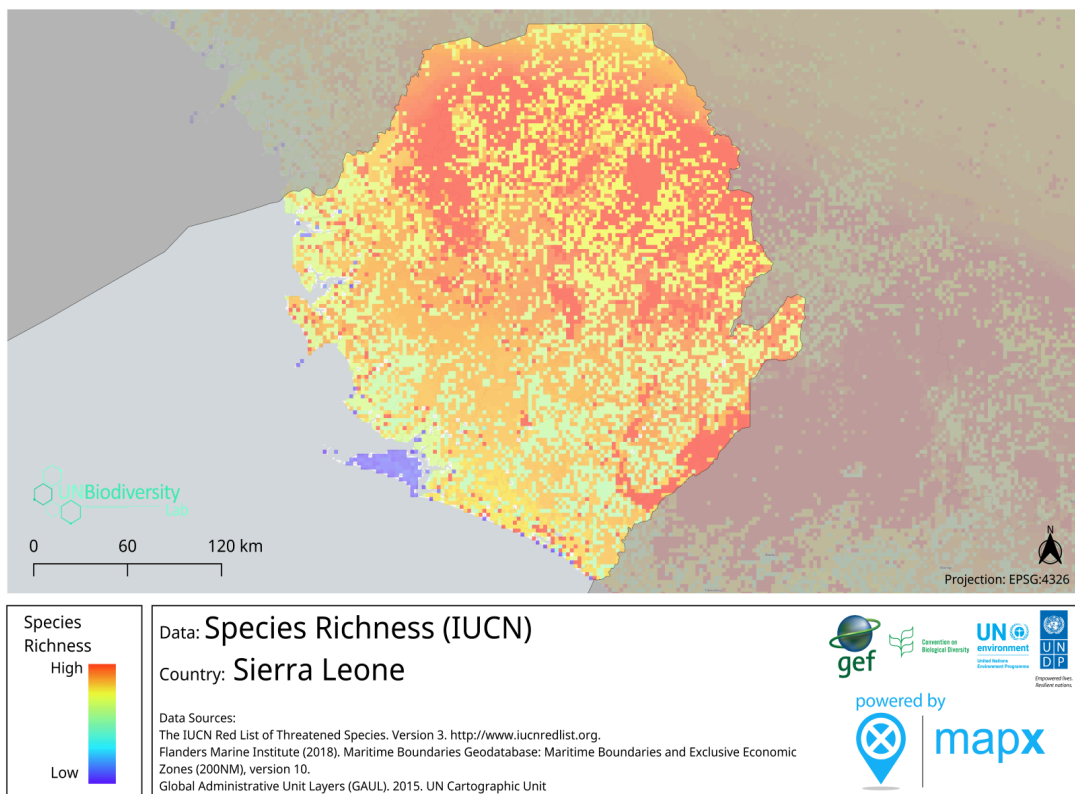
Summary of the assessment of progresses toward the implementation of the selected target

Sierra Leone has over 100 threatened species from various taxa, including 27 species of mammals, 30 species of birds 9 species of reptiles and 26 species amphibians, based on the IUCN Red List of Threatened Species. A significant proportion of these species, especially mammals

EN

and birds are found in protected areas and so the need for the necessary mechanisms to be put in place to enhance the condition of their habitats, thus improving on their population size. This output is being implemented in consonant with the CITES and CBD conventions, and the Medium Term National Development Plan 2019 - 2023. The maps below show the threatened species richness for Sierra Leone overlaps well with the protected area network for terrestrial sites, particularly forest PAs.





In situ conservation for species and ecosystems has mainly been pursued through the establishment and management of protected areas. Forest conservation has been in the forefront of most of the efforts because they contain the highest proportion of the most important biodiversity that require special protection. One of the greatest efforts at in-situ conservation (if not the greatest so far in Sierra Leone) is the management of the Gola Rain Forest National Park (GRNP), which was upgraded to a national park status in 2013, after eight years of innovative management as a concession for conservation. Once the Park attained full status, it was handed over to the Government of Sierra Leone in 2013 and is now managed mainly by staff from the Forestry Division of MAFFS and the NPAA, with technical support from the RSPB and other international partners, the Gola Forest Programme (GFP) was a major recipient of funding from the Tropical Forest Conservation Trust Fund, an RSPB initiative aimed at providing financing for tropical conservation initiatives around the world. Also in 2012, the RSPB developed a project for GRNP which would sustainably finance the core operations of the park for the 20 years through payments from the UN Reduced Emissions from Deforestation and Forest Degradation (REDD+) mechanism. A group of conservation stakeholders is exploring the possibility of applying for UNESCO World Heritage Site designation for selected areas of the country.

Montane vegetation (both forest and grassland at over 1500 m above sea level), which is among the most restricted ecosystems in Sierra Leone is being protected through the declaration of

the Loma Mountains as a National Park (formally a non-hunting forest reserve) in 2015. There is now a good crop of well-trained wildlife and forest rangers operating in the park to ensure that the regulations are enforced and from all indications the park is well protected. Support for the conservation of the Loma mountains forest (the second largest forest reserve in the country after Gola) was part of the Sierra Leone Biodiversity Conservation Project funded by Global Environment Facility (GEF) and implemented by the World Bank and Österreichische Bundesforste in collaboration with the Forestry Division, MAFFS. The project, which was launched in 2011 was aimed at strengthening the protection of OKNP, Kangari Hills and Loma Mountains, through improved site planning and implementation, expanded awareness-raising and community engagement, and capacity building within the national forestry department.

Through funding from the EU, Welthunge Hilfe (WHH) implemented a project to save the Western Area Peninsula Forest (WAPF) in collaboration with the Forestry Division MAFFS and a consortium of national NGOs called Environmental Forum for Action (ENFORAC), with the Department of Biological Sciences (Fourah Bay College, University of Sierra Leone) providing some technical support. The WAPF project saw the implementation of a no-expansion adjustment to the reserve's boundary by adding forests further down the peninsula to accommodate Freetown's growth. The project also provided much needed support to local communities for the management of watersheds as vital water supply sources. In addition the reserve boundaries were demarcated with GIS support so that areas where disputed boundaries were adjusted and sorted out with adjacent communities. However, the spate of expansion of the capital city is creating huge pressure from encroachment around the boundaries of the WAPF.

Indicators and Activities

Indicator(s) used in this assessment

- The review process of the three relevant conservation Acts (1972 Wildlife Conservation Act, the 1988 Forestry Act and the draft Wetlands Conservation Act) completed and enacted by Parliament by 2025.
- Management Plans for at least four more PAs developed and being implemented.
- Unified guidelines for PA management developed through a consultative approach.
- A PA management training needs assessment developed and being implemented.
- Improved PA management achieved through on-going graduate and in-service training by at least 20% of relevant staff.
- The protection and biodiversity conservation status in PAs improved significantly, evidenced by improved habitat conditions and increased population of some threatened species.
- The status and ecological condition in at least one terrestrial sites and one wetland site greatly enhanced
- The conservation status of 20% of all threatened species in targeted ecosystem

EN

improved significantly.

Any other tools or means used for assessing progress.

In 2015 the EPA funded the assessment of the conservation status of threatened forest flora and fauna in Sierra Leone, respectively. Two compendiums were produced for each thematic area respectively and the reports are available.

EN

As part the State of the Environment Report, 2015 funded by the UNDP, produced by the EPA, the state of national forests, wetlands, savanna and other ecosystems were assessed.

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is high because the reports were produced by consultants with the relevant expertise in the various thematic areas.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The targets is monitored from the reports produced which were peer-reviewed through a validation process attended by MDAs and other stakeholders.

EN

Strategic Output C4 - In-Situ Conservation Outside Protected Areas Enhanced by at Least 20%, Significantly Improving the Status of Habitats for Rare and Threatened Species.



2019 - Progress towards target but at an insufficient rate

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

Progress towards target but at an insufficient rate

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Whilst protected areas accounts for a significant proportion of threatened species, studies have shown that a good number of the populations of these species occur outside protected areas. For instance there were more breeding sites of White-necked Picathartes *Picathartes gymnocephalus* discovered outside the boundaries of the Gola Forest Reserve than inside reserve boundaries.

In the Gola RFNP, the conservation needs of the colonies of *P. gymnocephalus* outside the reserve is being addresses through working with communities on the basis of a memorandum of agreement, to protect the colonies of the birds. This scheme was initiated in 2011 and it is working and producing the desired results. The concept is being applied at the Kambui Hills Forest Reserve, where the adjacent community is collaborating with the Conservation Society of Sierra Leone to protect some *P. gymnocephalus* colonies, with support from government wildlife rangers.

Also some chimpanzee colonies occur outside protected areas especially around the southwestern section of the country, were three chimpanzee companies are known to exist. Most of the population of threatened species outside protected areas occur in community forest and community reserves, for example, sacred groves. Within the last five years recent approaches to the conservation of wildlife is the development of co-management plan, which incorporates the livelihood and access to resources for the communities.

EN

Indicators and Activities

Indicator(s)used in this assessment

- The NPAA and EPA are further empowered through improved legislation and policy action to effect wildlife management outside PAs.
- Management plan for protected species outside PAs developed and being applied to conserve threatened reports for flora and fauna outside PAs.
- The location, populations and conservation status of all threatened species outside protected areas identified.
- Guidelines for sustainable use of biological resources outside PAs being implemented and creating positive impacts on target species and ecosystems.

EN

- Local communities are benefiting from at least two private sector investment and ecosystem services due to participation in conservation of biological resources outside PAs.
- At least two Environmental/Conservation NGOs engaged in species and/or ecosystem project or program outside PAs.

Any other tools or means used for assessing progress.

Peer-reviewed reports of actions are the other tools used to assess progress on this target.
Meetings and workshops are also used to assess progress.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is high and reports are produced by consultants and field personnel.

EN

Adequacy of monitoring information to support assessment

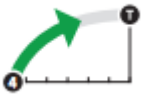
Monitoring related to this target is adequate

Monitoring system for the target

There is no standard monitoring system in place.

EN

Strategic Output C5 - Ex-Situ Conservation Programmes Designed, Supported and Implemented with Tangible Results.



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Ex-situ Conservation is a not a common phenomenon in Sierra Leone, but there are evidences of successful schemes that could be replicated for species that need special attention to help stabilize their population and protect them from local extinction pressures. The Tacugama Chimpanzee Sanctuary (TCS), which was established through facilitation and support from the Forestry Division of the Ministry of Agriculture Forestry and Food Security, is a typical example of a successful ex-situ conservation program which has not been replicated in any other location in Sierra Leone. Over the years, TCS has rescued scores of chimpanzees from their captors, from domestic pet and from trafficking. The center was established to rehabilitate chimpanzee, introduce them into semi-wild environment, from where they would eventually be released into the wild.

The centre currently house 92 chimpanzees and has in recent times introduced the concept of chimp adoption, as a means of ensuring a sustainable funding mechanism for the care of the animals. According to the 2019 IUCN Red List of Threatened Species, chimpanzees are critically endangered; they are targets of international trade (for zoos and biomedical studies), are kept as domestic pets (which are much loved when young and badly treated and virtually imprison when they grow old). The intervention of the TCS has greatly improved chimpanzee conservation, coupled with its outreach education and livelihood programs in rural communities. In 2019 following the visit of the renowned promoter of chimpanzee research and conservation, Dr Jane Goodall, the Government of Sierra Leone declared chimpanzee as a national animal, which will contribute to boosting tourism in the country and the conservation status of the species at the national level.

A crocodile holding facility, which appears to have been transformed into a place to keep rescued crocodiles, exists in Jui, just outside the Freetown Municipality. The initial intention of the keeper of the farm was to save a few of the animals that were brought to him by people who captured them, but because he offered money in return, his facility has been overwhelmed by increasing number of crocodiles brought there. A majority of the crocodiles brought to the facility are Nile Crocodile *Crocodylus niloticus*, but there is also a good number of Dwarf Crocodile *Osteolaemus tetraspis*, but no slender-snorted *Mecistops cataphractus* has been observed in the facility. Plans are now underway, through collaboration with the Environment Protection Agency, Sierra Leone

EN

EPASL and RAP-SL to release these crocodiles into areas where they will find safe and conducive habitats.

With approval and monitoring from the NPAA, the Tasso Ecotourism Centre is operating a temporary aviary to house and rehabilitate rescued Timneh parrots *Psittacus timneh*, a species that is considered vulnerable in the 2019 IUCN Red List. The intention is to develop the aviary into a facility where the parrots (and potentially other rescued birds) can be rehabilitated prior to release into the wild.

Indicators and Activities

Indicator(s) used in this assessment

- An effective system operational and achieving ex-situ conservation in at least two sites or facilities.
- The final reviewed conservation acts and policies contain relevant sections or clauses that address the conservation needs of all threatened species living outside PAs.
- At least two training programs conducted for at least 20 personnel on ex-situ conservation modules.
- At least two ex-situ conservation research carried out and reports available
- At least two concrete private sector investments secured to effect ex-situ conservation.

EN

Any other tools or means used for assessing progress.

Peer-reviewed reports and inter-agency meetings are the other tools used in assessing progress on this target.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

Tacugama Chimpanzee Sanctuary publishes regular newsletters on programs that are implemented and progress made.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is partial (e.g. only covering part of the area or issue)

Monitoring system for the target

There is no standard national monitoring system, in general. However, Tacugama operates a monitoring system, the results of which are provided in monthly reports and regular newsletters.

EN

Strategic Output D1 - Plant Resources for Agricultural are Effectively Harnessed and Managed for the Benefit of Biodiversity and People.



2019 - Progress towards target but at an insufficient rate

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

Progress towards target but at an insufficient rate

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

This strategic output is very relevant to the development of the agricultural potential and food security in Sierra Leone. Despite its huge agricultural potential, the country still lack the potential to feed itself and be able to export the excesses. The harnessing of plant resources would enhance the diversification of agricultural production that would lead to improved livelihoods of the vast majority of the rural population. The target is consistent with the 2008 National Agricultural Development Plans and the Medium Term National Development Plans 2019-2023.

EN

There has been serious challenge with low yield and infestation of pest and diseases affecting the agricultural sector. As a way of addressing these problems the Ministry over the years through its research arm has developed resistance and improve crop varieties for key crops in the country such as, cassava, rice, cocoa, groundnut, maize, sweet potato, pepper, cashew, fruits, coffee, cashew and oil palm among others.

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence in assessing progress on this target is average. This is because some of the information cannot be readily and independently verified.

EN

Adequacy of monitoring information to support assessment

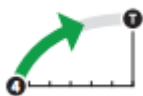
Monitoring related to this target is partial (e.g. only covering part of the area or issue)

Monitoring system for the target

The Ministry of Agriculture Forestry and Food Security has a monitoring systems for development in the agricultural sector, which do not appropriately address some of the indicators being reported on.

EN

Strategic Output D2 - Animal Resources for Agricultural Husbandry are Effectively Harnessed and Managed for the Benefit of Biodiversity and People.



2020 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

11 Jan 2020

Summary of the assessment of progresses toward the implementation of the selected target

The development of animal husbandry is yet at a low level in Sierra Leone. This is creating serious pressure on wildlife because bush meat consumption is very common in rural communities. This is because the options for meat protein is limited, expensive and unavailable for most people and so the need to enhance livestock rearing using locally available resources and potential inputs from external sources. Livestock restocking at institutional and local traditional farming communities has been going on over the last ten years to help farmers diversify their productivity. Sierra Leone Agricultural Research Institute (SLARI) has recently undertaken an introduction of a genetic variety of cattle through interbreeding with well-known genotypes into Sierra Leone that would enhance cattle resistance to diseases and improve productivity. Njala University is also doing some experimental interbreeding to get viable and resilient breeds.

EN

Indicators and Activities

Indicator(s) used in this assessment

- Improved capacity for animal husbandry and veterinary services attracting at least 30% increase in investment and economic viability in such agri-business ventures.
- On-going and improved research ventures result in the introduction of at least two improved and economically viable animal breeds in local and industrial animal husbandry.
- Well-established and viable non-conventional indigenous agro-silvo-pastoral range management systems are creating more employment opportunities for young people in the agricultural sector.

EN

Any other tools or means used for assessing progress.

Peer-reviewed reports and meetings are the other tools used in assessing progress on this target.

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

The level of confidence here is low. This is because not much has been done on harnessing animal resources for agricultural productivity and many of the reports require independent verification and some more time to realize the gains, if any.

EN

Adequacy of monitoring information to support assessment

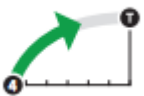
Monitoring related to this target is partial (e.g. only covering part of the area or issue)

Monitoring system for the target

No monitoring plan available.

EN

Strategic Output D3 - Land Resources for Agriculture are Effectively Harnessed and Managed for the Benefit of Biodiversity Conservation and People.



2020 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

11 Jan 2020

Summary of the assessment of progresses toward the implementation of the selected target

Land is a very important resource for development and agriculture in Sierra Leone. However, the existing land tenure system and to some extent, political influence tend to create some level of impediments to organised, more inclusive and diversified investment into agricultural development in the country that would also cater for biodiversity conservation needs. The target is consistent with the National Agricultural Development Plans and the Medium Term National Development Plan 2019-2023. In recent times the government is opening the agricultural base to

EN

private sector investment from both national and international companies.

There is currently an ongoing negotiation between the Government of Sierra Leone and Turkish investors for the Torma Bum bolilands rice development in the Bonthe District. The first phase of the project will entail the cultivation of about 54,000 hectares of rice, using the Wanje and the Sewa rivers for sustainable irrigation. Gbondapi in the Pujehun District will also be developed for rice production. Both projects, the first of its kind in the sub region, are worth \$550 million USD, of which one \$100 million USD will be the Government's contribution and the remaining \$450 million will be paid by donor partners. In addition, 185 hectares of lake will be constructed for hydropower and irrigation. Two hundred metric tons of seed rice is needed to kick start the project. Torma Bum in Bum Chiefdom, Bonthe District is known for its rice production. The area is rich in agricultural resources such as bolilands and other arable lands. According to projections, by 2023, the country will produce as much as 1.6 million metric tons of rice; some 900,000 metric tons of rice will be needed to not only feed the population but the rest will be exported. This investment will help Sierra Leone achieve food self-sufficiency and save the country more than \$200 million in rice importation annually. It will create more than 20,000 jobs for local people.

Rice is the main agricultural produce in the traditional slash-and-burn agriculture, which is blamed for much of the deforestation in Sierra Leone. With increased rice productivity and availability through the Torma Bum and Gbondapi investments, the traditional rice production related deforestation rate is expected to decline in the coming years.

Despite the potentials that exist, one of the biggest challenges to traditional agriculture is the development of large monocultures of oil palm, established by multinational companies in various locations in the country. These monocultures pose serious threats to local traditional agriculture that is characterized by high biodiversity and greater rate of nutrient replenishment if well managed. It is also creating land hunger among traditional rural farming communities in places affected, thus impinging on the sustainable livelihood potentials of many rural people.

Indicators and Activities

Indicator(s) used in this assessment

- Cultural ownership to land no longer becomes an impediment to biodiversity conservation in at least three sites
- Biodiversity conservation is a vital component of the activities of relevant agencies.
- At least two relevant MDAs receive the relevant capacity building support to harness land resources effectively.
- Adapted integrated land use and management system effectively conserving biodiversity in at least two co-management systems.

EN

Any other tools or means used for assessing progress.

Peer-reviewed reports and inter-agency meetings are the other tools used for monitoring the target.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level confidence is high. Reports are published in the Ministry of Agriculture website and meetings are peer-reviewed and the issue of land for agriculture is of utmost national interest with wide media coverage.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

The Ministry of Agriculture has a standard monitoring system which is applicable to this target.

EN

Strategic Output D4 - Indigenous Knowledge and Intellectual Property Rights Well Harnessed within Local Communities and Producing Beneficial Results.



2019 - Progress towards target but at an insufficient rate

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

Progress towards target but at an insufficient rate

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

The use of indigenous knowledge is only at a grassroots levels and has not been well organised at the national level. There is need for government input, research and the formulation of legislation at the local and national level to regulate the use of indigenous knowledge and the recognition and use of intellectual property. This output correlates neatly with the Nagoya Protocol which deals with access and benefit sharing of genetic resources. In May 2019, Sierra Leone submitted its Interim National Report to the Nagoya Report to the Nagoya Protocol. The process of developing the report went through several consultation and validation before submission. The process revealed a number of gaps, the most important of which is the lack of awareness and understanding about the Nagoya Protocol and what it entails among local people. This triggered the response from the EPA to conduct a national awareness and training on the Nagoya Protocol, targeting key players among local communities, including traditional heads, herbalists, women and community-based groups.

EN

Sierra Leone is a member of the World Intellectual Property Organisation (WIPO) and is an active participating country in the Medium Term Strategic Plan 2010-2015. WIPO aims to promote innovation and creativity for the economic, social and

cultural development of all countries, through a balanced and effective international intellectual property system, which includes knowledge and use of genetic resources, among others.

Indicators and Activities

Indicator(s) used in this assessment

- A study report on traditional knowledge and intellectual property available and being applied to influence change.
- Beneficial rural and pro-poor conservation practices identified and undergoing further development with positive result for biodiversity
- Full domestication and implementation of the Nagoya Protocol achieved by 2025.
- Policies and legislation adopted to protect of indigenous originators and innovations of elements or concepts on biodiversity conservation, including proper understanding and application of IPR is creating benefit to t least four

EN

rural communities.

- Traditional biodiversity conservation concepts and practices incorporated into local customary bye-laws in at least one chiefdoms in all district and are being effectively applied.

Any other tools or means used for assessing progress.

Peer-reviewed reports and meetings are the other tools used in monitoring this target.

EN

Level of confidence

Level of confidence of the above assessment

Based on partial indicator information and expert opinion

Level of confidence of the above assessment

The level confidence is moderate. Apart from a few reports, much of the information is coming from workshops and consultations with local respondents

EN

Adequacy of monitoring information to support assessment

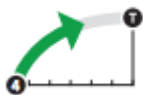
Monitoring related to this target is partial (e.g. only covering part of the area or issue)

Monitoring system for the target

There is no monitoring system in place and so monitoring of the target is only ad hoc.

EN

Strategic Output E1 - Diverse Capacities for Effective Implementation of National Biodiversity Programs Built and Being Utilized.



2019 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

Capacity development at all levels of governance for conservation is an ongoing process in Sierra Leone. Technical and resource capacities are required at national and local levels to ensure sustainable management of biodiversity programs and achieve effective conservation.

The REDD capacity project was a € 4.2 million funding by the European Union and implemented by the National Protected Areas Authority. The overall objective of the project was to contribute to the establishment of low-carbon and pro-poor development, whilst enhancing the degree of environmental protection and maximizing the benefits offered by environmental services. REDD+ is seen as a way to contribute to this general aim. More specifically the project aims to generate the basic conditions for developing the institutional, technical and social experience and capacities necessary for sound forest governance for Sierra Leone to benefit from pro-poor REDD+; and to develop a renewable energy sector in Sierra Leone.

The project had five expected results: (i) the capacity of the Forestry Division of the MAFFS is strengthened so as to fully fulfill its mandate to protect and sustainably manage forest resources in the country; (ii) basic REDD+ readiness is completed in Sierra Leone (complete forest cover and forest carbon inventory and a Measurement, Reporting and Verification system is developed); (iii) public awareness, especially among women and children, significantly increased (through close collaboration with the Environmental Protection Agency and the Ministry of Education); (iv) sustainable charcoal production is piloted, showing its potential to reduce pressures on forests; (v) the potential for generating solar power in Sierra Leone is mapped in order to inform a national strategy and action plan

Among the many actions undertaken were awareness raising on the need for forest conservation, the creation of school nature clubs, the implementation of a pilot project in Port Loko on sustainable charcoal pilot plantations and capacity building of the National Protected Area

EN

Authority. REDD+ was part of the EU's flagship climate change programme GCCA+ and the EU to Sierra Leone in 2017 received an Environmental Award for the REDD+ project achievements.

At the Gola Rain Forest National (GRNP) Park Ongoing capacity building activities at the GRCC are focusing on the training of GRNP staff members, community members (e.g. GRNP Community Youth Conservation Volunteer Programme on the White-necked Picathartes and Pygmy Hippos), students from Njala University and Eastern Polytechnic College in Kenema, as well as on conservation practitioners and researchers from other institutions (e.g. National Protected Areas Authority, Conservation Society of Sierra Leone, Society for the Conservation of Nature of Liberia and Tacugama Chimpanzee Sanctuary).

Njala University implemented a project code-named MENTOR-PACE, which was designed to contribute significantly to the conservation of Western Chimpanzee *Pan troglodytes verus* (listed as Vulnerable by IUCN) in Sierra Leone and Liberia. The project was implemented through a collaboration between institutions in these two countries and was hosted and led by the Njala University in Sierra Leone. The training program is part of the implementation of the action plan for chimpanzees in West Africa, being coordinated by the Great Apes Survival Partnership (GRASP) to save the species from extinction, through studies, direct protection, legislative action, habitat conservation and the establishment of rehabilitation centers.

Indicators and Activities

Indicator(s) used in this assessment

- A comprehensive training needs assessment report available.
- An Institute for biodiversity conservation studies established at university level and functioning to train personnel in various biodiversity conservation themes.
- Training in project funding proposal development achieved and yield at least two funding for biodiversity program or projects.
- It least two tertiary institutions effectively engaged in research on various biodiversity themes.

EN

- Adequate number of professional and technical staff, including at least 30% women, are trained in project development and report writing, resulting in the production of sound research reports.

Any other tools or means used for assessing progress.

Peer-reviewed reports and meetings are the other tools used in assessing progress in this target.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is high and is based on reports that were accepted by various sponsors and facilitators for the capacity building programs implemented.

EN

Adequacy of monitoring information to support assessment

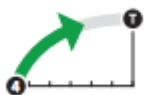
Monitoring related to this target is adequate

Monitoring system for the target

The various recipients of the human and material resources capacity development have their respectively monitoring systems. However, the target is monitored by the number of training activities and the resources acquired through various capacity development interventions.

EN

Strategic Output E2 - Public Participation on Biodiversity Conservation Significantly Improved and Making Positive Impacts.



2020 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

11 Jan 2020

Summary of the assessment of progresses toward the implementation of the selected target

For biodiversity conservation in Sierra Leone to be effective the public should be involved, especially in terms of implementing education and awareness programs and enhancing law enforcement. Co-management and private reserve concepts are being pursued in this direction, as part of the steps to ensure public participation. This is consistent with the implementation of the CITES, CBD conventions and the Nagoya Protocol. Co-management is a growing preference for the conservation of community forest, which are most under threat. By the end of 2019, two co-management plans have been developed (Mamunta-Mayosso Wildlife Sanctuary and Sierra Leone River Estuary) and another two are currently being developed (Tiwai Island Wildlife Sanctuary and Sherbro River Estuary). These arrangements will ensure that a good cross-section of the public participate in biodiversity conservation programs, especially those living closer to and depend on the resources for their survival.

At the Gola forest, with community involvement, the REDD project is using credits validated by the Verified Carbon Standards (VCS) and validated by the Climate, Community and Biodiversity Alliance (CCBA) - two recognized international standards of best practice to provide a stream of sustainable revenue sufficient to significantly reduce emissions from unplanned deforestation activities. The revenues from the sale of credits is being utilised to: i) improve the conservation strategy and effective management of the GRNP; ii) enable sustainable resource management in the National Park and nearby surrounding area (referred to as the project zone) through livelihood improvement activities with communities living adjacent to the National Park (known as Forest Edge Communities; iii) develop a monitoring program that provides robust information to underpin management decisions and a research program that allows Gola Forest National Park to become a recognized international centre of excellence; and iv) build conservation funds that will provide a means of ensuring conservation actions last beyond the 30-year lifetime of the GRNP REDD project.

The GRNP REDD project was developed and implemented by the GRNP partners which comprise of the Forestry Division of the Government of Sierra Leone, the Conservation Society of Sierra Leone (CSSL) and the Royal Society for the Protection of Birds (RSPB) with the full involvement of local communities.

EN

Indicators and Activities

Indicator(s) used in this assessment

- Community-participation made effective and more productive for biodiversity due to effective policy and legislative actions.
- At least two local community groups in each province acquire the relevant capacity to attract funding and support, and are engaged in biodiversity conservation work.
- Workable co-management systems for wildlife management and ecosystem conservation built in, at least, one local community.

EN

Any other tools or means used for assessing progress.

Peer-reviewed reports and meetings are the other tools used in assessing progress on this target.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is high because the indicators are monitored from peer-reviewed reports produced by the respective implementors of the different capacity development.

EN

Adequacy of monitoring information to support assessment

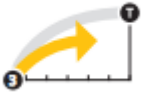
Monitoring related to this target is adequate

Monitoring system for the target

The reports specify steps taken and achievements made and are verified during meetings and consultations.

EN

Strategic Output E3 - Planning for Biodiversity Conservation Becomes a Significant Part of Sectoral Program of Activities.



2020 - Progress towards target but at an insufficient rate

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

Progress towards target but at an insufficient rate

Date the assessment was done

12 Jan 2020

Summary of the assessment of progresses toward the implementation of the selected target

The problems of overlapping mandates among Government Ministries Departments and Agencies (MDAs) is serious stifling progress in some actions, policies and legislative processes for conservation in Sierra Leone. This output is aimed at mainstreaming biodiversity conservation in all sectoral planning and activities and to ensure that there is consistency and collaboration among MDAs for the greater good. There are 14 members of the National Steering Committee for the implementation of the NBSAP 2017-2026 and they comprise key individuals and representatives from government agencies and institutions. The Chairman, who is the 15th member, is appointed to the Committee and is a rotational position that could be held by a member of any of the MDAs. Also as stipulated by the acts that established the Environmental Protection Agency and the National Protected Area Authority, members of their respective executive boards or steering committees are drawn from the relevant ministries and agencies that have one stake or the other on the operations of the respective bodies. The Executive Board or Steering Committee is the main decision making body and their actions are driven by policy and legislative provisions. Implicitly, other relevant MDAs are involved and have a stake in the operations of the EPA and NPAA, which are the two main environment agencies of government.

In October 2019, the President of Sierra Leone appointed a Minister of the Environment (ME), which completely detached environment from the Ministry of Lands and Country Planning. This appointment implies the establishment of the Ministry of Environment (MoE), the first ever in the country. Such a move, which was highly acclaimed by all environment and biodiversity-oriented agencies, organisations

EN

and individuals is expected to resolve some of the perennial problems associated with the misappropriation of lands that has led to multiple environmental problems in the country. The former Executive Director of the EPA is now the ME and with the establishment of a separate ministry, which independently undertakes and supervises the application of its environmental policies and legislation and so biodiversity conservation and general environmental issues are expected to be at the forefront of government actions. One of the expected outcome of the establishment of the MoE would be the preparation of the bill to Parliament for the enactment of the following: (i) the reviewed 1972 Wildlife Conservation Act; (ii) the reviewed 1988 Forestry Act; and the drafted Wetlands Conservation Act.

Indicators and Activities

Indicator(s) used in this assessment

- Effective planning and administration of biodiversity conservation programs is made possible by the signing of at least three MoUs between participating MDAs.
- Biodiversity-related activities become regular in the programs of of at least four sectoral agencies.
- An inter-agency consultation process translated into an agreement aimed at resolving overlapping mandates, thus positively impacting on biodiversity conservation.

EN

Any other tools or means used for assessing progress.

Peer-reviewed reports and meetings are the other tools used in assessing progress on this target.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence is high because the the reports and minutes of meetings are readily available.

EN

Adequacy of monitoring information to support assessment

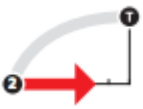
Monitoring related to this target is adequate

Monitoring system for the target

No standard monitoring system is in place, but meetings are regular and reports are verified.

EN

Strategic Output E4 - Access to Technology and Handling of Biotechnology is Made Effective and Beneficial to Local Biodiversity Programs



2019 - No significant change

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

No significant change

Date the assessment was done

20 Dec 2019

Summary of the assessment of progresses toward the implementation of the selected target

The use of technology and technological information for biodiversity conservation is a new concept to Sierra Leone. Proper understanding of what technology is applicable to national local situation is required to ensure effective use of technology for the purpose of species and ecosystem conservation. As of date, no significant progress has been made in acquiring any relevant modern technology and/or its use and application.

EN

Indicators and Activities

Indicator(s) used in this assessment

EN

- At least two technologies on biodiversity management is introduced in Sierra Leone by 2025 and contributing significantly to biodiversity conservation efforts.
- A biotechnology risk assessment study carried out, report available and being used to effect positive change in biodiversity management
- At least two tertiary institutions are offering coursed on bio-technology that support biodiversity cnservation.
- No unsuitable GMO products that pose threat to local biodiversity is allowed to be introduced in Sierra Leone, due to the application of relevant legislation and technology.

Any other tools or means used for assessing progress.

Not applicable

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

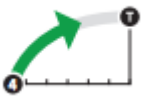
Not applicable

EN

Adequacy of monitoring information to support assessment

Monitoring is not needed

Strategic Output E5 - Financial and Budgetary Resources for Biodiversity Programs Mobilized and judiciously utilized.



2020 - On track to achieve target

Category of progress towards the implementation of the selected target

Rate of progresses toward the implementation of the selected target

On track to achieve target

Date the assessment was done

12 Jan 2020

Summary of the assessment of progresses toward the implementation of the selected target

Over the last ten years the Government of Sierra Leone has increased its budgetary allocation to environment and biodiversity conservation infrastructure programs. In 2012, the National Protected Areas Authority (NPAA) and Conservation Trust Fund (CTF) was established by an Act of Parliament; the CTF now has a separate Board of Directors. The CTF has a specific mandate to raise and mobilise funds for biodiversity conservation. In 2019, the first ever Ministry of the Environment was formed, with the former Executive Director of the Environment Protection Agency, Sierra Leone (EPA-SL) appointed as the Minister. In The establishment of these management and policy structures has significant budgetary implications and by all indications their effective functioning means that are well-funded and serviced by the central budget.

EN

Government has also increased its allocations to the Ministry of Tourism with the purpose of ensuring that the country becomes attractive to tourists, through enhancement of the ecotourism potentials. The National Ecotourism Policy, which was adopted in 2017 seeks to attract up to 20,000 international and 30,000 domestic ecotourism visits by 2025. The policy has placed significant emphasis on the protection of the environment, in collaboration with the EPA-SL and the NPAA.

Indicators and Activities

Indicator(s)used in this assessment

- There is at least 50% increase in government sectoral funding for biodiversity-related programs and activities, thus creating positive impacts.
- Ecotourism attraction to Sierra Leone increased by at least an average of 20% each year and contributing significantly to the national budget for biodiversity conservation.
- At least two more viable innovative ecosystem services related ventures establish and beneficial to biodiversity.
- Significant outcomes realized through funds raised each year through license and royalties and being invested in biodiversity programs.
- An acceptable tax to cover footprint for companies whose activities impact

EN

biodiversity is introduced and enhancing funding for conservation.

- Multilateral agencies and International NGOs increase their technical and financial support by at least 30% to biodiversity conservation effort in Sierra Leone.

Any other tools or means used for assessing progress.

Peer-reviewed reports and meetings are the other tools used in assessing progress on this target.

EN

Level of confidence

Level of confidence of the above assessment

Based on comprehensive indicator information

Level of confidence of the above assessment

The level of confidence indicated is high and is based on the reliability of the information provided in the reports and minutes of the meeting held.

EN

Adequacy of monitoring information to support assessment

Monitoring related to this target is adequate

Monitoring system for the target

No standard monitoring system in place.

EN

Section IV. Description of national contribution to the achievement of each global Aichi Biodiversity Target

1. Awareness of biodiversity values

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

In collaboration with the NPAA a radio drama show named "Watasai Stone" of 24 episode drama was produced by USAID funded called West Africa Biodiversity and Climate Change (WABiCC) program in 2019 and is ongoing till 2020. The drama is about mangrove conservation and management, good fishing practices and institutional bye-laws to protect the natural resources of coastal ecologies in Sierra Leone. This WABiCC programme was done in partnership with the National Protected Area Authority (NPAA) and other government Agencies and Ministries and Departments. The Drama was

EN

produced in four different national languages (i.e. Mende, Themne, Krio and English) and aired from four radio stations (SLBC- FM 100, AYV-FM 101.6, Radio Tombo- FM 96.1 and Radio Bontico- 96.9) across the four coastal (Sherbro River Estuary, Scarcies River Estuary, Sierra Leone River Estuary and Yawri Bay) Marine Protected Area(MPA) communities and Freetown.

With support from the U.S. Agency for International Development and the U.S. Fish and Wildlife Service, PCI Media Impact (a leader in entertainment-education) has partnered with civil society organizations in Sierra Leone to implement its signature “My Community” methodology to raise public awareness for wildlife conservation (www.pcimediaimpact.org). Among the key activities of the Conservation Society of Sierra Leone include conservation education, public awareness, communication partnerships and linkages with other environmental conservation organizations and agencies (www.birdlife.org).

Working in close collaboration with NPAA and the Forestry and Wildlife units in the Ministry of Agriculture and Forestry, Tacugama Chimpanzee Sanctuary (TCS) has an established Environmental Education Programme designed to promote awareness raising for local communities, school teachers and pupils in protecting their environment and wildlife (www.tacugama.com). A major conclusion of the National Chimpanzee Census was the fact that more than half of Sierra Leone’s chimpanzees are living outside of protected areas. Therefore in 2011, TCS founded the Tacugama Community Outreach Programme (TCOP) that works with rural communities living near known wild chimpanzee populations towards achieving sustainable natural resource management and wildlife conservation. TCOP team is presently working in 42 rural communities in Freetown, Moyamba and Pujehun districts.

The Environmental Foundation for Africa (EFA) Biodiversity and Renewable Energy Learning Center created for the promotion of environmental advocacy, education outreach, knowledge management and best practice demonstrations.

The Environment Protection Agency (EPA) undertake series of environmental education and awareness programs including: (i) Village-to-village environmental campaign; (ii) Me and my environment; (iii) Weekly radio and television.

The EPA also developed a National Communication Strategy on the implementation of Nagoya Protocol as one of the three objectives of the Convention on Biological Diversity. The document provides an overview of communication considerations, approaches and methods for the different phases of ABS implementation. It has been developed using Access and Benefit-sharing Strategic Communication for ABS - A Conceptual Guide and Toolkit for Practitioners, as a guide; whilst the action plan was formulated by reviewing the Sierra Leone’s National Strategic Action Plan with respect to Fair Access to Genetic Resources and Equitable Sharing of Benefit and other documents related to environmental resources, with reference to the Biodiversity Strategy and Action Plans of other countries.

This communication strategy document is for: (i) people who are formally in charge of national ABS implementation, such as Focal Points or National Competent Authorities; (ii) people who are otherwise involved in ABS implementation, such as officers in Ministries that are concerned with ABS, as well as industry, the science community, interested NGOs and other civil society groups; (iii) anyone else who has a need to communicate about ABS.

Target Sustainable Development Goals - SGD 1, SDG 2, SDG 11.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

The Interim National Report of the Nagoya Protocol was submitted to the CBD Secretariat in 2019. The report was prepared through a country-wide consultation process involving various levels of stakeholders including local communities, traditional heads, traditional healers associations, government field staff, local government representatives and central government agencies and civil society representatives. A validation workshop was also held prior to the final submission of the report.

EN

2. Integration of biodiversity values

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The importance and value of biodiversity has been integrated into a number of national policies and strategies for development. The Medium Term Development Strategy 2019-2023, has a whole cluster (Cluster 7 - Addressing Vulnerabilities and Building Resilience) that addresses the environmental and biodiversity issues in the country. Within the cluster, there are three subsections, each of which deals with a specific theme that is related to achieving the Aichi Biodiversity Targets. The subsections are: (i) Building national environmental resilience; (ii) Forestry management and wetlands conservation; and (iii) Improving disaster management governance. The establishment of the National Protected Area Authority under the National Protected Area Authority and Conservation Trust Fund Act of 2012 is an added anchor for ensuring the sustainable management of forestry and wetland resources.

No ecosystem valuation exercise has been undertaken and no natural resource accounts within the System of Environmental-Economic Accounting (SEEA) has been implemented.

Target Sustainable Development Goals - SGD 3, SDG 5, SDG 12..

EN

3. Incentives

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Incentives have been offered to local communities to promote the conservation of biodiversity in their respective localities. Some of the pro-conservation incentives that can be cited within the last ten years include the following:

(i) The Gola Rain Forest National Park is providing incentives to surrounding communities, including monetary payments towards community development. This ensures that buffer zones around the park are well managed by collaboration with local communities.

EN

(ii) As a way of encouraging community involvement and reduce pressure on Tiwai Island Wildlife Sanctuary, the management of the sanctuary (which is part of the Gola Forest complex), is providing a number of material and monetary incentives to the local communities. These incentives include, solar power, community centers, scholarship for children and seeds for agriculture; monetary payments are made to traditional heads to facilitate coordination of the activities and programs of the local communities.

(iii) Tacugama Chimpanzee Sanctuary is providing incentives through livelihoods services and education programs for local communities to protect the wildlife and forests in the sections of the country where they operate.

At the moment, there is no particular evidence of harmful incentives to biodiversity in Sierra Leone. However, its is the policy of government through its relevant agencies to prevent any such harmful incentive whenever they are introduced.

Target Sustainable Development Goals - SGD 4, SDG 5, SDG 6 & SDG 10.

4. Use of natural resources

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

A CITES MSc degree was completed in 2019 by NPAA staff in species management in trade leading to a thesis titled “Assessing Gaps, Challenges and Priorities for Effective Implementation of Cites in Sierra Leone”; this research looked at two key species: Flora (*Pterocarpus*) and Fauna (Sea Turtle) in other to understand the country’s CITES compliance towards the species management; the thesis is published on WABiCC website and the websites of the International University of Adalucia, Spain. The study has thrown light on the pressures that the two target species face as indicators of the pressures on biodiversity that is of economic value to local people. Another CITES MSc was completed in 2018 mainly focusing on the exploitation of wetlands resources.

In 2019, strides on building a sustainable tourism is paying off as the number of visitors for ecotourism increased by almost 100% in less than two years. The Ministry of Tourism is building various levels of capacities to handle ecotourism and so collaborating with NPAA and EPA to build and maintain sound and attractive ecological state in and around protected areas and other sites of attraction. Tourism has been identified as one of the potential for economic growth in Sierra Leone. Government, through the Ministry of Tourism is currently putting premium on the proper management of protected areas and other areas with beautiful natural scenery that potentially attractive to tourism, whilst maintaining rich biodiversity.

The use of natural resources is very common in traditional medicine. People in many rural communities depend on natural occurring plants and animals to address most of their medical problems. Many plant extracts are use to make concoctions that are used to treat many ailments, including bacterial infections, malaria, typhoid fever, problems in pregnancy and birth (prenatal,

EN

delivery and post natal issues) ,bone fractures etc. Traditional healers in many districts in the country have formed associations and have developed constitutions and bye-laws that would guide their operations, facilitate exchange of ideas and contribute to conserving the natural plant and animal materials that sustain their operations, whilst maintaining a rich biodiversity.

Target Sustainable Development Goals - SGD 1, SDG 3 & SDG 12.

5. Loss of habitats

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

According to data analysed by [FAO's Global Forest Resources Assessment](#), Sierra Leone gained about 2.23% forest cover between 2010 and 2015. This may have been a result of the actions taken at specific sites for the conservation of forest, including improved protection status of the Gola Rainforest National Park and the Loma Mountains national park. In addition to that, the declaration of Marine Protected in 2012 and increased surveillance and enhanced the protection of mangrove forests. Also other areas like the Bumbuna Watershed forest zone experience increased forest cover because of increased protection. However, recent anecdotal evidence show increase rate of loss of forest in the Western Peninsular Forest which was also declared a national park in 2013, due mainly to urban sprawl or settlement expansion around Freetown. In fact, some of the extension forest are now cleared and developed for housing.

A worrying trend is the increasing rate of loss of *Pterocapus* dominated woodland in the northern part of the country. Hundreds of thousands of logs are being shipped and smuggled out of the country on a monthly basis, and this is seriously degrading thousands of hectares of woodland. The habitats of many woodland-dependent species are being contracted and so they are susceptible pressures that may cause localized population extinctions.

An important thing to note is that both mountain ranges that contain montane plant communities (the Loma Mountain National Park and Tingi Hills Non-hunting Forest Reserve) have high levels of protection status in Sierra Leone. The Loma Mountains NP incorporates the Bintimani Peak, which is the highest in West Africa (1945 m asl) and Tingi Hills NFR (1709 m asl) being the second highest in the country. These montane vegetation are protected mainly because of their remoteness and limited access, due to the rugged and hilly nature of their terrain.

Target Sustainable Development Goals - SGD 6, SDG 11, SDG 12, SDG 13, SDG 14 & SDG 15..

EN

6. Sustainable fisheries

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The maintenance of a good and sustainable fisheries stock is the desire of the government of Sierra Leone, since fish protein is a major source of protein and a vital component of our daily cuisine. Fishing and shell fish harvesting practices has improved considerably over the last ten years, due to improved legislation and policy implementation. This has obviously had positive impacts on the fish and invertebrate stock in some locations, although there are challenges in others. The declaration of Marine Protected Areas in the four major estuarine systems in coastal Sierra Leone (Scarcies, Sierra Leone River, Yawri Bay and Sherbro River) and the West African Biodiversity and Climate Change (WABiCC) project have improved the situation with fish, invertebrate stock and mangrove vegetation conservation. WABiCC is also preparing a co-management plan and set up a community management committee for the Sherbro River Estuary, which holds the largest mangrove cover in the country. The Government has also enacted the Fisheries and Aquaculture Management Act of 2019 that is now being implemented by the Ministry of Fisheries and Marine Resources (MFMR), with the ultimate aim of managing both marine and freshwater fisheries resources.

The use of unsuitable fishing nets and fishing methods by artisanal fishermen, and invasion into the exclusive economic zone (EEZ) have been serious concerns, but there has been frantic efforts by Government and its partners to control these activities. In 2018, Fisheries Officers collaborated with BBC World Service journalist to expose illegal activities into the EEZ by Chinese operated vessels, which contributed to significantly to reduce the incidence of invasion by industrial vessels. The MFMR is implementing a program of retrieving unsuitable size nets from artisanal fishermen and supplying them with suitable nets, in order to ensure sustainable fishing practices in coastal fishing communities.

The illegal taking and export of other fisheries and marine resources has also been controlled and regulated. These include shark fins, sea horses, fish bladders, sea turtles (meat and carapace) and manatees. Fisheries officers are working in collaboration with local authorities to regulate the exploitation of these resources, which are mainly targeted for export. Awareness and sensitization programs are being organised at local community and national levels to increase control on exploitation and illegal export of these resources. The control of by-catch and discards are being monitored by officials of the MFMR and the draft Act has included regulations covering these issues.

Sierra Leone was an active participant of the West Africa Regional Fisheries Project (WARFP), which was funded by the World Bank implemented for five years starting in 2008. The combined development objectives of the project was to: (i) sustainably increase the overall wealth generated by the exploitation of the marine fisheries resources of West Africa, and the proportion of wealth captured by West African countries; and (ii) to strengthen the capacity of Cape Verde, Liberia, Senegal, and Sierra Leone to govern and manage targeted fisheries, reduce illegal fishing and increase local value added to fish products. The project has leveraged a number of other funding support and is making significant progress on the overall objective.

In June 2019, the Government of Sierra Leone received support from the Government of Japan and the Food and Agriculture Organization of the United Nations (FAO) for a project to implement the 2009 FAO Agreement on Port State Measures and the Voluntary Guideline to Securing Small Scale

EN

Fisheries (SSF). The project intends to enhance the sustainability of marine fisheries by preventing, deterring, and eliminating Illegal, Unreported and Unregulated (IUU) fishing and to improve maritime security in Sierra Leone. The Implementation of Voluntary Guidelines for Securing Sustainable Small Scale Fisheries will be done in the context of Food Security and Poverty Eradication, and the introduction of improved fish processing technology is expected to contribute to women and youth employment and improve the national food security.

The key outputs of the project will include, among other things; develop and adopt policies and laws consistent with the provisions of the Agreement on Port States Measures (PSMA); review and align national policies, legislation and monitoring, control and surveillance systems and operations to the provisions of the PSMA and complementary international instruments and regional mechanisms. Also, it will strengthen the capacity of public officials, especially national fisheries inspection authorities to effectively prosecute culprits engaged in illegal, unregulated and unsustainable (IUU) fishing practices and facilitate value chain development and capacity development of youth and women Fishery Workers on fishery and fish processing using the improved cost effective technology.

It is estimated that Sierra Leone losses USD 30 million annually to IUU fishing. These interventions will dominantly contribute to FAO Strategic Objective 2, which is, making agriculture, forestry and fisheries more productive and sustainable and also contributes to the other four strategic objectives to a certain degree. FAO is directly executing the project in partnership with the Ministry of Fisheries and Marine Resources through a Project Task Force supported by other relevant FAO Technical Units at regional and sub-regional level.

Target Sustainable Development Goals - SGD 12 & SDG 14.

7. Areas under sustainable management

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The fact that biodiversity resources are important for livelihoods and environmental and ecosystem services warrants the setting aside of areas that can be put into sustainable management, particularly for addressing the survival needs of local communities whilst maintaining optimum ecological functionality. The following are three areas that have been put under sustainable management and have achieved successes that contributing significantly to addressing this Aichi Target.

Sustainable management of the Turtle Islands for the conservation of sea turtles

Since 2011 to date, Reptiles and Amphibians Program - Sierra Leone (RAP-SL), is a national NGO, that has been running conservation programs on marine turtles, reptiles survey and conservation and conservation education. The RAP-SL program has been focusing on species and coastal ecosystem conservation in the Sierra Leone River Estuary, Yawri Bay and Sherbro River Estuary. The program has been supporting mangrove restoration and the conservation of threatened species of reptiles and amphibians in these wetlands through co-

EN

management approaches, awareness raising, establishment of bylaws and enforcement through fines, and provision of alternative livelihoods for conservation efforts. In 2011, RAP-SL advocacy led to the adoption of provisions in the 2011 Fisheries Bill that protected and prohibited the harvest of specimens of all marine turtles in Sierra Leone. The following are the achievements so far:

- Establishment of nurseries comprising coconuts, mangoes, oranges, pear and other fruit trees in five communities. The trees help prevent beach erosion (important nesting sites) in the future, and provide shade, food and fuel wood (especially the local fuel wood trees) for locals. The provision of shade and food on nesting beaches serve as protection of marine turtles in the future;
- Trained and deployed sixty-three community monitors with monitoring materials. Monitors carry-out patrols on beaches to curb and report by-catches of protected wetlands species within their respective communities;
- By-catch monitoring effort has so far resulted in recording 70 marine turtles captured in fishing nets, of which 56 were released. Fourteen turtles were found drowned in fishing nets and these were buried;
- Beach monitoring effort recorded 67 nests of which a larger number was hatched; sighting and releasing thousands of hatchlings (RAP-SL, 2015).

Mamunta-Mayosso Wildlife Sanctuary (MMWS)

The Sierra Leone Wetlands Conservation Project (SLWCP) developed a strategic plan for wetland conservation and piloted wetland conservation site planning and management in Mamunta-Mayossoh wildlife sanctuary, which incorporates two lakes and seasonally flooded zones. The following were the key achievements of the project:

- Management Plans (MPs) for MMWS was produced in a participatory process over several months including all relevant stakeholders, such as village and traditional authorities and district council representatives. Participatory Rural Appraisals were organized in cluster villages. The MPs Action Plans for thematic areas, community development, enhancement of site surveillance and protection or Research and Monitoring plans.
- The ecological condition in MMWS been greatly enhanced by stopping logging and farming activities in core zones. Only few farming activities done in the buffer areas and fishing activities are done in lakes within the Sanctuary every one or two years.
- A community action plans (CAPs) was developed based on needs assessment surveys to identify programs that will enhance community welfare, while preserving wetland area resources. Women benefited more than men in general as many CAP activities were related to preferences women such as vegetable trainings, groundnuts, and gardening.
- MMWS: 100% households at the MMWS were targeted under CAP and they received support for conservation linked activities. Some activities, such as drying floors and solar installations were benefiting whole communities, rather than individual households.

Tiwai Island Wildlife Sanctuary

TIWS is found within the Moa River, southern Sierra Leone. It is considered as one of the places with the highest density of primates in West Africa. TIWS is a community led conservation initiative that has existed in some form or other for nearly 40 years. Before the Sierra Leone Civil War “core funding” was provided by two American Universities; there has been no core funding from any source since then. From 2006 there has been an average of between 600 and 700 paying visitors per year; this is just sufficient to make the scheme self-sustaining. Small grants have allowed the gradual improvement of infrastructure and the recovery from unforeseen events (such as storm damage). The surplus after maintenance of infrastructure (buildings, boat, trails etc) and payment of staff stationed on the Island is distributed on an annual basis to eight communities to encourage development. The following are some of the activities and benefits associated with the management of the TIWS.

- Educations and awareness about the need for protection of Tiwai Island is widespread and acceptable by the local communities, leading to inclusive management system in the island.
- Local communities are benefiting from direct payments for funds obtained from various sources including ecotourism and project support;
- TIWS is now a well-known destination for ecotourism, with the desired ecological ambience that has been sustained through collaboration of stakeholders, the key ones being Environmental Foundation for Africa (EFA), Njala University, Forestry Division (Ministry of Agriculture) and local communities representatives.
- The development of a sustainable and fit-for-purpose management plan was commissioned in April 2019; a series of consultations with all relevant stakeholders is the basis for developing the co-management plan.

Target Sustainable Development Goals - SGD 12, SDG 14 & SDG 15.

8. Pollution

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Sierra Leone is not considered a net emitter of green-house gasses because of its low level of industrialization and so at the global level, is not among the major polluters and contributors to climate change. However, the Government of Sierra Leone through the Environmental Protection Agency (EPA) has developed and is implementing the necessary regulatory mechanisms that would ensure that pollution levels are kept within acceptable limits. The capital city Freetown and environs is the most industrialized area in the country and has the highest density of vehicles, most of which are bought and brought into the country secondhand. So, In 2015, the EPA commissioned a study to

EN

assess the pollution levels of vehicles plying the main roads in the municipality, titled the “Impact of Urban Traffic on the Ambient Air Quality in Freetown”. The study revealed that poorly maintained vehicles, frequent traffic jams and human behavior were key factors responsible for higher than normal pollution levels along the main roads. In another study using lichens as indicators of air quality, areas in Freetown where dumpsites occurs and experience burning, show poor air quality due to pollution from burning and other air pollutants. The results have informed the EPA on policies and regulations that should be applied to reduce air pollution levels in certain locations in Freetown and how lessons learnt could be replicated in other cities in Sierra Leone.

Other sources of pollution are also considered under the reviewed 2012 EPA Act. These particularly focus on pollutant from industrial sources, including the CFCs, sulfur oxides, nitrogen oxides and lead. The EPA held a workshop in 2016 with owners of industries to discuss the application of new standards for all forms of pollution, including air, water and soil. At least five industries were suspended from operations by the EPA between 2018 and 2019 for violating the minimum acceptable levels of pollution resulting from their operations.

Target Sustainable Development Goals - SGD 6, SDG 11, SDG 13, SDG 14 & SDG 15..

9. Invasive Alien Species

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Since 2011, there has been no significant research or survey on invasive alien species and so, presumably the situation has virtually remained unchanged. Implicitly, it is difficult to assess whether or not Sierra Leone has contributed to the global control of invasive alien species. Fortunately no new insect and microbial pests that are destructive to crops are known to have been introduced during the period. However, there are concerns over possible introduction (albeit anecdotal) of potentially invasive invertebrates from secondhand goods and furniture from various countries in the west, particularly the USA and the UK. These concerns are pointed at the possible introduction of cockroaches of the species *Blatta americanus* and bedbugs, which are invading homes and proving difficult to be controlled or eradicated.

Target Sustainable Development Goals - SGD 3.

EN

10. Vulnerable ecosystems

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Most of the major ecosystems in Sierra Leone are vulnerable to human and climate-related pressures. The forests are being cleared for agriculture (which is blamed for converting most of the forest into farm bush) and of late, the expansion of settlement especially around the capital city Freetown. The woodland savanna is being degraded by the logging of *Pterocarpus* and other

EN

hardwood species targeting the Chinese market. The inland wetlands are under threat from mining and related activities, whilst the coastal wetlands are under threat from deforestation of mangrove and unregulated exploitation of fish and marine invertebrates. Recent evidences show that some coastal communities are now experiencing serious flooding that is breaching flood defenses and destroying houses along edges of the affected islands and other settlements.

In the midst of all these problems the Government of Sierra Leone and its partners are taking action to ensure that the vulnerable ecosystems are protected and adverse environmental effects are controlled and mitigated, as described below:

- Work is now ongoing by the West African Biodiversity and Climate Change (WABiCC) Project in collaboration with the National Protected Areas Authority to protect and conserve mangroves with the purpose of developing resilience of climate change and provide sustainable ecosystem services and livelihood mechanisms for local communities.
- Wetlands are now a vital component of the protected area network in Sierra Leone, exemplified by the declaration of four marine protected areas, the drafting of the first ever Wetlands Conservation Act in 2015, and the drafting of the Fisheries and Aquaculture Act in 2019. These actions, however await parliamentary enactment.

Target Sustainable Development Goals - SGD 9, SDG 11, & SDG 12.

11. Protected areas

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

For terrestrial ecosystems, no new areas have been declared for protection since 2011, but there has been increased protection status for some areas. The protected forest estate in Sierra Leone covers a total area of about 220,000 ha, including Gola Forest National Park, Loma Mountain National Park, Western Area Peninsula Forest National Park, Kangari Hills Non-hunting Forest Reserve, Tingi Hills Non-hunting Forest Reserve and about 10 other forest reserves. The protection status of the first three were upgraded to national parks, accounting for about 60% of the total protected forest estate in the country. The declaration of four marine protected areas (MPAs) is a key step in facilitating the protection of 182,792 ha of mangrove forests in Sierra Leone.

The Government of Sierra Leone (GoSL) through an act of Parliament established the National Protected Areas Authority in 2012 in order to improve on the administration and management of protected areas in the country. The move is also a manifestation of the commitment by the GoSL to implement the objectives of the Convention on Biological Diversity and the Sustainable Development Goals. Consultations and the documentations are currently being prepared for the designation of the Sherbro River estuary (which contains the largest mangrove cover in the country) as a Ramsar site, whilst a co-management plan is being developed through facilitation by the WABiCC project. This would greatly enhance the protection status of coastal wetlands, particularly mangroves in Sierra Leone.

EN

Target Sustainable Development Goals - SGD 12, SDG 14 & SDG 15.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

The NPAA has identified two community forests for upgrade into designated PAs and also working with various partners on improving on and designating other sensitive ecosystems as PAs. However, the necessary arrangement, such as negotiations with the local communities and the legislative processes are yet to be complete.

EN

12. Preventing extinctions

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The efforts being made by the Government of Sierra Leone and all its national and international partners are targeted at two main goals: conserving biodiversity in all its forms and preventing the extinction of any species. New policies and legislation are being adopted, whilst the status of protected areas are being upgraded to enhance the conservation status of species. So far, based on monitoring and survey data, no species that was recorded during the past several decades of studies and surveys have gone extinct. In fact, some species which are thought to have gone extinct in some localities are being discovered in other areas. For example, *Arthroleptis aureoli*, which was thought to be extinct in Mount Aureol in the outskirts of Freetown, was recently rediscovered. However, there are a few instances of local extinctions of species due to various forms of human pressures. The extent of these possible local extinctions are unknown because of limited research in that direction.

The status of biodiversity is being monitored regularly through various surveys on biodiversity themes for various purposes including but not limited to data update, reassessment and environmental impacts assessments. Sierra Leone has participated on national waterbirds census since its inception in 1992, and so continues to contribute to the monitoring of the species and status of the coastal and inland wetlands habitats for migratory birds along the east Atlantic flyway.

Target Sustainable Development Goals - SGD 3, SDG 12, SDG 14 & SDG 15.

EN

13. Agricultural biodiversity

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

As a consequence of its tropical vegetation and climatic status, Sierra Leone finds itself in a unique situation in terms of the diversity of agricultural produce it has and the potential they accord to the people. The country's land area incorporates the Sudan-Guinea savanna biome in the north, the Guinea-Congo forest biome in the south and the coastal strands of mangrove and other vegetation types. Therefore, the diversity of plant and animal resources for agriculture is considerable. The

EN

cultivated food crops are many, but the most important ones are cereals (rice, maize, sorghum and millet), tubers (cassava, sweet potato, cocoa-yam, yam and Chinese yam), and oil palm. There are also five species of citrus (orange, lemon, grapefruit, soar lime and sweet lime) numerous domesticated and wild fruits and vegetables. So far none of the species of domesticated food crops are extinct, although there is huge pressure on the wild edible variety of crops and fruits due to deforestation and habitat degradation.

Livestock plays an integral role in the livelihood of both rural and urban communities in Sierra Leone. The major traditional livestock found in Sierra Leone are cattle, sheep and goats and to some extent, pigs and poultry. A recent survey by the Planning, Evaluation Monitoring and Statistics Division (PEMSD) of the Ministry of Agriculture Forestry and Food Security gives national figures of 241,153 heads of cattle, 945,047 heads of sheep, 1,538,557 heads of goats, 12,781,575 chicken, and 1,122,301 ducks. Except for cattle which is mainly reared for commercial purposes, the other livestock are reared for subsistence purposes. The number of pigs was not included, but they are among the least reared of the livestock in Sierra Leone.

The Ministry of Agriculture and other partners have made tremendous efforts in promoting biodiversity conservation in line with agriculture and food production. The Ministry, SLARI, UN agencies and universities have embarked on crop production intensification to meet the current population pressure. Many fast growing crops have been experimented and are now planted by many farmers across the country. It is envisioned that these crops will in future reduce food scarcity and high dependency on imported food items. The genetic variation and diversity of crops, livestock, and fish have led to continued improvement in research on crops varieties and livestock breeds.

Target Sustainable Development Goals - SGD 2, SDG 8 & SDG 10.

14. Essential ecosystem services

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Maintaining optimum ecological status and function is essential for the provision of ecosystem services. In Sierra Leone, being one of the least developed countries in the world means that most people (especially in the rural areas) depend on the natural system and biodiversity for survival. It is therefore important that systems are in place to conserve biodiversity and maintain ecosystem function. In its Medium Term Development Strategy, the Government of Sierra Leone dedicated Cluster 7 to environment and biodiversity titled "Addressing vulnerabilities and Building Resilience". Under this cluster, the strategy specifies two areas of interventions as follows: 7.1 Building national environmental resilience; and 7.2 Forestry management and wetland conservation. Many steps have already been taken in that direction in some sectors, but there has been serious challenges in others. Some of the positive changes that have occurred include the following:

- The Gola Forest has been upgrade to a national park in 2013, after going through a successful management based on the concept of concession for conservation program. The local communities are now benefiting considerably from the implementation of s

EN

REDD project which was developed by collaborating partners with the full involvement of local communities and validated under the Verified Carbon Standards (VCS) and the Climate, Community and Biodiversity Alliance (CBA) standards. The project is using funds obtained from the sale of credits to improve management of the National Park, support sustainable resource management through livelihood improvement activities with local communities, develop monitoring and research programs and develop longer-term conservation funding sources.

- The Mamunta-Mayosso Wildlife Sanctuary, the Tiwai Island Game Sanctuary are being sustainably managed with collaboration from the local communities and there many environmental and livelihoods benefits being accrued from these efforts that have been elaborated in the Section II and Section III of this report.
- The Turtle Islands complex is receiving attention from Reptile and Amphibian Program (RAP-SL) and Solon Foundation in collaboration with the National Protected Areas Authority to conserve the biodiversity and sustain ecosystem services and community development on the islands.
- The current challenges to sustaining ecosystem services is observed in the following:
 - there is serious threat to the biodiversity of the Western Area Peninsula Forest because of building of new settlements due to the expansion of the capital city, Freetown.
 - a vast area of *Pterocarpus* woodland is being degraded at an alarming rate, being perpetrated by high demand for hard wood from the Chinese and other south east Asian countries.

Target Sustainable Development Goals - SDG 2, SDG 6, SDG 8 & SDG 13.

15. Ecosystem resilience

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

The UNDP/GEF funded a five-year project titled "Adapting to Climate Change Induced Coastal Risks Management in Sierra Leone" for the duration 2018-2023, aimed at strengthening coastal communities to systematically manage climate change risks and impacts on physical infrastructure and economic livelihoods. The project targets six coastal pilot sites (Conakry Dee, Lakka, Hamilton, Tombo, Shenge and Turtle Island). The project was designed to overcome the following: (i) the limited accessibility and use of data and information relevant to understanding coastal related climate risks; (ii) inadequate institutional and policy capacities for Integrated Coastal Zone Management (ICZM), (iii) limited awareness programmes on coastal related climate risk and human activities along the coast; (iv) inadequate resources and financial constraints; and (v) the need to introduce climate resilient livelihood options and approaches to address the climate risk facing coastal communities. The project is implemented by UNDP in partnership with Environmental Protection Agency (EPA SL), the Ministry of Fisheries and Marine Resources (MFMR), the Institute of Marine Biology and Oceanography (IMBO) and the National Tourist Board (NTB).

EN

Commenced in 2015, the West Africa Biodiversity and Climate Change (WA BiCC) project is a five-year program funded by the United States Agency for International Development (USAID) that aims to improve conservation and climate-resilient, low-emissions growth across West Africa. In line with wetlands ecosystem conservation, WA BiCC supports coastal adaptation interventions in the mangrove forest and coastal landscape conservation. The project also supports programs to combat illegal wildlife trade operations such as aquatic species listed in the CITES appendices or prohibited by laws of Sierra Leone. Programs implemented by WABICC includes research and policy implementation, protection and restoration of coastal ecosystems, promoting institutional coordination and local co-management systems; and strengthening regional and national cooperation in data generation, sharing, and utilization for biodiversity conservation.

Target Sustainable Development Goals - SDG 11, SDG 12, SDG 13, SDG 14 & SDG 15.

16. Nagoya Protocol on ABS

Interim national report on the implementation of the Nagoya Protocol

[ABSCH-NR-SL-246288-1](#) Interim national report on the implementation of the Nagoya Protocol

Additional relevant information that has not been included in the interim national report

In addition to preparing the Interim National Report, Sierra Leone has embarked on raising awareness at all sub-national level on what the Nagoya Protocol is. The awareness raising workshops were held at five provincial headquarters and the target audience were all categories of government, local and traditional leaders and actors, whose activities and roles impinge directly or indirectly on biodiversity and use of genetic resources.

EN

Target Sustainable Development Goals - SDG 5, SDG 10, SDG 11, SDG 12, SDG 16 & SDG 17.

17. NBSAPs

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Sierra Leone has prepared its second NBSAP for the period 2017-2026. The document incorporates the actions taken since 2011, so as to align it with the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets. There are no regional or sub-national biodiversity strategy, but all local administrative sectors of the country operate under the umbrella of the national agencies that deal with biodiversity issues, and so the NBSAP is applicable to all of them. The EPA, as the focal point for the CBD has regional offices which collaborates with the respective local government agencies to implement conservation programs.

EN

Target Sustainable Development Goals - SDG 11, SDG 13, SDG 14, SDG 15 & SDG 17.

Other activities contributing to the achievement of the Aichi Biodiversity Target at the global level

Other Ministries Departments and Agencies (MDAs) of the Government has have components in their respective programs that aligns with the NBSAP and by extension, the Aichi Targets. The Ministry of Development and Economic Planning prepared a the Medium Term Development Plan 2019-2023, which incorporated biodiversity conservation and ecotourism as important elements in the development aspiration for the country. A number of environmental NGOs are engaged in biodiversity conservation actions (some of which are described under Section III of this report) that directly or indirectly contribute to the achievement of the Aichi Targets. These include, inter alia: (i) the conservation action for Lake Sonfon (by the Conservation Society of Sierra Leone, funded by Bread for Life (BROT) and (ii) conservation action for sea turtles by Reptile and Amphibian Program, Sierra Leone, sponsored by US Fisheries and Wildlife.

EN

18. Traditional knowledge

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Traditional knowledge on biodiversity and the use of genetic resources is widespread in Sierra Leone, although not well organised at the national level. A national union of traditional healers was formed in 2011 to coordinate the affairs and practices of traditional herbalists in the country. There is also provincial and to some extent, district level organisation of practitioners of traditional medicine, mainly using herbal remedies. Significant work has been done in documenting traditional knowledge and is still being done by universities and other institutions. However, the level of coordination and collaboration is still weak and there is hardly any research relationship between the traditional and the academic domains.

Target Sustainable Development Goals - SDG 2, SGD 3, SDG 4, SDG 5, SDG 10, SDG 11 & SDG 12.

EN

19. Biodiversity knowledge

Description how and to what extent the country has contributed to the achievement of this Aichi Biodiversity Target

Sierra Leone has continued to improve knowledge on its biodiversity since official data collection started in the early 1900s. Through the Important Bird Areas (IBA) and the Key Biodiversity Areas (KBA) process, though which available data were collated and biodiversity priorities were identified for conservation action. Such priority setting processes have culminated in the development and implementation of various biodiversity conservation projects, including the Sierra Leone Biodiversity Conservation Project (BCP) and its out-shoot, the Wetlands Conservation Project (WCP). Since 2011, a number of research and surveys have revealed more information on the biodiversity of the country given as follows:

- The Environmental Protection Agency Sierra Leone (EPA-SL), facilitated the preparation of

EN

two compendiums - (i) A Compendium on Threatened Forest Fauna in Sierra Leone; (ii) A Compendium on Threatened Forest Flora in Sierra Leone. Both documents identified and provide policy makers and the general public with vital information about the status and distribution of threatened based on the IUCN Red List of Threatened Species and national status.

- During the environmental impact assessment for the Phase II Bumbuna Hydroelectric Project, in the central north of the country, significant new findings were made for Sierra Leone. Three bat species were recorded for the first time in Sierra Leone, raising the total number for the country to 85 species and a couple of un-described non-volant small mammals (Weber et al. 2019).
- In his rapid survey of rodents and shrews in Gola Raiforest National Park, Monadjem (2011) recorded for Sierra Leone one new rodent species (*Colomys gosling*) and four new species of shrews, one of which was new to science.
- Due to increased intensity of surveys, the total mammalian diversity has now increased from 170 to 220 species, and amphibian diversity increased from 55 to 65 species.

Target Sustainable Development Goals - SDG 4, SGD 5, SDG 6, SDG 11, SDG 12, SDG 14 & SDG 15.

20. Resource mobilization

Description of country's contributions to the achievement of the Aichi Biodiversity Targets, please describe how and to what extent these contributions support the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals:

Sierra Leone being a poor country with human development ratings at 181 out of 189 countries (2018 UNDP Human Development Index) means that the country is resource poor as far as funds available for conservation is concerned. The only significant contribution that the government is making towards biodiversity conservation is the much-needed funding for administration and surveillance mechanisms for the management of protected areas. Much of the funds being mobilized for practical implementation of projects and programs geared towards biodiversity conservation, are provided through foreign assistance. A number of project funds and other resources were mobilized since 2011, which has contributed significantly to the conservation of biological diversity at the local and national levels and by extension, the global level:

- The Global Environmental Facility provided funds to the tune of US\$ 5.0 million to implement the Sierra Leone Biodiversity Conservation Project and an additional 1.6 million dollars to implement the Wetlands Conservation Project. In combination these project leveraged additional resources for sustaining the management of three target protected areas.
- The European Union offered 3.0 million Euros to implement a REDD+ preparedness project for the Western Peninsula Forest Reserve (WAPF).

EN

Target Sustainable Development Goals - SDG 17.

Section V. Description of the national contribution to the achievement of the targets of the Global Strategy for Plant Conservation

Sierra Leone has national targets related to the GSPC Targets

Details on the specific targets

The following given below are the target output related to plant conservation in Sierra Leone:

Strategic Output B3 - Ecological Restoration and Recovery of Species and Ecosystems under Threat is Significantly Improved

Strategic Output C3 - In-Situ Conservation for Species and Ecosystems in Protected Areas Enhanced by At Least 30%, Leading to Improved Conservation Status of Threatened Species and Habitats.

Strategic Output D1 - Plant Resources for Agricultural are Effectively Harnessed and Managed for the Benefit of Biodiversity and People.

EN

Information on any active networks for plant conservation

NA

EN

Major measures taken by your country for the implementation of the Global Strategy for Plant Conservation

The respective measures implemented already are given in Section III and Section IV.

EN

1. An online flora of all known plants

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

No significant change at national level

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

So far nothing has been done to publish an online database of all known plants. However, there are many independent and uncoordinated research and survey data that has been published on the flora of Sierra Leone

EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

NA

EN

2. An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

A compendium of Rare and Threatened Forest Flora was undertaken in 2017 to initiate the identification of priorities for plant species conservation. A total of 90 plant species belonging to four IUCN categories: one critically endangered, 11 endangered, 69 vulnerable and nine near-threatened. In total thirty families were reported from the five main forest blocks in Sierra Leone: Gola Rainforest National Park, Western Area Peninsula Forest, Loma Mountains National Park and Kangari Hills Non-hunting Forest Reserve. The Family Leguminosae and Family Meliaceae accounted for the largest numbers of threatened plants than any other plant family encountered in this study. The vulnerable threatened category contains the highest number of species. Gola Forest block registered the highest number of threatened flora followed by Loma Mountains and the least was reported for Banana Island, featuring Gola and Loma prominently as conservation priority areas. There are more dicots threatened plant species than monocots. With respect to the form of plant of threatened species, trees are in higher number followed by herbs and then lianas the least. A larger proportion of the flora reported is of local conservation concerns and only few ubiquitous species are locally not threatened.

EN

Through various research, at least two new species of plants have been identify over the last couple of decades in Sierra Leone. A new species *Lebbiea grandiflora* (Podostemaceae), a rheophytic herb from the Sewa River rapids in Sierra Leone, is described as a new species. It is the first new African genus of Podostemaceae published for 30 years. First collected in May 2017, the species is assessed as Critically Endangered using the IUCN 2017 standard. Also the species *Croton scarcesii* (Euphorbiaceae-Crotonoideae), a rheophytic shrub from West Africa, is shown to have been misplaced in *Croton* for 120 years, has now been put into a whole genus named *Karima* (named after Dr. A.B. Karim, an Associate Professor of Botany at Fourah Bay College, University of Sierra Leone).

As a significant outcome of a CITES MSc study, more information is now available to inform action on the threat to *Pterocarpus erinaceous*, a hard wood which is being exploited and depleted at an alarming rate in the north of the country. The findings of the study is contributing to designing regional mechanisms to discourage the smuggling of the wood across borders in West Africa.

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

The Compendium document that was produced has detailed information on the plant species that are globally threatened. The document is now available and is expected to be published by the EPA-SL.

EN

3. Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

No significant change at national level

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

No strategy developed.

EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Not applicable

EN

4. At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

The Government of Sierra Leone is making frantic effort to conserve the remaining patches of closed moist forest in the country and so has been able to upgrade the status of three forest reserves to national parks - the Gola Rainforest National Park (the largest), the Loma Mountain National Park and the Western Area Peninsula National Park. Also there are current action being taken to protect the remaining stretches of mangroves along the coastal zones. However, much needs to be done to prevent the destruction of vegetation of the Outamba-Kilimi National Park and environs, where the main woodland tree species, *Pterocarpus erinaceus* is being exploited at an alarming rate.

EN

5. At least 75 per cent of the most important areas for plant diversity of each ecological region protected with effective management in place for conserving plants and their genetic diversity

6. At least 75 per cent of production lands in each sector managed sustainably, consistent with the

conservation of plant diversity

7. At least 75 per cent of known threatened plant species conserved in situ

8. At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes

9. 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge

10. Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded

11. No species of wild flora endangered by international trade

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Progress towards target at national level but at an insufficient rate

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

The Ministry and Agriculture, Forestry and Food Security has in place a control mechanism set up at border crossings and international airports to prevent any form of international trade in endangered flora. The Phytosanitary Division of the ministry has responsible such controls and have been effective in implementing stringent measures on trade across the borders. However, there are huge challenges associated with the exploitation of *Pterocarpus erinaceous* which is being exploited and causing serious degradation in savanna woodland ecosystem in the north. The key challenge with *Pterocarpus* is that it is a hard wood in high demand by Chinese manufacturers and so provide much needed foreign exchange for the country. Implicitly, the species is being indiscriminately exploited primarily because it brings income to the government.

EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

There was a ban on *Pterocarpus* unprocessed timber export from Sierra Leone, but the ban has been lifted to allow the export of the large stock of the timber that have already been logged.

EN

12. All wild harvested plant-based products sourced sustainably

13. Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care

Category of progress towards the target of the Global Strategy for Plant Conservation at the national level

On track to achieve target at national level

Explanation on category of progress towards the target of the Global Strategy for Plant Conservation at the national level

Indigenous people are highly knowledgeable about plant species that occur in the vicinity of their villages and town. They depend on these naturally occurring plant resources as their key sources of survival - for food, medicine, housing materials etc. A number of studies have been done on ethnobotany, indicating a high degree of knowledge and dependence on plant resources by indigenous communities. Indigenous approaches to addressing problems of health is a well-known practice in many local settlements. Some of these traditional healers are being encouraged to increase the size of their living herbariums which they usually keep for the purpose of ease maintaining availability and access to these plant resources for medicinal purposes. However, they need to be supported in terms of finance and resource management skills to ensure that their practices are sustainable.

EN

Please describe how and to what extent your country has contributed to the achievement of this GSPC Target and summarize the evidence used to support this description

Through the support by government to the operations of traditional healers' associations and union, plant species used for traditional practices are being conserved. In fact, these traditional healers now have district associations and a national union that are working towards ensuring that the plant resources that they use in their practices are sustainably harnessed. These associations and unions are registered with and supported by the local councils.

EN

14. The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes

15. The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy

16. Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy

In Sierra Leone, more than 90% of the land area and natural resources including biodiversity ecosystems fall under the jurisdictions of rural areas that are controlled by the customary tenure systems and owned by indigenous people or local communities. The majority of the population (59%) also comprises of indigenous people and is largely dependent on the access and use of natural resources for their livelihoods. It is recorded that about 86% of rural households are involved in agricultural practices for their livelihoods. Large populations of indigenous people living in rural communities are involved in mining activities, extraction of biodiversity resources such as game hunting, timber and non-timber products; and over 80% of the population rely on charcoal and fuel wood for domestic energy use. And at the same time, poverty levels in the country are high and it is estimated that 70% of rural communities live in poverty.

Therefore in the context of the NBSAP implementation, the inclusion and participation of indigenous people and local communities is very critical and strategic in achieving the outcomes of biodiversity conservation and sustainable use of natural resources in the country. Since 2010, several efforts has been made at policy, legislative and programming levels to foster indigenous people and local communities' contribution towards meeting various biodiversity conservation targets.

Policy and legislative processes

Local communities mobilized together in many parts of the country to resist large-scale land acquisition for long-term mining and agricultural investments since land governance laws are outdated and weak in protecting resource rights of local communities and indigenous people. As a result in the 2015 National Land Policy, communities were able to contribute in the processes that ensured the policy created strategies to reduce the size and lease period of land investments to an initial 5,000 hectares and 25 years instead of unlimited size and the 50 year or more lease terms. This policy will reduce biodiversity loss and deforestation as a result of mining or mono-cropping activities; as well as reduce pressure on surrounding forests and biodiversity resources because local communities will have access to available land.

In line with the Wildlife and Conservation Policy 2010, Forestry Policy 2010 and the Fisheries Policy 2010, indigenous communities through conservation management committees developed and implemented bylaws that are approved by traditional leaders and the local councils. The bylaws are based on knowledge within local communities on biodiversity and traditional approach to sustainable resource exploitation and conservation.

Designation of Protected Areas

Communities have also supported Wildlife and Conservation Policy 2010 that set strategies to acquire at least 20% of the total land to be designated as protected areas for biodiversity conservation purposes. In the past 10 years, communities have demonstrated this by allocating about 500,000 hectares of land for conservation in the Sierra Leone River Estuary, Yawri Bay, Sherbro River Estuary, Gola National Park, Kangari Hills Forest Reserve, Scacies River Estuary,

EN

Lake Sonfon,

Co-Management

More than twenty Community Management Communities (CMCs) have been established in about 10 Protected Areas, National Park or Forest Reserves across Sierra Leone since 2010. The establishment of the CMCs demonstrated indigenous communities' recognition of biodiversity issues and willingness to address challenges for improved biodiversity conservation. The CMCs have been very active in resource monitoring, reporting and boundary enforcement to prevent encroachments. In one local community in Freetown, the people with support from their community head, constructed boundary pillars in the Aberdeen Creek located in the Sierra Leone River Estuary to stop destruction of mangrove swamps and embankment of swamp for the construction houses. These actions were taken to comply with bylaws set by the community to protect mangroves and to report any encroachers. Community Management Committees have engaged in landscape restoration such as 100 hectares of mangrove restoration in all river estuaries and development of community forests for the purposes of timber and fuel wood productions. Community Management Committees have enforced fishing and mangrove forest harvests regulations and bylaws that has contributed to reduce habitat loss for fish spawning, tidal waves control and controlled sand mining especially in the Western Region of the country.

Sustainable Agriculture

While shifting cultivation slash and burn remains one the main techniques for crop farming in Sierra Leone, communities have been given awareness on climate change issues to invest in inland valley swamp farming. In 2012, an additional 3,000 hectares were cultivated by farmers indicating some level of shift from shifting cultivation farming practices (A4P, 2013). In at least 144 chiefdoms across the country, about 11,800 hectares of wood plots are established to support sustainable energy utilization for domestic and commercial purposes. Bylaws protecting community forests promote sustainable use of forest products is one of the key policies being promoted to conserve forest biodiversity and enhance fallow agriculture in traditional farming communities.

Challenges

- High level of poverty, low levels and lack of alternative livelihood resources is causing over exploitation of biodiversity resources and ecosystems
- The documentation of indigenous knowledge is ongoing, but limited to medicinal plants. There is much more knowledge and information within indigenous communities that have not been documented and so potentials for future utilization and livelihood potentials.

Indigenous knowledge, local communities and the Aichi Targets

The following are the Aichi Biodiversity Targets being addressed through the participation of indigenous and local communities in biodiversity conservation.

Target 1

By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take

to conserve and use it sustainably.

There is increasing awareness of the value of biodiversity in local communities which has resulted in allocation of over 500,000 hectares of land for protected area management and community forest (wood lot) development. Communities have established conservation areas in the form of sacred groves, to protect biodiversity resources and prevent over-exploitation.

Target 4

By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Over 11,800 hectares of community forests are developed and protected for sustainable use of forest products timber, non-timber and fuel wood production; and without recourse to forest reserves or protected areas. Over 100 hectares of mangrove swamps has been restored by local communities to enhance Mangrove ecosystem services.

Target 6

By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that over-fishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Monitoring and reporting mechanism are implemented by community conservation committees in coastal zones to enforce bylaws and regulations in protecting aquatic species such as sea turtles from capture and destruction of nesting sites. Local user communities have also enforced the ban on mono-filament fishing gears to ensure sustainable fishing of aquatic species.

Target 7

By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Community conservation management committees have been established to ensure co-management of forest reserves. Increased area of cultivation of inland valley swamps has reduced slash and burn shifting cultivation practices coupled with the use of farm mechanization systems Managed by local communities.

Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Community bylaws and enforcement actions in coastal zones within the Sierra Leone River Estuary, Yawri Bay and Sherbro River Estuary have contributed to the increase in sighting of breeding sea turtles. These aquatic species were rarely seen but the support from the Reptile and Amphibian Program (RAP) has enhanced community action to protect the species.

Target 18

By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Community awareness raising and training have been conducted, whilst community conservation management committees have been institutionalized and are part of biodiversity conservation mechanism that ensure participation and recognition of indigenous knowledge.

Section VII. Updated biodiversity country profile

Biodiversity facts : Status and trends of biodiversity, including benefits from biodiversity and ecosystem services and functions:

Sierra Leone's vegetation comprises two major biogeographic ecosystems: the Sudan-Guinea savanna biome which occupies most areas of the north to the north-west; and the Guinea-Congo forest biome stretching across the south to north-eastern flank of the country and constitutes the westernmost extent of the Upper Guinea forest endemic area. Mixed elements of these two major biomes occur in places, mainly in the transition zones between the northern and southern sections. The current vegetation distribution indicate a vast area of degraded land, mainly comprising bush fallows (farmbush), covering approximately 50% of the land area. The closed forest vegetation, which is apparently declining, accounts for only about 3-5% of the land area, which is a vast difference from the estimated 60% cover over a century ago. The Gola Rain Forest National Park accounts for the largest tract of closed forest cover: 71,070 ha representing ca 25% of the estimated 285,000 ha of forest estate in the country. Significant closed forests are also found in the major forest reserves.

In the north to northwest the vegetation is mainly savanna, with mixed elements of woodland and grassland ecosystems. The largest area of savanna ecosystem under protection is the Outamba-Kilimi National Park covering a total of 110,900 ha, in two separate portions; Outamba 74,100 ha and Kilimi 36,800 ha. There are some elements of savanna protected at the Lake Sonfon conservation area, a vast area of unprotected woodland (mainly *Pterocarpus erinaceus*) on the Sula Mountain

EN

range and environs and montane grasslands at Loma National Park and Tingi Hills Non-hunting Forest Reserve. In addition, some of these savanna areas are interspersed by patches of closed forest, giving rise to forest-savanna mosaic vegetation. The table that follows shows the distribution of plant communities in the major vegetation types in Sierra Leone.

The wetlands in Sierra Leone is estimated to cover a land area of about 4,838 km² and can be categorised into two main types – the inland wetlands (floodplains, lakes and rivers) with vegetation typical of freshwater swamp forests, riparian zones and bolilands; and the coastal/marine wetlands, mainly associated with mangroves, sand flats and mud flats. There are ten major rivers in the country running almost parallel in the northwest direction, many of which empty into the Atlantic Ocean through estuarine systems. The lakes form the catchment area for numerous streams and tributaries associated with the river systems. Lake Sonfon, Lake Mape and Lake Mabesi are the larger lakes, whilst Lake Idrissa, Lake Dakrafi and Lake Ronietta are among the well-known smaller lakes. The rivers and lakes are a major source of ecosystems services to the local communities including water supply, fish and a host of other food and life-supporting resources. The fresh water swamp forests are ubiquitous in Sierra Leone and consist of *Mitragyna stipulosa*, *Raphia palma-pinnus*, *Cala muzdeeratus*, *Heritiera utilis* and *Rhychospora corymbosa* as the endemic tree species.

The shores of Sierra Leone run for about 560 km northeast to south, and a continental shelf of area 25,000 sq. km. There are four major estuarine systems that form the drainage basins of the network of rivers and accounts for the largest proportion of mangrove swamps in the country. The total mangrove estate covers area of 172,000 hectares along 825 km of coastline, bays and creeks, extending 30 to 50 km inland. The mangrove plant communities comprises of five species - *Rhizophora racemosa*, *R. harrisoni*, *R. mangle*, *Avecenia nitida*, and *Laguncularia racemosa*, which are found differentially in various locations along the river beds and coastlines. Intermingled among the mangrove are other plant species such as *Paspalum vaginatum*, *Sesuvium sp.* and *Phloxerus vermicularis*. The estimated spatial extent, size of mangrove cover and protection status of these estuarine systems is given in Table 2. Apart from mangroves the coastal resources includes sandy beaches, mud flats, cliffs, wildlife, cultural and historical sites and attractive landscape.

Sierra Leone has over 2000 species of vascular plants including 74 species endemic to the West African sub-region. There are 91 plant species listed as threatened and near threatened based on an assessment by the EPA in 2015 and IUCN (2017) Red List of Threatened Species. There is no reliable data to show the distribution of plant species, but from various studies particularly by and *ad hoc* surveys most of timber resources are found in closed canopy forest formations. Some of the most locally exploited timber species which are now listed as threatened by IUCN (2017) include *Gilbertodendron bilineatus* (VU), *Gilbertodendron splendidum* (VU), *Heritiera utilis* (VU), *Terminalia ivoriensis* (VU)

Pterocarpus erineaceous (NT). The number of threatened plant species is apparently correlated with the threat status of the ecosystems and this is the reason for the greater number of threatened forest tree species compared to species from other ecosystems.

Sierra Leone is home to almost 1,980 known species of terrestrial fauna of various phyla and classes. With the exception of butterflies, the total number of species of fauna, excludes other insects and general invertebrate groups for which little or no studies have been done. In general, recent *ad hoc*

studies have highlighted low presence and declining numbers and distribution of species within and outside national forest estate. However, with reference to the 2019 IUCN Red List of Threatened Species, only about 5% of the species in the taxa covered are of global conservation concern. The following describes the diversity of the different taxa that have been studied so far:

There are about 220 species of mammals, of which are 15 species of primates (six of which are threatened), 18 species of antelopes (16 species considered threatened or locally rare), other species of large mammals (eight are threatened), 45 species of bats (three species are threatened) and a good diversity of other mammalian groups. The following table gives the number of species that are listed as threatened according to IUCN (2019) Red List of Threatened Species. A recent impact assessment study in the Bumbuna HEP Phase II recorded three species of bats for the first time in Sierra Leone and a couple of un-described non-volant small mammals. Also a rapid survey of shrews in Gola Rain Forest National Park recorded one new rodent species and four new shrew species for Sierra Leone, one of which is new to science. The various surveys done over the last 10 years have revealed additional mammalian species for the country and so the number has increase from 170 to 220 species.

A total of 642 species of birds have been identified in Sierra Leone from various studies comprising 489 resident species and 143 migratory species. Of the 642 species, 10 are vagrants and another 10 are new records from various surveys conducted over the last 20 years. The migratory species are categorized into 96 species of Palaearctic migrants and 47 species of Intra-African migrants. Of the resident species, 307 show proof of breeding, including 174 species restricted to the Guinea-Congo forest biome of which 15 species are endemic to the Upper Guinea forest Endemic Bird Area. There are a total of 30 species of global conservation concern that are placed under different category of threat status as follows: 2 critically endangered, 3 endangered, 11 vulnerable, 11 near threatened and 3 data deficient species.

The herpeto-fauna (reptiles and amphibian) diversity indicates a total of 122 species: 67 species of reptiles and 55 species of amphibians. Though not well studied, the reptiles are very widely distributed in all habitats, both aquatic and terrestrial. The reptilian diversity includes: three species of crocodiles (two globally threatened); five species of marine turtles (all globally threatened); many species of tortoises (two globally threatened); four species of monitor lizards (one globally threatened). Three of the species are listed under critically endangered, which is the highest category of endangered species in the IUCN Red List of Threatened species. The amphibian diversity (toads and frogs) comprises two endangered species, one vulnerable species, 13 near threatened species and six species considered as data deficient. There are 13 species of frogs and 42 species of toads. One frog species, *Cardioglossa aureoli* (new name *Arthroleptis aureoli*) is endemic to West Africa, with records from the Western Area Peninsula Forest and Bumbuna Watershed. One toad species *Amietophrynus cristiglans*, which is also endemic to the region, occurs in the Tingi Hills Forest Reserve. Comparatively, amphibians are the most threatened groups with nearly 40% of the total number of species of vertebrates (excluding fish) in one threatened category or the other.

Much of the study on marine biodiversity in Sierra Leone, particularly fish, have been undertaken at the Sierra Leone River Estuary (SLRE) where up to 80 species have been identified. Fish productivity in Sierra Leone is not exactly known, but based in data from some studies fish production in the

estuaries is between 3,855 and 4,144 million tonnes per year. The benthic fauna is a rather diverse group that has been the subject of investigations for several years. The dominant members of this group are the Clupeidae (*Ethmalosa fimbriata*, *Sardinella maderensis*, *Ilisha africana*). The inshore demersal stocks include mainly the Sciaenid assemblage, which live above the thermocline on shallow muddy bottoms. Although some 60-80 species have been identified in this community, only a few species are dominant, including *Pseudotolithus elongatus*, *Drepane africana*, *Cynoglossus goreensis*, *Arius lasticutus* and *Dasyatis maragaritu*. Among the inshore pelagic species, the most important species are the Clupeids (*Ilisha africana*, *Ethmalosa fimbriata*, *Sardinella maderensis* and *Sardinella aurita*), the Carangids and the Scombrids. These fish categories are mainly migratory and closely related to the fluctuations of the environmental conditions within the estuaries and near-shore.

The offshore pelagic fisheries consist mostly of species associated with three types of hydrographic regimes. *Engraulis encrasicolus*, *Sardinella aurita* and *Decapterus* species are found associated with the thermocline. *Scomber japonicus* and *Trachurus* spp are found in the upwelling zones. Tuna species are also found in this zone, which include: Yellowfin tuna *Thunnus albacares*, Skipjack tuna *Katsuwonus pelamis* and Little tuna *Euthynnus alletterates*. This community consists mostly of demersal fish species. It is diverse but in terms of abundance it is dominated by Sciaenidae. The offshore demersal fishers include the spined fauna of the continental slope community and shellfish. The spined fauna normally inhabits the regions below the thermocline on sandy and rocky bottoms. The shallow shelf Lutjanidae sub-community is dominated by the species *Balistis capriscus*, *Pagellus bellotti* and *Dentex canariensis*. The deep shelf spined community includes *Dentex* sp and *Pendtheroscusion* sp. The crustaceans and molluscs consist of the shrimps, cuttlefish and squid. Of the six shrimp species of commercial importance *Penaeus notialis* accounts for about 96% of the landings and occurs on the Freetown peninsula especially around Banana Island. *Penaeus kerathurtus* occurs in the southern part of the coast. Both species inhabit the mangrove swamps, estuaries and inner continental shelf to a depth of 55m. Other species occur in deeper waters of 40-70m and above the continental slope. The inner shelf shell fish populations are assessed to be in good but declining condition.

In freshwater ecosystems, 16 families of fish comprising about 100 species have been identified. The major fish species include *Alextes longipinnus*, *Epiplatys fasciolatus*, *Hepsetum odoe*, *Sarotherodon kingsleyi*, *Ctenopoma kingsleyi*, *Polypterus palmos*, *Hemichromis fasciatus*, *Tilapia* sp., *Clarias lazera*, *Clarias laevicps* and *Mormyrus macrophalus*. There are also several species of catfish *Bagrus bayad*, *Synodontis nigrita*, *Clarias platycephalus*, *Clarias lazera* and *Chrysichthys furcatus* found in lakes, rivers and lagoons (Payne, 1986). Although the practice of aquaculture has huge potential as a profitable commercial enterprise, it is limited and fish species such as Tilapia, Mulletts (Mugi and Liza), Clarias, *Chrysichthys*, *Penacus* and *Scylla* are the commonly used feeder stocks.

For butterfly, 880 species have been recorded in Sierra Leone so far. Systematic study of butterfly diversity and distribution has only been carried in four key locations – Gola Forest, Loma Mountains, Bumbuna area and the Western Area Peninsula Forest. These studies have shown that some 50 butterfly species in Sierra Leone are endemic to West Africa or to the Liberian sub-region and the African swallowtail butterfly *Papilio antimachus* (DD) reaches its westernmost limit in Sierra Leone. Not many of these species are listed in the IUCN Red List, but the following are worth

mentioning as species that are endemic with rare occurrences in the country: *Papilio horribilis*, *Neurellipes staudingeri*, *Charaxes nobilis claudei*, *Euphaedra aberrans*, *Euphaedra afzelii*, *Acraea vesperalis*, *Melphina maximiliani* and *Kedestes protensa*. Two endemic species of dragonfly, *Allorhizucha campioni* (EN) and *Argiagrion leoninum* (DD) also occur,

Main pressures on and drivers of change to biodiversity (direct and indirect)

Habitat destruction and degradation is the most potent threat to biodiversity in Sierra Leone. Biodiversity in Sierra Leone has been subjected to serious threats, both direct and indirect. The most obvious threats include habitat loss and fragmentation of natural habitats due primarily to deforestation, wetland drainage and infrastructural development, overgrazing, poor mining practices, poor farming practices, inappropriate use of agro-chemicals, pollution, bush fires, population pressure, civil conflict, poverty, illiteracy, lack of resources, limited trained human power, inappropriate policies, institutional weakness as well as socio-economic factors. The following is a description of various forms of threats to biodiversity from habitat destruction and degradation:

Agriculture

The nature of agriculture that has been practiced for centuries in the country is slash-and-burn shifting cultivation, which is considered by the Inter-governmental Panel on Climate Change (IPCC, 2007) as one of the biggest threats to global biodiversity. In fact, it has been estimated that slash-and-burn agriculture is one of the main factors responsible for the depletion of the country's forest ecosystem to less than 5% its 1900 cover. Consequently, closed forest formations only occur as fragments of habitats mainly in forest reserves, a majority of which are found in the east to south-eastern sector of the country. From data, forest-dependent species constitute the highest proportion of species in the country and so any significant threat to the forests will affect biodiversity.

Agriculture-related habitat destruction is very widespread in Sierra Leone (Figure 7), restricting the habitat availability and distribution for some species, resulting in limited species dispersal capacity and restricted gene flow that constitute the tools for evolution and speciation. The state of such ecological processes have been worsened by declining fallow periods resulting from the growing rural population, increasing cost of living and lowering crop yield. Studies have indicated that fallow periods have declined from over 15 years to an average of less than seven years in one to two generations and that the local farming communities view fallow agriculture (or shifting cultivation) as becoming increasingly challenging with lowering crop yields over time.

Crop production is the major contributor to GDP from agriculture. The production of rice, the staple food, is the key output of fallow agriculture. Traditionally, rice dominates the crops contribution to GDP with the average of over 15%, followed by cassava at 9.3% (ICADEP 2014). In order to enhance productivity, upland rice cultivation, which supplies a vast proportion of the food demand, is preferably done in plots where old secondary regrowth occurred, and have accumulated much nutrient over time. This is depleting huge tracts of secondary forests every year whilst the spate of deforestation is increasing with increase food demand to cope with the growing rural population and demand for modern lifestyles. Also, the traditional burning of vegetation during the phase of land preparation for agriculture is increasing emission of carbon-dioxide into the atmosphere, which is one of the major drivers of climate change.

Over the years, as the land availability becomes limited by the growing population and traditional

EN

governance system, anecdotal evidence show that the farming system has changed from a traditional shifting cultivation (wherein the farming village moving from one location to another to farm) to a more sedentary fallow mechanism (wherein the village remain in one location and the farming plots rotated). Of the national land area, 5,360,000 ha (approximately 74%) are arable, of which 80% constitute upland ecosystems.

Furthermore, the NRDS report postulates that agricultural productivity needs to increase significantly, if incomes are to be enhanced and poverty is to be reduced in Sierra Leone. Given the limited scope for expansion of the area under annual crop production using the traditional upland bush fallow system, most of the productivity increases must come from increases in yields, resulting from adoption of new technologies by the small-scale farmers who produce the bulk of agricultural output.

Considering that rice is the nation's staple food and thus its major agricultural product, the NRDS identified two strategies for increasing rice production, namely: (a) increase in area cultivated, mainly in the lowlands where there is much under-utilized capacity, and (b) increase in productivity per unit area in all ecosystems. In order to realize the Government's goal to achieve rice self-sufficiency by 2013, the NRDS targeted a land area of 830,000 ha, and an increase in the average rice yield/ha to 2.0 mt/ha. This has the tendency of increasing the pressure on forest and pristine habitats.

A recent disturbing phenomenon is the conversion of vast areas of species-rich agro-ecosystems into monocultures for the cultivation of sugar cane and oil palm used for biofuel production. This is mainly driven by investment from multinational companies to satisfy the growing need for environmentally-friendly low-carbon emitting fuels. The largest of such investment is the Socfin Oil Palm Company in the Pujehun District, which covers an area of about 15,000 ha. Others include Gold Tree (oil palm) in the Kenema District, Miro (agroforestry) in the Tonkoli District and Addax (sugarcane) in the Bombali District. However, such ventures have proven to be counterproductive, as they are creating serious pressure on biodiversity, worsening the land hunger among local farming communities, and reducing indigenous agro-biodiversity, thereby increasing pressure on pristine ecosystems, particularly forests that support a most of the country's biodiversity.

Wood fuel extraction and logging

Wood fuel (wood and charcoal) is estimated to account for a very high proportion of domestic fuel needs in Sierra Leone. In combination with logging and pole extraction, wood-fuel production is now a leading cause of habitat degradation in various ecosystems, including closed forest, woodlands and mangroves. Many species that depend on these ecosystems are threatened because such activities degrade the micro-ecological integrity of their habitats, distorting their feeding, foraging and breeding activities. In response, some species tend to retreat into deep areas in closed forests or other pristine habitats where they could find suitable alternative habitats for survival. However, for some species, with delicate and rare microhabitat requirement, any distortion could be disastrous to their local populations.

The rate of wood, charcoal and log production is so high nowadays that the rate of habitat recovery is hardly keeping pace with the rate of depletion. The recent introduction of the power-saw into wood processing for logs and charcoal is a very potent factor that is accelerating the destruction

and degradation of forests. As a result there is always a tendency to extend wood extraction into pristine areas and reserves. Although logging can sometimes be selective, the increasing demand for building poles and logs is causing indiscriminate extraction in recent times. Forest tree species have been the main target of logging companies and private loggers, but now the extraction of species like *Pterocarpus erinaceus* and *Lophira lanceolata* is devastating savanna woodland habitats in northern Sierra Leone, including areas in and around the Outamba-Kilimi National Park and Lake Sonfon.

Unbridled urbanisation and development

The accelerated rate of population increase coupled with rural to urban migration in the country, have over the last two decades necessitated the expansion of housing in towns and cities throughout the country. The situation was exacerbated by the 1991 - 2001 civil war during which large numbers of rural inhabitants migrated to safer areas in main towns and cities. Consequently, the numbers and sizes of slums increased, whilst unplanned housing construction in vulnerable areas escalated, putting great pressure on the natural support systems and resources and almost permanently obliterating the natural ecological systems of these locations. Some of these areas were forests and intertidal coastal systems that used to support a diversity of both terrestrial and aquatic birds, respectively. One typical example is the proliferation of housing on the previously forested hills overlooking the city of Freetown, which used to hold significant number of wildlife species. Another is the expansion of settlements along the Freetown estuarine coast, where large numbers of migratory waterbirds used to visit, particularly the Aberdeen Creek.

Bird numbers have declined significantly as a result of changing ecological conditions in these sites as with many other sites in the country. Both hillside and coastal erosion events are causing serious sedimentation of once productive coastal habitats important for bird feeding and roosting activities of migrant birds. Erosion along river banks is clogging river courses and destroying vital riparian habitats thus fringing aquatic wildlife. For instance, over a period of 21 years, the number and abundance of waterbird species at the Aberdeen Creek declined significantly. This creek is a typical example of a once viable habitat that has been degraded by threats from various anthropogenic sources, including mangrove clearing, sedimentation, unbridled development and over-exploitation of fish and molluscs.

Mining

The deleterious effect of mining on the environment and biodiversity is glaring and this is evident in many areas in the country. Mining contributes an average of about 4 to 10% of the country's GDP (depending on the quantity of minerals mined and the global market price), and provides among the highest private sector employment in the country. The production of iron ore by two large mining companies between 2008 and 2012 was the reason for the dramatic growth in the country's GDP, up to about 20% in 2013. However, by all indications, mining constitutes one of the most significant threats to biodiversity today. Huge areas of land are being deforested and degraded in various parts of the country, resulting from various mining operations. In Kono, large portions of land have been left to waste following diamond mining. In Mokanji and Rutile, huge areas of land and vegetation are degraded through bauxite and rutile mining, respectively; whilst in Ferrengbiai and Lunsar, similarly destructions are happening as a consequence of iron ore mining. The destructive nature of the mining and the dumping of mine tailings is rendering many viable habitats ecologically redundant,

as in most instances, mine tailings are inert and support little or no wildlife.

Artisanal is destroying viable habitats and riparian ecology of a number of floodplains, estuarine, river and streams systems around the country. Vast areas of riparian zones and flood plains have been devastated by unregulated artisanal gold and diamond mining, whilst illegal zircon mining threatens the ecology of some parts of the coast. A general observation from various field surveys show that birds that depend on riparian ecologies (such as kingfishers, crakes and ducks), were absent from river systems in the east of the country that have experienced years of sedimentation from both artisanal and industrial mining activities. Sand mining, which is generally artisanal, is creating huge localised disturbances to natural aquatic habitats along some sections of the coast (particularly around the Freetown peninsular) and along some of the major rivers and tributaries.

Climate Change

Climate change has become one of the most important discussions in international agenda on the environment. It is a natural phenomenon that has been scientifically proven to be accelerated by human activities, and has been blamed for a number of extreme weather conditions, including floods, heat waves and bush forest, with devastating consequences on people and nature. A report by Karim and Okoni-Williams in 2007 for the National Adaptation Programme of Action (NAPA), indicates that climate change has the potential to distort a range of ecosystem processes that may lead to permanent changes to bird diversity and bird habitat in future.

Although the evidences are not immediately apparent, the long dry spells with intense solar heat and the changes in annual precipitation period coupled with irregular strong winds and heavy rainfall are enough signs of changing climatic conditions that may affect birds and their habitats. As birds are considered indicators of ecological change, it follows that such changes in ecological conditions is affecting a significant diversity of flora and fauna. Rising sea levels is depleting habitats for birds and other coastal/marine wildlife along sections of the coastlines of the Sierra Leone River Estuary.

Along the coast, rising sea level eroded the sandy beach, banks and fringing vegetation depleting vital habitats for birds, wildlife and human settlement. Many islands within the major estuaries and off the coastline are threatened by rising sea level that is causing flooding, thus eroding the banks and threatening the existence of a couple of the smaller islands. It is also suspected that climate change is now accelerating the rate and intensity of sea weed invasion unto the beautiful beaches along the coast between July and September each year, obliterating their scenery. These beaches are not only used for leisure and fish productivity, but are among the most attractive destinations for both local visitors and international tourists, and contribute significantly to local and national economy. In the forest and woodland environments strong winds and wild bush fires are destroying trees and viable habitats for biodiversity.

Introduction of invasive and exotic species

Invasive exotic species are known to create serious ecological imbalances and threaten indigenous biodiversity, because they are hardly faced with natural enemies, competitors and predators in their new environment. There are numerous instances of the effect of invasive and exotic species on local biodiversity including local and global extinctions as exemplified by the extinction of the dodo on the island of Mauritius mainly due to the introduction of predatory species into the island by humans. Most such introductions are not deliberate and their effects are gradual, but potent and lasting, and

are likely to create permanent damage to the environment and local biodiversity.

A very potent threat to Sierra Leone's biodiversity is the proliferation of both alien and local exotic species, which are slowly, but surely becoming invasive and are destroying local ecologies. Invasive species include plants (such as *Chromolaena odorata*, *Acacia mangium* and *Acacia auriculiformes*) and animals (particularly invertebrate pests - e.g. cassava millibug) that are becoming troublesome to the natural ecosystems, agricultural systems and crops. Anecdotal observations show that the cockroach species *Periplanatus americana* (introduced through second-hand household goods), appears to eliminate the local species *Blatta occidentalis* wherever their habitats overlap. *Chromolaena odorata* is a shrub that exists as a noxious weed in many upland ecosystems including farm bush and every other available inch of clearing and preventing the growth of other vegetation. It is often referred to as the "rebel weed" among some local communities.

Direct off-takes and Wildlife Harvesting

Direct off-takes refer to the taking of wildlife either dead or alive from their natural environment. The practice was done through subsistence hunting and trapping and historically allowed for natural recovery of wildlife, but presently, the association of the trade with trafficking and economic gain, has made it deleterious to wildlife populations. Anecdotally, wildlife trafficking is becoming a serious threat to Sierra Leone's biodiversity. The wild bird trade target species included estrilids, hornbills, grey parrots, orioles and starlings among others. The skins of most other species are the main reasons for hunting them, rather than food. There are cogent evidences that the skins of pangolins, pythons and boars, crocodiles and the shells or turtles and tortoises are smuggled out of the country. Currently, the most significant threat from trade in wildlife trade and trafficking comes from cross-border activities through the Republic of Guinea, for live trophies, and to a lesser extent, Liberia, where monkey and other bush meat are delicacies.

Hunting and trapping

Hunting is a very widespread activity. Hunting using shot guns declined because of the general embargo on guns due to the civil war (1991-2001). However, trapping using snares is a widespread practice as it is very common to come across dozens of snares in a forest patch, for species of various sizes ranging from rodents to monkeys and buffalo. Local hunters mainly hunt for subsistence and almost all species of wildlife are targeted, including primates (chimps and monkeys). There are also isolated incidences of hunting and trapping of threatened birds like White-necked Picathartes, White-breasted Guineafowl and a number of other forest-dependent species.

Specific threats to Biodiversity in the Aquatic, Coastal and Marine Ecosystems

The definition of the coastal zone used in this document is that defined by Clark (1990) as "all coastal areas that are subject to storm flooding by the sea, all intertidal areas of mangrove, marsh, deltas, salt flats, tide flats and beaches; all permanent shallow coastal water areas such as bays, lagoons, estuaries, deltaic waterway and near coast waters that include sea grass meadows, coral reefs, shellfish beds submerged bars; the near shore coastal waters and small coastal islands". In 1985, CSO stated that about 43% of the population of Sierra Leone lived within 10 km of the coast. Between 1991 and 2002 (during the rebel war), it is believed that as many as 60% of the population may have fled to safer areas on the coastline occupying more than 500 towns and villages.

Along the coast activities such as fishing, agriculture, industrial activities (textile, chemical, and brewing), mining and mineral exploitation, tourism, marine transportation, marine and coastal infrastructure, waste deposition (both industrial and domestic) are bound to be on the increase. The control and management of these activities would require huge investment and appropriate infrastructure. Urbanization and development consumes resources heavily and generate huge quantities of waste (chemical and solid wastes). Increase in anthropogenic activities and introduction pollutant into the coastal zones affect the complex food web and ecological relationships thus adversely affecting the biodiversity. The bulk of pollutants entering the sea are derived from the following sources: runoff and discharges from the land mainly through rivers (44%); atmospheric sources (33%); marine transportation, spills and operational discharges (12%); deliberate dumping of wastes (10%); offshore development of mineral resources (1%). The following paragraphs provide some details of the specific threats to Sierra Leone's aquatic, coastal and marine biodiversity:

Over-exploitation

In Sierra Leone, there is evidence of over-exploitation of certain categories of target species and significant reduction in others in response to growing demand and population growth. Out of seven major snapper species, five (*Dentex angolensis*, *D. congensis*, *D. Canarensis*, *Pagellus belloti* and *Sparus caeruleostictus*) have been shown to be declining rapidly (Showers, 1996). There is evidence of over-exploitation of the following species: *Pseudotolithus senegalensis*, *Drepane africana*, *Galeoides decadactylus*, *Dasyatis margarita*, *Ilisha africana* is the only pelagic species known to have been over-exploited.

The shrimps have reached the maximum sustainable yield levels of 3,000 million. Generally gill netting, purse seining and bottom trawling discriminate poorly between target and non target species. Bottom trawling can cause considerable mortalities among benthic organisms such as molluscs, crustacean, hydrozoans, bryozoans and echinoderms. In Sierra Leone about 70% of the total landings from the shrimping sector consist of finfish by catch. Both shrimp and finfish trawlers discard about 50000 million tons and 3000 million tons of finfish by catch amounting to 3% and 11% of the total annual catch respectively.

In the artisanal sector large proportions of juveniles of valuable species such as *Ethmalosa fimbriata*, *Sarda sarda*, *Caranx* and *Polydactylus quadrifilis* are landed by gill nets and beach seines (Figure 16). In recent times 2002 there are about 150 beach seines compared to some 20 in 1995 in the Western Area. Okera, 1978, recorded 64 species of fish landed at Lumley beach. Today, there are not more than 40 species recorded annually. Poisons and explosives are prohibited by law but are widely used especially in rivers and estuaries. Artisanal fishermen are noticing a drop in their catches.

In the coastal areas, mangrove swamps especially in the North are cleared for rice production. Fomba (1994) estimated that 35,000 ha in the North and 5,000 ha in the South are under cultivation. Mangroves are used as fuel wood, for charcoal production, and construction material. Mangrove swamps and wetlands are bound to be put under further pressure leading to habitat destruction and loss of biodiversity. Pesticides are also used to control of malaria, schistosomiasis and onchocerciasis. Pesticides are also used to control pests of rice. Oil palm plantations such as Biopalm Oil Star, West Africa Agriculture, Socfin Oilpalm and Miro Forestry Company Limited are all using chemical fertilizers. These fertilizers are dangerous when they reach the aquatic and marine environment. These are washed up through erosion and run-off into rivers and sea. Also, sugar plantation owned

by ADDAX Bioenergy Company is also contributing to the level pollution in the Rokel River.

Mining and Mineral Exploitation

The main minerals mined in Sierra Leone are Iron ore, sand gravel, rocks, gold, diamond bauxite, zircon and rutile. Due to the construction industry and coastal infrastructural development especially for tourism, sand and other building materials are in great demand. Mining alters the coastline and discharges silt and mineral water into the coastal zone. Rocks on rocky shores with their rich biota are quarried also for construction. The biggest future potential threat to the country's marine environment is the prospective exploitation of crude oil in the southern off-shore tip of the country, if not well managed.

Implementation of the NBSAP

Fortunately there has been strong commitment from international partners and multilateral donors to provide full or matching funds for the conservation of the biodiversity in the country, including funding to ministries and agencies for their respective internal programmes. International donors provide much of the needed funds for biodiversity action, particularly in-situ conservation programmes in Sierra. The GoSL, its implementing agencies and in-country partners has the responsibility to build trust and promote partnership through ensuring strong fiscal management and commitment to its national and international environmental legislation.

The administration of the NBSAP and related activities would depend on what future plans and programmes government might have in terms of organising and managing of its environment and protected area infrastructure. However for the sake of expediency, the EPA is making frantic efforts to mobilise initial resources and mechanisms for the implementation of the NBSAP. In most of the workshops conducted there many suggestions were made that a unit be established within the EPA or the NPAA to coordinate the activities of the NBSAP.

A National Steering Committee has been identified, based on the 2003 NBSAP concept, comprising representatives from government MDAs, NGOs and the University, which is providing policy, technical and moral support to the secretariat. Such strong institutional support will ensure that the NBSAP process achieved its purpose and objectives within the given time-frame. However, the work of the Committee has not been very active because of lack of funding and motivation over the years. This issue requires attention within the framework of support to the monitoring and evaluation of the progress of the NBSAP 2017-2026, in order to ensure that the work of the National Steering Committee is sustained and effective over the period of implementation of the Plan. Fourteen institutions are members of the National Steering Committee as for the implementation of the NBSAP 2017-2026 comprises key individuals and representatives from various institutions and the distribution depends on the relative roles in the committee, but each institution has only one vote. So, there are 16 members, representing 14 The Chairman appointed to the Committee by the EPA constitutes its 15th member.

The GOSL albeit with its inadequate budget, has over the years provided significant support to the environment and conservation sector in various ways. Many policies, legislation and regulations have been developed and passed into law as a manifestation of government's commitment to

EN

both national and international drive to conserve biodiversity. This is an important strength and capacity inherent in the GOSL governance mechanism that can use most effectively to cater for the environmental and biodiversity protection needs of the country. In terms of the NBSAP 2017-2026, focus should be given to the review of policies legislation and regulations consistent with current and future challenges and emerging concepts.

The process of reviewing of policies and enactment of legislation in most instances has strong policy and political considerations. However it is important that the interest of the environment, its benefit to posterity and the overall national interest must override political consideration and conflict of interest in order to promote the conservation interest and make the objectives of the NBSAP achievable. Much of the responsibility lies of the various agencies and ministries of government that are in the position to initiate and drive the process at every stage. One of the impediments to the promotion of policy legislative action is the lack of clear-cut understanding of the responsibility of the various agencies of government, exacerbated by conflicting roles and overlapping mandates. This a strong argument for the organisation and institution of an inter-agency forum with the primary purpose of building consensus among key government partners to resolve the issue of overlapping mandates and conflict of interest. The NBSAP implementation process provides an opportunity for such long-overdue inter-agency consultations, which has been a regular point of convergence in most recommendations from meetings and workshops on environmental and biodiversity issues. The EPA-SL is well-positioned to coordinate and organize an result-oriented meeting between the relevant agencies and other stakeholders

The Board of Directors of each of the agency, such as the EPA, NPAA, and the relevant Parliamentary Committees, which are mandated to provide policy direction to these agencies have the capacity to promote relevant policies and legislation relating to biodiversity conservation. The overlapping mandates as given in the various acts can be looked upon as areas of potential inter-agency collaboration rather than causes conflict of interest and such possibilities can be promoted by the various boards of directors. Wherever there is a diversity of interest from various stakeholders, there is bound to be divergence of views and struggle for authority and resource control. However, with effective consultation and strong collaboration between agencies at different levels, policy development and legislative process can be readily expedited, if the right information is available and well disseminated.

From concept to policy and eventually to legislation, processes have to be followed. Sometimes the processes are stalled because of lack of consultation and problem of disagreement on inter-agency policy divergence. Based on discussions and recommendations from the regional and national workshops, it is necessary that established mechanism for the development of a concept into a workable and implementable policy or legislation be published. A major opportunity is the general willingness expressed by representative from the relevant government agencies to collaborate and support proposed policy and legislative processes required for the effective implementation of the NBSAP. The following is a strategy to be implemented to address policy, legislation and inter-agency collaboration for biodiversity conservation:

Data Coordination and Clearing House Mechanism

The concept of a clearing house has been a much discussed topic in many technical fora and programmes hosted by government and other partners respectively. It is one of the major

administrative infrastructures of the NBSAP recommended by the 10th Conference of Parties of the CBD and is consistent with the general thinking among stakeholders in the biodiversity conservation community in Sierra Leone. A clearing house mechanism will contribute to the effective implementation of the NBSAP and support other environment and biodiversity programmes through the following ways:

- (i) Establish an organised system of data collection, processing and storage
- (ii) Provide easy access to data that may be required to inform policy and decision making.
- (iii) Ensure that there is consistent updating of data in order to facilitate easy assessment of trends in biodiversity status in the medium to long term.
- (iv) Ensure that the outcomes and result of data processing are effectively disseminated
- (v) Identify experts in various thematic areas and constantly engage them.
- (vi) Identify training and development needs for efficient data handling, storage and retrieval.

However, identifying a clearing house, setting up of the mechanism and operationalizing it requires significant human and equipment resource inputs. Many academic institutions and other agencies and NGOs have conducted research in diverse thematic areas, ranging across the major groups of flora and fauna. This network of research institutions, their diversity of expertise, and the level of collaboration that exists between them, there is ample opportunity to address the research and documentation needs of the NBSAP. A clearing house mechanism ensures effective coordination, sharing and use of data and information between and among organisations. Proper management of data would obviously lead to the effective use of the same for the intended purpose. A clearing house would also encourage collaborative research opportunities, which are platforms where people from various institutions exchange ideas, learn from each other and build experience for future research challenges.

Overall actions taken to contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020

- Established training relationships with developed and developing countries (e.g. South Africa, Cyprus) which provide opportunities for overseas training in these areas.
- Use of television and radio programs to educate the public on the importance of biodiversity conservation.
- Publication of an environmental bulletin and celebration of World Environment Day through tree planting exercises countrywide; use of nature clubs in school.
- Local environmental NGOs are supported in communication, education and awareness-raising initiatives.
- The World Bank Project on Protected Area Management and the Wetlands Conservation Project have both supported rural biodiversity management initiatives through micro-financing schemes.
- The Artisanal Fisheries Development Programs (AFDEP) on sustainable fisheries and aquaculture was implemented with the view to promote sustainable fisheries and enhance the achievement of the objectives of the National Poverty Reduction Strategy Paper (PRSP).
- The three largest forest reserves were upgraded to national park status - Gola Rain Forest, Loma Mountains Forest and Western Area Peninsula Forest. Plans are underway to

EN

designate the Sherbro River Estuary (the largest portion of mangrove cover in the country) as a Ramsar Site.

- was in the eastern part of Sierra Leone involves collaboration with international NGOs through MOUs and other agreements to promote the participation of local communities in decision-making, through training and skills development for their effective participation, while also contributing to implementation of Aichi Biodiversity Target 11 (Protected Areas).
- The National Environmental Protection Act (2008) makes provision for proposed development projects that may have adverse effects on biodiversity to carry out mandatory EIAs, whilst stringent measures are now in place to control pollution by manufacturing and other production companies. Guidelines and Procedures to undertake EIA are in place.

Support mechanisms for national implementation (legislation, funding, capacity-building, coordination, mainstreaming, etc.)

The Government of Sierra Leone has enacted several notable pieces of legislation to support national implementation of biodiversity targets which can be categorized based on which sector they target (e.g agro-biodiversity, forest biodiversity, marine biodiversity). There are several piecemeal legislation on agriculture but notable amongst them is the one enacted in 1946 captioned “An Ordinance for the Control and Preservation of Agricultural Produce”. More recently are the National Protected Areas Authority and Conservation Trust Fund Act of 2012 and Fisheries and Aquaculture Act of 2017, The 1972 Wildlife Conservation Act, the 1988 Forestry Act are under review, whilst a draft Wetlands Conservation Act has been done. It is hoped that the Government’s commitment to biodiversity conservation will see increased budgetary allocations, with additional funding being sought from bilateral donors to the Sierra Leone Government, private sector businesses, and fees and royalties from the potential exploitation of biodiversity. All the financial resources marshaled will be deposited into a National Biodiversity Trust Fund, with the accruing interest utilized for conservation-related activities. Current activities in biodiversity conservation are not well coordinated, and cross-sectoral interactions in the implementation of biodiversity issues are non-existent in the relevant government ministries. A unit or secretariat responsible for biodiversity will serve to build the capacity of all relevant institutions by providing training, mobilizing and utilizing existing expertise and resources, and ensuring that all the relevant institutions collaborate in the sustainable use and conservation of biodiversity. International and national NGOs are involved in the implementation of conservation programmes in local communities and schools. These NGOs include Environmental Foundation for Africa and Conservation Society of Sierra Leone.

EN

Mechanisms for monitoring and reviewing implementation

Sierra Leone does not have a comprehensive monitoring programme in place. The identification of indicators for national-level monitoring of biodiversity is still in progress. Programmes do exist for controlling forestry licensing, monitoring annual rainfall, levels of chlorofluorocarbons and the use of inappropriate fishing nets and gear, among other programmes. The Sierra Leone Navy also patrols the territorial waters of Sierra Leone to monitor the activities of foreign fishing vessels in a bid to minimize unsustainable fishing practices.

EN

Monitoring is an essential tool for the assessment of progress in any system and the NBSAP is

not an exception. The NBSAP process does not end with the implementation of activities, but it is important that these activities are monitored and evaluated against their indicators and the achievement of the stated targets within the given time frames. Monitoring is normally an on-going process which starts after the commencement of the project or programs and ends some months or years after the completion of the project or programs. In terms of the monitoring of implementation NBSAP 2017-2026, it would be more prudent to develop a monitoring and evaluation plan which would be implemented once a year, the result of which would feed into effective planning and/or modification of activities for subsequent years. If well implemented, such a process would ensure proper assessment of the successes and challenges of the strategy in an organised and informative fashion, and enhance learning and experience sharing among participating partners.

Monitoring rests on the shoulders of all key stakeholders, but the process must be led by the EPA and the NPAA, which are the agencies that have the mandates to uphold and implement government policies. Their functions in monitoring is dependent upon how well they guide and direct policies towards promoting biodiversity. Both the EPA and the NPAA have monitoring and evaluation units with the relevant capacities and expertise, The Universities, particularly USL and NU, are equally useful partners in monitoring and evaluation, because they usually have the expertise and the analytical capacity to present the findings in a scientific, but comprehensible manner. Additionally, NGOs such as the CSSL and EFA could provide technical support in relevant areas. The EPA and NPAA as the key custodians of the NBSAP, and have exhibit willingness to organise and coordinate monitoring activities.

Monitoring of the NBSAP will be aligned with other national development strategies, national policies and international biodiversity conventions, agreements and programs. This is to ensure that the implementation of the NBSAP is not done in isolation, but holistically addresses biodiversity issues across the board. The functions, programs and activities of every ministry, departments and agencies (MDAs) of government related to the environment and associated resources have direct or indirect relationship with the NBSAP. The extent to which the work of these MDAs affect the NBSAP is a subject for monitoring, especially in terms of addressing issues of overlapping mandates and conflict of interest.