



Government of the Republic of Sierra Leone  
Ministry of Agriculture, Forestry and Food Security

## **WESTERN AREA PENINSULA NATIONAL PARK**

**Management Plan  
2014-2018**

**VOLUME I**

**THE MANAGEMENT PLAN**



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*The views and proposition expressed herein are those of the Experts and do not necessarily represent any official view of the European Union or any other organization mentioned in the Report.*



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## LIST OF ABBREVIATIONS

BCP	Sierra Leone Biodiversity Conservation Project
BT	Bumbuna Trust
°C	Degrees Centigrade
CSMC	Conservation Site Management Committee
CSMT	Conservation Site Management Team
DC	District Council
DD	Data deficient
EN	Endangered
EPL	Exclusive Prospecting License
FD	Forestry Division
FIRMS	Fire Information for Resource Management System
GEF	Global Environment Facility
ha	Hectare
HWC	Human Wildlife Conflict
IUCN	World Conservation Union
km	Kilometre
km <sup>2</sup>	Square kilometre
LC	Least concern
LMNP	Loma Mountains National Park
M	Metres
MAFFS	Ministry of Agriculture, Forestry and Food Security
METT	Protected Area Management Effectiveness Tracking Tool
ML	Mining Licence
mm	Millimetre
NGO	Non-governmental Organisation
NT	Near threatened
NTFP	Non-timber Forest Products
ÖBf AG	Österreichische Bundesforste AG
PA	Protected Area
tCO <sub>2</sub>	Tonnes of Carbon Dioxide
TRA	Threats Reduction Assessment
US\$	United States Dollars
VU	Vulnerable
WB	World Bank
WWF	World Wide Fund for Nature



## FOREWORD

The Government of Sierra Leone has upgraded the Western Area Peninsula Forest to the Western Area Peninsula Forest National Park in 2013. Over the years, the Ministry of Agriculture, Forestry and Food Security (MAAFS) has been faced numerous challenges to ensure that the unique biodiversity of the Western Area Peninsula Forest Reserve and its eco-system services the forests bring to our people, are maintained. As an institution responsible for the management of the nation's natural resources, we have to design ways and mechanisms that will ensure the protection and sustainable utilisation of these resources. The development of this Management Plan for this globally unique protected area is an important step forward in the process of developing a framework that strengthens the national protected areas system and raises the management effectiveness of conserving the biodiversity of the Western Area Peninsula National Park (WAP-NP).

To meet the challenges of effectively managing the national protected areas system in Sierra Leone this Management Plan is part of a process of building the experience of protected areas management and planning across the spectrum of stakeholders. It introduces new concepts as well as different approaches to conservation management that are not yet fully supported by the legal framework but are integral parts of the newly approved Conservation and Wildlife Policy. Therefore considerable space is dedicated, within the management plan, to explaining the principles and building the arguments to justify the approaches that the plan is advocating.

This Management Plan aims at conserving the biodiversity of Western Area Peninsula National Park (WAP-NP) by protection and sustainable utilisation of resources in partnership with the village communities in the Western Area Peninsula District and the capital city of Freetown. It recognises that protected areas cannot exist in isolation; indeed they need to be fully integrated within the local and national land use planning.

**Dr. Sam Sesay**  
**Minister of Agriculture, Forestry and Food Security**  
**Republic of Sierra Leone**





## **APPROVAL**

This Management Plan for Western Area Peninsula National Park has been reviewed by the Forestry Division of the Ministry of Agriculture and Food Security and, after consultation with all relevant parties, approved for implementation.

**Sheku A. Mansaray  
Director  
Forestry Division  
Ministry of  
Agriculture, Forestry and Food Security**





## ACKNOWLEDGEMENTS



## EXECUTIVE SUMMARY

Western Area Peninsula National Park (WAP-NP) forms a unique ecosystem in Sierra Leone and has been identified as a key area in the national protected areas system. The territory has been declared a forest reserve in 1916 and a non-hunting area in 1973. However, this is the first attempt to develop a plan to guide the management of the protected area in achieving biodiversity conservation and the sustainable provision of eco-system services.

This management plan is the first management plan to be developed for Western Area Peninsula National Park (WAP-NP). Experiences and working results since 2009 are contributing to the plan. The plan provides an institutional framework which will enable effective management of the protected area itself as well as the surrounding territories.

In developing the management plan it was explicitly recognised that

- WAP-NP is of global importance and extremely vulnerable to a variety of threats. The natural values (particularly biodiversity) of WAP-NP are increasingly vulnerable to changes in land use in the communal lands surrounding the national park.
- The potential to develop eco-system services (water supply, hydro-power, eco-tourism, NTFP, REDD+ etc.) which support the life for adjacent population and can contribute to the park financing.

The implementation phase focuses on four sectors:

- “Participatory Governance of the National Park”
- “Market-based provision of eco-system services”
- “Creation of Biodiversity knowledge”
- “Environmental Education”

Prohibitive measures to reduce the rate of land clearance for settlements in the process of suburbanization of the capital Freetown as well as packages of initiatives designed to promote the sustainable use of eco-system services are an integral component of this MP. This approach is broadly supported by the Wildlife Conservation Policy of 2010.

Its preparation has followed a structured participatory and consultative process involving the Forestry Division, the Environmental Protection Agency (EPA), the Western Area District Council, the Traditional Authorities and residents of the villages neighbouring Western Area Peninsula National Park.

The Vision for the Western Area Peninsula and surrounding communities was mutually agreed:

**“The vision of the park is to conserve and restore nationally significant forest and wildlife populations while maintaining a viable and sustainable working environment in recognition of the nature of the forest, historic importance of the forest and coastal areas along the forest with their importance for wildlife habitats are recognized in management.”**



In order to achieve the common vision, the following nine Management Objectives were identified to enable effective management within WAP-NP as well as in the customary land bordering the park:

*Objective 1: Participatory Governance of the National Park*

Promote of the institutional development of park management by capacity development. Key players and administrative staff (foresters, tourism managers, researchers, and journalists) will be technically trained. Documented quarterly dialogue forums on environmental issues meeting of representatives of ministries, agencies, civil society and local population in different centers and around the National Park.

*Objective 2: Market-based provision of eco-system services*

Development and management of environmental services (water, hydroelectric power, tourism, medical and traditional plants) for the local population: a system is developed to maintain 25 currently existing mini dams, together with the district administration. In two pilot villages gravity-based micro-hydro power plants will be installed and set up local water company for market-oriented water supply. This will encourage the further development of tourism services and market the forest area as an internationally recognized biodiversity hot-spot of Freetown with beach coves, hiking, culture, bike trails, climbing.

*Objective 3: Creation of Biodiversity Knowledge*

The establishment of a biodiversity database through the Biological Faculty of Fourah Bay College is promoted by using modern techniques such as camera-trapping. Biodiversity (fauna and flora) and the carbon content in the rainforest are measured. Results will lead to planning documents for the establishment of a REDD + system in the context of the Voluntary Carbon Standard (VCS). Documentation in the form of exhibitions and reports are made available to the public.

*Objective 4: Environmental Education*

The Union of Environmental Journalists is specializes in environmental advocacy and lobbying. Environmental journalists report regularly in the newspaper, TV and radio, and provide for increased public environmental awareness. Education programs are also conducted for the local population.

To reflect the important role of the adjacent population to this management plan, it includes MoUs with communities and established by-laws.

The Forestry Division have primacy in planning and management within WAP-NP whereas the surrounding communal lands are subject to a multiplicity of authorities and responsibilities. Indeed the management plan legally has little influence on the activities of people immediately surrounding WAP-NP. Therefore strong liaison to the urban planning department of the Ministry of Lands, Planning and Environment is paramount.

A Provisional Budget for implementing the management plan was developed and estimates a cost of Euro 0.8 million for the four years period.



## 1. INTRODUCTION

### 1.1. Purpose of the management plan

Since 2009 the project “Conservation of the Western Area Peninsula Forest Reserve and its Watersheds”, generally known as the WAPFoR Project, has achieved significant results in terms of establishing political effort and public goodwill toward the protection of the Forest Reserve. In the context of the reserve’s current transition to park status, however, there is a critical need to develop both expanded and new initiatives for the production and sharing of knowledge on the area’s biodiversity, for public engagement and for the mitigation of human threats to the park’s ecological resources.

The proposed management plan will therefore directly engage these priority strategic objectives by developing and implementing a pro-active management plan involving ongoing research, environmental law enforcement and community outreach and alternative livelihood programs. Accomplishing this through the establishment of inter-agency, local-international and public-private partnerships, the park and its management headquarters will also serve as a hub for innovation of new techniques and approaches appropriate to the Sierra Leonean context.

This management plan has been developed for a period of four years (2014-2017). However, it has to be remembered that this plan is set in an ever changing environment on ecological, social and economic level and therefore needs to be adapted as need arises in order to react to changing conditions accordingly. Furthermore, management planning is a process and therefore does not end with a plan. Annual work planning and budgeting as well as monitoring and evaluation will be needed to adapt the plan constantly in order to bring us closer to the GoSL’s vision.

### 1.2. Participatory planning process

The WAPFoR Project has been implemented by the Forestry Department, Welthungerhilfe and the Environmental Forum for Action (ENFORAC) and has been co-financed by the European Union from March 2009 to February 2014. This project has developed the presented management plan as a result of a participatory process involving different layers of the society and government from community stakeholders, local authorities, research institutions, civil society, and administration to central government. The management plan serves thereby as a planning document for the after-project phase.

### 1.3. Rational

#### *More effective system of protected areas management*

This management plan engages the objectives of several core national environmental and development strategies. First, the establishment of a more effective system of protected areas management *per se* has been a consistent and central theme in the Government of Sierra Leone’s (GoSL) internal efforts and multilateral environmental commitments since the civil war. In the Biodiversity Strategic Action Plan (BSAP), for example, Strategic Objective number 2 is to “establish and properly manage all protected areas in representative ecosystems across the country.” Similarly, the National Adaptation Plan of Action (NAPA), the country’s core planning document for coping with climate change, identifies improving the “management and protection of forest reserves” as Priority Project 10.

In recent years, the Government of Sierra Leone and its international partners have been increasingly active on this issue and 2011-12 have seen work towards establishment of a Conservation Trust Fund, definition of a work plan for the formation of a National Authority of Protected Areas Authority



and the gazettement of the Gola Forest Reserves, Loma Mountains and WAPFoR (pending) as national parks. Nonetheless, with only one other existing national park – Outamba Kilimi, established in 1995 in remote Tambakka Chiefdom – there remains a critical lack of experience and adequately trained human resources for park management. In this context, the project will make a critical contribution by creating the foundations for in-country skills development and transfer programs, reducing GoSL's reliance on external agencies for such expertise.

#### *Biodiversity conservation*

Second, by developing and initiating a detailed and coherent Park Management Plan, GoSL will directly engage several important strategic objectives regarding biodiversity conservation. As the NAPA stresses, the Western Area Peninsula is one of the country's flagship ecological areas containing a number of rare or vulnerable species and ecosystems and its conservation is a NAPA Priority Project. As the BSAP emphasizes, however, biodiversity conservation requires not only the establishment of protected areas, but also active management specifically tailored to the needs of endangered species and habitats. Unfortunately, the country's existing biodiversity knowledge base is weak and the BSAP identifies the development of knowledge resources such as a Biodiversity Database System as a Priority Project. At the same time, national and international experiences indicate that conservation projects are rarely successful without public support, and the BSAP also prioritizes improvement of the "understanding of biodiversity through research, public education and awareness" as a key Strategic Objective.

#### *Protection of water catchments*

The third key strategic objective addressed by the project is the protection of water catchments. The Western Area Peninsula is composed of a core area of high forested hills reaching to elevations over 1,000m surrounded by a perimeter of densely settled lowlands. Given its coastal location, the area receives a high level of rainfall averaging around 2,500mm per year. This combination of abundant precipitation, numerous rivers and surrounding dense settlement makes the park's watersheds arguably the most important in the country, potentially providing clean fresh water to around a quarter of the country's population. In securing an effective long term protection and management regime and sustainable water systems development, the project will help fulfil key environmental and developmental goals of GoSL – addressing NAPA Priority Project 10 and BSAP Strategic Objective 3 which mandate the conservation of important watersheds as essential ecosystem services, and simultaneously enabling Sierra Leone to make a major stride toward meeting Millennium Development Goal Target 7c.

#### *Payment for Environmental Services (PES)*

Fourth, in recent years, the various branches of GoSL have given increasing attention to the potential of transitioning to a 'greener' economy, particularly by developing various Payment for Environmental Services (PES) systems. While strategic initiatives such as the BSAP place significant emphasis on this objective for biodiversity conservation, still more impetus has come from incipient efforts to develop a national Reducing Emissions from Deforestation and Degradation (REDD) program. Indeed, the Strategy for the Development of a Climate Change Abatement Economy published in 2010 identified the development of *at least three* integrated REDD/PES pilot programs in Sierra Leone as a key Strategic Goal.

In the Western Area Peninsula context, the development of a REDD funding program has already been initiated by the WAPFoR project as a source of sustainable funding for protection of the reserve. Nonetheless, the realization of this program will require ongoing additional investments of effort and funds beyond the timeframe and budget of the current project. The proposed project will therefore provide the continued support essential to see this program to completion, as well as exploring other PES options in areas such as urban water provision and tourism facilitation (see below). In so doing, it will not only ensure sustainable financing for the programs outlined above, but



will also establish a key resource for by providing a model and source of expertise for development of PES initiatives elsewhere in the country.

### *Tourism Industry*

Finally, the rebuilding of the tourism industry has been identified by GoSL as a strategic economic development opportunity and the critical importance of WAPFoR and its surrounds was singled out in the most recent Poverty Reduction Strategy Paper (*Agenda for Change* PRSP II: 2008-2012), which noted that:

The major asset for the development of the tourism industry in Sierra Leone is the country's natural beauty, particularly the unique setting of the Western Peninsula, with its pristine beaches, mangroves and lagoons, against the backdrop of the natural rainforest along the mountains.

Though Sierra Leone's tourism sector has grown steadily in the post-conflict era, a recent evaluation of notes that while the Western Area Peninsula is an "ecotourism flagship", it is threatened by ongoing encroachment and that "saving the Western Peninsula's forests is critical for the establishment of ecotourism in Sierra Leone."<sup>1</sup>

In consolidating the gains of the WAPFoR project by developing a functional park management system including ecotourism facilities within the park, the project will therefore make a major contribution to the realization of not only GoSL's economic development strategy, but also of MDG 7, which mandates integrating sustainable development at the national level. At the same time, a vibrant tourism industry will directly support core conservation goals, providing not only direct funding through a system of fees for use of facilities, but also by raising international interest in the area and its ecology, and through the consolidation of public goodwill in the Peninsula through the increased development of alternative – and conservation dependent – livelihood opportunities for local residents.

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<sup>1</sup> Robert Travers *Sierra Leone Sustainable Tourism: Value Chain Analysis*, (PAGE / USAID/ ACIDI-VOCA 2011).



## 2. DESCRIPTION OF THE WESTERN AREA PENINSULA

### 2.1. General information

#### 2.1.1. Area in the context of national protected areas system

The Western Area Peninsula Forest is one of eight “protected area complexes” that have been identified in Sierra Leone’s Biodiversity Strategic Action Plan to contain 80 to 90% of terrestrial biodiversity found in the country, namely:

1. Outamba-Kilimi National Park
2. Loma-Tingi Complex
3. Western Area Peninsula Non-hunting Forest Reserve (proposed to become a National Park)
4. Gola Forest National Park
5. Mamunta-Mayoso Wildlife Sanctuary (proposed Game Sanctuary)
6. Yawri Bay
7. Mape and Mabesi Lakes
8. Kangari Hills Forest Reserve

The Western Area Peninsula, as a large montane forest in Sierra Leone, has a unique biodiversity compared to the low land forests (e.g. Gola Forest National Park). Due to the relatively low human population and difficult access, the forests are much less impacted compared to most other forest in the country. Forest and wildlife species composition and presence indicate that the ecosystem is relatively intact. The Western Area Peninsula National Park has national and regional biodiversity values, which warrant its place as one of the key protected areas in Sierra Leone deserving utmost attention and protection.

Its unique habitat composition is not only of academic interest but also gives potential for eco-tourism and environmental awareness as its habitat as well as wildlife diversity can be observed and experienced by the visitor. Its gallery forests, flanked by numerous streams and grassland areas have a good game viewing potential which is an added value in comparison to lowland forested protected areas where wildlife can be hardly observed by the visitor.

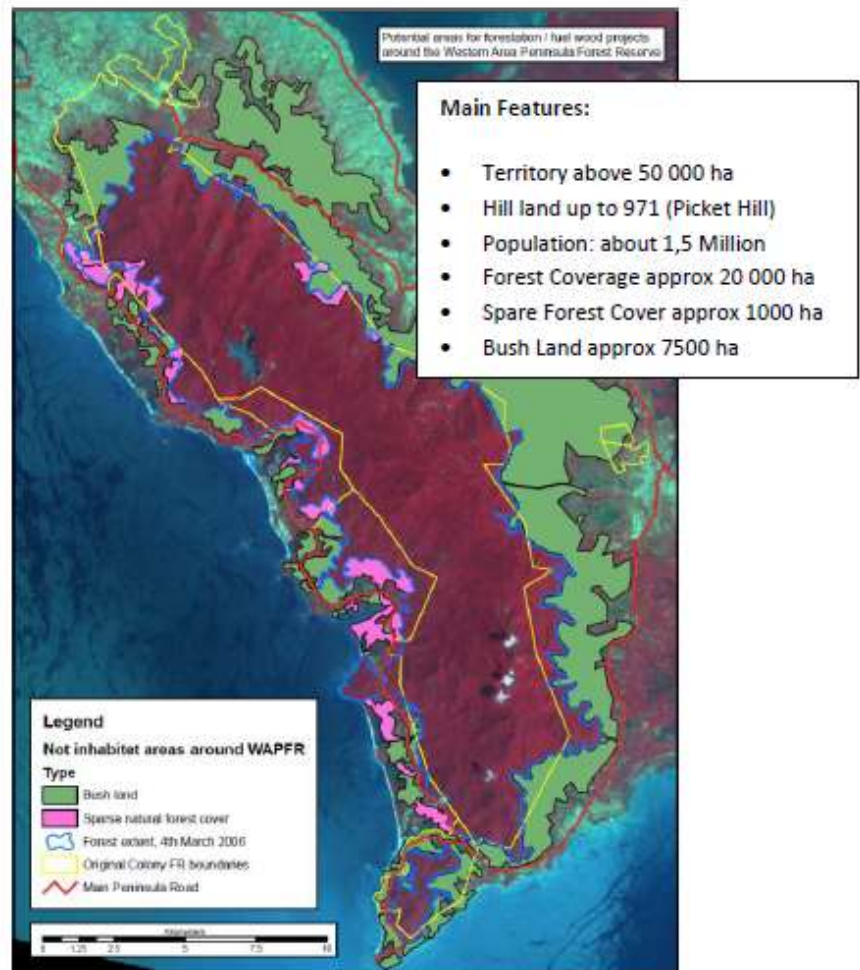
#### 2.1.2. General Description and Location

The Western Area Peninsula Forest Reserve (WAPFR) with an area of approximately 17,688 ha forms the westernmost extent of the Western Guinean Lowland rainforest in West Africa. It occurs in the Western Area of Sierra Leone (8°23’N and 13°10’W), some 5 km south of the capital, Freetown. It occupies a narrow chain of hills approximately 37km long and 14km wide, with a range of peaks, the highest being picket hill in the south, which rises to about 900m. A thin coastal strip lines the peninsula to the north, west and south, Freetown (population in excess of 1.5 million) occupies the northern end and numerous small settlement are found along the roads leading from the capital towards the reserve.

The Western Area Peninsula and adjacent Banana Islands – dominated by breathtaking steep mountains covered in lush rainforest sloping down to pristine white sand beaches – are both ecologically and culturally rich due to their regionally unique physical geography and globally important social history. Part of the Upper Guinean Forest Ecosystem, the peninsula is located on the west coast of the country and is home to roughly 1.5 million people – 20% of the country’s total population. As a result of this great importance to both Sierra Leoneans and international visitors, as well as its close proximity to the capital, Freetown, the Peninsula is one of the premier showcases of Sierra Leone and indeed, broader West Africa. The reserve supports two major reservoirs (the Guma Valley and Congo Dams) that supply water to Freetown and other communities around the peninsula.



Occupying most of the peninsula's core area is the Western Area Peninsula National Park which is soon to be established as a national park. This forest reserve forms the only remnant of moist closed forest remaining in western Sierra Leone and probably the westernmost in the upper Guinea forest block. Between 150m and 971m of the hills are covered by closed moist forest, whilst along the coastal strip, the forest vegetation is interrupted by laterite plains covered by natural grassland. The relief is generally fairly steep and the hills are drained by a number of rocky permanent or seasonally flowing streams (Okoni-Williams et al. (2005)<sup>2</sup>). It includes roughly 18,000 hectares of high canopy Guinea Moist Forest covering a range of hills that reach heights of up to 971 meters and slope directly to the mangrove-fringed coastline making WAP-NP truly unique in West Africa. At present, roughly 60% of the forested area can be described as pristine and it hosts a number of rare, endemic and endangered and wildlife species such as White-necked Picathartes, Jenkins duikers and chimpanzees. As a result, the Reserve has been identified as a key member of Sierra Leone's eight biodiversity hot-spots which together host approximately 85% of the country's terrestrial biodiversity.



The core area of the Western Area Peninsula is part of the now rare but biologically rich Upper Guinea Forest ecosystem, lauded as one of the world's most important hotspots for biodiversity. At present it is a known refuge for a number of rare, endemic and endangered floral and faunal species including primates, such as: Western Chimpanzees (*Pan troglodytes*), Red Colobus Monkeys (*Procolobus badius*), Black-and-White Colobus Monkeys (*Procolobus badius*), Sooty Mangabeys (*Cercocebus atys*) and Diana Monkeys (*Cercopithecus diana*); other threatened mammals including Leopards (*Panthera pardus*), Jentink's Duikers (*Cephalophus jentinki*), Black Duikers (*Cephalophus niger*) and Maxwell Duikers (*Cephalophus maxwellii*), and; at least 316 bird species including the endangered Green-tailed Bristlebill (*Criniger olivaceus*) and White-breasted Rockfowl (*Picathartes gymnocephalus*). In addition, while a full floral biodiversity study of the area has not yet been possible, of the more than 2000 species of plants occur in Sierra Leone at least 74 species and one genus are endemic, many of which are present in the Peninsula. Furthermore, adjacent to the hills is the Peninsula's coastline with its many rich estuaries and fringe of mangrove islands and swamps which host further rare species including the regionally endemic slender snouted crocodiles (*Crocodylus cataphractus*) and dwarf crocodiles (*Osteolaemus tetraspas*) as well as the only recently

<sup>2</sup> Okoni-Williams, A.D., Thompson, H.S., Koroma, A.P and Wood, P. (2005). Important Bird Areas in Sierra Leone: Priorities for Biodiversity Conservation. Conservation Society and Government Forestry Division, MAFFS.





discovered local endemic 'Freetown long-fingered frog' (*Cardioglossa aureoli*). Finally, many small granite-based islands encircle the peninsula providing habitat for both these and additional terrestrial, bird and aquatic species.

### 2.1.3. Accessibility

The reserve is within 5 km of the centre of the capital Freetown. A motorable road which is currently under reconstruction runs right around the reserve with a number of feeder roads and a few trails within reserve zones. The reserve is one of the attractions to visitors in Sierra Leone, because of the beauty of the undulating forested mountains, from which the country had its name. There are extensive scenic beaches around the coastal areas of the peninsula, where hotels and beach bars can be found.

Some of the most frequently visited locations include the Tacugama Chimpanzee Rehabilitation Centre (about 5 km from central Freetown) and the Guma trail, (the Congo Dam to the Guma Dam), providing visitors some opportunities for watching birds and wildlife. Yawri Bay on the southern coast and Sierra Leone River estuary on the northern coast, are within 40km and 10 km respectively of the WAPFoR.

### 2.1.4 Climate

Generally the Freetown peninsula experiences some of the heaviest rainfall in the country with annual rainfall ranging from 3000-7000mm (Birchall et al., 1979)<sup>3</sup>. Mean daily temperatures vary between 25-30°C in the dry season and 22-27°C in the rainy season. Relative humidity at 1500 hours varies between 45% and 80% annually. The WAPFoR occurs on an exposed part of a large igneous intrusive Precambrian body of layered basic and ultra-basic gabbros.

### 2.1.5 Socio-cultural history of the Western Area

The Western Area Peninsula is the home of many very important historical sites bearing witness to key periods of social change, inter-continental cultural collisions and, perhaps most significantly, the birth of an entirely new and very different society in West Africa. First, it was a key area of exploitation by Portuguese and later British Slave traders, as the many slave dungeons, fortresses and extensive tunnels around the Peninsula and its islands still attest. Second, Freetown later also served as a key base from which the British navy – following abolition in Britain – fought the ongoing trade in slaves by other European powers. Finally, it is one of the world's most important areas with respect to the emergence of the post-slavery era, as the name of the Sierra Leone's capital 'Freetown' indicates – marking a key turning point in history in which freed slaves from diverse areas of the world were encouraged to resettle on the Peninsula, eventually forming a new people, the Krio.



Picture 1 View on Lakka Bay



Picture 2: Bureh Town Estuary

<sup>3</sup> Birchall, C.J., Bleeker, P. & Cusani-Visconti, C. (1979). Land in Sierra Leone: A Reconnaissance Survey and Evaluation for Agriculture. Technical Report No. 1 AG: DP/SIL/73/002. UNDP/FAO 1979.



This newest period in the country' began in 1787 when, with the aid of British philanthropists, the 'Province of Freedom' was established on the Peninsula for around 400 freed slaves from London. In its initial years the settlement met with continual near-disaster inception due to French naval bombardments, diseases and conflicts with the surrounding Sherbro and Temne ethnic groups. In 1792, however, it was consolidated by a second wave of 1,100 freed slaves from Nova Scotia who joined with the original settlers to found the settlement of Freetown – now Sierra Leone's capital city and the oldest urban municipality in Africa. In subsequent decades, the population of Freetown grew significantly as the British, acquiring the Peninsula as a colony in 1808, used Freetown as a base from which to fight the slave trade for half a century. In the process, at the same time as former slave 'maroons' were brought in from the Caribbean, numerous West African 'recaptive' slaves were released from passing slave ships caught by the British navy, many of whom stayed in Freetown. This created a vibrant ethnic mix in the settlement and in 1850 it was reported that over 150 different languages were being spoken in Freetown.



**Picture 3 View from East Freetown - Grafton**

Eventually, however, the diverse newcomers amalgamated with the original resettlers creating a single unique ethnic group with one language – the Krio – and though their cultural and political dominance in the country has waned since independence, Krio culture and achievements are still very much in evidence, not least through national institutions such as Freetown's Fourah Bay College founded in 1827 as the first western-style university in West Africa, but also through many of the cultural foundations of the Peninsula including the unique architecture of distinctive wooden board houses found in old Freetown and other living Krio settlements throughout the Peninsula.

#### 2.1.6 History of the Park

Over centuries of human life on the Western Area Peninsula the forest has been harvested for its timber especially for the construction of shipping materials and construction. It is only since 1916 that the forest has been benefiting from protective measures. The WAPFoR was declared a forest reserve in 1916 and gazetted a non-hunting forest reserve in 1973. The Forestry Department (FD) plans to manage some portions of the reserve as resource areas for ecotourism, fuelwood and timber, and the remaining closed forest as strict nature reserve. The WAPFoR is made up of the core area, the Peninsula Forest Reserve (13,926 ha) and several smaller forest reserve extensions that form separate units for management purposes. These extensions include: Freetown waterworks (1,121 ha), Number 2 River (691 ha), Kent extension (637 ha), Fabaina (378 ha), John Obey (204 ha), Moku Hills (115 ha) and Waterloo (85 ha). In the late 1980's and early 1990's the FD embarked on a fuel wood plantation programme as a step towards a sustainable fuel wood extraction system. Plantations to provide fuel wood for Freetown and its environs with active community participation were established.

During and after the civil war, illegal chain-saw operations increased dramatically. Local community groups e.g. The erstwhile Peninsula Action Group on Environment (PAGE), attempted to police and reduce this activity, but are often frustrated by high level influence wielded by the chain-saw operators. The original boundaries, however, had remained largely respected until the outbreak of the civil war in the 90<sup>th</sup>. The population of the inhabitants of all villages adjacent to the Peninsula forest is estimated at 50,000. The demography of these villages has changed over the years, as a result of the war. Significant number of people migrated into these communities during the periods when Sierra Leone was one of the main tourist destinations in West Africa. The lands that form the



buffer zones are owned by the communities and people from Freetown. Because of lack of the boundary marks, encroachment into reserve areas is common and widespread, especially in most of the extension forests of the reserve. Edible seedpods of *Parkia biglobosa* and fruits of *Parinari excelsia* are some of the wild food resources obtained from the reserve by the communities. There is commercial extraction of the leaves and roots of trees like *Cassia sieberiana* and *Cassia siamea* for medicinal purposes which are useful in treating malaria and many other ailments. Oil from seeds of *Carapa procera* is used to treat stomach aches. Over 25 species of plants were identified as being obtained directly from the forest and used as food species.

The influx of civil war refugees imbalanced the urban planning measurements taken without sustainable planning solutions until today. Hence, the main threat to the Park is generated by urbanization and expansion of the urban settlements. The capital city of Freetown has been increasing from some 600 000 inhabitants in 1995 to today more than 2 million inhabitants on the Western Area Peninsula in 2013<sup>4</sup>. This goes along with improved transportation (vehicle and roads) and the demand for attractive living conditions in the suburbs. The suburbanization of Freetown is immense especially along the beach line and the Eastern wing of Freetown along the access road to the provinces. Furthermore the Park is endangered due to its richness in raw materials; among others Nickel, Bauxite, Granite, and Plutonium. In 2013 at 5 individual sites industrial stone production was on-going: Hamilton (Chinese quarry), Baw-Baw (CSE quarry), John Obey (sand-mining, Lebanese quarry), Kent Junction (Fullah man) with two more concessions planned: Moku Hills (Lion Corporation) and one Chinese quarry. Whereby the quarries are established at the edge of the forest only, they create serious impact on biodiversity, beauty and land-use.

In addition to the above, the Western Area National Park hosts the two main sources of water supply to the greater majority of the population in Freetown and its surrounding communities. The dams provide water for both domestic and commercial uses (in some cases). The area forms the only remnant of moist closed forest remaining in western Sierra Leone (and probably the westernmost in the Upper Guinea forest block). Between 150 m and 900 m the hills are covered by moist forest, whilst along the coastal strip, the forest vegetation is interrupted by laterite plains covered by natural grassland. The relief is generally fairly steep and the hills are drained by a number of rocky permanent or seasonally flowing streams. The reserve supports two major reservoirs (the Guma Valley and Congo dams) that supply water to Freetown and other communities around the peninsula.

The Western Area Park is not a site for fuel wood production; however, specifically the fishing communities do depend on fuel wood to conserve their catch. Especially in the South of the Park still plenty of fuel wood is traded. Fuel wood production for household patterns is largely under control by today.

In 2007 a new forum of green actors, the Environmental Forum for Action (ENFORAC) has been established and it comprises a consortium of green actors from different groups in society including environmental NGO's, the University and Media actors. ENFORAC is currently engaged in developing partnerships and programmes for the conservation of WAPFoR, especially the establishment of a biodiversity learning centre. A chimpanzee rehabilitation centre has been established to provide semi-wild habitats for orphaned chimpanzees, which are victims of the pet trade. The long-term aim of the centre is to reintroduce these chimps into their natural environment and through awareness programmes reduce the incidence of pet trade for chimps.

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<sup>4</sup> At the National Election 2012 more than 900 000 voters were registered in the Western Area Peninsula



### 2.1.7 Deforestation/ Degradation

Many parts of the Western Area Peninsula continue to experience extensive and intensive deforestation from severe exploitation by illegal woodcutters, charcoal **producers** and stone miners. Visible evidences/degradation of perennial flows from naturally forested hills, which have been carefully stripped of its cover, can be seen from numerous extraction tracks leading up to the watershed. The forest has been cleared all the way along the mountain villages, leaving bare slopes landslides (Charlotte Falls) and mud slips (at Leicester) as a result of very large scale erosion, indicating the fragility of the slopes. Further landslides may be imminent considering the current extent of deforestation of hill slopes.

The extent of soil erosion on the hills slopes of WAPFR is evident around the estuary of the Sierra Leone River, which is loaded with brown silt up to half a kilometre into the sea brought down by active erosion during heavy rains.

There are four main causes of deforestation-increased land clearance for farms, new settlement, mining and illegal logging. Much of the forest in the interior of the reserve remains fairly pristine, presumably because the steep/slopes render these areas inaccessible. On the other hand most of the forest extensions and buffer zones outside the reserve have been degraded to secondary farm bush. This is mainly due to slash and burn farming which is widespread around the margins of the reserve.

Although, prohibited by law in this reserve, hunting is intensive and is carried out mostly by local inhabitants and people believing to "hunting society" in and around Freetown. About 35 such societies occur in Freetown alone and every village around the reserve has its own society (one or more). These societies operate year round and each group makes at least four expeditions to the reserve, with an estimated off take of more than 10 animals (displayed) each tome. This represents a lot of animals killed on a yearly basis. The leopard that inhabited this forest is now thought to be extinct.

Illegal cutting of timber, using chain-saw is presently increasing. Woodcutting for fuel wood and charcoal production has a major impact on the forest, especially on the more accessible slopes and areas close to Freetown and Tombo.

One of the major means of livelihood of the seaside villages around the peninsula is fishing and fish smoking, which is highly fuel wood consuming and contributing to the reduction in the density (and availability) of some species. A species like the *Uapaca guineensis* has mostly been wiped out of the WAP-NP. It is feared that similar fate may befall the other B preferred fuelwood species found in this area.

Although, platinum and gold mining have ceased in the WAPFR, granite mining for export and stone quarrying for local housing construction is continuing.

Okoni-Williams (2003)<sup>5</sup> estimated a 69% increase in urbanization between 1986 and 2000. Increased rural-urban migration has resulted in rising demand for shelter and hill slopes are being cleared at an alarming rate to create building sites as the city expands. The clearing of the hill slopes has led to increases soil erosion leading to siltation of the shores of Freetown. This threatens the ecology of the creeks and bays and even the natural harbor in the long run. Housing construction on the hill slopes is expected to increase when the peninsula road presently under construction *completed*.

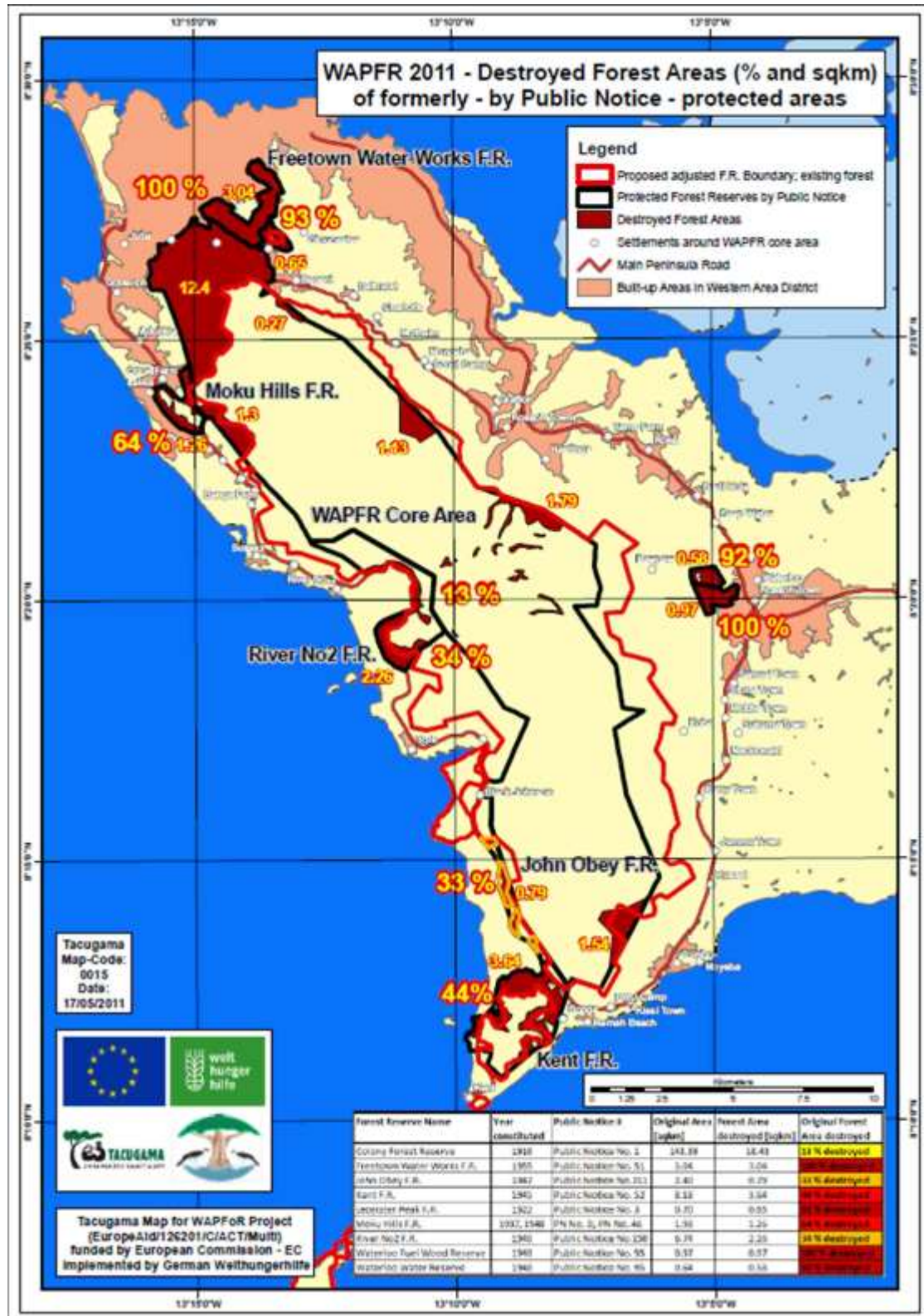
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<sup>5</sup> Okoni-Williams, A.D. (2003). Anthropogenic effect on diversity and spatial patterns of trees, shrubs and birds of a forest reserve in Sierra Leone. Unpublished Master of Science Dissertation, University of Cape Town, South Africa.





The population of the inhabitants of all villages adjacent to the Peninsula forest is estimated at 50,000. The demography of these villages has changed over the years, as a result of the war. Significant number of people migrated into these communities during the periods when Sierra Leone was one of the main tourist destinations in West Africa. The lands that form the buffer zones are owned by the communities and people from Freetown. Because of lack of the boundary marks, encroachment into reserve areas is common and widespread, especially in most of the extension forests of the reserve.





### 2.1.8 Boundaries

A new boundary, excluding human settlements, was drawn up in 2011. The new boundary has been proposed by the project “Conservation of the Western Area Peninsula Forest Reserve (WAPFoR) and its Watersheds”. The proposed boundaries were discussed with adjacent communities, the Forestry Department of the Ministry of Agriculture, Forestry and Food Security (MAAFS) and the Ministry of Lands, Country Planning and Environment (MLPCE). Furthermore the concept of the new boundaries in form of the Demarcation Report has been presented to His Excellency the President of Sierra Leone as well as to his full cabinet. Also the new boundaries had been subject to a cabinet meeting in April 2012 and been approved. The proposal of the boundaries has followed the below systematic.<sup>6</sup>

- ✓ Capturing the pristine tropical rainforest that is remaining
- ✓ Boundary oriented along horizontal lines where terrain gradient is getting steepest, as difficult terrain is a natural protection for the forest against encroachment
- ✓ Protection of catchment areas
- ✓ Avoiding settlement – no resettlements are necessary
- ✓ Creation of buffer zones
- ✓ Leaving land for urban/ rural development
- ✓ Including Banana Islands

Concrete pillars and signboards have been erected along the 90km long new boundary. Also 20,000 trees of *Tectona grandis*, *Mangifera indica* and *Heritiera utilis* have been planted along the boundary to serve as live markers.

As a result of the boundary re-demarcation, the size of the proposed Western Area Peninsula National Park arrived to 18,336 ha (the size before the re-demarcation was 17,500ha).

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<sup>6</sup> For more information see: WAPFoR Project (2011): Demarcation Report. Freetown.



Map 3 The Western Area Peninsula National Park





## 2.2 Biodiversity of the Area

The Western Area Peninsula Forest Reserve (WAPFoR) in Freetown Sierra Leone constitutes one of the westernmost parts of the Upper Guinea forest block. It is highly threatened and is being degraded and deforested with increasing vigour from logging, woodcutting, charcoal burning and construction. The spate of these pressures on the forest if unchecked and uncontrolled will lead to the total disappearance of the forest cover. It must be noted that this forest holds Guma Valley which is the main water reservoir for the larger population of Freetown, the capital city. The disappearance of the forest carries with it the loss of biodiversity and gene pool. There is therefore an urgent need for regulatory policies to ease these pressures and ensure proper management of the forest.

In 2012, Welthungerhilfe (WHH) through the WAPFoR project and in a bid to provide baseline biodiversity data through systematic survey commissioned the Department of Biological Sciences at Fourah Bay College to conduct a rapid biodiversity survey of the National Park. The overall aim of the survey was to conduct a general assessment of the biodiversity status of the park. The report of this survey contains data on WAPFoR's insects, avifauna and flora. Similarly, a recent study conducted by Tacugama gives a detailed report on the mammal species found in the peninsula forest. Although these reports together present a good baseline biodiversity profile of the reserve, there is still lack of data for some groups like amphibians, reptiles and fish. Below is a summary of the findings, more details can be found in the reports submitted to Welthungerhilfe (WHH).

### 2.2.1 Flora

A total of 128 species of trees  $\geq 5$ cm diameter at breast height (dbh) belonging to 33 families were recorded in the Western Area Peninsula Forest Reserve. The family Leguminosae had the highest number of species (28) followed by Euphorbiaceae (14) and Rubiaceae (12). The families Anisophylaceae, Bombaceae, Chrysobalanaceae, Connaraceae, Gentianaceae, Ixoranthaceae, Melastomataceae, Myristicaceae and Palmae were each represented by one species only.

The diversity index of tree species calculated for the entire WAPFoR area is 3.6, indicating that the overall tree species diversity in the WAPFoR is appreciably high. The lowest diversity was around Kent and the highest was around Kossoh Town. The trend in plant species diversity observed is partly due to the kind and extent of pressure by the respective communities around the Peninsula forest. Thus the presence of a high number of tree species in and around No. 2 River forest suggests that conservation efforts in this community is contributing positively to the health of the forest ecosystem.

### 2.2.2 Plant species importance and distribution

Importance value indices (IVI) calculated for the entire WAPFoR reveals four tree species with the highest IVI and these include *Anisophylea laurina* (28.5%), *Phyllocosmus africanus* (27.9%), *Parinari exelsa* (25.6%) and *Daniella thurifera* (17.2%). This is consistent with the expectation that multiple species dominance prevails in most tropical forests types. About 23 % of the tree species recorded are rare with low IVIs of 0.3% or less.

Local species endemism was observed within the forest. No.2 River forest plot had the highest number of species (9) endemic to it whereas only one species was endemic to Hamilton. Information on rare and common tree species alike can be useful in managing wildlife habitat as well as provide cultural resource values of these trees. The quantitative characters related with density, dominance and diversity of these trees act as indicators of changes and susceptibility to anthropogenic stressors on the WAPFoR. The frequency distribution of tree species suggests that a good number of them have high frequency as would be expected in typical species-abundance distributions.

The conversion of the Western Area Peninsula forests into various land use systems created some impacts on the flora. As the forest is composed of high percentage of species rarity (23%) and the





study plots composed of local endemic species they increase our concern for species conservation in the WAPFoR.

### 2.2.3 Birds

The result of the survey showed that the WAPFoR still holds a reasonable diversity of avifauna, considering that 163 species belonging to 33 avian families were recorded over a coverage of just under 1.5% of the 17,800 ha of the reserve. The number of species encountered represented 43.6% of the species known for the WAPFoR. The species recovery curve indeed showed that the species that could potentially be sampled are by no means exhausted. Nevertheless, the resident species accounted for 90% of the number of species encountered, but only 45% of the resident species that are known to exist in the reserve.

Four of the five IUCN red-list species were encountered in the sampling as follows: White-necked Picathartes *Picathartes gymnocephalus* (Vu), Green-tailed Bristlebill *Bledia eximia* (Vu), Yellow-casqued Hornbill *Ceratogymna elata* (NT) and Rufous-winged Illadopsis *Illadopsis rufescens* (NT). The fifth species *Turatis boubou* was not encountered, probably because it is not strictly a forest interior species. There was a large variance in species composition between sample grids and so was percentage species representation of the avian families encountered, which is an indication of the degree of dissimilarity of the avifauna in different parts of the reserve that need to be ascertained by further research.

### 2.2.4 Insects

The Relative Abundance of the three invertebrate classes covered during this survey is above average considering the area covered. There is little information on species vulnerability assessments of insects of West Africa especially the important groups like butterflies, dragonflies and beetles. This however does not mean that there are no species that are endemic to Guinea Savanna Biome, which covers Sierra Leone. A total of 67 species of butterfly, 23 species of beetles and 9 species of dragonflies were recorded in the survey. The two butterfly species, *Euphaedra hastiri* and *Euphaedra afzeli*, recorded in the forest reserve are known to be endemic to the West African region.

The degradation of the habitats generally leads to species depletion within any ecosystem. It is therefore important that measures be put in place to conserve as many of the invertebrate species as possible. This is because any significant reduction in the species diversity and/or abundance may not be able to regenerate itself and consequently, the ecosystem health will be greatly affected.

From the surveys conducted it can be seen that among the patches of forests, there are areas that still hold a good number of organisms especially butterflies. The presence of butterflies particularly in large numbers indicates a healthy environment and healthy ecosystem. Areas rich in butterflies are rich in other invertebrates, which comprise over two-thirds of all extant species. They have been used by ecologists as model organisms to study the impact of habitat loss and fragmentation, and climate change.

### 2.2.5 Mammals

The camera-trapping survey report of 2012 by Tacugama indicated relatively high presence and abundance of mammal species of global conservation concern in WAPFoR (Table 1). Apart from rodents which have a stable population trend, there seems to be a decreasing trend in the population of some mammal species in the peninsula forest. However and in spite of the widespread anthropogenic activities in the forest, species like Maxwell's duikers, giant-pouched rats and African brush-tailed porcupines are still widespread and showed good relative abundance indices. In addition, the Slender-tailed squirrel *Protoxerus aubinnii* and African Giant squirrel *Protoxerus stangeri* were observed during the 2012 biodiversity survey commissioned by Welthungerhilfe and conducted by the Biological Sciences department at Fourah Bay College. Furthermore, the presence



of forest-dependent species such as Bay Duiker and Black Duiker, including Jentink's duiker that was thought extinct in the WAPFoR suggests a healthy forest ecosystem in the peninsula forest.

Due to the limitation of the cameras to capture small and arboreal mammals, it is obvious that there could be a broader spectrum of mammal species in the WAPFoR than has been recorded in the study.

**Table 1. IUCN 2012 conservation status for each of the most representative mammal species identified in the WAPFR**

EN: Endangered VU: Vulnerable NT: Near threatened LC: Less concern

Common name	Scientific name	IUCN status 2012	Population trend
<b>PRIMATES</b>			
Chimpazee	<i>Pantroglodytes verus</i>	EN	Decreasing
Sooty mangabey	<i>Cercocebus atys</i>	VU	Decreasing
Campbell's monkey	<i>Cercopithecus campbelli campbelli</i>	LC	Unknown
Western spot-nosed monkey	<i>Cercopithecus petaurista buettikoferi</i>	LC	Unknown
<b>ARTIODACTYLIS</b>			
Jentink's duiker	<i>Cephalophus gentinki</i>	EN	Decreasing
Maxwell's duiker	<i>Philantomba maxwelli</i>	LC	Decreasing
Black duiker	<i>Cephalophus niger</i>	LC	Decreasing
Bay duiker	<i>Cephalophus dorsalis</i>	LC	Decreasing
Bushbuck	<i>Tragelaphus scriptus</i>	LC	Stable
<b>RODENTS</b>			
Giant-pouched rat	<i>Cricetomys emini</i>	LC	Stable
Fire-footed rope squirrel	<i>Funisciurus pyrrhopus</i>	LC	Stable
Red-legged sun squirrel	<i>Heliosciurus rufobrachium</i>	LC	Stable
African bush tailed porcupine	<i>Atherurus africanus</i>	LC	Unknown
<b>SCALY ANT EATERS</b>			
Tree pangolin	<i>Phataginus tricuspis</i>	NT	Decreasing
<b>CARNIVORES</b>			
Pardine genet	<i>Genetta pardina</i>	LC	Unknown
Marsh mongoose	<i>Atilax paludinosus</i>	LC	Decreasing
Slender mongoose	<i>Galerella (Herpestes) sanguineus</i>	LC	Stable



African civet	<i>Civettictis civetta</i>	LC	Unknown
Cusimanse	<i>Crossarchus obscurus</i>	LC	Unknown
African palm civet	<i>Nandinia binotata</i>	LC	Unknown

Source: Adapted from Tacugama 2012 report

#### 2.2.5 Amphibians and Reptiles

To the best of our knowledge, no comprehensive inventory data of amphibian and reptile species occurring in WAPFoR exists. However, previous surveys have shown that an endemic amphibian toad species *Cardioglossus aureoli* occurs in the Peninsula forest. Presently, there is an on-going survey of reptiles and amphibians in the western area including WAPFoR commissioned by the Global Environmental Facility to Reptile Sierra Leone (RAP-SL).



## 2.3 Governance of the Park

### 2.3.1 The Legal Framework

The Wildlife Conservation Act of 1972 and the Forestry Act of 1988 are the two main legal frameworks in regards to biodiversity conservation and protected areas management in Sierra Leone. Under both laws, the Forestry Division (FD) of the Ministry of Agriculture, Forestry and Food Security (MAFFS) is the national level institution mandated with the management responsibility of protected areas in Sierra Leone. Both laws are considered to be outdated and are currently under review. This process was started by the development of a new Conservation and Wildlife Policy as well as a Forestry Management Policy, which were both passed in 2011. Based on the approved policies, both laws will be amended in the near future.

Additionally there are plans to create a National Protected Area Authority, mandated with the regulation and management of protected areas and biodiversity related agendas on other lands. Furthermore, a national Conservation Trust Fund shall be created to fund the newly established Authority. The legal act, in this regard, was passed in 2012.

The most striking difference between the Wildlife Conservation Act of 1972 and the new Conservation and Wildlife Policy is that the general paradigm in protected areas management in Sierra Leone has shifted from a purely protectionist approach, which was based on excluding people from natural resources, their management and governance. This has resulted in the alienation of people from protected areas. The new policy embraces the inclusion of stakeholders and recognises their rights, which is manifested in the following governance principles:

- Rule of law and its effective enforcement, including national policies and statutory instruments, ratified international agreements, and local, traditional and community-based rules and arrangements supportive of wildlife management.
- Devolution of authority for wildlife management to the most appropriate level for achieving policy objectives.
- Participation by and access to information for all relevant parties to wildlife management decisions and their implementation, and informed consent of those parties directly affected by those decisions.
- Promotion of an informed and knowledgeable population on wildlife conservation issues.
- Clear definition of roles and responsibilities among all relevant partners including all levels and agencies of government, traditional authorities, communities, civil society, academic institutions and the private sector.
- Application of conflict management methods that protect stakeholder interests, but develop consensus solutions and mechanisms that enable agreed conservation actions to continue.

The Local Government Act of 2004 re-established the Local Councils in Sierra Leone. The Act states the function of the District Council as *being the highest political authority in the locality and shall have legislative and executive powers to be excursive and shall be responsible for promoting the development of the locality and the welfare of people in the locality with the resources at its disposal and with such resources and capacities as it can mobilise from the central government and its agencies, national and international organisations and the private sector.*

In this regard, the Western Area District Council is the main institution coordinating sustainable development within all sectors of the economy on District level. Furthermore, the District Council is an important linkage between local people in villages, wards and chiefdoms with national government institutions through Chiefdom Councils. However, it has to be mentioned that the District Councils are chronically underfunded and lack the human resources to effectively fulfil their mandate. In addition they stand in concurrence with the national ministries in Freetown.



### *2.3.2 Role and Responsibilities of various stakeholders*

The sustainable management of the WAP-NP requires many stakeholders ranging from community people, civil society organizations and government institutions. In Sierra Leone protected areas, are set aside for conservation under the National Parks and Wildlife Act, which are managed by the National Protected Areas Authority (NPAA) of the MAFFS. These areas play a critical role in protecting biodiversity as well as natural and cultural heritage.

#### **Ministry of Agriculture Forestry and Food Security (MAFFS)**

- MAFFS should oversee/supervise/control and give technical advice to the park management
- The ministry should ensure that funds are allocated for the park from the national budget

#### **Academic institutions**

- They should conduct research and education programmes
- They should help in the development of the policy documents

#### **Responsibilities of the NPAA are**

- Establishing strategic priorities for additions to the reserve system
- Assessing, acquiring and gazettement lands for inclusion in the reserve system
- Managing the pressures on reserves, including fire, pest animals and weeds
- Providing opportunities for people to visit and enjoy the reserve system while minimizing their impact on its conservation
- Protecting objects, places and sites of historic heritage significance within the reserve system
- Involving communities in reserve management, including forming co-management partnerships with the forest edge communities

#### **Civil Society Organizations should responsible for:**

- Researching, monitoring and evaluating the success of conservation activities
- Awareness, education and sensitization campaign of protected areas
- Advocate for better conservation policies and regulations
- Provide vital information on conservation activities to the public
- Dialogue with other stakeholders to ensure sustainability of the environment

#### **Forest edge Communities/tribal heads should:**

- Ensure that all the natural resources in the reserve are effectively and efficiently utilized
- Create awareness, education and sensitization campaign for the efficient use of the protected areas
- Establish community by-laws to ensure economic and environmental sustainability of the park

#### **Environmental Protection Agency (EPA) has the responsibility of seeing that:**

- All environmental laws are properly implemented alongside with that of economic development
- Monitoring and evaluating all environmental related activities in the park

#### **Role of Western Area Rural District Council (WARDC)**

- As custodian of the WAP-NP, the council should ensure that all the development programmes of the park are in line with the council development plan



### 2.3.2 Infrastructural and institutional development of a Park Headquarters

The current capacity of the Forestry Division, the central government body legally in charge of forest reserves and national parks, is not sufficient. It has limited funding and staff and very limited experience with park administration and management, as until recent months, Sierra Leone has had only one national park (Outamba Kilimi), established in the remote and sparsely populated Tambakka chiefdom in the far north of the country. As a result of these difficulties, it is heavily reliant on foreign donors and NGOs for protected areas management and monitoring. This is distinctly problematic, as the long-term sustainability of these important ecological sites will require stable management institutions and funding operated by adequately capacitated government institutions.

This issue has also become politically acute in recent years, due to the increasing push by the highest echelons of the Sierra Leone Government to ensure greater environmental protection. At present, there are focused initiatives to redraft the Wildlife Conservation and Forestry Acts as well as to create a National Protected Areas Authority under the Forestry Division and a Conservation Trust Fund. More dramatic, however, are the recent announcements in the *Sierra Leone Government Gazette* of the intention to redesignate WAPFoR and the Loma Mountains Forest Reserve as national parks, almost immediately following declaration of Gola Forest National Park, the nation's second ever, in late 2011. This rapid proliferation of national parks is particularly impressive, considering that previously only one park had been declared during the 40 years since the legislation for the creation of national parks was established back in 1972.

Despite these great achievements, development of institutional capacity is still lagging, and major efforts are needed to support the Forestry Division to take a more active and direct role in the management of the country's protected areas. WAPFoR is the most logical location for the piloting of such a move, given its close proximity to GoSL headquarters in Freetown, reducing the logistical difficulties of its management and monitoring. Though local capacity in the peninsula has been improved in some respects through the existing WAPFoR project, like other protected areas in the country, the reserve's overall management is still almost exclusively reliant on from foreign staff and consultants. There is an urgent need to capitalize on the current strong political will for protected areas consolidation in the country, and transition WAPFoR from the objective of saving the forest reserve to the development of long-term national park administration capacity within GoSL.

Currently a Park HQ building is under construction at Sugar Loaf. This will relocate the central administration of WAPFoR away from Welthungerhilfe office in Freetown to a more strategic permanent location. First, The Headquarters will be constructed using environment best practices including full use of solar power and green architectural design. Two vehicles and three motorbikes will be procured to provide transportation for the HQ's operations.

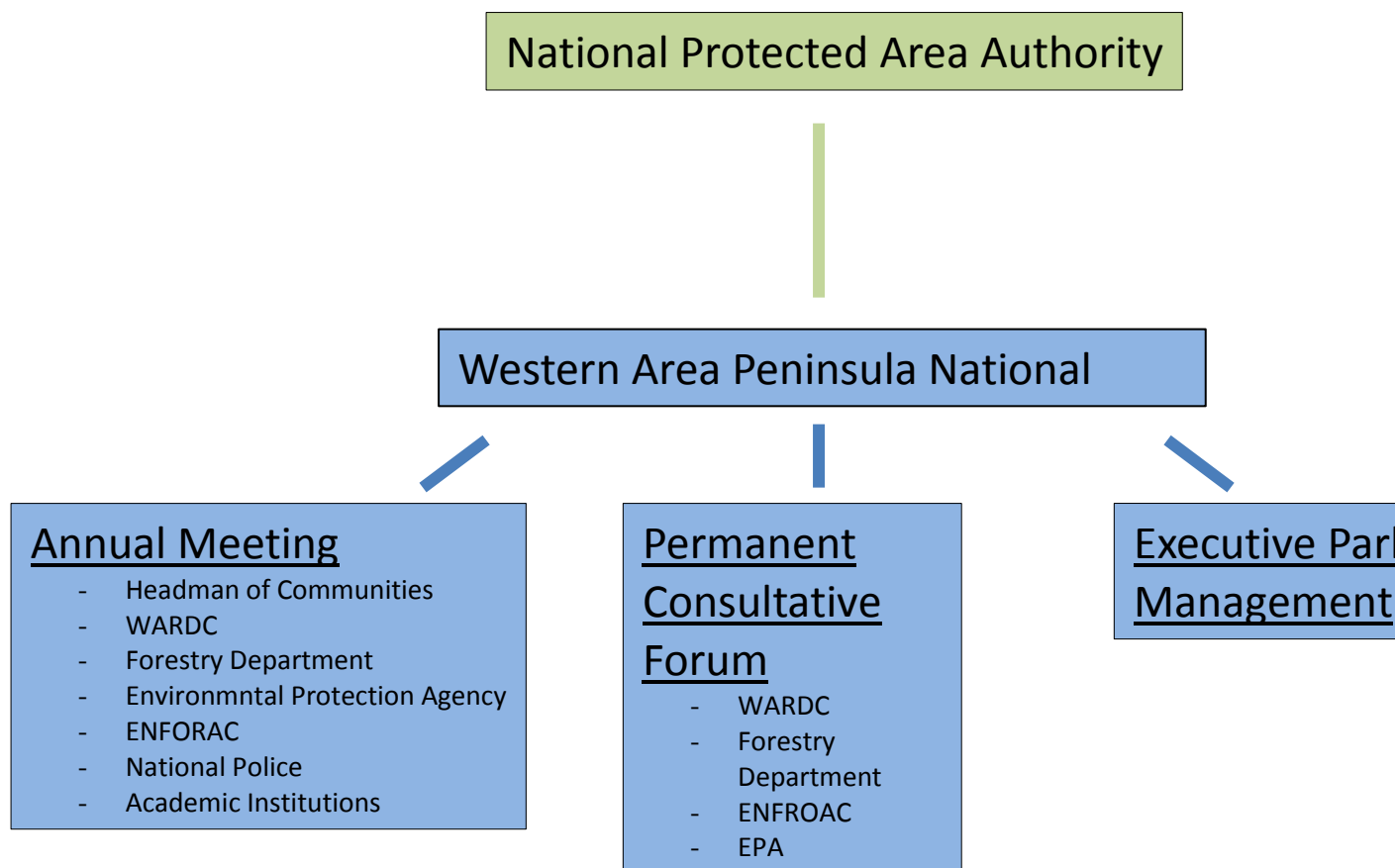
### 2.3.3 Governance framework

Governance is the means for achieving direction, control, and coordination that determines the effectiveness of management. The importance of a well-balanced governance structure becomes apparent when there are contested resources and areas and/or included lands and insufficient financial, material and human resources available to the state to carry out its management role. Hence it is necessary to develop a governance framework for the protected area and its immediate surroundings.

The WAPFoR project has established a Park Management Centre at Sugar Loaf. The daily management of tasks has been transferred to this location in 2013. The project has established a park management structure which underlies the National Protected Area Authority (NPAA). The Executive Park Management supervises the day-to-day implementation. As a permanent consultative body the institutions of WARDC, Forestry Department and ENFORAC are instituted. Furthermore the Executive park Management organizes an annual meeting between the headmen of communities adjacent to the WAP-NP, WARDC, the Forestry Department, EPA, ENFORAC, the National Police and Academic Institutions.



The outlined governance system is coming into force the 1<sup>st</sup> January 2014.



**Figure 1: Schematic governance structure: Western Area Park Management System**

Successful park management requires numerous programs including ongoing ecological and biodiversity research, boundary policing, community engagement, forest-friendly livelihoods promotion and, perhaps most critically, continuous and sustainable financing. However, responsibility for the establishment such programs should not be shouldered by the park administration alone, but should be conducted through strategic partnerships. For example enhanced community livelihoods should be shared through strategic partnerships with NGOs and community based organizations as well as local and international research institutions. Facilitating such partnerships is a key input in itself.

#### *2.3.4 The Executive Park Management*

The Executive Park Management includes the different components of the park management plan. Each component is to be managed by an individual body. The components are to be coordinated by an overall park manager mandated by the National Protected Area Authority (NPAA).

The tasks and mandates to manage the WAP-NP efficiently require support of different parties and agencies. During the participatory elaboration of the park management plan a sector approach under the mandate of the national protected Area Authority (NPAA) has been chosen. Individual sector implementation plans have been listed in the attached work plan.

The park management is supported by key facilities and infrastructure. Among the most important are:

#### **Park management Centre at Sugar Loaf**

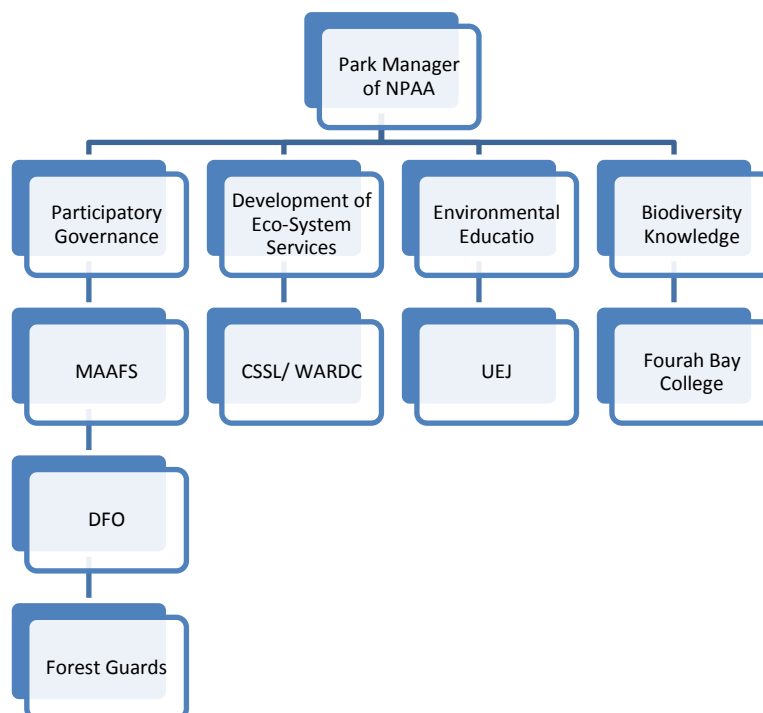




- The Executive Park Management uses the centre for the security management, enforcement and control of the security staff in the Park

### 34 Forest guards

- The forest guards are responsible for protecting and manning the forest. They should protect the newly demarcated boundary as well as all the water catchment areas. They should arrest and prosecute any defaulters



**Figure 2 Executive Park Management (proposed structure)**

### 13 man of the Operational Support Division (OSD)

- Those men are para- militarian support division working closely with the forest guards

### 6 Watch Towers

- The watch towers/posts are used as shelter for the forest guards while on duty. These posts are built to intercept Hunters, Power Saw holders, Wood cutters, Land grabbers, Charcoal burners, Stone miners, Illegal agriculturists and many other forest defaulters. These posts are equipped with different tools (GPS, lights, lock books, cameras, binoculars, etc.)

### Tacugama Chimpanzees Sanctuary

- Tacugama is located on the immediate edge of the forest reserve, allowing for more direct monitoring of park monitoring. The sanctuary could also provide research, supervisory and of other services. The management of Tacugama can do advocacy, awareness raising campaign, education and sensitization programme.

### WAPFoR Demarcated Pillars

- The pillars are used as physical land mark structures to identify the boundary between the core forest and the buffer zone areas





### Water Dams

- The national park includes 61 watersheds that supply a network of mini-dams, a growing population of 2 million today for decades. Today, in addition to the two major dams on the capital available (Guma and Congo) about 25 mini dams, which have already been built during the colonial period. It use gravity and pressure pipes connecting the dams over the places. There is public water points, for a private service charges levied by local water companies. Are also currently two hydropower plants under construction (2 MW and 5kw). Water supply also promotes urban agriculture, which in turn ensures food safety. This sustainable features can be ensured only by the protection of the forest and the watershed. Both have direct effect on the position of women in villages as traditional verantortlich for the supply of water. The WAPFoR project developed 10 more additional community water dams at Kossoh Town, Hastings, Deepeye Water, Macdonald, Koba Water, Tombo, Bureh Town, York, River No. 2 and Baw-Baw.

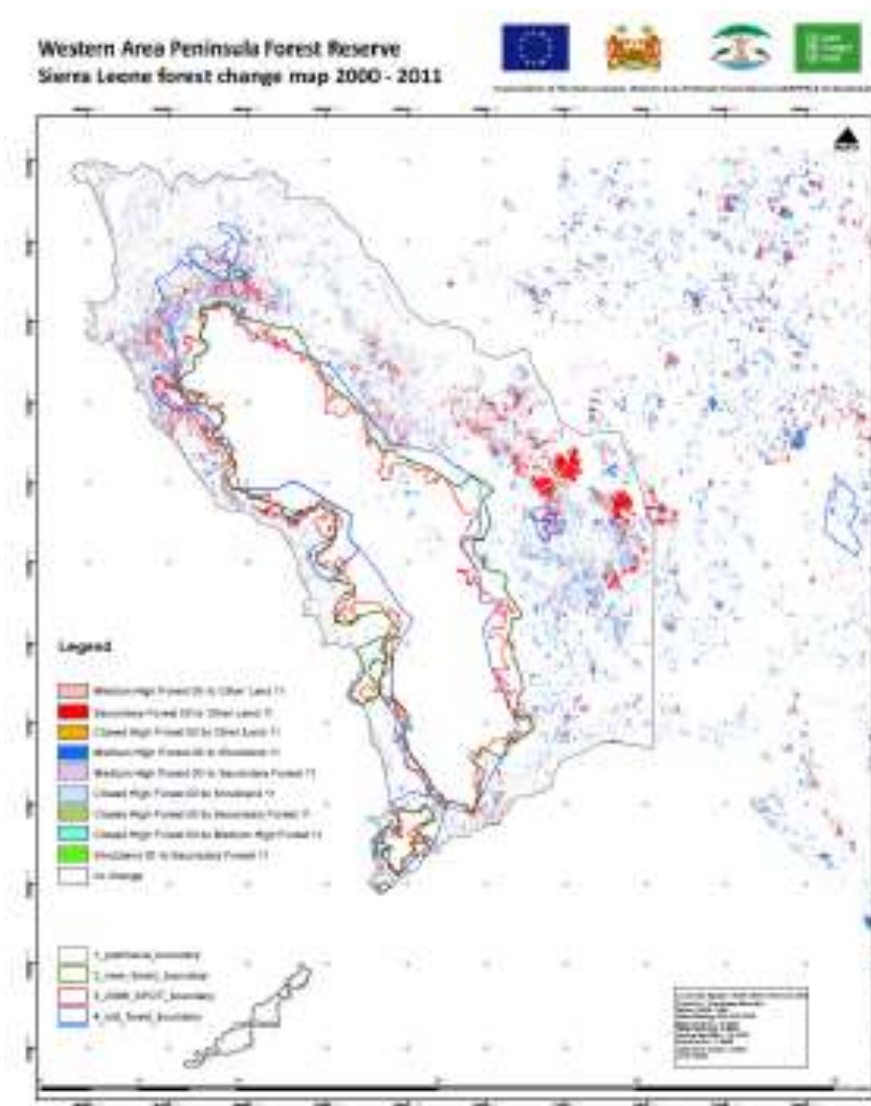
## 2.4 ECO-System Services

### 2.4.1 REDD+

WAPFoR is under threat especially from urban expansion into the reserve and land speculation. The population of the Western Area Province has increased by more than 70% from 1985-2004. Since Freetown is surrounded by sea, its expansion is merely on the cost of the forest re-serve.

From 2000-2010, about 4,600 ha (equal to 8.7%) of forests were lost on the Peninsula. The deforestation has doubled from the period 2000-06 to 2006-11. 3,125 ha of the old forest reserve have been encroached. A conservative estimate of the historical emission, caused by deforestation during the period 2000-10 is close to one million tCO<sub>2</sub> for the whole Peninsula and about 160,000 tCO<sub>2</sub> for the Reserve.

An avoided deforestation project is to be registered under VCS. The project area will be the new forest boundary of 2011 proposed for gazettement which covers 18,336 ha. The area is suitable/eligible for a REDD project, since it is still covered with intact natural Upper Guinean Rainforests (longer than 10 years), has high carbon stocks especially in the core zone and is under high threat of deforestation through urban expansion being located so close to the capital Freetown. The area can relative easily be managed since it is quickly accessible from Freetown and has a modest size. It receives high attention from policy makers, especially since it has an important watershed function for Freetown, therefore the conservation prospects are quite good, provided political will re-mains exalted.



Map 4 Sierra Leone Land Change Map 2000 - 2011



The landscape value provides an unique scenery of forested hills reaching down to splendid sand beaches. Before the civil war, the beaches of the Western Area Peninsula have been well developed to cater for tourism. By keeping the forested hills intact, the beaches will retain their attractiveness for a growing tourism industry.

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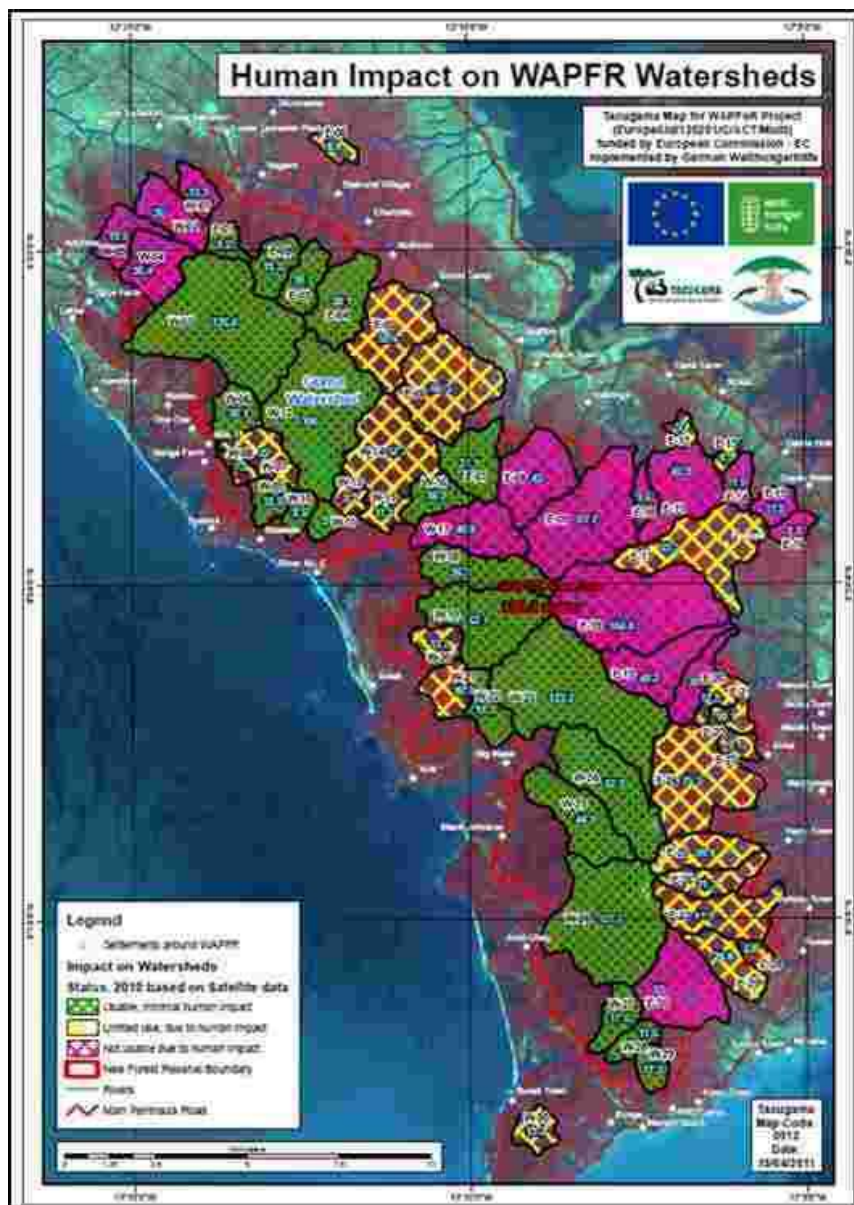
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to a water tank/ storage of 15 – 20 000 gallons capacity; water is treated chemically and the supply to community water points is enabled. At termination of the WAPFoR project with its current EU funding 18 out of 50 communities around WAPFR will profit from an improved water supply system. The average costs for the above mentioned system is 25 000 USD installed on non -profit rates for each system.

#### Main Facts:

- 20% of population of Sierra Leone depend on WAPFR water supply
- Demand of water in the Western Area Peninsula is 26 million gallons by day, current supply only 14 million gallons: minus of 12 million gallons
- Guma Valley Catchment Area is only the 5th biggest on Western Area Peninsula. There is a potential to develop further dam areas
- Each rural community around WAPFR is blessed by at least one stream supplying their community; mini dams (4-10m) for water supply can be easily developed. A dense network of mini dams is possible.
- If managed properly everyone on the Western Area peninsula can have enough water for his family—every day
- All of these can only happen if the Western Area Peninsula Forest is protected







#### 2.4.3 Tourism as lucrative eco-system service

Sierra Leone's tourism industry is still recovering from the destruction and loss in subjective security feeling by visitors, caused by the civil conflict which came to an end in 2002. Although the total arrivals of non-residents at Lungi International Airport increased from 2011 to 2012 by 14% to 59 730 arrivals, only 9 464 indicated traveling for pure leisure reasons. In 2012, the tourism sector, including hotel accommodation, restaurant, transportation and souvenirs accounted for 41.7 million US Dollar of revenue for the country's economy, excluding additional revenue from sources such as GST, corporate taxes and licenses fees from the National Tourist Board.

The Western Area Peninsula (WAP) has many advantages compared to other destinations within Sierra Leone, and most of the visitors spend much time in and around Freetown. The advantages of the WAP are:

- a) Closeness to Freetown → easy access + good accommodation facilities;
- b) Diverse environment (e.g. beaches, forest, mountains, mangrove swamps);
- c) Biodiversity Hotspots;
- d) Historic importance (e.g. Sherbro, Krio, Slave and Colony history).

No central park management is in place yet, so that communities and tourism facilities in and around the forest reserve conduct their individual activities, also within the forest (e.g. hiking, camping, Chimpanzee sanctuary), without any guidelines or code of conducts.

The park management plan would be the central point of departure for all activities in the national park, trying also to include adjacent activities. This includes, but should be possibly extended to other activities related to the aims and objectives of the park management plan:

- Elaboration of Rules and Regulations for Visitors;
- Distribution of Official National Park Documentation (e.g. postcards, posters, flyers, brochures regarding biodiversity and others);
- Construction of camping sites within the national park (along the trails);
- Clearing of trails (this could be in partnership with adjacent communities).

The Western Area Peninsula though would become an even more attractive tourist destination. Although the national park does not possess a large amount of highly visible big mammals (chimpanzees and perhaps duikers are the only mass-marketable mammals), the combination of biodiversity and historical sightseeing would be the key to success. The listing of the WAP-NP on the World Heritage Site would also increase the flow of incoming visitors.

The Peninsula has many monuments linked to the local Sherbro and Krio history, and is an important location for relics from the slave era and the time of British colonisation. Like the Apartheid museum in Johannesburg, South Africa, the national park could also include a museum on the civil conflict in Sierra Leone (1992-2002), with special attention to the role of the Western Area Peninsula. This would turn the cruel history into something positive; many visitors would be interested to hear about, because that is what people think of when they hear the name "Sierra Leone".



## 2.5 Threats to biodiversity reduction assessment

To have a thorough analysis of the threats on the biodiversity, the Threat Reduction Assessment (TRA) approach for conservation of the WAPFoR was used as a tool for monitoring the threats in the park. The TRA was primarily developed as a monitoring tool for conservation projects and is also considered as part of a monitoring system for WAP-NP project in the future, alongside other monitoring system components. It is a simple tool designed (by Richard Margoluis and Nicky Salafsky Biodiversity Support Programme) to identify threats and quantify them in terms of their proportion of habitats (area affected), intensity (the severity/impact on biodiversity) and the urgency (how immediate is the threat).

The TRA approach has series of advantages over biological approach in the sense that the TRA approach can measure changes over short time periods, whereas biological approach could not measure changes within brief periods, especially in relation to naturally occurring fluctuations.

To make the exercise more precise and simple for the participants the park was divided into Northern and Southern Groups with representatives from communities, District Council, MAFFS, FBC, Gola Rain Forest National Park, ENFORAC, Tacugama and BRACO. The exercise was conducted separately in these two groups. The following threats were identified:

**Land grabbing:** The review of all land related policies/laws with government will enhance effective use and land management for equitable distribution of the land. Robust law enforcement on land governance will go a long way to minimize illegal land acquisition thus reducing the threat on biodiversity.

**Hunting:** Illegal hunting in WAPFoR and its environs mainly by resident communities as well as by some people from other communities will disturb the density of birds and animal population in the forest. So a sustainable harvesting of birds and animals through setting up and implementing hunting regulation can reduce the threats.

**Indiscriminate wild fire:** human induced fire set for preparing fields for cultivation that are not controlled and spread beyond the intended area. During charcoal production fire again seems to have some effects on the park though very minimal. Naturally induced fires are not considered in this regard, but would need to be managed as well.

**Charcoal burning/Fuelwood collection:** A sustainable provision of livelihood for forest encroachers can reduce this threat completely. This can be done through skills training, provision of animal husbandry, and the introduction of micro-grants to the encroachers.

**Illegal Farming:** With the newly demarcated boundary, there are a lot of fields located in the new park. These fields are mainly in the core forest. Community people explained that it will not be easy to convince these 'Illegal' farmers to leave those fields inside the park after harvest. However, small scale farming especially for rice and vegetable production do occur near the boundaries of the park and it will be important to avoid any future farming encroachment beyond the newly established park boundary through sensitization campaign.

**Stone mining:** Currently there are a lot of both commercial stone mining companies and artisanal stone mining taking place in and around the park. Therefore, stone mining seems to be an immediate threat to the park but this might be put to rest if commercial stone mining is abolished thus reducing pressure on the park. Of course artisanal stone mining can be done in the buffer zone areas.

**Weak legal laws and weak management structure:** It is clear that there are weak laws and management structure in the country especially in the areas of conservation. Weak law enforcement actually encourages poor management of the park. There are also evidences that the management structure in the park is very weak because they lack the needed capacity to carry out their duties. Intensive and well-coordinated law enforcement and a well capacitated management structure will ensure that this threat is reduced completely.





**Weak tourist management:** This has been a serious threat to the park especially when people cannot manage the activities of the tourists. Wastes in the forest and around the beaches have serious effects on the environment. Special training on tourist management should be instituted around the park to minimize the threat.

Having identified the threats, it is clear from both groups that Land grabbing is the most eminent threat in all the regions of the WAP-NP. The Southern group further identified Weak legal laws and weak management structure as other serious threats in the WAP-NP. Similarly the Northern group further identified both charcoal burning and illegal farming are also very serious threats to the park. Some threats, such as fuelwood collection, indiscriminate fire, stone mining, hunting and illegal farming do occur in the park but are not thought to be that detrimental to the integrity of the protected area.

TRA worksheets A and B show the threat ranking results for Northern and Southern Parts<sup>7</sup>.

Site Name: WAP-NP						
Site Description: Government Forest Reserve						
Assessment Period: March 2009 to May 2013						
Completed By: Stakeholder Forum						
Threat		Criteria Rankings			Total Ranking	% Threat Reduced
		What proportion of the habitats is affected by the threat?	How severe is the threat( i.e. the impact of the threat)	How immediate is the threat?)		
Northern Part WAP-NP						
A	Land Grabbing	6	6	6	18	60%
B	Charcoal burning	5	3	5	13	75%
C	Fuelwood collection	3	4	3	10	75%
D	Illegal farming	4	5	4	13	75%
E	Indiscriminate fire	1	2	2	5	45%
F	Stone mining	2	1	1	5	65%
Southern Part WAP-NP						
A	Fuelwood Collection	2	5	3	10	70%
B	Hunting	5	1	2	8	70%
C	Mining and exploration	3	4	4	11	75%
D	Land grabbing	4	6	5	15	50%
E	Weak tourist management	1	2	1	4	80%
F	Weak legal laws and weak management structure	6	3	6	15	85%

<sup>7</sup> Based on workshop results held XXX May 2013 in Freetown with xx participants



After having listed and ranked the threats, participants were asked to have their candid judgement as to how much of each the threat was possible to be reduced over the implementation period of the management plan. Indiscriminate wild fire has a low percentage because it is seen that fire is difficult to manage. In both groups land grabbing had a low percentage in both regions as it was felt that it was generally difficult to control this threat. Fuelwood collection/charcoal burning had low percentages in both regions. Weak tourist management and Weak legal laws and weak management structure are, though only mentioned in one group, also has a high percentage. This illustrates that the threat can be reduced no matter the situation, through capacity building of these management structures.

Hunting and illegal farming scored a relatively high percentage that indicates that they are currently under taken by the inhabitants for both regions. Stone mining scored a relatively low percentage in the North and a comparatively higher percentage in the south. This could be related to the fact that stone mining is one of the most important livelihood strategies in both areas. It was judged by the Northern participants that it is possible to reduce illegal farming by a large extent as people can be convinced to leave the recently established fields and establish new fields outside the park. Similar sentiments for corporate stone mining were expressed by all the groups, with emphasis on the abolition of commercial stone mining.



### 3. VISION STATEMENT OF THE WESTERN AREA NATIONAL PARK

The vision statement outlined below is intended to provide direction for the short, medium and long term management of the Western Area National Park (WAP-NP). The vision statement describes the condition of the park from now if the intent of the Management Plan is followed. It is not meant to describe the current condition of the area. The vision statement is used to provide context and guidance for managers to make decisions about stewardship, recreation and other activities in the protected area.

**The vision of the park is to conserve and restore nationally significant forest and wildlife populations while maintaining a viable and sustainable working environment in recognition of the nature of the forest, historic importance of the forest and coastal areas along the forest with their importance for wildlife habitats are recognized in management.**



#### 4. MANAGEMENT OBJECTIVES AND MANAGEMENT ACTIONS

Based on the Vision and threat to biodiversity assessment, stakeholders developed a set of objectives.

##### Objective 1: Participatory Governance of the National Park

Promote of the institutional development of park management by capacity development. Key players and administrative staff (foresters, tourism managers, researchers, and journalists) will be technically trained. Documented quarterly dialogue forums on environmental issues of representatives of ministries, agencies, civil society and local population in different centers around the National Park.

##### Objective 2: Market-based provision of eco-system services

Development and management of environmental services (water, hydroelectric power, tourism, medical and traditional plants) for the local population: a system is developed to maintain 25 currently existing mini dams, together with the district administration. In two pilot villages gravity-based micro-hydro power plants will be installed and set up local water company for market-oriented water supply. This will encourage the further development of tourism services and market the forest area as an internationally recognized biodiversity hot-spot of Freetown with beach coves, hiking, culture, bike trails, climbing.

##### Objective 3: Creation of Biodiversity Knowledge

The establishment of a biodiversity database through the Biological Faculty of Fourah Bay College is promoted by using modern techniques such as camera-trapping. Biodiversity (fauna and flora) and the carbon content in the rainforest are measured. Results will lead to planning documents for the establishment of a REDD + system in the context of the Voluntary Carbon Standard (VCS). Documentation in the form of exhibitions and reports are made available to the public.

##### Objective 4: Environmental Education

The Union of Environmental Journalists is specializes in environmental advocacy and lobbying. Environmental journalists report regularly in the newspaper, TV and radio, and provide for increased public environmental awareness. Education programs are also conducted for the local population.

##### Objective 1: Participatory Governance of the National Park

*WAP-NP to be supported by great political will to enforce effective park management that enhance biodiversity conservation and social development through law enforcement and policy formulation*

Great inter ministerial cooperation paired with an active contribution of civil society is needed in order to sustain the conservation and the management of the WAP-NP. Main stakeholders are

- National Protected Area Authority
- Ministry of Agriculture, Forestry and Food Security
- Ministry of Lands, Country Planning and Environment
- Environmental Protection Agency
- Office of the President/ Statehouse
- Ministry of Mining
- Western Area District Council
- Civil Society
- Community representatives



Named actors are to agree on management systems, procedures and regulations. There must be an annual supervision body to approve taken actions. Great day-to-day collaboration is needed to face development barriers efficiently.

### Management Actions:

- Annual Work plans: Annual operative plans will be produced by the executive park management office and are forwarded for approval to named stakeholders. Allocate sufficient capacity at the national headquarters for fund raising and monitoring of financial performance of the protected areas system. Annually a threat report is to be published.
- Access and Infrastructure: Necessary infrastructure to access (paths) and manage the park has to be established and monitored. This includes tools and machines to manage the park efficiently. The Park Management Centre at Sugar Loaf will serve as a management centre.
- Appropriate financing: The Ministry of Agriculture, Forestry and Food Security (MAAFS) will, through nationally agreed pilot approaches to protected areas financing, support WAP-NP by establishing legal, regulatory and institutional frameworks that facilitate revenue generation, revenue retention and other elements of sustainable protected areas financing and management. Government to provide sustainable and appropriate funding to support the park management team.
- Appropriate Staffing: Necessary financing for appropriate staff of the park management is to be identified. Enforcement staff training and equipment will be improved to provide a high calibre of staff with a strong commitment to conservation and a clear and fairly remunerated career structure. A training programme for the key line agencies (e.g. FD) will be developed to build the capacity of these agencies to operationalize the management plan and in particular the off-reserve natural resource management.
- Rules and Regulations for the Park Management: Establishment of rules and regulations of WAP-NP to facilitate a transparent and efficient institutional framework. This includes advocacy for updated and efficient legislations and policies in the forestry sector and intensive collaboration of inter-ministerial development goals.

Involvement of the adjacent communities is a key aspect to conservation success.

- Community participation in the management for the park has to be ensured as well as effective law enforcement and policy implementation. The territory of the park itself is property of the GoSL. However, involvement and acceptance of the population to collaborate with the National Park is necessary for sustainability. The management plan seeks to create a governing body that includes local community concerns and allows local community participation in the decision-making process and implementation of the management plan.
  - Establishment of by-laws for environmental protection: In 2011 community representatives have decided on by-laws on the conservation of the Western Area Park. The by-laws have to be updated regularly.
  - Locally based civil society organizations are encouraged to contribute to conservation efforts.
  - Initiate sustainable livelihood programs based on MoUs between the park management and the community.



- Law enforcement: Continuous efforts in collaboration between forest guards, Operational Support Division (OSD) and police stations. By-laws are established to prohibit specific activities that are deemed to be unacceptable within the protected area. Local courts and other local enforcement agencies will be made aware of the additional restrictions and the importance of these specific regulations. In particular the courts and law enforcement officers will be informed of the contractual nature of collaborative management.

#### Objective 2: Market-based provision of eco-system services

Development and management of environmental services (water, hydroelectric power, tourism, medical and traditional plants) for the local population: a system is developed to maintain 25 currently existing mini dams, together with the district administration. In two pilot villages gravity-based micro-hydro power plants will be installed and set up local water company for market-oriented water supply. This will encourage the further development of tourism services and market the forest area as an internationally recognized biodiversity hot-spot of Freetown with beach coves, hiking, culture, bike trails, climbing.

Since the early days of settlement in the Western Area Peninsula, people profit from available eco-system services of the National Park. Often the service are so deep embedded in the daily life that people do not even realize their connection to the forest and to the nature. Some examples are:

- Water supply for Freetown and satellite towns around the Peninsula
- Hydro-power facilities at Charlotte and Number 2 River
- Tourism facilities for local and international tourism
- Medicinal Herbs and other Non-Timber-Forest Products
- Micro-Climate Protection
- Protection against environmental hazards as land-slides, flash-flooding, wind, etc.

As guiding principle therefore the management plan considers sensitization of the population on such assets as well as the continuous establishment of infrastructure to optimize the benefits of available eco-system services. This must be paired with a payment system of the eco-system services.

#### **Management Actions:**

- Market-based Eco-System Service Management: WAP-NP as a conservation project is in need of sustainable financing mechanism. The close physical distance to the capital city is offering interesting options of financing of eco-system services. A detailed study on options shall be produced and disseminated. Potential financing options shall be followed-up.
- Watershed Protection: 61 watersheds are located within WAP-NP. Most of them have potential to supply water to adjacent population. An intensive monitoring of human encroachment is to be applied to successfully conserve available watersheds.  
  
Establishment of a Water Supply Monitoring Committee under the supervision of the WARDC and in cooperation with established community groups. This committee is to produce bi-annual management reports on the community water points and supervise management works as well as community-based payment services.
- Hydro-Power: Establishment of a two additional mini-hydro power facilities (4-15kwh). This shall combine with a detailed feasibility study for hydro-power facility.
- Non-Timber Forest Products: WAP-NP forest products offer sustainable non-timber forest products as bee-keeping, medicinal plants, beers, etc. Regulations to access those products by adjacent population will be developed.





- REDD+: Project Development Document for REDD+ in WAP-NP is to be developed.\_See chapter 3.

### Objective 3: Creation of Biodiversity Knowledge

The establishment of a biodiversity database through the Biological Faculty of Fourah Bay College is promoted by using modern techniques such as camera-trapping. Biodiversity (fauna and flora) and the carbon content in the rainforest are measured. Results will lead to planning documents for the establishment of a REDD + system in the context of the Voluntary Carbon Standard (VCS). Documentation in the form of exhibitions and reports are made available to the public.

WAP-NP offers a unique opportunity for humanity to increase our understanding of the natural world and natural processes as well as the impact of social and economic changes upon the environment. Priority will be given to management-oriented research and the Management Team will develop specific research guidelines, priorities and regulations. Little is known about the forest biodiversity. Recently three studies were conducted by Fourah bay Collage and Tacugama. The following research methods have been used:

- Transects
- Camera Traps
- Sampling Plots
- Animal recognition
- Observation
- Interviews with population

The overall knowledge on biodiversity in WAP-NP can still be described as limited.

### **Management actions:**

- Habitat mapping and biodiversity survey will be carried out in order to identify species and habitats at risk and, through a participatory process, internal zoning will be designed.
- Detailed biodiversity portfolio will be established and backed by scientific data. A minimum of two scientific publications shall be produced.
- Species and habitat recovery plans will be developed by the Management Team for species and habitats which are determined as being particularly vulnerable or threatened. The academic sector and NGOs will be encouraged to participate in this process through the provision of both technical expertise and material resources.
- Links with international organisations will be strengthened to promote the management of migratory species.
- Application as UNESCO World Heritage Site (mixed component): WAP-NP to be promoted as internationally recognized UNESCO World Heritage. WAP-NP is registered at UNESCO as a tentative UNESCO World heritage site (<http://whc.unesco.org/en/tentativelists/5741/>). The full application shall be prepared.

### Objective 4: Environmental Education

The Union of Environmental Journalists is specializes in environmental advocacy and lobbying. Environmental journalists report regularly in the newspaper, TV and radio, and provide for increased public environmental awareness. Education programs are also conducted for the local population.

WAP-NP represents a unique and considerable educational resource. The protected area is a living classroom that can enhance learning process through passive and planned activities. Education of Sierra Leone's children and adults, government agencies and policy-makers, visitors and resource



users, all, will be touched by the natural beauty, diversity of life and landscapes providing the inspiration for lifelong learning.

The implemented WAPFoR program has been extremely successful on public education and the presence in the national media (television, radio, newspaper). Also at weekends environmental outreaches have been organized. This action has been under the mandate of the Union of Environmental Journalists. Task is to ensure the protection of the environment through sensitization and education campaigns.

**Management actions:**

- A communications programme and media strategy will be developed to promote the aims and ideals of the protected area amongst a broad and representative cross-section of society. Utilising a variety of local, national and international media, the purpose of the communications programme is to develop an awareness of, and support for WAP-NP.
- To train and equip two Community Liaison Officers to work in local schools and develop educational and informational material. This shall include public outreaches as environmental cinemas, television shows, animations, etc.
- Develop and maintain partnerships with national and local authorities, NGOs, sponsors and volunteers to optimise the educational experience of people visiting WAP-NP. The Management Team will meet regularly with teams from other protected areas in Sierra Leone to provide a forum for the exchange of knowledge, experience and ideas.
- The Management Team will, whenever possible support and organise study tours for national park staff and local partners staff to other protected areas
- Establishment of an education Learning Centre



## 5. PROVISIONAL STRATEGIC WORK PLAN

No	Activity	Primary responsibility	Contributing partners	Timing	Priority	Indicator	Baseline
<b>Objective 1: Strengthening the institutional and financial settings of the park management</b>							
1.1	Establishment of annual work plans	Management Team	Consultative Forum	Annually	Medium	Annual work plans	Strategic guiding plan available
1.2	Identify sustainable financing options	NPAA	ENFORAC, specialist agencies	Year 1-3	High	Annual expenditure report	Basic funding available
1.3	Training programme for the key line agencies	NPAA	Specialist Agencies	Year 2-4	Medium	Improved management performance	Level of education of park management staff
1.4	Rules and Regulations for the Park Management	NPAA	EPA/ NPAA	Year 1	High	Rules and procedures available as document	Constitution of the National Park, By-laws with communities
1.5	Community Participation	WARD/ ENFORAC	EPA	Year 1-4	High	Regular updated community by-laws	Community by-laws have been established in 2011 and signed by important stakeholder
1.6	Locally based civil society organizations are encouraged to contribute to conservation efforts	WARD/ ENFORAC	NPAA/ Ministry of Water	Year 1-3	Low	Program on-going	CBOs engaged



No	Activity	Primary responsibility	Contributing partners	Timing	Priority	Indicator	Baseline
1.7	Law enforcement	NPAA / Police	OSD	Year 1-4	Medium	Decreasing number of incidents	42 forest guards and 14 OSD, regular patrolling
<b>Objective 2: Market-based provision of eco-system services</b>							
2.1	<i>Market-based Management</i> <i>Eco-system</i>	NPAA/ Management Team	ENFORAC	Year 1-4	High	Guidelines available	First ideas communicated
2.2	<i>Watershed Protection</i>	NPAA/ Ministry of Water	WARD, Communities, Private Water Companies	Year 1-4	High	Long-term protection; Sustainable water supply reported	Watersheds identified, trees planted; 25 water dams are in use
2.4	Develop Hydro-Power Approaches	NPAA/ Ministry of Energy	Ministry of Water, communities	Year 1-4	Medium	A minimum of 3 hydro-power plants available	1 hydro-power system in place
2.5	Produce Guidelines and monitor Non-Timber Forest Products harvesting	NPAA/ Fourah Bay College	Communities	Year 1-4	Medium	Guideline available	Only studied done on medicinal plants
2.6	Display visitor information at the Park Management Centre	WARD/ CSSL	Communities/ NTB	Year 3-4	Medium	Field assessment	Only at Tacugama currently
2.7	Development of a REDD+ project	NPAA/ Fourah Bay College	Specialist Agencies	Year 1-4	High	Development of PDD document	Pre-feasibility done, field carbon calculations currently in place



No	Activity	Primary responsibility	Contributing partners	Timing	Priority	Indicator	Baseline
<b>Objective 3: Creation of biodiversity knowledge</b>							
3.1	Habitat mapping and biodiversity survey	Fourah Bay College	NPAA	Year 1-3	Medium	Report and Plans	Biodiversity Survey Available; Tacugama Chimpanzees Study available
3.2	Detailed biodiversity portfolio	Fourah Bay College	NPAA	Year 1-4	Medium	Report and Plans	Biodiversity Survey Available
3.3	Species and habitat recovery plans	Fourah Bay College	NPAA	Year 1-4	Medium	Report and Plans	Biodiversity Survey Available
3.4	Links with international organisations	Fourah Bay College	NPAA	Year 3-4	Medium	Meeting reports	No systematic contacts
3.5	Application as UNESCO World Heritage Site (mixed component)	NPAA/ NTB	Specialist Agency	Year 2-4	Medium	Application report available	Registered on the tentative list
<b>Objective 4: Environmental Education</b>							
4.1	Communications programme and media strategy	UEJ	NPAA, EPA, ENFORAC	Year 1-4	Medium	List of NGOs and minutes of meetings	Suitable NGOs unknown
4.2	Implementation of a School Program focusing on environmental education	UEJ	NPAA, EPA, ENFORAC	Year 3-4	Medium	Minutes of meetings	No training conducted
4.3	Develop and maintain partnerships with national and local authorities, NGOs, sponsors and volunteers to optimise the educational	UEJ	NPAA, EPA, ENFORAC	Year 1-4	Low	Concept paper available, membership list of certified	No certification scheme available



No	Activity	Primary responsibility	Contributing partners	Timing	Priority	Indicator	Baseline
	experience of people visiting WAP-NP.					producers	
4.4	Study tours for national park staff and local partners staff to other protected areas	UEJ	NPAA, EPA, ENFORAC	Year 3	Low	Minutes of meeting	No books distributed
4.5	Establishment of an education Learning Centre	UEJ	NPAA, EPA, ENFORAC	Year 3-4	Low	Inventory of resource materials	No resource materials available





## 6. MONITORING MANAGEMENT EFFECTIVENESS<sup>8</sup>

Conservation of the Western Area Peninsula National Park (WAP-NP) is taking place in a context, driven by economic, socio-political and the ecological influences. Therefore, management is working in multiple fields such as ecology, economics, natural resource management, politics, business and social sciences. In these fields there are a large and unquantifiable number of known and potential variables, all subject to continual change, all interacting with each other in ways that may be predictable or non-predictable. In this context many components are complex or multivariate and cause and effect of actions and activities are non-linear.

In this complex environment, monitoring and evaluation has to take into account that management will have to be constantly adapted to adjust to newly understood variables which results in revising management actions, operational and work plans and activities. In order to accommodate this into a monitoring system it is recommended to measure the effectiveness of management in its entirety.

### 6.1. Management Effectiveness Tracking Tool

The World Conservation Union (IUCN) defines management effectiveness as *“the assessment of how well protected areas are being managed – primarily the extent to which management is protecting values and achieving goals and objectives”*. The term management effectiveness reflects three main ‘themes’ in protected area management:

1. Design issues relating to both individual sites and protected area systems;
2. Adequacy and appropriateness of management systems and processes and
3. Delivery of protected area objectives including conservation of values.

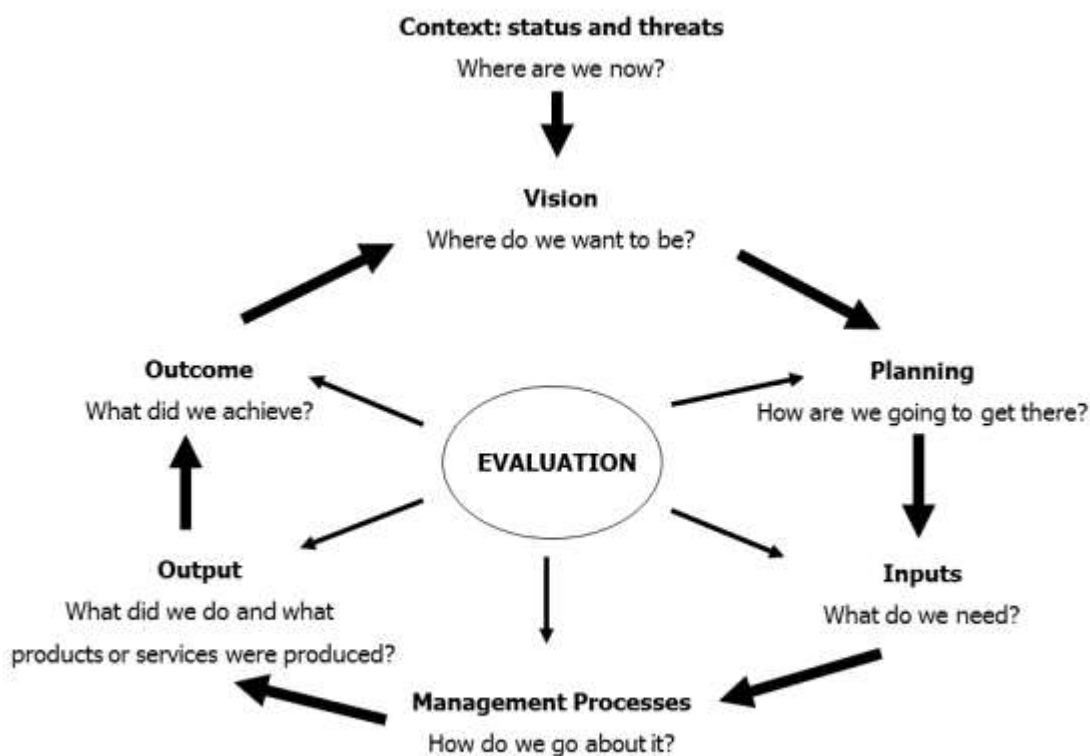
Evaluation of management effectiveness is recognised as a vital component of responsive, pro-active protected area management. In response, the World Wide Fund for Nature (WWF) and the World Bank (WB) through the “Alliance for Forest Conservation and sustainable Use” developed the Management Effectiveness Tracking Tool (METT), which was also taken up by IUCN’s “Best Practice Protected Area Guidelines Series”. The tool is specifically designed to:

- Provide a harmonised reporting system for protected area assessment;
- Supply consistent data to allow tracking of progress over time;
- Be relatively quickly completed by protected area staff, so as not to be reliant on high levels of funding or other resources;
- Provide a “score” if required;
- Provide for alternative text answers to each question, strengthening the scoring system;
- Be easily understood by non-specialists; and
- Be nested within existing reporting systems to avoid duplication of effort.

Management is usually influenced by contextual issues; in the case of a protected area by its significance and uniqueness and the threat and opportunities that it faces. Evaluation must therefore look at all aspects of the management cycle, including the context within which management takes place. The results of evaluation can be fed back into different parts of the Management Cycle (compare to Figure 3).

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<sup>8</sup> This chapter is copied from the Loma Mountain Preliminary Management Plan, elaborated by OeBF 2012



**Figure 3: The Management Cycle**

The Framework is based on the six elements of the Management Cycle:

- It begins with understanding the context of existing values and threats,
- progresses through planning, and
- allocation of resources (inputs), and
- as a result of management actions (processes),
- eventually produces products and services (outputs),
- that result in impacts or outcomes.

**Table 1: The METT elements**

Elements of Evaluation	Explanation	Criteria that are assessed	Focus of Evaluation
<b>Context</b>	<i><b>Where are we now?</b></i> Assessment of importance, threats and policy environment	<ul style="list-style-type: none"><li>• Significance</li><li>• Threats</li><li>• Vulnerability</li><li>• National context</li><li>• Partners</li></ul>	Status



Elements of Evaluation	Explanation	Criteria that are assessed	Focus of Evaluation
<b>Planning</b>	<p><b><i>Where do we want to be?</i></b></p> <p>Assessment of protected area design and planning</p>	<ul style="list-style-type: none"> <li>Protected area legislation and policy</li> <li>Protected area system design</li> <li>Reserve design</li> <li>Management planning</li> </ul>	Appropriateness
<b>Inputs</b>	<p><b><i>What do we need?</i></b></p> <p>Assessment of resources needed to carry out management</p>	<ul style="list-style-type: none"> <li>Resourcing of agency</li> <li>Resourcing of site</li> </ul>	Resources
<b>Processes</b>	<p><b><i>How do we go about it?</i></b></p> <p>Assessment of the way in which management is conducted</p>	<ul style="list-style-type: none"> <li>Suitability of Management processes</li> </ul>	Efficiency and appropriateness
<b>Outputs</b>	<p><b><i>What were the results?</i></b></p> <p>Assessment of the implementation of management programmes and actions; delivery of products and services</p>	<ul style="list-style-type: none"> <li>Results of management actions services and products</li> </ul>	Effectiveness
<b>Outcomes</b>	<p><b><i>What did we achieve?</i></b></p> <p>Assessment of the outcomes and the extent to which they achieved objectives</p>	<ul style="list-style-type: none"> <li>Impacts: effects of management in relation to objectives</li> </ul>	Effectiveness and appropriateness



At the heart of the tool are a series of 30 questions that can be answered by assigning a simple score ranging between 0 (poor) to 3 (excellent). A series of four alternative answers are provided against each question to help assessors to make judgments as to the level of score given. Questions that are not relevant to a particular protected area would be omitted, with a reason given in the comments section (for example questions about use and visitors will not be relevant to a protected area managed according to the IUCN protected area management Category I, a strict nature reserve). The toll allows calculating a score that refers to the following levels of management effectiveness.

*Very Low* - management effectiveness score of 0 – 30 %

*Low* - management effectiveness score of 31 – 40 %

*Low Intermediate* - management effectiveness score of 41 – 50 %

*Intermediate* - management effectiveness score of 51 – 60 %

*High Intermediate* - management effectiveness score of 61 – 70 %

*High* - management effectiveness score of 71 – 80 %

*Very High* - management effectiveness score of 81 – 100 %

The METT is already being used in Sierra Leone and has been applied and conducted in LMNP in 2011. The assessment scored a total of 19 points, which translates into a management effectiveness of 21.8%, which is considered very low.

## 6.2. Biodiversity Monitoring

The BCP will carry out surveys of key biodiversity resources within WAP-NP, which will establish a baseline. The surveys will be required to identify key indicators for assessing the impact and effectiveness of conservation management.

These biodiversity studies will design a basic biodiversity monitoring programme taking into account the cost implications and institutional capacities to carry out the monitoring.

It should be noted that monitoring biodiversity is a long term undertaking and the indication of changes brought about by management do not provide the rapid feedback necessary to adapt management within the life of a management plan. Thus the biodiversity monitoring will provide the longer term data necessary to track change between the lifetime of management plans and management will largely rely upon the METT as an indicator of performance and impact.

## 6.3. Threat Reduction Assessment

In addition to METT it is proposed to monitor the reduction of threats to biodiversity over time. However, threat reduction will be achieved by the implementation of the management plan in longer time intervals and therefore monitored at the end of the implementation phase of the management plan.

The Threats Reduction Assessment (TRA) tool was developed by the GEF Biodiversity Support Group. It is a simple tool designed to identify threats and quantify them in terms of their extent (area affected), intensity (the impact on biodiversity) and the urgency (how immediate is the threat).

The exercise recognises that due to the constraints of time it is normally not possible to evaluate the impact of project or management interventions using biological indicators because such indicators may take considerable periods to demonstrate significant changes.

However, it is possible to approximate the effectiveness of any intervention by measuring the amount by which it reduces a causative factor. In protected areas management we often refer to



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causative factors, as “threats” and measuring how much a threat has been reduced will provide us with a robust approximation of whether any intervention is likely to have an impact.

Therefore this will provide us a reasonable assessment of management performance but it is important to bear in mind that reducing the threats is not an end in itself but more often a means to an end such as a reduction in grazing to allow vegetation to recover. This is not the same as assessing the overall impact of an intervention, which would be the recovery of vegetation as measured by species diversity, abundance and/or structure etc. Therefore the assumptions (that over-grazing is the root cause of loss of biodiversity) should be explicitly recognised and reducing grazing intensity is not the same as the recovery of biodiversity.



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## 7. SUSTAINABLE FINANCING

### 7.1. Costs of operation and maintenance

The basic annual management cost for WAP-NP is estimated to be around US\$90,000 (to be adjusted for inflation). This figure enables the Forestry Division to show a continuous presence in the area by funding core staff that has adequate infrastructure, transport and communication facilities at hand to perform the most basic functions such as law enforcement and regulation. An international assistance is not part of this budget.

This figure represents the very minimum in order to sustain recently made investments (e.g.: deployment of forest guards, transport equipment, infrastructural equipment, road improvement and boundary demarcation) and should be seen as the core funding required for WAP-NP to be provided by government.

### 7.2. Cost of management plan implementation

The cost of implementation of the management plan from 2013 to 2017 is estimated to be around US\$ 1,3 million (including the Cost of operation and maintenance as stated in the section above). It is foreseen that a mix of the following funding sources can cover the costs.

### 7.3. Funding sources

#### *7.3.1. Forestry Division/ REDD+ Project (EC)*

The Forestry Division with an approved institutional support project of the EC will contribute to the management plan where it fits into the implementation.

#### *7.3.2. Western Area District Council*

The District Council for Western Area District Council, situated in Waterloo, is currently underfunded to provide a meaningful financial input into WAP-NP and its management plan. However, the DC is the catalyst for rural development in the district and can certainly attract increased attention to WAP-NP by government programmes as well as NGO funded projects. Therefore, it is emphasised that district level development plans and the WAP-NP management plan should be accorded on an annual basis.

#### *7.3.3. Global Environmental Facility (GEF)*

The GEF SGP with its focus on community-based and other non-governmental organisations offers wide opportunities to integrate work of these organisation into the park management, without using own resources, and additionally provide alternative livelihoods for forest-edge communities.

#### *7.3.4. National Conservation Trust Fund*

The Ministry of Agriculture, Forestry and Food Security is in the process of creating a National Protected Areas Agency as a parastatal body mandated with the management of the national protected areas system. In parallel a National Conservation Trust Fund is being established to fund the newly created institution as well as the protected areas under its authority. The fund is being designed as a revolving sinking fund with the possibility of holding endowment capital as well. Whether the fund will be sufficiently capitalised to finance WAP-NP in the short term is not known in this point of time.





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#### 7.4. Funding sources to be investigated and/or developed

##### *7.4.1. Payment for ecosystem services*

One of the activities in the management plan will look into the feasibility of payment for ecosystem services. This could include looking into developing payment mechanism for water supply, hydro-power, tourism and others. A reasonable suggestion is also the development of a REDD+ program based on the available pre-feasibility study.

##### *7.4.2. Public-Private-Community Partnerships*

Costs of managing WAP-NP could be reduced (for central government) if they can be shifted to a private sector or civil society partner. This model has, for example, secured long-term financing for Gola Forests National Park and has been successfully implemented in other countries. Setting up such a long-term partnership arrangement involves however considerable transaction costs and should not be regarded as a short term financing vehicle.

This mechanism has the advantage that it strengthens the entire protected areas system by making more resources available to other areas (i.e.: Gola Forest National Park is effectively managed under the regulation of MAFFS but has very little cost implications on MAFFS, resulting in scarce ministerial budget to be available for other protected areas in the country).

Considering the high biodiversity value and uniqueness of ecosystems found in WAP-NP a long-term partnership with well reputed and financed institutions seems feasible.

##### *7.4.4 Donor Funding*

Individual component leaders/ leading groups will identify donor funding for individual actions. A good funding source maybe mining and other investment agencies active in Sierra Leone.



## ANNEX 1: PROVISIONAL BUDGET

The following budget is developed on the basis of the Work Plan, presented in the main document. This budget is provision and will have to be aligned once a decision has been taken on the way forward.

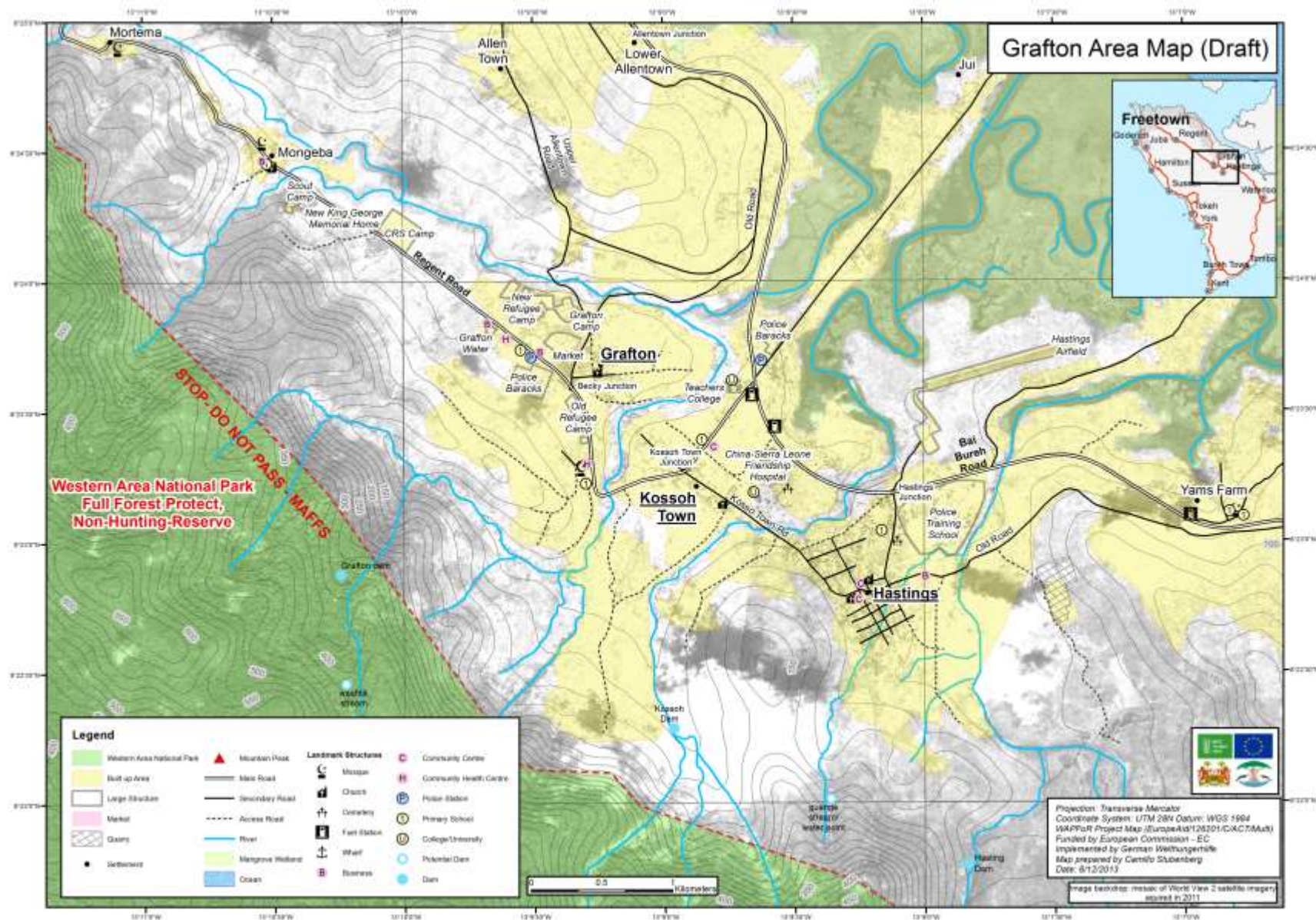
WAP-NP Provisional Budget		Total MP Forecast Budget [US\$]	Forecast Budget by Year for Management Plan [US\$]				Potential Funding Source
		2013 - 2017	2014	2015	2016	2017	
<b>BASIC OPERATIONAL COST</b>							
	<b>Salaries, allowances, personal equipment</b>						
	Salaries and allowances (incl. forest guards)	60,000	15,000	15,000	15,000	15,000	NPAA/ GoSL
	Personal equipment	20,000	5,000	5,000	5,000	5,000	NPAA/ GoSL
	<b>Transport</b>						
	Vehicle running costs (fuel and maintenance)	60,000	15,000	15,000	15,000	15,000	NPAA/ GoSL
	Motorbikes running costs (fuel and maintenance)	40,000	10,000	10,000	10,000	10,000	NPAA/ GoSL
	Replacement vehicle	35,000				35,000	Donor contribution
	Replacement motorbikes	20,000		10,000		10,000	Donor contribution
	<b>Administration and Communication</b>						
	IT equipment	10,000	2,500	2,500	2,500	2,500	NPAA/ GoSL
	Furniture, etc.	9,000	6,000	1,000	1,000	1,000	NPAA/ GoSL
	Office running costs	16,000	4,000	4,000	4,000	4,000	NPAA/ GoSL
	<b>Maintenance of infrastructure and equipment</b>						
	Maintenance of infrastructure	80,000	20,000	20,000	20,000	20,000	Donor contribution
	Maintenance of communication infrastructure	8,000	2,000	2,000	2,000	2,000	Donor contribution
	<b>BASIC OPERATIONAL COST</b>	<b>358,000</b>	<b>79,500</b>	<b>84,500</b>	<b>74,500</b>	<b>119,500</b>	



MANAGEMENT PLAN IMPLEMENTATION COST							
<i>Objective 1: Strengthening the institutional and financial settings of the park management</i>							
1.1	Rules and Regulations for the Park Management (e.g. Workshops, Stakeholder Meetings, etc.)	12,000	3,000	3,000	3,000	3,000	NPAA/ FD through EC
1.2	Law enforcement (OSD Forest Guard Link, Transport, Logistic, Allowances)	20,000	5,000	5,000	5,000	5,000	NPAA/ GoSL
1.3	Identify sustainable financing options (e.g. networking, consultancies)	14,000	3,500	3,500	3,500	3,500	NPAA/ FD through EC
1.4	Establishment of annual work plans (e.g. meetings)	4,000	1,000	1,000	1,000	1,000	NPAA/ GoSL
1.5	Community Participation	40,000	10,000	10,000	10,000	10,000	WARD/ FD through EC/ Donor Contributions
1.6	Training programme for the key line agencies	20,000	5,000	5,000	5,000	5,000	NPAA/ FD through EC/ Donor Contributions
1.7	Develop Park Infrastructure	60,000	15,000	15,000	15,000	15,000	NPAA/ FD through EC/ Donor Contributions
	<b>Subtotal</b>	<b>170,000</b>	<b>42,500</b>	<b>42,500</b>	<b>42,500</b>	<b>42,500</b>	
<i>Objective 2: Market-based provision of eco-system services</i>							
2.1	Market-based Eco-system Management	12,000	3,000	3,000	3,000	3,000	GEF/ Donor Contribution/ NPAA/ FD through EC
2.2	Watershed Protection/ Develop Water Supply Approaches	12,000	3,000	3,000	3,000	3,000	Ministry of Water
2.4	Develop Hydro-Power Approaches	200,000	50,000	50,000	50,000	50,000	Ministry of Energy
2.5	Produce Guidelines and monitor Non-Timber Forest Products harvesting	8,000	2,000	2,000	2,000	2,000	GEF/ Donor Contribution/ NPAA/ FD through EC
2.6	Locally based civil society organizations are encouraged to contribute to conservation efforts	10,000	2,500	2,500	2,500	2,500	GEF/ Donor Contribution/ NPAA/ FD through EC
2.7	Development of a REDD+ project	150,000	150,000				GEF/ Donor Contribution/ NPAA/ FD through EC
2.8	Display visitor information at the Park Management Centre	10,000	2,500	2,500	2,500	2,500	
2.9	Initiate sustainable livelihood programs based on MoUs between the park management and the community	40,000	10,000	10,000	10,000	10,000	GEF
	<b>Subtotal</b>	<b>392,000</b>	<b>210,500</b>	<b>60,500</b>	<b>60,500</b>	<b>60,500</b>	



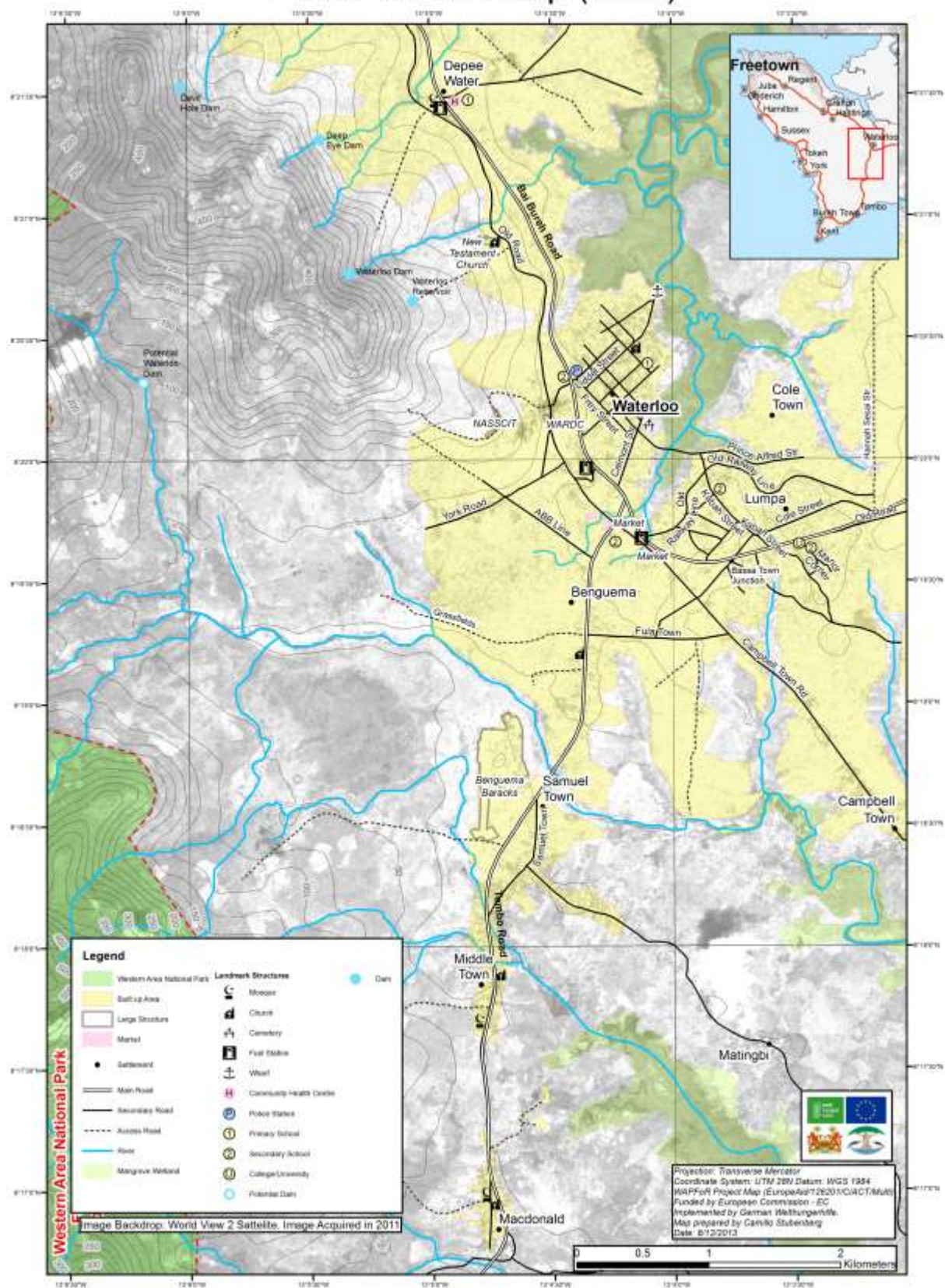
<b>Objective 3: Creation of biodiversity knowledge</b>							
3.1	Habitat mapping and biodiversity survey	50,000	20,000	10,000	10,000	10,000	GEF/ Donor Contribution/ NPAA/ FD through EC
3.2	Detailed biodiversity portfolio	40,000	10,000	10,000	10,000	10,000	GEF/ Donor Contribution/ NPAA/ FD through EC
3.3	Species and habitat recovery plans	40,000	10,000	10,000	10,000	10,000	GEF/ Donor Contribution/ NPAA/ FD through EC
3.4	Links with international organisations	12,000	2,000	4,000	4,000	2,000	GEF/ Donor Contribution/ NPAA/ FD through EC
3.5	Application Process "UNESCO World Heritage" Application	60,000	20,000	30,000	10,000		GEF/ Donor Contribution/ NPAA/ FD through EC
	<b>Subtotal</b>	<b>192,000</b>	<b>62,000</b>	<b>64,000</b>	<b>34,000</b>	<b>32,000</b>	
<b>Objective 4: Environmental Education</b>							
4.1	Communications programme and media strategy/ media work (TV, Radio, Newspaper)	100,000	25,000	25,000	25,000	25,000	GEF/ Donor Contribution/ FD through EC
4.2	Implementation of a School Program focusing on environmental education	40,000	10,000	10,000	10,000	10,000	GEF/ Donor Contribution/ FD through EC
4.3	Develop and maintain partnerships with national and local authorities, NGOs, sponsors and volunteers to optimise the educational experience of people visiting WAP-NP.	10,000	2,500	2,500	2,500	2,500	GEF/ Donor Contribution/ FD through EC
4.4	Study tours for national park staff and local partners staff to other protected areas	10,000	2,500	2,500	2,500	2,500	GEF/ Donor Contribution/ FD through EC
4.5	Establishment of an education Learning Centre	40,000		40,000			GEF/ Donor Contribution/ FD through EC
	<b>Subtotal</b>	<b>200,000</b>	<b>40,000</b>	<b>80,000</b>	<b>40,000</b>	<b>40,000</b>	
	<b>Total</b>	<b>1,312,000</b>	<b>434,500</b>	<b>331,500</b>	<b>251,500</b>	<b>294,500</b>	







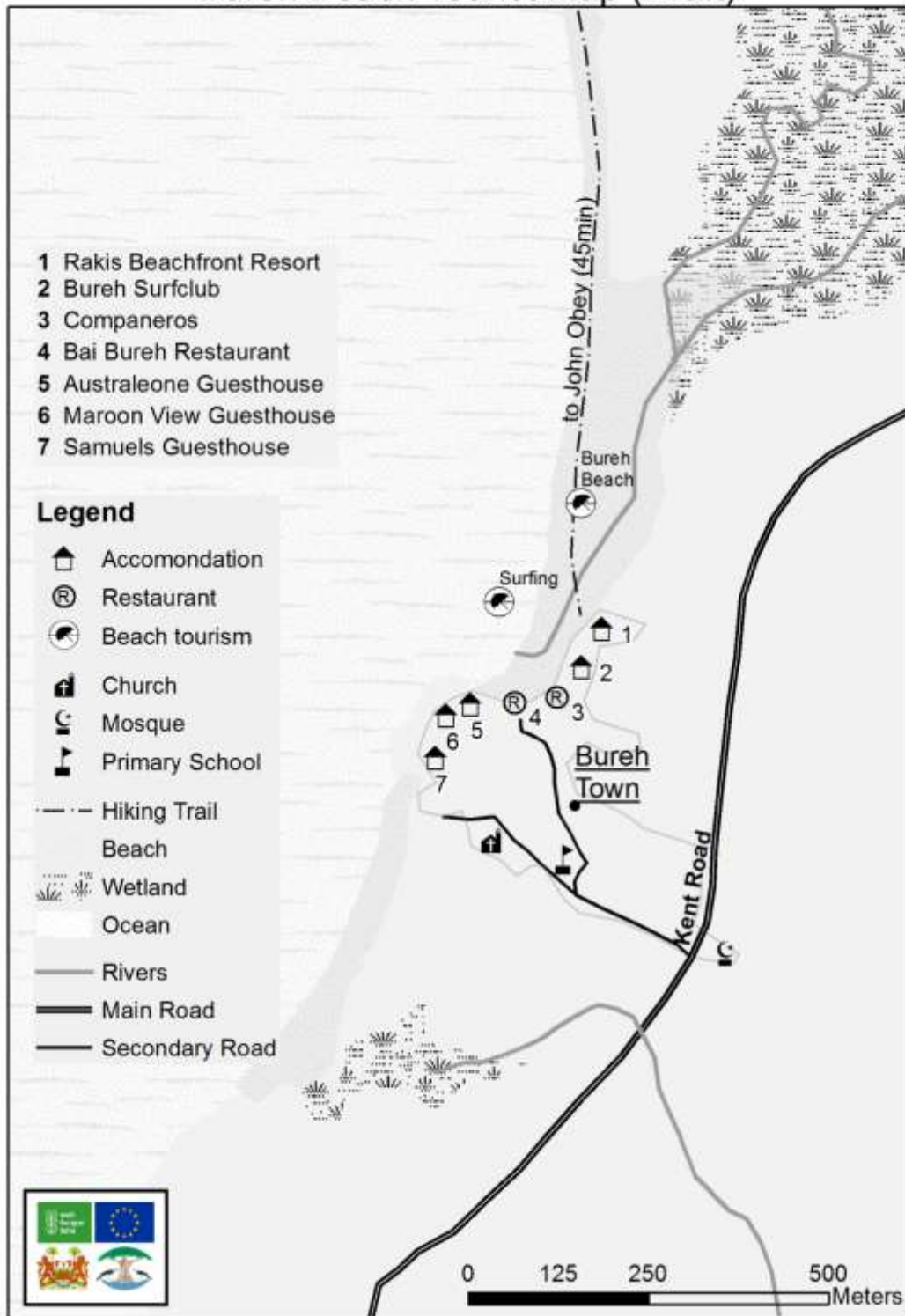
## Waterloo Area Map (Draft)







## Bureh Beach Tourist Map (Draft)





## River Nr. 2 Tourist Map (Draft)

