

**DETAILED ANALYTICAL REPORT ON
EAST NIMBA NATURE RESERVE
(PROTECTED AREA)**

Under the program

**Review of experience on integration of Protected Areas in Wider Landscape, Sectoral
Strategies and the Poverty Reduction Strategy Process**

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TABLE OF CONTENT

- ii. TABLE OF CONTENT
- iii. ACRONYMS
- v. ACKNOWLEDGEMENT
- vi. DEFINITION OF TERMS

EXECUTIVE SUMMERY

- 1.0 Introduction
- 1.1 Purpose of Study

- 2.0: Methodology
- 2.1 Structure of the Study
- 2.2 Background of East Nimba Nature Reserve
- 2.3 Location
- 2.4 Topography

- 3.0 Literature Review
- 3.1 The National Forest Policy and Implementation strategy
- 3.2 National Forest Reform Law
- 3.3 Liberia Protected Areas Network Strategy Plan
- 3.4 History of Customary Conservation
- 3.5 Event of Modern Protected Areas Management in Liberia
- 3.6 Civil car and after the civil war
- 3.7 Poverty Reduction Strategy Programme and Protected Areas Management
- 3.8 Land Rights Community Forestry Program
- 3.9 The USAID/ARD LRCFP

- 5.1 Data Collection
- 5.2 Data Processing
- 5.3 Data Analysis
- 5.4 Constraints
- 5.5 Analysis of Socio-Economic Characteristics of the Population
- 5.6 Analysis of the Nature Reserve Management Structure in place

- 6.0 Analysis of the Results and Findings
- 6.1 Livelihood Coping Mechanism
- 6.2 Conclusion
- 6.3 Recommendation

List of Abbreviations and Acronyms

AU	African Union
CBD	Convention on Biodiversity
CCC	Convention on Climate Change
CEPF	Critical Ecosystem Partnership Fund
CI	Conservation International
CITES	Convention on International Trade in Endangered Species
CMS	Conservation of Migratory Species of Wild Animals
ENNR	East Nimba Nature Reserve
EPA	Environmental Protection Agency of Liberia
EPML	Environmental Protection and Management Law of Liberia
ESMF	Environmental and Social Management Framework
FDA	Forestry Development Authority
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GOL	Government of Liberia
IBA	Important Bird Area
ICDPs	Integrated Conservation and Development Projects
IUCN	International Union for Conservation of Nature
LEAP	Liberian Employment Action Plan
LEEP	Liberian Emergency Employment Program
LFI	Liberia Forest Initiative
LFR	Liberia Forest Reassessment
MEAs	Multilateral Environmental Agreements
NBSAP	National Biodiversity Action Plan
NGO	Non-governmental Organization
NNFL	New National Forest Law of Liberia
NIBACS	National Important Bird Areas Convention Strategy

NTFP	Non-timber Forest Products
OAU	Organization of African Unity
PAM	Protected Area Management
PAMS	Protected Areas Management System
PAN	Protected Areas Network
PF	Process Framework
PoWPA	Programme of Work for Protected Area
PPA	Participatory Poverty Assessment
PRC	Peoples Redemption Council
PRS	Poverty Reduction Strategy
SCNL	Society for the Conservation of Nature of Liberia
SNP	Sapo National Park
SOE	State of the Environment
UNCED	United Nations Conference on the Environment and Development
UNEP	United Nations Environmental Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNCLOS	UN Conference on the Law of the Sea
UGFE	Upper Guinea Forest Ecosystem
WSSD	World Summit and Sustainable Development
WWF	Worldwide Fund for Nature

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Definition of Terms

Agro-forestry - connotes a dynamic ecologically based, natural resource management practice that, through the integration of trees and other tall woody plants with agricultural plants on farms and in agricultural landscape, diversifies production for increased social, economic and environmental benefits.

Biodiversity - is defined by the CBD as “the variability among living organisms from all sources including, inter-alia, terrestrial, marine and other aquatic ecosystems and ecological processes of which they are a part.”

3-C Concept - connotes the forest sector concept developed by the LFR project intended to balance forest management activities in terms of commercial, community, and conservation parameters. It is often referred to as the “3Cs”.

Climate change - is a natural phenomenon wherein a warming climate has alternated patterns of rain and wind in unpredictable ways. More heat would lead to more rapid evaporation of water from the oceans, and thus leads to greater precipitation alternating with more intense drought. These shifting regimes could threaten agricultural and protected ecosystems with possible effects on human settlements. It can be either by natural (as it occurred in the Ice Age) or human-made (the burning of fossil fuel which produces CO₂).

Community - “a group of local residents who share a common interest in the use and management of forest resources, with traditional or formal rights to the land and the forest on it.”

Communal forest - refers to “an area set aside by statute or regulation for sustainable use of forest products by local communities or tribes on a non-commercial basis

Community forestry - is a governance and management of forest resources in designated areas or landscapes by communities for commercial and non-commercial purposes to further their own livelihoods and development. Community forestry incorporates the practices, arts, science, policies, institutions and processes necessary to promote and support all aspects of sustainable community based forest management.”

Conservation - in its broadest sense refers to management of natural resources substantially as well as their protection and restoration.

Environment - includes the surrounding living and non-living things, and their interactions.

Livelihoods -The ways in which people make a living. Livelihoods contribute to human well-being, which includes spiritual and aesthetic values.

Migratory Species - significant proportion of species whose members cyclically and predictably cross one or more national jurisdictional boundaries.

Poverty - is often defined as people falling below a specific level of income, commonly USD2 per day; it can also be seen as having multiple dimensions. The World Bank refers to three dimensions of poverty: lack of assets, powerlessness and vulnerability. This study adopts this definition.

Protected area - is a geographically defined area which is designated or regulated to achieve specific 'conservation objective.' It concludes national forest, nature reserve, and national park, strict or other special category for conservation purpose.

Sustainable development - has to do with meeting of today's needs and planning for the future generations

Traditional knowledge - is any knowledge, innovation, or custom of indigenous, traditional-based local communities that is relevant in ensuring the conservation and sustainable use of biodiversity.

Wildlife - connotes all flora, fauna, and micro-organisms existing in their natural state within a forest ecosystem.

EXECUTIVE SUMMARY

Poverty remains a serious threat to human security and sustainable resource management protected areas being no exception. The establishment of protected area is viewed as a strategy to contribute to the reduction of poverty situation of local communities surrounding given that such establishment places restriction on local communities to accessing forest resources their only source of livelihoods. Livelihoods itself contribute to human well being including food & income security, spiritual and aesthetic. Integrating poverty reduction strategy Programme into protected area management regime globally, has two prong strategies, conservation of biodiversity and providing alternative livelihoods of communities in the proximity of the protected area.

Protected area management has been practiced in Liberia for a long time now as far back as the inception of the Country; Protected areas management was been practiced in context of Community Forest Reserves and Secret Forests managed by traditional and cultural means. As it relates to central government involvement in protected areas management, it started in Liberia in the mid 50s and 60s with passage of key legislations such as the natural resources law, Bureau of forest conservation Act etc. these laws became institutionalize in the 70s with the establishment of the Forestry Development Authority (FDA) which subsequently oversaw the establishment of the only two protected areas in the country, Sapo and East Nimba Nature Reserves in 1983 and 2003 respectively.

The establishment and operation of protected areas in Liberia, continue to be based on the 19th century protected area management philosophy of exclusion of locals in its governance type and therefore full short of addressing their livelihoods and cultural concerns. Because of this approach, it is difficult if not impossible to adequately manage the existing protected areas sustainably. There are mountains of evidence of persistent violations of the integrity of protected areas by locals and others arguing that they have no alternative but to violate the integrity of existing reserves because their establishment did not provide alternative source of livelihood for them (locals).

Recognizant of the liberal doctrine of protected area management which advocates that communities around said establishment must be empowered to participate in the management protocol to ensure sustainable management system to serve common accord; providing ecosystem services to both national and international needs, at the same time catering to the livelihoods needs of local communities, the Environmental Protection Agency of Liberia and partners launched the project-Supporting country Action under the CBD Programme of Work with the objective, to conduct study

and research on existing policies, plans and management strategies frameworks on protected areas management and their relationship to poverty reduction strategy in Liberia. The study area was communities neighboring the East Nimba Nature Reserve. The findings and recommendations contain in this report, are the initiate study conducted on local communities around that reasrve.

This report is divided into three parts; the first part provides the historical background of the establishment of the East Nimba Nature Reserve, it geographic, demographic history and institutional arrangement. The second part focuses on the administration of structured questionnaire to a sample size population of 1,000 to determine social-economic profile (standard of living) of the local population and the relationship they have with the existing management regime in place. The last part deals with the interpretation and analysis of the questionnaire, and recommendations of the study and the bibliographical notes.

The study concludes that, the management mechanism in place excludes local participation and is in no way contributing in any significant manner to providing alternative livelihood assistance to the local population. Because of this, locals and other intruders who could have been prevented from entering the park by the locals, constantly violating the integrity of the park and pillaging the resources thereto. The study therefore recommended among others that:

1.0 CHAPTER ONE: INTRODUCTION

More than 10% of the Earth's land surface is classified as PAs (Jeffrey 2008) and that the management system is central to preventing conflicts arising over the utilization of resources and to securing biodiversity wealth. In Liberia, there are three (3) categories of PAs. According to the country's 2006 Forestry Law, Category I comprises national forest, national park and strict nature reserve; while in Category II are buffer zone, communal forest, game reserve and multiple sustainable use reserve. Category III includes cultural sites. PAs are created for broad intentions to meet objectives consistent with global, national and local goals and needs. Principal among the aims are to preserve and conserve diversity of life supporting systems (including but not limited to genetic diversity, species diversity, ecological diversity, etc); ecotourism/recreation; protection of watersheds; and preservation of sites significant to national culture and heritage.

Internationally, every country is obliged under the Convention on Biological Diversity (CBD) to conserve at least 10% of their biodiversity in network of PAs. In furtherance of that mandates, international policies on protected area management (PAM) call for strengthening mechanisms for the poor to share actively in decision making and to be empowered to give rise to what some have called "people centered conservation" concept in which the viewpoints, choices and livelihoods needs of poor people are taken into consideration in the protected area management system (PAMS) to emphasize the importance of poverty alleviation in protected area management mechanism (PAMM).

Having such management system in place that caters to poverty alleviation of community within the proximity of the protected areas network (PAN) as part of the strategies to ensure sustainable management continues to be a serious challenge to wildlife and PAM authorities in Liberia. The reason is simple - the politics of PAM in Liberia is ambiguous as compared to the present global approach. The 19th century PAM philosophy of exclusion of locals in the decision-making process falls short of doing much about their livelihoods and cultural concerns.

The idea of incorporating the livelihoods and cultural concerns of locals is in tune with the new international doctrine of PAM which advocates that communities around PAs should be empowered directly to participate in the management protocol to ensure sustainable management system to serve as a common accord; providing ecosystem services to both national and international needs. At the same time, catering to the livelihood needs of communities is what stakeholders advocate presently.

Predicated upon this ideology, the project, “*Supporting Country Action under the CBD Programme of Work on Protected Areas*” was conceptualized and launched by the EPA with funding from GEF and management support from UNDP country office in collaboration with sectoral ministries, agencies and nongovernmental organizations (NGOs) to assess operational and management strategies in place for PAs; and comes with a shared vision of how PAM can be integrated into the country’s Poverty Reduction Strategy (PRS) to serve the dual roles of biodiversity conservation and addressing livelihood concern of communities to reduce poverty and at the same time ensure sustainability of PAs.

With this foundation objective, the study was carried out in 2008 in the ENNR to determine the livelihood concerns around the reserve, to determine a management system that will integrate the vision of the locals about PAM to put forward recommendations that will facilitate a better management approach that integrates designated PAs into the PRS as part of the mainstreaming process of environmental issues in development plans, policies and programmes.

The principal objective of the proposed management system of the ENNR is to embody people centered conservation; that is, biodiversity conservation should be for its value for local livelihoods, national, and global public good. This means that costs and benefits of the reserve should be a holistic “Ecosystem Approach which draws on multiple interest groups within the society and relies mostly on local management institutions and that, conservation should inculcate poverty alleviation.”ⁱ

1.1 Background of East Nimba Nature Reserve

Establishment and objectives

The East Nimba Nature Reserve (ENNR) was established by an Act of National Legislature on October 2003 as Liberia second gazette protected area. The ENNR was carved from the East Nimba National Forest Reserve.

Within the framework of Liberia’s national conservation strategy, the management and development objectives for the ENNR are:

1. Investigate options for increasing wildlife densities through strict management, and determine how a surplus of wild animals can contribute to the food resources surrounding human settlement.

2. Investigate the use of areas outside the Park for sustainable resource development and management, such as agroforestry, cash crops and food crops.
3. Provide local training and experience in preservation and management of a tropical forest habitat and its resident wildlife species.
4. Encourage the use of the Park as educational resources for Liberian universities, schools, and other educational institutions.
5. Establish a base of operation where staff training, scientific research and management planning can be concentrated and coordinated for the benefit of Park administration.
6. Focus the interest and efforts of government agencies and private organizations on a cooperative management program for the forests associated resources.

The communities surrounding the reserve have little knowledge of the creation of the reserve in 2003 and that its creation did not make provisions for alternative livelihood venture for those communities. The ENNR is an integral part of the reserve which also runs into Cote d'Ivoire and Guinea. The ENNR is the last portion to be passed into law. The Ivorian portion was legislated 1943 and the Guinea 1944. The Mount Nimba range is a World Heritage Site under UNESCO. Liberia comprises two-fifths of the range. Because of the new philosophy that resource management places on the state with the passage of the environmental framework legislations in 2002 and 2003 (including the EPA Act) and new Forest Policy and Forestry Reformed Law of 2006, there is a paradigm shift to sustainable development. Integrating livelihoods concerns of communities around the reserve is one of the strategies for mainstreaming PAMS in the government's PRS as one key way of mainstreaming environmental and sustainable development concerns into the national development blue print of the country.

Thus, the EPA and the Society for Conservation of Nature in Liberia (SCNL) commissioned this report and the UNDP supported this effort to document the socio-economic issues in and around the ENNR to form part of attempts preparing a national medium-term programme for protecting the ecological integrity and biodiversity of PAs; and incorporating the concerns generated in the process into the PRS.

The PRS was evolved in 2008 and comprises four (4) pillars. These are security (national); economic revitalization; governance and the rule of law; and infrastructure and basic services.ⁱⁱ The forestry sector is very vital to the revitalization of the economy; it is expected to contribute some US\$16 Millions to the Country's National budget yearly.

Both the Forestry Development Authority (FDA) and EPA are central government agencies responsible for promoting the development and management of environment and natural resources in this country. These two (2) institutions play major roles in the achievement of these goals. With the international agencies involved in forestry and agriculture, the agencies together have all contributed funds and human resources to the revitalization of the forestry and tree crop sectors. Farmers also are expected to play an important role in implementing the goals of the PRS.

1.2 Location and Size

The ENNR is located in the North of Liberia and extends some forty (40) km along a south-west north-west alignment in the north-east of Liberia. The reserve lies within “latitudes 7 degree (sic) 00 to 8 degrees 00’ North and longitudes 8 degrees 00’ West. Commencing at a point on the border between Liberia and Cote d’Ivoire at 8.44 E, N 7.52 N; thence a line runs 472 chains due north west crossing the Noun River along the border over Mount Nimba to -8.5 E, 7.58 N; on the Liberia Guinea border; thence due south west for 144.8 chains to -8.52 E, 7.57 N where it meets a tributary of the St. John River. The site is bordered by several communities including; Bassa Village, Zortapa, Yolowee, Zorgowee Town, Gbapa Town, Geipa and Setontuo. Majority of the community dwellers around the reserve speak Mano - one of the eighteen (18) spoken languages in Liberia.

The site as the name indicates is mountainous and covered with mixed forests at its lower slope. These include Parinari cloud forest that is characterized by Parinari excelsa and many epiphytes. On the peak and ridges of the mountain above 1,200 m, the character of the forest changes to mountain forest; dominated by Parinari excelsa and Garcinia polyantha. The gnarled and stunted trees at the site seldom exceed 9-10 m in height. The mountain is shared jointly with Cote d’Ivoire and Guinea. The highest peak 1,752 m is in the southwest and is shared by Guinea and Cote d’Ivoire. Rather less than half, the south-western part of the mountain chain is Liberian territory. The site includes two small National Forests, East and West Nimba.

The ENNR was proposed as a nature reserve in 1983 and legislated by the 51st Legislature as a fully PA in 2003 under the regime of President Charles Taylor. Mining iron ore deposits has destroyed much of the forest on the ridges and slopes of Mt. Nimba in Liberia. The run-off from mining operation has caused pollution and siltation in the Yah River, the most important in the area.

1.3 Topography

Nimba is covered with mixed forest at its lower slopes and at the foot of the western side of central Nimba; there are some patches of grassland savanna. There is not yet information on the individual percentage covered by each type of forest. However, Mount Nimba Range running in these three (3) Mano River nations has “Precambrian basement rock, predominantly granites. It rises abruptly 1,000 m above an almost flat surrounding glaxis. The range is a striking example of erosion processes. The sharp relief of the mountains, with their grass-covered summits, precipitous slopes and flat open piedmont, is formed by a ridge of iron-quartzite emerging from softer metamorphic rocks. Weathering also left a gigantic sheet of hard iron-quartzite jutting out of the eroded piedmont schists and granite gneiss. This crusts over the whole glaxis of the eastern and northern parts of the piedmont giving very poor soils, usually skeletal litho sols if present at all. These soil conditions explain the treeless grassy summits as well as the belt of savanna at 500-550 m around the mountains above which the forests take over. The Nimba Mountains have great topographical diversity, with valleys, plateaux, rounded hilltops, rocky peaks, abrupt cliffs, waterfalls and bare granite blocks; the whole area being a vast water catchment and reservoir. Major land-use activities carried out in Nimba include shifting cultivation, alluvial mining and cattle grazing. There is also no information available on the percentage covered by each of the activity.

Birds (importance of site): In term of birds, 134 species have been identified from 33 families at the site. Six (6) of the fifteen (15) (UGF) restricted species identified include *Bleda eximia*-Green tailed Bristlebill, *Criniger olivaceus*-Yellow-bearded Greenbul, *Illadopsis rufescens*-Rufous winged Illadopsis, *Apalis sharpie*-Sharpe’s Apalis, *Melaenornis annamarulae*- Nimba Flycatcher and *Lamprotornis cupreocauda*-Copper –tailed glossy Starling. Seventy-four (74) of the 184 Guinea-Congo Forests that occur in Liberia were recorded at the site. The study was conducted in about ten communities surrounding the Reserve covering a sample size population of 1,000 persons involving youths (both females & males), adults (men and women).

1.4 Climate

The climate of Liberia including the East Nimba Nature Reserve (ENNR) is tropical with two major seasons: dry and rainy seasons. The least and highest temperatures recorded in the Mount Nimba range have been “14°C and 30°C respectively (17°and 23° on the peaks). The mean annual rainfall is about 3,000 millimeters (mm), but varies with elevation from ~1,750 mm at the base (1,430 mm at the north end) to ~3,300 mm on the peaks, also with aspect, ocean-facing slopes being wetter than

north-facing rain shadowed slopes. The wettest months are usually April to November (May to November on the peaks). There is pronounced variation, but rainfall is usually heaviest from August to October. January is the driest month with a mean rainfall of 20 mm. Relative humidity in the mornings is 94% to 99%, dropping in the afternoon as much as 70-80%. A mean minimum of 18% is recorded in January and February when dry frequently heavily dust-laden winds blow from the desert. Owing to the change in the climatic condition, it is difficult to predict the periods of both seasons. But before The dry season ran from November to April, while the rainy season ran from May to October. The average rainfall is estimated to be 2000mm per annum and the mean temperature ranges between 25 and 30 degrees Celsius with variations of 27-32 degrees Celsius during the day and 21-24 Celsius during night. The humidity is about 80 percent which occurs during the dry season.

1.5. VEGETATION

The East Nimba Nature Reserve is an area of moist lowland rainforest, composed of 63% primary and mature secondary forest, swamp forest, seasonally inundated forest and young secondary forest.

1.4 Purpose of the Assessment

The rationale for this survey is to document the socio-economic concerns of locals in and around the ENNR and include those concerns into the wider picture of national development and develop strategies to address them through integration into the PRS programme of the country; thereby increasing the integrity of the reserve.

It is hoped that the results of the assessment will be implemented to stop the further degradation of the reserve already threatened by lumbering, pit-sawing, trading in bush meat, hunting for livelihoods, and shifting cultivation (subsistent agriculture) and mining (iron and alluvial); thus, conserving the ENNR and its biological diversity.

The assessment was carried out with the following terms of reference (TOR)

1. To design and administer a socio-economic survey questionnaire for the conduct of an assessment on poverty issues in and around protected area of East Nimba Nature Reserve and nearby communities in Nimba County;
2. Undertake field visits and consult with community people, NGOs' and scientists on biodiversity conservation , and poverty reduction issues in the areas ;
3. Appraise park related management plans, and policies concerning protected area management and how they fit into national poverty reduction issues ;

4. Analyze the data obtained on the socio-economic surveys as they relate to poverty reduction strategies regarding protected area management , and
5. Write and submit a detailed and analytical report with recommendations bearing specific strategies and actions to ensure integration of poverty reduction strategies into protected area management systems in Liberia.

1.5 Limitations

The limitations of the study were:

- Inadequate Road network
- Distances from one village to the other

2.0 CHAPTER: METHODOLOGY

The first part of the methodology involved:

1. Recruiting and training of enumerator (s) research assistants. They were trained for two hours;
2. Designing and pretesting the questionnaire and making the necessary adjustments;
3. Administering the socio-economic survey questionnaire under the supervision of the ENRR project management unit (PMU); and
4. Making field visits and consulting with community people, NGOs' and scientists on biodiversity conservation, and its relationship with poverty reduction issues in the target areas.

The second part included:

1. Reviewing relevant literature/documents (i.e. protected areas management literature at the national and global levels); appraising the management policies, programmes and strategies of the reserve and how they relate to poverty alleviation issues which the government's PRS anticipates to tackle as strategy to achieving the MDG and CBD 2010 targets background documents on ENNR, the reserve's management structure in place and how it promotes communities involvement in the management of the reserve and livelihood activities;
2. Analyzing the data obtained; and
3. Compiling and writing the detailed and analytical report with recommendations bearing specific strategies and actions to ensure integration of poverty reduction strategies into PAMS in Liberia.

The communities involved in the survey were:

The statistical tool used in the survey was simple random sampling; using a sample size population of 1,000 selected from communities adjacent the reserve. This methodology was used in consideration of several factors including but not limited to resources limitation (time, finance, human). Additional tool used in the assessment was the participatory rural appraisal (PRA) method combined with rapid rural appraisal (RRA) techniques in order to collect relevant data/information. The conversations between the team and community people were conducted in simple Liberia English, & Mano, widely spoken in the area.

3.0 CHAPTER THREE: LITERATURE REVIEW

The literature review exercise draws experiences from relevant PA laws, policy documents, and reports of assessments and projects done and current being undertaken at various community sites in and around the reserve.

3.1 The National Forestry Policy (2006)

The aim of the Forestry Policy of Liberia is to conserve and sustainably manage all forest areas, so that they will continue to produce a complete range of goods and services for the benefit of all Liberians and contribute to poverty alleviation in the nation, while maintaining environmental stability and fulfilling Liberia's commitments under international environmental conventions in particular the CBD. The policy document contains various strategies for implementation. Among them is a strategy on forest conservation.

Forest conservation includes the management of specific sites of high commercial and conservation values and the integration of commercial, conservation and community objectives into all aspects of forest management. It also focuses on wildlife and protected area management, management of coastal and inland wetlands, and the development of ecotourism. The forest conservation strategy includes two activities relevant to this study: 1) Strengthening and improving alternative livelihood opportunities to reduce rural communities' dependence on forests and wildlife, and 2) increasing community participation in wildlife management in all forest areas and, in particular, through collaborative management of protected areas.

3.2 National Forestry Reform Law (2006)

The National Forestry Reform Law (NFRL) has provisions for sustainable management of the Liberian forest land, conservation of the nation's forest resources and protection of the environment. It also provides for community rights as they relate to forest management and the promotion of forestry and wildlife activitiesⁱⁱⁱ Actions prescribed in the law require the participation of all Liberians in identifying their problems, finding ways to overcome them, designing realistic plans to achieve these goals, and implementing them, thus increasing Liberia's total wealth, thereby reducing poverty and solving other social problems.

3.3 Liberia Protected Areas Network Strategic Plan-2008-2013 (draft)

The mission of this plan is to conserve the unique biodiversity and ecosystem services through stakeholders especially local communities in the management to ensure sustainable benefits, cultural values, and abiding by the rule of law.

To achieve this laudable task, the plan anticipates doing that through ensuring the fair and equitable distribution of benefits provided by environmental goods and services to the people of Liberia in particular local communities and providing global environmental benefits. Accordingly, this will be done by using natural resources appropriately and promotion of local communities' involvement in the management and decision-making mechanism as a way of ensuring national ownership of the management process.

3.4 History of Customary Conservation Norms, Laws, policies and Institutions in Liberia

The concept of private land ownership and right to exclude and restrict all others from the use and benefit of natural resources did not exist in tribal kingdoms and confederations in Liberia prior to the introduction of the modern PA philosophy. All natural resources were communally held. Access and rights to these resources were regulated and obligations as well as responsibilities were on the users. The Chiefs through the Council of Elders allocated land, farming and hunting areas, right to fetch fuel wood, herbs and fishing grounds.^{iv}

These customary codes also created PAs and mandated prohibited acts. Areas of scenic, biological, cultural, historic, physical, traditional and customary significance were highly restricted and more often designated as shrine and sacred groves.

Animals and plant species which were of cultural, medicinal and herbal significance and on the verge of depletion were designated as tribal taboos to ensure the survival of those species.

3.5 Advent of Modern Protected Area Management in Liberia

The 1968 code which created the Bureau of Forest Conservation within the then Department of Agriculture (now Ministry of Agriculture), mandated PAs to include National Parks, National Forests, Native Reserves and Community Forests^v; is considered the first modern conservation and sustainable natural resource management legislation.

The 1976 Forestry Act creating the FDA as an autonomous agency to ensure the management of forest resources could be considered the actual legislation that institutionalized PAM in the country. It is however sad to note that customary conservation codes and principles were never included in any of these legislations. This approach was copied directly from the political leadership which also excluded tribal political philosophy of governance from the statutory laws and policies of national building. This may be the cause (to a large extent) of conflict in PAM in the country as it is in the political governance structure of the country.

3.6 The Civil War and after

The civil war years had two phases. Phase One was 1989-97; and Phase Two 1999-2003. From 1997-2003, both local and international nature conservation organizations came up with an action plan known as “renewal of nature conservation in Liberia”. The plan was part of advocacy for more PAs in the country; especially when the then National Patriotic Party (NPP) regime led by Charles Taylor instituted massive resource exploitation policy by mainly destroying the forests at a fast rate. According to the Forest Concession Review Committee (FCRC) set up by the National Transitional Government of Liberia (NTGL), there was “widespread noncompliance and pervasive mismanagement in the forest sector, as exemplified by the over 64 million dollars in tax arrears accumulated by concession holders and the fact that the combined land area allocated for forest concessions over the last twenty-five years was two and a half times the forested surface area of the entire country.”^{vi} Such exploitation no doubt greatly damaged the biodiversity and vital ecosystems in the process.

This nature conservation advocacy came at the end of the West Africa Conservation Priority setting workshop in Almina, Ghana in 1999 which recommended that Liberia has the greatest potential for nature conservation of any of the Upper Guinean Ecosystems country.^{vii} As a result of the sustained

advocacy by nature conservation organizations, the Government of Liberia agreed to create six additional national parks and nature reserves and expand Sapo Park. With this commitment, the government committed itself to setting aside an additional 800,000 hectares for other protected areas and corridors linking parks and reserves to cover a total of 1.5 million hectares or 30 per cent of Liberia's forests.

The creation of the ENNR (13,400 hectares) and expansion of Sapo by 54,100 hectares in 2003 were a noticeable result of that sustained advocacy. While the expansion accelerated Liberia's PAN from 3-4% of total forest covered, Liberia's conventional obligation under the CBD that requires 10% of national forests to be placed in PAs means that Liberia still has a deficit of 7 % to reach the CBD mark.

However the real issue of contention in PAM is not whether the country has met its 10 % commitment under the CBD but the poverty stricken conditions of communities within the fringes of existing PAs. Poverty by definition is a serious threat to sustainable resources management and conservation; addressing poverty problem will contribute to sustainable and participatory management regime of protected area like the ENNR.

3.7 Poverty Reduction Strategy Programme and Protected Area Management in Liberia

In 2006, the Government of Liberia developed an interim Poverty Reduction Strategy (iPRS) which culminated into a full blown PRS by April, 2008 at the end of nationwide consultation to solicit the inputs of citizens and residents. The PRS which is also known as "Lift Liberia" was formally launched June, 2008. It is estimated at US\$1.6b.

The Environmental Working Group (EWG) which was the creation of EPA and its partners as one of the advocacy medium to mainstream environment in the formulation of the PRS set the integration of protected areas management in the poverty reduction strategy Programme as one of its outputs of mainstreaming environment in the national development agenda especially the PRS including protected areas management.

According to the EWG, invasive poverty and the exclusion of the livelihoods concern of communities surrounding PAs remain a major threat to the sustainable management of PA since the advent of in-situ conservation in the country. Globally, social-economic and cultural issues of local

communities resonate in the management strategy of PAs given that their creation places restriction on locals' access to forest resource. Henceforth, finding alternative livelihoods is seen as critical to a sustainable management of PAs.

Another problem associated with poverty-environment scenario in PAM in Liberia is that existing philosophy of conservation fails to recognize that land and biodiversity are central to the cultural and livelihoods of local people. These two (2) factors form the basis for their survival, their spiritual well-being and cultural identity. The loss of these assets without a viable alternative threatens the very survival of the community.

In the wake of this philosophy, FDA and partners are faced with the challenge of local and fortune hunters invasion of PAs and pillaging their resources. The FDA and partners continue to appeal in vain for locals' assistance to protect the park without addressing the fundamental problems - local people exclusion from the management regime and lack of alternative livelihoods for survival. Tackling this fundamental issue is critical to success; this is the vision that underpins the present project; leading to this study in the reserve to break new grounds for PAM philosophy and doctrine in the country.

3.8 Land Rights and Community Forestry Program (LRCFP)

A central dilemma throughout Liberia's history has been that the country's rich natural resources have only benefited a small number of Liberians. In order to address these fundamental inequities and help foster better governance in Liberia's forest sector, USAID is supporting community forestry, land tenure and property rights activities through the Land Rights and Community Forestry program (LRCFP).

The overall goal of the program is to advance the policy and practice of land and forest management in forest-dependent Liberian communities through the introduction of adaptive and generative management and learning-based approaches in rural areas of both Nimba and Sinoe counties as well as supporting capacity building for national and county level institutional partners. Specifically, the LRCFP will improve the legal and policy environment for land tenure and property rights through:

- 1) Support to the FDA and its partners in the development of a law governing community access rights to forests and the regulatory framework required to implement it; and

- 2) The provision of technical assistance to the new national Land Commission to assist it in the development of key policies, regulations and laws.

Various socio-economic and biological surveys conducted in the ENNR revealed that surrounding communities of the reserve are seriously concerned about the loss of livelihoods and other customary practices brought about by the establishment of the reserve. They are concerned about the management action presently in place because it affects negatively their livelihood activities and customary practices.

However, from the Sapo National Park (SNP) experience, it is not clear what communities within the ENNR mean by 'benefit' to them. In other words, it is not yet understood by the park management and partners, what communities' interpretation of 'benefit' is. What may become apparent during the reserve management process is that communities could benefit in several ways. For example they may enjoy employment opportunities; new and improved livelihood initiatives such as cattle rising and cash crop agricultural programs and development schemes. It is highly recommended that lessons from the SNP livelihood initiative and community forestry pilot projects be visited at the management level to help determine how effective and acceptable 'benefit' issues could be for the local communities surrounding the ENNR.

3.9 The USAID/ARD LRCFP

The LRCFP are specifically working toward the improvement of the legal and policy development for land tenure and property rights in Liberia through:

- 1) Support to the FDA and its partners in implementing the law governing communities' access rights to forests and the regulatory framework required to implement it, and
- 2) The provision of technical assistance to the new National Land Commission to assist LRCFP in the development of other key policies and regulation regarding forest communities.

A workshop on "*Community Benefits from Forest Resources* was held on September 23-26, 2008. The objectives of this workshop were:

1. To review international experiences in providing community benefits from forest resources and assess their relevance and applicability in Liberia, and

2. To determine priorities for future action in ensuring community economic benefits and participation in all aspects of sustainable management of forest resources. The presentations and the final report from this workshop provide valuable baseline and trend because of the range of participants and lively discussions.

4.0 DATA PROCESSING AND ANALYSIS

Sixty-five (65) research assistants were recruited, trained and deployed in villages of Nimba County where the questionnaires were administered under the close supervision of the PMU. The survey was conducted in ten (10) communities around the park.

Table 1: Demography Survey Data

No	Town/Village	Population ¹	County	District
1	Bassa Village	35	Nimba	Yarwenmehnonon
2	Zortapa	2,668	Nimba	Gbehlay- Geh
3	Yolowee	1,000	Nimba	Gbehlay- Geh
4	Zorgowee	4,600	Nimba	Gbehlay- Geh
5	Gbapa	6,972	Nimba	Yarmain
6	Geipa	875	Nimba	Gbehlay- Geh
7	Setontuo	400	Nimba	Gbehlay- Geh
8	Dulay	3,000	Nimba	Gbehlay- Geh
9	Zualay	2,500	Nimba	Gbehlay- Geh
10	Nyantuo	290	Nimba	Gbehlay- Geh

Table 1 shows the demography survey data per town/village, district and the county which the districts, town and village.

4.1 Data Processing

The data/information were processed manually first through shortening, coding and tabulating and content analysis. This process requires less time and minimum use of equipment.

4.2 Data Analysis

The analytical approach to the data was through the description of variables mainly livelihood system, coping method, income and expenses, etc. The techniques of interpretations were descriptive and explanatory using percentages in analyzing the quantitative and qualitative variables.

4.3 Analysis of Socio-economic Characteristics of the Population

Table 3: SOCIO ECONOMIC DATA

No.	Town	Population	Basic Services			Source of Livelihood	Community Project	Implementer
			<i>School</i>	<i>Clinic</i>	<i>Road</i>			
1	Bassa Village	35	Yes	Yes	Yes (in Bad condition)	Farming, hunting,	No	None
2	Zortapa	2,668	Yes	Yes	Yes	Farming, hunting, formal employment	No	None
3	Yolowee	1000	No	No	Yes (in Bad condition)	Farming, hunting,	No	None
4	Zorgowee	4,600	No	Yes	Yes	Farming, hunting, formal employment	No	None
5	Gbapa	6,972	Yes	No	No	Farming, hunting, formal employment	No	None
6	Geipa	875	No	No	No	Farming, hunting,	No	None
7	Setontuo	400	No	No	No	Farming, hunting,	No	None
8	Dulay	3,000	Yes	No	No	Farming, hunting, formal employment	No	None
9	Zualay	2,500	Yes	Yes	Yes (in Bad condition)	Farming, hunting, formal employment	No	None
10	Nyantuo	290	No	No	Yes	Farming, hunting, Cattle raising,	No	None

According to the respondents, the economic activities of the population in the area are farming and hunting and some mining. The analysis shows that 80 % of the populations are subsistence farmers. Five percent claimed that they are engaged in mining and another 5 % claimed that they have some formal employment while 10 % said they do hunting as their partial livelihood. Again, those who are farmers (80%) indicated that their production outputs cannot feed them and their families throughout the year. In effect, all the respondents noted that they purchase rice and other food items during some part of the year.

The expenses of the respondents, according to their various explanations as indicated in Table 4 above range from \$2,000.00 LD to \$6,000.00 per month on food, school and health care services for each household. Relative to income earning, 35% indicated that they earn money but that all is spent on food, health and school fees.² These constitute the relative poverty that is prevalent in the surveyed area.

On the issues of basic infrastructure availability, it was observed and indicated that four (4) out of ten (10) villages covered have schools with levels ranging from elementary to junior high. Two (2) villages have roads, and three (3) have road networks that are in bad conditions. Again, No village indicated that their community is implementing non-conservation projects from or by NGOs.

(However, at the time of validation of the study, two (2) NGOs ARD and STCP were implanting projects in three (3) communities. Associate Rural Development (ARD) was in Zortapa and Gbapa; and STCP in Zortapa and Zorgowee. Hand pumps and toilets had also been built in some of the communities. These project such as hand pumps and toilets are directly related to Pillar IV in the government's PRS³.) In conclusion, most or 80 % of the respondents claimed that they are engaged in farming and its related activities.

4.4 Analysis of the Nature Reserve Management Structure in Place

Since the ENRR was gazetted, it has been managed, by a management team put in place by the Wildlife and Park Division under the supervision of the Department of Forest Conservation which is headed by a Technical Manager of the FDA. However, the Community Forestry Department of the FDA plays a major role especially in the area of community forestry and livelihood. The ENNR is headed by a Park Warden, who performs under the supervision of the Protected Area Manager. At the time of the validation the task teams consisted of three zone wardens, biologist, administrator and other support staff, and for each zone there is a community engagement ranger, rule of law ranger, and community volunteers.

The specific duties and responsibilities of the PAM in consultation with the Technical Manager for Conservation (TMC), and in close collaboration with the Technical Manager of FDA shall include:

1. Designing , and implementing programs, supervising, managing and monitoring all activities related to Wildlife Conservation and PAM;
2. Preparing annual outcomes, work plan, budget and annual report for the division of wildlife conservation and PAM;
3. Managing sections within the Divisions of Wildlife Conservation, Education and Eco-tourism PAM;
4. Assisting in formulating policies and regulations for protection and classification of wildlife PAs;
5. Ensuring sustainable utilization of wildlife;

6. Developing, implementing and maintaining all PAM plans:
7. Implementing all international conventions and treaties relating to wildlife and PAM including, Convention on Wetlands of International Importance (RMSA), AITSS, Convention on Biological Diversity (CBD), and Conservation of Migratory Species of Wild Animals (CMS);
8. Promoting public awareness, education, and community participation in wildlife and PAM;
9. Designing and maintaining guidelines for the development of eco-tourism;
10. Identifying and facilitating research in wildlife, PAs, education and eco-tourism and ensuring results and utilizing these results in management activities.

4.5 Analysis of Results and Findings

During the assessment of ENNR, the team observed that the people in the area live in severe poverty. The population is severely food insecure. In all the ten (10) villages/towns in and around the reserve basic social infrastructure is lacking or in bad conditions. The social infrastructure includes schools, clinics, and roads. The following points were also observed:

1. Even though the ENNR reserve was officially established since 2003, communities bordering the reserve do not feel or see themselves as shareholders in its management;
2. They do not enjoy sustainable programs in terms of livelihood activities that will make them feel a part of the management process in caring for protection and conservation of the reserve;
3. There is little or no consideration for the local government administrations and the traditional leaders in the management system of the reserve; hence, making their involvement minimum or less of a responsibility in protecting the nature reserve.
4. FDA staffs, mainly park rangers in the field are poorly equipped, understaffed and less motivated to carry out the enormous task of managing the reserve. For example the staffs do not have adequate communication equipment that will enable them to communicate between post points, they are poorly mobile in that they one vehicle in the field and most of the motorbikes are not serviced regularly to effectively shield the 13,000 or more hectors of the protected Area and they lacks GPS Equipment in the field.

5. In view of the poor management systems of the ENNR, there are unauthorized persons carrying out illicit activities in the ranging from gold and diamond mining and hunting amongst others.
6. The ENNR was established without sufficient public education and awareness, thus the residents of the surrounding towns and villages do not fully understand how and why the reserve was created, in terms of its importance.
7. The area was not properly demarcated in a way that buffer zones were created to allow the residents carry out their traditional activities therein.
8. The laws were created without efficient and effective enforcement mechanism. The FDA which by law is charged with the responsibility of ensuring the protection of the PA is not adequately equipped with the needed logistics.
9. The ENNR lacks adequate qualified scientists to research on the kinds of biodiversity available in the area, the number of different types of plants and animals, to educate the people in the surrounding areas what benefit(s) they could get from the biodiversity, what threatens biodiversity, and the importance of conservation.
10. It was observed from the assessment that a large number of rural inhabitants living in villages surrounding the reserve depend on the reserve's forest resources for livelihood. The coping method of their survival is working on the farms of less than two (2) hectares. The major crops they cultivate are rice, cassava, and other minor ones. which cannot sustain them throughout the year. They therefore engage themselves in illicit mining, and hunting to fill the void
11. During the assessment of the reserve, it was observed that about 70% of the respondents were vulnerable to food insecurity. It was indicated that the major causes of food insecurity were: Agricultural production constraints such as lack of or limited post harvest technology; Poor infrastructure and limited access to market; Inadequate drinking water and sanitary facilities; Poor health care facilities;
- 12 Again, those who are farmers, (80%) indicated that their production outputs cannot feed them and their families throughout the year.

5.1 LIVELIHOOD COPING MECHANISM

The livelihood coping mechanism of the communities adjacent the Reserve is of such that, a bulk of the inhabitation of the communities within the proximity of the Reserve obtain the survival on forest resources; their main endurance is working on the farms. The crops they cultivate are mainly rice followed by cassava. They work hard but their increase is not enough to sustain their families. They augment their subsistence production by engaging themselves in other activities such as hunting, manning and gathering of fuel wood. With these additional undertakings they are still not adequately able to feed their families all through the year. As a result of this, their coping methods is to put pursue on the forest resources which they exclusively rely on for their upkeep.

Basic infrastructures such as motor roads and regular transportation system, good schools, hospitals and electricity are lacking or inadequate in most of the communities surrounding the Reserve. Fuel wood is their major source of energy which they extract from the diminishing secondary forest. The communities do not have adequate drinking water facility and the surrounding bushes of their communities are used for latrines. Malaria, diarrhea and pneumonia, are common illnesses found amongst the community dwellers most especially the children.

In all the communities as in most rural communities of Liberia, of which Nimba County is of no exception, the living condition of the inhabitation is one that needs more to be desired. Mostly in the case of the elderly, the women and children whom are the meanly vulnerable as a result of the lack of basic social services, huge unemployment in the most of extreme poverty. When someone is sick, they are carried at some point over a long distance to seek medication. Impoverished families have more children than they desire because of poor access to family planning education, contraception, decent employment opportunities, and the lack of sexual and reproductive health information and services.

5.2 CONCLUSION:

The livelihood of the rural populations is central to biodiversity conservation and natural resources are; they cannot be separated from the broader context of social economic and development challenges. Sound environmental and natural resource management is fundamental to the sustainability of biodiversity resource base and economic benefit stream. For the rural communities, access to and control over natural resources are major governance issues. Improved governance and economic framework will maximize the ability of the rural communities to benefit from their resources base, while creating a powerful force for preserving land and its biodiversity over a long period of time. Sound environmental management is also fundamental to reducing the vulnerability of rural communities.

Based on the assessments and the results of this survey, it is concluded that in the first place, the communities in and around the reserve are faced with serious livelihood problems, which encompass serious food insecurity. As results of these factors, the communities around the reserve derive their sustenance from the environment and its biodiversity through different means including farming, hunting, fuel wood collection etc. Consequently, the forests are degraded of its biodiversity, and that biodiversity resources are being severely consistent pressure.

It is important that poverty reduction strategy be integrated into the management systems of the reserve. This will pave the way for the management team to address issues of poverty reduction in the area in the medium and long terms. Even though there are hopes of some small projects to be undertaken in the area by some nongovernmental organizations, there are still gaps to be filled in addressing poverty production. Most of the projects are not sustainable and might not directly address the long term concern of poverty reduction. Therefore, a poverty reduction scheme should be prioritized in the management plan for the proposed reserve.

However, this can work only if the management team of the reserve is motivated and equipped to carry out the various aspect of management effectively. Communities too must be encouraged to be involved and to participate in the management of the Reserve because it is these communities existed long before their areas were declare as Protected Areas, they had they own ways of conserving biodiversity even thou they did not fully understand its importance. Hence the governance and protection of the reserve should be largely dependent on local community involvement.

In addition, alternative livelihood must be considered and integrated in the management plan as a way forward to poverty reduction, with an emphasis placed on food security and income generation.

The ENNR, like other PAs in Liberia, is threatened and needs to be protected. The study shows that the area is being severely impacted by human activities. These activities include:

- Bush meat hunting: The animals generally hunted in the area are _____. The continual killing of these animals will deplete the animal species in the ENNR.

- Illegal alluvial mining (gold and diamond): Nimba is rich in both minerals and these provide substantial incomes for families. Additionally, the mining of iron ore was carried out by the erstwhile Liberia-American-Swedish Mineral Company (LAMCO) and its predecessor, the Liberia Mining Company (LIMINCO). Full time iron ore mining operations are expected to be carried out by the Mittal Steel in the not too distant future on the Liberian side of Mount Nimba. Such will greatly affect the ENNR as the surrounding communities will be host to job seekers and employees. This will put enormous pressure on the ENNR as residents will be fighting for scarce resources.

Cutting of forest products such as tree for fuel wood energy production: Before the civil war, much of the charcoal production came from unwanted logs from the timber or logging industry. However, this is not the case now because the logging industry has not been fully resuscitated. Therefore, the forest area of the reserve is also being used for fuel wood production to provide energy needs for most households in the ten (10) communities surveyed

5.3 RECOMMENDATIONS:

Based on the analysis of the existing situations of the Reserve, the following recommendations are advanced to guard having a sustainable and management structure in place:

1. At the planning and management stages of the proposed reserve, poverty reduction should be of high decision-making priority to ensure that the national Poverty Reduction Strategy is integrated in the management of the Reserve.
2. That the FDA work in line with the Poverty Reduction Strategy which focuses on rehabilitation of basic infrastructure, security and the rule of law and economic revitalization to ensure sustainable livelihood for communities around the reserve;
3. The development of human capital to ensure effectiveness in the management of the area is essential at the planning and management stages of the reserve. And to promote economic growth, and raise the living standard of the people in communities surround the Nature Reserve and that EPA, FDA, and its partners develop an appropriate programmes for community dwellers for the purpose of enhancing their capacity and integrate traditional methods in protected area management mechanism already in place.
4. The Government of Liberia and its partners should commit some funding to infrastructural development (i.e. housing, farm to market roads, safe drinking water system, renewable energy technology, schools and clinics etc.) to improve the living standard of the community dwellers. This kind of undertaking will help to reduce poverty, strengthen the management system of the reserve, enhance farm productivity and improve the local economy.
5. The Government of Liberia and its partners organize sustainable agricultural programs for communities in the reserve such as training large numbers of village workers in various systems of farming that are sustainable, including food crops product (i.e. rice upland and swamp, cassava, and vegetable productions), cash or tree crops production (i.e. rubber, cocoa, coffee and oil palm), animal husbandry production (i.e. cattle, sheep, goats, pigs, chickens), and fish pound management. These can serve as incentives in helping to manage the reserve, increase food security, create employment opportunities, and stimulate economic growth, and reduce poverty in the area.

6. That FDA, in collaboration with the Ministry of Internal Affairs (MIA) and EPA, organizes town hall meetings involving the management team of the reserve and the rural communities of the area to forge a common front that will enable the communities and the management team to better address ecological, economic and social concerns in order to avoid conflict and related problems.
 7. The management team should strengthen local capacity for integrated management system of the reserve and the natural landscape to maximize benefit for the local communities.
 8. The Government of Liberia, with assistance from its partners, recruits scientists and deploys them alongside the management team of the Nature reserve to carrying out periodic research, monitoring and evaluation of the progress and performance of the management systems of the reserve;
 9. The EPA and FDA, in collaboration with key partners, carry out comprehensive public awareness campaign of the legislation laws that created the reserve for the communities bordering the reserve.
 10. The Government of Liberia through the FDA, with technical and logistical support from its partners, should carry out an inclusive survey the reserve in order to set accurate boundaries and buffer zones.
 11. That the EPA and FDA, in collaboration with their respective partners, develop training needs and conduct training for the restructured management team of the nature reserve.
 12. That the Ministry of Education, in collaboration with the management team of the area, initiates the process of conducting adult literacy programme for the local communities. The programs will mainly target female and male youths and adults and other local people who may serve as work force in the area.
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