

EAST NIMBA NATURE RESERVE
UPDATED MANAGEMENT PLAN

2024-2029

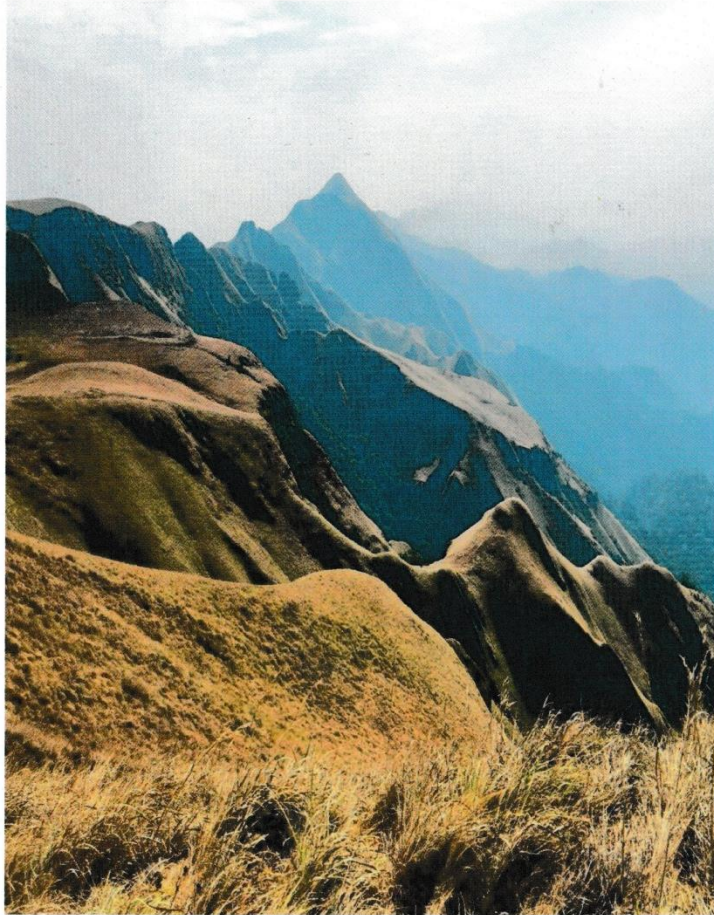
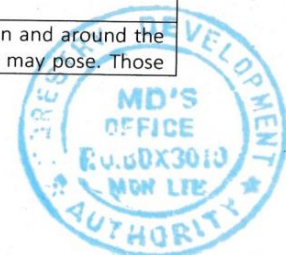


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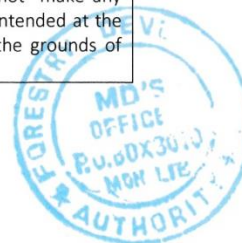
Section	Summarized Actions and Guidelines
5.0	Management of the Reserve
5.1	General Approach to Management: Define management of the Reserve as consisting of the requirements that its stewardship must contribute to the socioeconomic, scientific and educational welfare of Liberia; must employ quick, wise and efficient efforts to protect and conserve the Reserve; and must take into account that ENNR is internationally recognized for its high biodiversity and hence needs and deserves strict protection.
5.2	Boundary delineation : Demarcate external boundaries of the Reserve to resolve the lingering dispute along the Ivorian-Liberian borders.
5.3	Land management : Identify/detect and destroy Exotic Invasive Plant Species for native species to thrive again in those areas exotics once occupied.
5.3.1	Habitat restoration: Support AML’s effort to restore degraded areas of the Reserve through revegetation.
5.3.2	Fire management: Ensure public awareness of the constant threat of fire, train fire fighters and illustrate the measures that must be taken to avoid, detect , fight and stop fires.
5.3.3	Exotic Invasive Plant Species: Raise awareness with individuals and stakeholder groups about Acacia magium(an Exotic Plant Species),that is spreading like wild fires in some parts of Liberia.Chromolaena and an unidentified species of a fruit-bearing tree, Guava, are recently reported as thriving in some parts of the Reserve.
5.4	Wildlife management: Outlaw any activities which are an encroachment on the lives of wild animals (e.g. Hunting, logging , farming, mining,etc.) inhabiting the ENNR and its surrounding landscapes.
5.5	Conflict between humans and wild animals that feed on or otherwise damage people’s crops: Because various species of animals are involved, there is a constant dialogue with affected households/individuals to identify the conflict animals ,employ fencing, “Flashy tapes” and other means to keep protected (by law) animals away from farms and to hunt/trap unprotected conflict animals such as cane rats, porcupines and squirrels.
5.6	Introductions or re-introductions of domestic animals into the ENNR: An introduction of domestic animals in the Reserve is currently illegal but when this becomes necessary for whatever reason(s), actions and guidelines will be provided. For example, all animal owners working in or visiting the Reserve must register their pets, will be issued permits and will bear full responsibility to keep their animals from entering the Reserve and its buffer zone. A failure to comply will trigger a fine in any amount as may be determined by Management.
5.7	Handling of dead,injured,abandoned domestic animal(s): A visitor code of conduct will be assembled and copies distributed to all visitors or employees who own animals. Animals are not permitted in the Reserve and its buffer zone, and this include dogs and grazing animals. Dead, wounded or abandoned domestic animals found in the ENNR must be left alone, but any of these outcomes must be documented and reported to the appropriate authority at the Reserve’s Headquarters for action.
5.8	Diagnosis and control of zoonotic diseases: There are no known or reported zoonotic illnesses at the ENNR,but development and implementation of a risk assessment and surveillance plan to proactively monitor zoonotic illnesses is recommended.
5.9	Collecting, harvesting and use of Non-Timber Forest Products from the ENNR: Collection/harvesting and use of any products from the Reserve are forbidden and punishable by law, and this law needs strict enforcement.
5.10	Abandoned mine equipment: All abandoned tools, vehicles and their likes in and around the boundaries of the ENNR are to be disposed of because of the danger they may pose. Those



	equipment of iron origins are, reportedly, being collected and sold for cash by scrap iron dealers.
5.11	Water pollution: Habitat restoration through revegetation is an option that is currently recommended to deal with water pollution problems.
5.12	Historical and cultural sites: Invest in the search for historical and cultural sites for their likely potential to attract ecotourists.
5.13	Mineral prospecting and mining: Outlaw mineral prospecting and mining of any kind in the ENNR.
5.14	Environmental and Social Impact Assessment (ESIA): Make the credible conduct of ESIA one of the high-ranking requirements of any activities requiring such assessment in the ENNR.
5.15	Climate change adaptation: Propose to carry out research on climate change impact on climate-dependent farming such as shifting cultivation, to support an informed decision on the part of ENNR-fringed communities and beyond.
6.0	Zonation
6.1	Core zone: Take decision that conservation and protection of ENNR's core zone are the supreme if not the only management objectives.
6.1.1	Biodiversity hotspot: Prepare maps of habitats of large mammals, birds, butterflies and bats as the first action for their delineation and management.
6.1.3	Habitats of potential importance: Identify various animals (small and big mammals, butterflies, bats and birds in patches of forests), using the high-quality maps which have been meticulously prepared.
6.2	Old mine restoration: Recommend Agroforestry innovations and tree growing (not tree planting only) regimes to restore degraded areas.
6.3	Buffer zone: Propose to establish and maintain ENNR's buffer zone for the first time since its creation in 2003. This section spells out what should be done to structure the Reserve's buffer zone for ENNR.
6.4	Stakeholder zone: Propose areas to be used by some communities who are now displaced because of the creation of the ENNR. This idea of a stakeholder zone remains a proposal. Management will be able to determine whether a stakeholder zone is possible or not during the zonation of the Reserve.
6.5	Administrative zones: Set aside areas around the Reserve to accommodate its Headquarters, zonal headquarters, staff housing units, including the Reserve Warden, and so on.
7.0	Affected Communities
7.1	Co-management actions and guidelines: Propose and advocate for a partnership with all stakeholders and actors of the ENNR to bring to bear the best in them for successful protection of the Reserve.
7.1.1	Major phases of co-management: Outline and briefly discuss the four phases of co-management which are preplanning, organization of partnership, negotiation of plans and agreements, and learning by doing (adaptive management).
7.1.2	Conditions under which co-management can be successful: Compile from a growing body of published experiences factors which make for a successful co-management endeavor, and these are an appropriate balance of power and responsibilities, managing equity issues and low transaction costs.
7.1.3	The basic aim of co-management: Highlight the eight (8) elements which constitute the aim of co-management, an example of which is to establish a process of shared responsibilities regarding the use (non-consumptive) and management of the ENNR.
7.1.4	Rights and obligations: Define and illustrate the rights and obligations of the Co-Management Committee(CMC).
7.1.5	Co-management policy, actions and guidelines: Repeat for emphasis this Plan's co-management policy and corresponding actions and guidelines for a rewarding outcome.
7.1.6	Additional information on affected communities: Propose closeness, previous exploitation in varying degrees to the Reserve and land tenure as criteria which qualify anyone as a stakeholder in delivering on ENNR's development agenda.
7.1.7	Socio-economic background of Nimba County: Raise ENNR stakeholders' consciousness of the



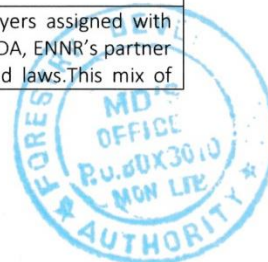
	importance of Nimba county and why understanding the county's socio-economic conditions will help make protection and conservation attempts for the ENNR possible. Nimba is one of the most important counties of Liberia in terms of population, politics and exports, for example – she houses the ENNR.
7.1.8	Effect of ENNR on local communities: Keep on board the fact that the Reserve has taken away so much from its bordered communities in terms of land for active farming and areas for hunting, among others; but it also gives quite a few of them the right to continue harvesting their cash and other crops which were established before the Reserve was created, but outlawed any expansion of such areas(a kind gesture initially; apparently, this has become a challenging encroachment arrangement).
7.1.9	Community impact on the ENNR: Draw attention to the activities of ENNR-fringed communities that do not support the goals and objectives of the Reserve's existence, including hunting, farming and mining; hunting and mining being the most damaging, arguably.
7.1.10	Cultural values: Recognize cultural values as having the propensity to support conservation interests and efforts.
7.1.11	Clan areas around the ENNR: Recognize that a positive relationship with the clans on whose customary land the ENNR in part lies, is vital to its protection. Areas in or around the Reserve which the Clans claim as theirs are, as a result, identified and mapped.
7.1.12	Partnerships: Attach significant value to partnerships to ensure success in protecting the ENNR and other protected areas in Liberia for that matter.
7.2	Conservation Agreements: Document and monitor compliance with what stakeholder community (synonymous with ENNR-fringed communities) of the Agreement promised to do in support of conservation and what the donor (an NGO partner) promised to provide as an economic benefit.
7.2.1	The parties and their responsibilities: Pursue consistent commitment to the agreement reached between the stakeholder community to protect the Reserve and the donor community to provide compensation in return.
7.2.2	Conservation commitments: Pledge direct economic benefit by a donor to a stakeholder community to stop illegal activities or support conservation in the Reserve, and this covenant is respected by both parties at all times.
7.2.4	Penalties for non-compliance: Design a performance-based incentive scheme into the Reserve's protection-benefit agreement and activity, with the stakeholder community. The agreed economic and other benefits for the stakeholder community must be compliant; non-compliance triggers a gradual loss of benefits.
7.2.5	Performance monitoring: Ascertain that both sides of the Conservation Agreements comply; implementation and performance effectivity and efficiency are monitored almost daily from day 1 of signatory to the Agreement.
7.2.6	Finance: Make honest commitment that Conservation Agreements should possess long-term (and I may add permanent and internally-derived, externally-supported) finance if they are to be successful. Currently, the polluter-pay scheme, arguably, has made ArcelorMittal the source of fund, although some institutions such as FFI (Fauna & Floral International), UNOPs(United Nations Office for Project Services), CI(Conservation International) and others are contributing , while exploring other sources of funds. For ENNR it is likely that ArcelorMittal will continue to be a crucial source for funds, e.g. in capitalizing the trust fund, in the medium to long term, and this document absolutely agrees with and endorses the ENNR Management Plan (2014-2018) on the issue of finance.
7.3	Policy and Actions to Sustain Support for Cultural Values: Manage,reduce,avoid or resolve disputes and conflicts, minimize the negative impacts of protected areas and the ethical imperatives which this effort has embodied. These and other policy actions impose on this management plan the need to seek and support cultural values, even though it is difficult at times to recognize the benefit of such cultural values easily or these do not make any significant change at times in the lives of locals as has always been honestly intended at the outset; but protected area management must invest in cultural values on the grounds of ethical dictates, hence compliance.



7.4	Support for Livelihoods: The multiple ENNR partners and stakeholders adopt the “alternative livelihood” model in their unflinching support for local livelihoods designed to reduce the negative impacts and maximize incentives towards conservation outcomes, and to ensure that Conservation Agreements serve as living examples of such incentive (or have them improved to serve as credible examples of such an incentive-based system which is in its experimental phase).
7.5	The Challenges Associated with Alternative Livelihoods: Undertake quality analyses to tap into the mixes of the natural and social sciences, among others, to understand what constitutes a livelihood. Two examples of the 6(six) challenges to alternative livelihoods are: (i) “Frequently the support for livelihoods is driven by a project and supported by temporary specialists but is not a part of the core business of the FDA, so there is inadequate buy-in by government” and (ii) “Even when support for livelihoods has been successful, and has been adopted by the local communities, there sometimes are unintended consequences, in direct opposition to the original objectives of reducing reliance on natural resources” .
7.6	Livelihood-Focused Interventions(LFIs): Propose four livelihood-focused interventions to be fully discussed with ENNR’s multiple groups of stakeholders for consideration (see Sections 8.6.1-8.6.4.
7.6.1	Agroforestry innovations(AFIs): AFIs (e.g. Food & cash or tree crops, small-scale plantations for timber and fruit trees, Alley cropping, Home gardens, Backyard gardens , etc.), to meet the needs of locals for food, timber, cash and other essentials for an improved standard of living .
7.6.2	Livestock husbandry(LSH): LSH,poultry-focused, but leaves an open room for other options to ensure flexibility for the multiple hundreds of households and individuals who will definitely have other choices to make. Poultry and the husbandry of other animals would cut down the level of dependence on bushmeat which is in high demand for GB(a local dish), but we could begin the long journey in trying to replace bushmeat with meat from chickens, ducks, goats , cows and so on. Wastes from these animals could support production of chemical- free fertilizers.
7.6.3	Small-scale forest-based enterprises(SSFBEs): SSFBEs, which are in abundance in Liberia but are not recognized nor assisted by government or the private sector. Examples of SSFBEs in rural Liberia, including the towns and villages in northern Nimba, are Basketry (e.g. Weaving mats, chairs and nets from Rattan and other plants), Carpentry (Manufacturing/assembling wooden beds, boxes, doors, door frames, etc.), Chainsaw logging (Pit sawing)(which is the harvesting of wood from felled trees), and the Cultivation and Management (Growing and harvesting, processing and marketing) of natural plant products such as Griffonia simplicifolia, Xylopia spp and other Non-timber Forest Products (NTFPs).
7.6.4	Solar energy systems(SES) for human health, climate change mitigation and reduced deforestation: Provide a source of quality drinking water in almost all the ENNR-fringed communities where most, if not all, the sources of surface and underground water is polluted by mining. Even places where hand-pumps had been installed, muddy and red water has been collected from such hand water pumps. Solar-powered water pumps and solar lamps will have a life-changing impact on the lives of ENNR-fringed communities by providing clean drinking, cooking and bathing water and lighting, while eliminating/mitigating health hazards and habits, such as firewood burning and charcoal production that have serious impact on human health and climate change.(LFI’s are proposed in addition to Ecotourism (see NER) (NOT MASS TOURISM/TOURISM IN GENERAL)as additional support for local livelihoods in ENNR-fringed communities and beyond.
7.7	Community forests: Develop permit systems and rules with trained and organized community forest management bodies (CFMBs), who are interested in forest conservation but focus on the mere assembling and institutionalizing of a permit system of rules making and enforcement in Bleih and Zor Community forests. The community forests closest to the ENNR could be of so much value to protection of the Reserve in its contribution to demarcation of external boundary of the Reserve, establishment of its buffer zone and help make ENNR less attractive to locals as an area for farming, logging, mining and the collection and harvesting of non-timber forest products.



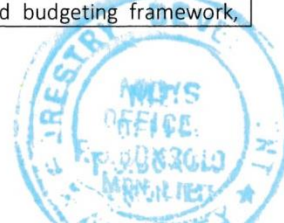
7.8	Policy and actions of community forestry in support for ENNR-fringed communities: Invest in community forests not only for their centrality in making successful participatory forest management highly likely in Liberia in general and Nimba in particular, but also as an enduring positive force with the strong potential to make conservation and protection of ENNR attainable. For example, community forests are viewed in some circles in Nimba as having a role in the demarcation of the external boundary of the ENNR, and correctly so, something that has not been done about 20 years now since the Reserve was created.
7.9	Grievance Procedures: Review and address ENNR-fringed communities' concerns, including complaints about wild animals raiding their farms. Sincere attempts on the part of the Authority are being made to deal with this complicated problem of wild animal-human conflict.
8.0	Law Enforcement
8.1.1	The urgent need for an effective anti-poaching strategy: Recommend all law enforcement officers to undergo training on effective anti-poaching methods, but in the meantime, there is so much to be done about this challenge right now. These actionable steps are laid out in this Plan and are outlined in this section.
8.1.2	The simple but dangerous forms of encroachment which are, at times, not considered. Identify and describe the difficulty Rangers face with patrolling some parts of the Reserve's rough terrain which only Remote Sensing can detect and only farmers know and can travel on much better than Rangers; and the fact that agreement reached with farmers to continue to harvest their farms in the Reserve which were established before ENNR was created. This arrangement is now being viewed as a suspect of encroachment in the search for the correct culprits of this challenge in a bid for the most fitting solution.
8.1.5	Effective patrolling: Plan continuing training and capacity building program for Rangers and Auxiliaries to bring poachers to justice and to discourage and eventually stop encroachment and poaching.
8.1.6	CMC/Rangers and the use of the 4 D's: Bring to bear determined efforts to ascertain that the CMC and Rangers – and possibly the Auxiliaries – will get themselves familiarized with the 4D's at their fingertips through on-the-job training and other continuing education processes.
8.1.7	The "Range System" : Continue with the Range System, determined to have it improved with a trained and motivated staff.
8.1.8	Monthly patrolling routines: Continue monthly patrolling routines with the current number of Rangers available, while planning to recruit and train more Rangers in the near future; both the old and newly recruited batches of Rangers should be equally involved.
8.1.9	Incentives: Increase and broaden incentives to motivate ENNR staff as well as the senior administrators and technical personnel at FDA's Headquarters.
8.2	Routes for patrols: Ensure routes for patrols are kept open and monitored to regulate entry into the Reserve.
8.2.2	Records, monitoring and reporting tool: Continue to employ SMART (Spatial, Monitoring & Reporting Tool), Vision and other methods in records, monitoring and written reports and analyses.
8.4.1	Logistics/Communications: Require more mobile phones and radios, and the Authority awaits the delivery of these items and may request for more communication devices and tools.
8.4.	Firearms: Probe into the possibilities to equip Rangers and Auxiliaries with the means to protect themselves from potential offenders, possibly criminals, armed and dangerous, who they must run from, as these protectors of the forest are only protected by their mere hands, heads and feet. In our closest neighboring countries of Guinea and Cote d'Ivoire, Rangers are armed. In Liberia, Rangers are not armed. A middle ground is being sought to allow arms of some sort which our Rangers, Auxiliaries and administrators could use to protect themselves.
8.4.4	Intelligence: Strengthen the intelligence component of Law Enforcement for improved patrolling effectiveness and efficiency.
8.5	Prosecutions: Recommend creation of a forum to be attended by lawyers assigned with Liberia's protected areas or in counties where such areas are located, the FDA, ENNR's partner organizations, the CMC and selected experts (2-3) on Forestry policy and laws. This mix of



	actors and partners should be invited to discuss the challenges lawyer face in prosecuting cases where knowledge of forestry laws and policy is a necessity. Miscarriage of justice prevails in most of our protected areas as a result of the lack of prosecutors who know and understand forestry law and policy issues governing protected areas.
9.0	Monitoring and Research
9.1	Adaptive management: Adopt implementation of activities this plan proposes without having to know all that one needs to know to pursue the objectives of management (It is the same as “learning by doing”).
9.4.1	Current research: Carry out planned biological research on the production of high-quality maps that help conservation scientists to map out the habitats for dragonflies, butterflies, amphibians, bats, birds, and small and large mammals, snakes in the ENNR and proximate landscapes, and tree species-site compatibility studies to identify native plant species that will be suitable for the degraded sites which must be restored by revegetation, and other methods.
9.5	Future research: Continue systematic surveys of large mammals as a baseline for monitoring trends and add socioeconomic analysis to the research agenda, as well as independent assessment of performance effectivity, conservation agreements ,alternative livelihoods, among others.
9.6	Research regulations: Copies of completed research results are to be submitted to the Research Department of the FDA, as per Research Regulations authored by the Authority. That Department will send copies of research results to ENNR and other Headquarters of the various Protected areas in the country. There is a plan to prepare user-friendly versions of research results from the FDA to all the field offices of the protected areas system across Liberia to keep the public informed.
10.0	Public Relations, Education and Ecotourism Development
10.1.1	School groups and wildlife clubs: Environmental clubs (about 10 of them)(more than 6 years ago) are teaching students of mixed ages about the ENNR, its wildlife and the wider environmental services and values it continues to provide.
10.1.3	The changing situation in the choice of tourism typologies: Outline and examine the various ways in which tourism has been defined by various research and development interests, both on-going and completed, on the entire Mount Nimba Landscape of Liberia in general and on the ENNR in particular. This is one of the serious research issues for protected areas across Liberia, as ENNR is selected as a pioneering site for co-management and other approaches to alternative livelihoods in bordered communities of exceptionally biologically rich hotspots.
10.1.5	Ecotourism and management of the Reserve: Endorse and highly recommend the principles and practices of community-based tourism as the most credible and workable alternative livelihood for ENNR-fringed communities and the rest of the Mount Nimba Landscape of Liberia.
11.0	Personnel Management
11.1	Current FDA staff: Proffer an increase in the number of FDA staff that commensurate with the current technical and administrative tasks which must be performed to achieve proposed goals and objectives.
11.1.2	Number of proposed CMC staff: Highly recommend an increase in the number of CMC staff and to regularize their payment to the FDA standard.
11.2.1	Code of conduct and discipline: Exercise an absolute adherence to the code of conduct and discipline for all employees and wage earners at the ENNR. It is with unbridled enthusiasm that recommendations are being forwarded here to FDA for Auxiliaries to be put on government payroll and for payment of all FDA and ENNR staff to quickly return to the level of salaries received before the Harmonization program of government took place.
11.2.2	Job description: Prepare and timely distribute the Terms of Reference to former and/or newly recruited staff.
11.2.3	Staff performance evaluations: Recommend an established system at the ENNR for annual unbiased appraisal of staff performance.
11.2.4	Staff selection: Select staff to take various assignments in absolute adherence to the rules of



	the Forestry Development Authority.
11.2.5	Transfers: Encourage job transfer between protected areas where staff are well prepared for such a transfer:
12.0	Training and Capacity Building
12.1	Suggested training themes and potential trainees: Prepare a check list of training themes and those who are highly likely to benefit from undergoing any of such training and capacity building initiatives in any of the themes put forward.
12.2	Routine assessment of training and capacity building needs: Institutionalize a routine assessment of training and capacity building needs because there is a long-term need for external training for CMC, Rangers and Auxiliaries on a range of Protected Area management skills ranging from project planning, management and administration, through law enforcement and others. Second, ENNR deserves preparedness of this magnitude to enable her to render Liberia and the world the service as a role model for conservation and co-management in Liberia and around the world.
12.3	Training Types for ENNR Field staff and Senior Technical Managers and Administrators from FDA Headquarters: Provide a checklist of the various training and capacity building opportunities that are possible if any FDA or ENNR staff is interested to know this and could act to make a training offer a reality.
13.0	Infrastructure and Equipment
13.1	Buildings: Staff housing and ENNR's Headquarters at Zortapa need to be fully equipped(still need sustained source of electricity, toilets and bathrooms),are poorly maintained, and lack a suitable place to prepare meals, etc.).Administrators and staff are hoping for a better situation when the updated management plan is ready and funded for implementation.
13.2	ENNR Headquarters: Conduct reconnaissance to determine the strategic location for the new ENNR Headquarters.
13.3	Headquarters office requirements: Formed a committee to deal with the key issues on what is actually required in this office and initial results show the following(as few key examples):6 office rooms(not bed rooms), a room big enough to accommodate at least 25 persons at a time, rest rooms/equipped and functional toilets), shelves, storerooms, rooms for Auxiliaries, offices for the Reserve Warden and the Reserve Biologist, visitors (consultants, advisors, both national and international), researchers who may choose to stay in the Headquarters for a little fee) and so on.
13.4	Staff houses: Request for 16 (sixteen) housing units or a little more, have been projected and are meant for the Reserve Warden, Reserve Biologist, Senior and Junior staff and administrators, and Technicians and advisors from FDA Headquarters and partners, among them.
13.5	Roads and trails : Carry out frequent reconnaissance of roads and trails to know and monitor all paths/trails and major roads (official, unofficial) leading to and closer to the major zones of the Reserve .
13.6	Vehicles : Purchasing orders are soon to be requested for motorbikes, at least one for 2 Rangers had been proposed as ideal at the time and a car (4x4) for the CMC, a car (4x4) each for the Reserve Warden and Biologist) and some bicycles may help.
13.7.4(1 4.7.4)	Maintenance: Designing a system for safe-keeping and maintenance of all equipment and property from theft and mishandling. Ideas are floating around about the need to recruit a stand-by motorcyclist for the ENNR to provide emergency services and should also be charged with the responsibility for on-the-road repairs or trouble shooting skills and experience.
14.0	Financial Planning
14.2	Potential funding streams: Identify 14 (fourteen) sources for funds, with varying capacities, willingness and trustworthiness about 9 (nine) years ago, and the list appears to be growing.
14.5	Business planning: Business plans are in the making for the proffered activities designed to deliver on the goals and objectives of the Management Plan (as updated) as effective and efficient as possible.
14.6	Financial and budgeting framework: Prepare a basic financing and budgeting framework,



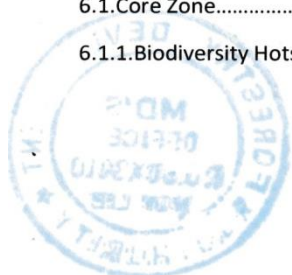
	purposely designed to illustrate and reflect the most pressing needs to prioritize towards taking this plan from the printed pages to the ground where it matters most.
15.0	Trans-boundary Conservation and Tri-national Agreement
15.1	Transboundary conservation: Create and nurture support for a tri-national program about the integrated conservation of Mount Nimby and collaboration between Liberia, Cote d'Ivoire and Guinea to address transboundary conservation issues and concerns.
15.2	Tri-national agreement: Facilitate a jointly signed framework agreement by Liberia, Cote d'Ivoire and Liberia for integrated and sustainable conservation of the Nimba Mountains.
15.2.1	The tri-national vision of the national tri-national committee: Develop a tri-national vision reflecting the well-being of current and future generations of all stakeholders, which the Reserve and its people must continue to enjoy or benefit from in regional peace and security.
15.2.2	Economic policy: Develop an economic policy that would contribute to the national development goals of poverty alleviation and increased food security, by increasing the opportunities for forest-based income generating activities.
15.2.3	Tri-national Agreement: Propose an activity or 2 from this Agreement to be carried out within the 5-year duration of this Plan.
16.0	IMPLEMENTATION OF THE PLAN
16.1	Organization of an Advisory and Implementation Team: Set up an Ad Hoc committee to form an Advisory and Implementation Team whose membership should consist of individuals with suitably qualified legal minds, conservation experts, international and national NGOs who have been active within the Mount Nimba Landscape of Liberia, public health specialists, respected elders and young people of the traditional leadership, social researchers and others recognized groups and individuals.
16.2	Recognition of the major composite implementation activities that must be prioritized: Staffing and Personnel Recruitment and Management, Infrastructure, Operationalizing Co-management, Equipment and Vehicles.
16.3	Preparation of Annual Work Plans: Assemble Annual Work Plans in adherence to the major implementation priorities as defined above (Section 16.2).
16.4	Monitoring of Progress: Prepare staff and keep them acquainted with all monitoring methods and processes as listed under Monitoring Methods (Section 9.2 in the body of this Plan).
16.5	Updating the Plan: Recommendations for changes in planned activities will be undertaken so that annual management actions can be adapted to changing circumstances during implementation, but in full compliance with the goals and specific objectives of the Plan.
16.6	Implementation Milestones: A matrix prepared to inform Annual Work Planning; it is more illustrative than indicative of the planning process.
17.0	LONGER TERM OBJECTIVES (this section serves as a "parking lot" for substantial issues which this plan wishes to have given ample attention but, for the want of space, time and other scarce resources, must be put up for the future).
17.1	The urge to petition government to make it a must that mining concessions operate only in the areas set aside for such concessions, across the Mount Nimba Landscape in Liberia.
17.2	The necessity to effectuate an "open-door" policy of the various research themes and interests, so that the government and local communities on the Liberian side of the Mount Nimba Landscape would have a saying on any research agenda.



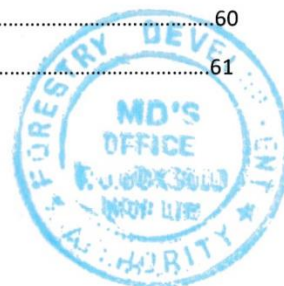
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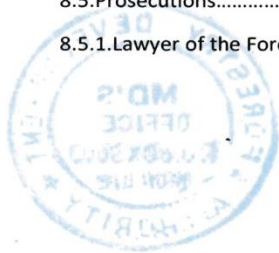
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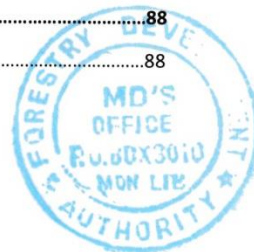
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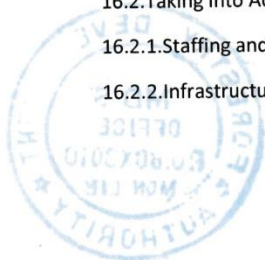
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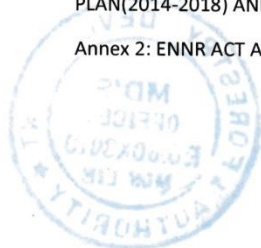
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Authorization

This Revised Management Plan is hereby presented to fulfill the legal requirement for managing the East Nimba Nature Reserve (ENNR), in accordance with the act of 2003 that established the Reserve, approved on October 10, 2003, and the National Wildlife Conservation and Protected Area Management Law of 2016.

The revision of the ENNR management plan is made possible as by the funding support of the United Nations Office for Project services (UNOPs) European Union –PAPFor project.

The undated management plan is henceforth authorized by the Forestry Development Authority (FDA), Republic of Liberia, for implementation at the ENNR.



Saye Thompson
CMC Chair

Date: _____



Rudolph J. Merab, Sr.
Managing Director
Forestry Development Authority

Date 20/09/24

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1.INTRODUCTION

1.1.Background

East Nimba Nature Reserve (ENNR) is a globally recognized biological hotspot.It is characterized by a composition of natural ecosystems evolving from several ecological and geophysical processes that have ultimately resulted in the creation of many habitat types that include a montane gallery forest, secondary thickets/woody grassland, secondary hill forests, moist evergreen forest and swamp or wetter secondary forests^{1,2}. Because of the diverse uniqueness of the site, accommodation is provided for a multitude of species of conservation relevance that are endemic to the ENNR and are either endangered or threatened under IUCN status such as the Nimba toad (Nimba phrynoides occidentalis liberiensis),Nimba otter shrew (Micropotamogale lamottei,Nimba flycatcher (Malaenornis annamarulae),African Swallow-tail butterfly(Papilio antimachus),the Micropotamogale of Mt Nimba (Micropotamogale lamottei),Beuttikoferi’s shrew (Crocidura beuttikoferi) and the endangered Chimpanzees (Pan troglodytes versus) which are famous for their distinctive tool use repertoire^{1,3}.

As an added credit to its fame, this invaluable landscape of the most remarkable animal and plant populations across the African continent, is transboundary with Guinea and the Cote d’Ivoire⁴. Species with ranges that span international borders – and these account for 53.8% of terrestrial amphibians, birds and mammals - are in increasing peril through uncoordinated management and artificial barriers to human movement, such as border fences. Transboundary conservation initiatives like the ENNR’s, present an uncommon opportunity to better protect and meet the needs of such species through coordinated management across national boundaries⁵.It, therefore, is no wonder why the ENNR demands, deserves and enjoys a very high conservation interest and status around the world since its gazettement in 2003 as an Important Bird Area and a biodiversity hotspot of high endemicity, among others^{6,7,8,9}.

Its exceptional values and qualities have, of recent, earned the ENNR an IMET (Integrated Management Effectiveness Tool) index of 68.3%¹⁰.Despite these outstanding extrinsic and intrinsic values, the Reserve continues to lack in active management and protection protocol¹¹ but, instead, is plagued by an unprecedented wave of direct and indirect threats and challenges among them climate change(unusual cataclysmic storms and floods, droughts), a lingering external boundary imbroglio, paved and otherwise improved network of roads, damaged habitats, exotic invasive plant species, poaching^{1,10,12}, the lack of sustained and adequate funding and insufficiently trained and motivated human resource. In consequence, the Reserve has been ranked at an IMET index of 46%, an average score of the six elements of the management cycle¹⁰. A passionate search for a credible and enduring solution to ENNR’s challenges is taking place and this document, an updated management plan for the Reserve, aims to play a significant role in making this search a success.

1.2.Purpose of the Plan

The purpose of this plan is to provide a concept or general policy for the refinement of different management issues in the future. It is internationally accepted and is Liberia Government policy that all protected areas should have management plans. The Forestry Reform Law of 2006 states: *The Authority shall, as soon as practicable after the establishment of a National Forest, National Park, Nature Reserve, or Strict Nature Reserve, prepare and publish, and thereafter review and republish every five years, a comprehensive management plan for the Protected Area in accordance with internationally accepted standards.* This updated version of the latest plan is designed to be used as a manual by the Co-Management Committee and FDA and its staff at East Nimba Nature Reserve. It, honestly, attempts to guide the many stakeholders on what to do and how to do it, provides a vision that everyone should aim to achieve and conforms with the forest sector policies and laws of Liberia. The proposed policy statements, actions and guidelines are expected to provide guidance in unforeseen situations, and the goals and objectives are adjudged to be realistic and achievable.



1.3.Vision

East Nimba Nature Reserve (ENNR) will become a role model for biodiversity conservation by co-management between the Government , ENNR-fringed communities and stakeholders for the benefit of everyone.

ENNR will be the best protected area in Liberia and will be both nationally and internationally for co-management, ecotourism and research.

1.4.Consultation

This management plan has been written in accordance with the 2003 East Nimba Nature Reserve Act and the principles of the Co-Management Agreement. It has been compiled with significant community involvement and participation. The plan builds on the outcomes of previous consultations including the Management Planning Workshop in Ganta, and the Project Planning/Gap Analysis Workshop in Sanniquillie, both in April 2013. Annex 1 carries the names of the individuals who were consulted during preparation of the first ENNR Management Plan (2014-2018) for which these workshops were held and their institutions. In addition, extensive consultation with CMC, FDA and the wider communities took place between November 2013 and February 2014. CMC members toured the key affected communities and presented a PowerPoint summary of the plan, and sought feedback. The 25 "towns" that make up the "primary" (most affected) communities of the Sehyi, Gba and Zor chiefdoms were visited during this period to assess community concerns, needs and wishes. Key areas of concern centered on what the Reserve will restrict or take away, namely access to future farmland and hunting; and what the Reserve's partners will do to offset these / any negative impacts that improved conservation brings to bear on local livelihoods.

During that consultation, the following key issues were raised by the communities:

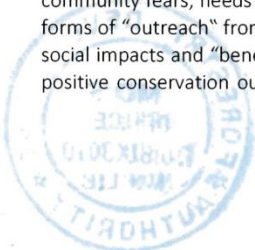
1.4.1.Costs /Losses

- Loss of future farming land.
- Loss of hunting /animal protein.
- Loss of None Timber Forest Products.
- Human and wild animal conflict.
- Impossibility for children to visit the forest and know its wildlife.

1.4.2.Benefits / Solutions

- The nature and amount of compensation and/or livelihood support (e.g. Fish ponds, farming, animal raising, soap making, afforestation/reforestation, etc.).
- Specific support for hunters.
- Help with local roads / infrastructure .
- Jobs / benefits (CMC, Auxiliaries, etc.).
- Training, education and capacity building opportunities.
- Involvement / empowerment of women in ENNR / CMC conservation and protection activities.
- Effective law enforcement, and clear role of community .
- Ensuring that NGO's keep their promises.
- Clear boundary demarcation lines as frequently as necessary.

Feedback from the impacted communities has been incorporated into this Management Plan, where possible. Moreover, all the data and information collected during the planning process were used to inform the CMC of community fears, needs and aspirations, and will be used to improve the Conservation Agreements and other forms of "outreach" from ENNR to the local people. It also should be noted here that mitigation of all adverse social impacts and "benefits" are contingent upon community involvement in ENNR's conservation as well as positive conservation outcomes. Additionally, it may not be possible to avoid or mitigate all negative social



impacts. It is, however, a key goal of this Management Plan for ENNR and partners, that the communities are included in management that impacts them are as low, mitigated or compensated for, as possible. Broader, final consultation on the 2014-2018 ENNR Management Plan was undertaken on March 24th and 25th, 2014, in Sanniquellie, with a range of key stakeholders, including CMC, FDA, AML, CI and additional community members and representatives. During that 2-day workshop, remaining technical and logistical issues were addressed, and compromise and/or consensus achieved on fundamental issues of ENNR functions, costs, benefits, roles and responsibilities.

1.4.3. Validation of the Plan

Validation of this plan was undertaken at a series of three (3) independent levels of the ENNR-fringed Communities, County/Regional and National. Participants were identified, selected, and officially invited in view of the mixes of age, gender and experience as core criteria. A workshop-type of meeting was employed as the most appropriate approach to the validation process that involved ENNR's multiple stakeholders, and all was done to keep the process simple and as cost-effective as possible. Prior to validation exercises, the Manager of the management planning process for the ENNR from UNOPS and FDA's senior staff of the Conservation Department took turns to independently review the Zero (an initial rough draft) and the first drafts of the Plan. Finally, the Authority's staff at the Department of Forest Conservation spent about four (4) hours of a nearly page-by-page review of this Plan for its eventual submission to FDA's Managing Director for endorsement.

1.4.4. Initial Historical Events Leading to Preparation of the First ENNR Management Plan

Since the 1950's and probably earlier, the FDA and a number of her international actors and partners have worked so hard to produce the first Management Plan for the Reserve that is being currently updated. The table below reflects the mosaic of stakeholders who continue to pull resources together to conserve and protect the Earth's nature and ENNR's, and had worked so hard to get the first Management Plan (2014-2018) of the Reserve prepared (See Table 1).

Table.1. Major Periods and Corresponding Actions Taken by the Main Actors and Partners of the Reserve

Period	Key Actor or Partner	Summarized Accomplishments
1950's	Government of Liberia (FDA)	Creation of a National Forest across the Mount Nimba landscape, including the ENNR, as a permanent Estate in Liberia.
1958	German Forestry Mission	Conduct of surveys which led to the creation of the East and West Nimba National Forests.
1960's	International Mining Interests (Sweden, USA)	Commencement of mineral exploration in the National Forest in East and West Nimba, that was primarily set aside initially to serve as permanent protected ecosystem.
1970's	Government of Liberia (FDA), IUCN, WWF	Conduct of Liberia's first nation-wide ecological surveys. Results were released in 1983 and led to the recommendation that a Nature Reserve be established as one of the seven (7) potential areas; that number was later increased to fourteen (14).
2003	Government of Liberia (FDA) through an Act of the Liberian Legislature	Declaration of the East Nimba Native Reserve.
2009	Conservation International (CI)	Production of the ENNR Action Plan, Draft 9*.
2011	USAID, Land Rights and Community Forestry Programme (LRCFP)	Production of the Co-management Planning Framework for ENNR Version 0.1*.
2012	Conservation International (CI)	Development of ENNR's Business Plan.
2013	Government of Liberia (FDA) and representatives of residents in	The signing of the ENNR Co-management Plan.



	Gba,Sehyi & Zor	
2014-2018	Government of Liberia (FDA),CI, FFI, ArcelorMittal Liberia (AML)	Production of the First ENNR Management Plan that is now being updated.
*These drafts or plans, as reported, were not completed or formally endorsed by the FDA.		

1.5.SWOT Analysis

A Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis was performed by the CMC/FDA during a workshop in Sanniquellie in April 2013. The latest threat analysis, as reported here, was undertaken in August and September 2023 by members of the CMC and staff of the Department of Conservation, Forestry Development Authority, respectively, in separate settings.

Strengths	Weaknesses
<p>ENNR Act, 2003. National Forestry Reform Law(NFRL 2006). Co-Management Agreement, 2010. CMC is good at community mobilization. Good relations between ENNR Management and communities (although not always/ everywhere). Some trained and experienced staff. Offices established in all 3 administrative zones. Auxiliaries are fit for patrols. Auxiliaries know the forest well. Boundary had been demarcated. Hunting/Trapping animals in the ENNR has been significantly reduced.</p>	<p>Inadequate financial support . Inadequate patrol equipment and rations. Inadequate uniforms and inadequate supply of fuel. Insufficient number of motorbikes, vehicles and equipment not being maintained. Low stipends for Auxiliaries. Insufficient training for most ENNR staff. CMC not paid and not supported in full. Low capacity to manage forest and other natural resources. Inadequate alternative livelihood support. Insufficient number of computers. Lack of internet services at ENNR Headquarters. Insufficient number of staff. Reserve is relatively small in area (11,553ha) and is vulnerable to too many threats.</p>
Opportunities	Threats (Human-induced, dynamic influences that cause some degree of deterioration or destruction of biodiversity ¹³).



<p>MoU between FDA and AML signed for ENNR support.</p> <p>International conservation NGOs(FFI,CI,UNOPS) support ENNR.</p> <p>ENNR-fringed communities participate in forest management.</p> <p>Willingness of ENNR-fringed and adjacent communities to work with the CMC and FDA staff.</p> <p>Training and capacity building efforts of some ENNR staff by partners.</p> <p>ENNR has achieved World Heritage Status.</p> <p>Improved transboundary co-operation.</p> <p>New Monrovia – Ganta-Sanniquellie road built, and Sanniquellie-Yekepa road under construction.</p> <p>Heightened interest and opportunities in community-based Ecotourism as reflected by the construction of the Nimba Ecolodge and Reserve, and a number of related initiatives that are being planned by some partners.</p>	<p>Inadequate logistical support .</p> <p>Unregulated harvesting of NTFPs.</p> <p>Alien invasive plant species.</p> <p>Inadequate community cooperation.</p> <p>Inadequate support for alternative livelihoods .</p> <p>Increase in population / encroachment/wildfires.</p> <p>Farming /Violation of Co-Management Agreement.</p> <p>Continual uncontrolled/unsustainable hunting / fishing.</p> <p>Quiet disputes in some ENNR-fringed communities about how the Reserve was established.</p> <p>Potential political instability .</p> <p>The lack of information about the expanse of various mineral development agreements across landscapes bordering the ENNR.</p>
--	---

It is important to note that the situation regarding activities - out-reach, attitudes and staff capacity, is constantly changing. This analysis of Strengths, Weaknesses, Opportunities and Threats offers us a snap-shot and baseline picture or information of a changing reality from the start of the management planning process and the agreements reached ,to the progress made on a range of activities. Results of the SWOT Analysis undertaken by the CMC and FDA, as mentioned above, agree with those of UNOPS¹⁰. All three (3) analyses found that weaknesses and threats, in sum, quite out-numbered opportunities and strengths. In essence, results of the latest SWOT Analysis are not different in any major way from those reported in the first Management Plan(2014-2018).

1.6. Period of Validity of the Plan

As mandated by the National Forestry Reform Law (NFRL 2006),the period of validity of this Management Plan is five (5) years(2024-2029).

1.7.Scope of the Plan

This plan describes activities to be carried out in 5 years. It is realistic, achievable and adapts the “CAP” - Conservation Action Planning- approach, as adopted by the Tri-National Partnership for the Nimba Massif.

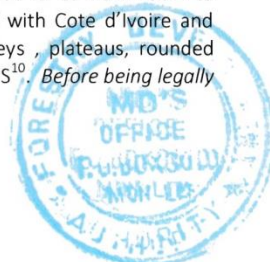
1.8.Description of the Reserve

1.8.1.Location and Area

ENNR is located in Nimba County in north-central Liberia. It lies within latitudes 7°24" and 7°37" North and 8°26" and 8°37" West. ENNR (as demarcated) has an area of **11,553 hectares** (115.53km² or 28,548 acres). Figure 1 shows the map of the Nimba Mountains in Liberia within which the ENNR is located.See Annex 2(2.1) for the metes and bounds of the Reserve.

1.8.2.Topography

The Reserve is on part of the Nimba Mountains range which is a 40km – long narrow ridge running northeast. The northern three-fifths are in Guinea and Cote d'Ivoire, and the Liberia constitutes the remaining fifth. It is predominantly granites and within the PreCambrian bedrock and with an altitude that varies from 450m to 1,752 meters at Mount Nimba, which is the highest point in Liberia and is shared with Cote d'Ivoire and Guinea. The Mount Nimba Mountains have great topographical diversity, with valleys , plateaus, rounded hilltops, rocky peaks, cliffs, waterfalls and bare granites (EPA 2007)(as quoted by UNOPS¹⁰. *Before being legally*



classified as a Strict Nature Reserve in 2003, the Liberian southern two – fifths of the mountain range were heavily exploited for iron ore until 1992.

1.8.3. Access

The Reserve's main office is in Zortapa, which is about 23km north-west of Sanniquellie by road and takes about 30mins from Sanniquellie. Sanniquellie is the capital of Nimba County and is about 285km north-west of Monrovia by road, and used to take about 6 hours of travel time from Monrovia. The Monrovia to Ganta road had been built, and the journey from Ganta to Yekepa (the small town where AML is headquartered in ENNR) road is currently being upgraded. If all these roads are upgraded, then the travel time from Monrovia to the ENNR will be shorter and stress free but will make access to the Reserve easier by a variety of people with different interests which will not necessarily serve the agenda for protection and conservation of the ENNR. Access is a two-edged sword; it is both a blessing and a curse in this particular case. Figure 1 is a map of the ENNR, showing its location within the landscape of the Nimba Mountain in Liberia and its international boundaries with Cote d'Ivoire and Guinea.

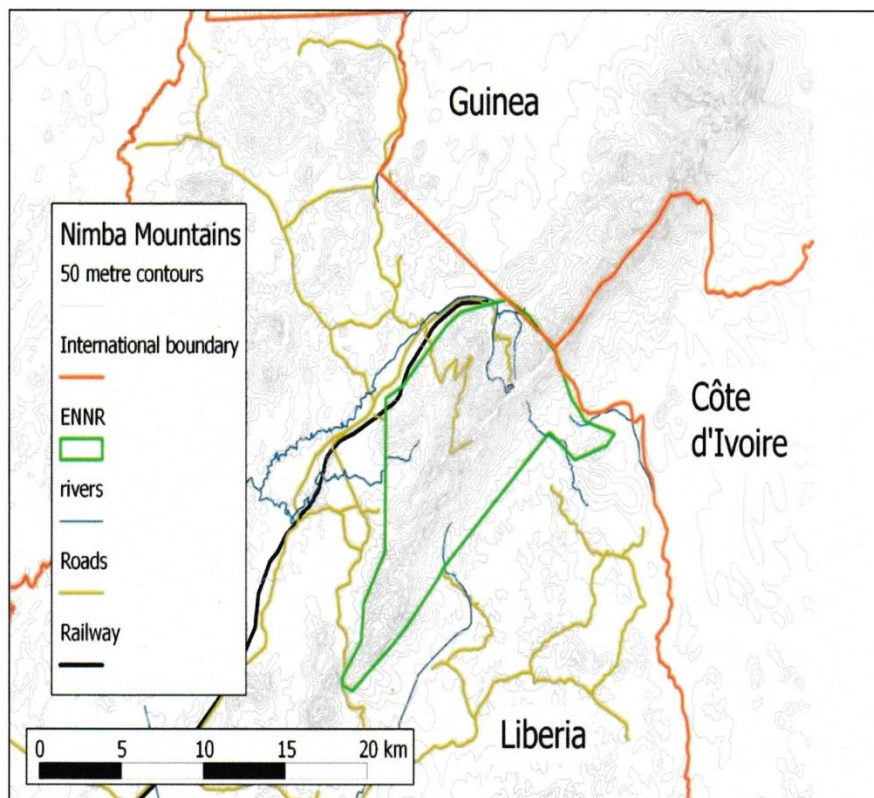


Figure 1. Map of the Nimba Mountains in Liberia, Guinea and Côte d'Ivoire

1.9. Biophysical Description of the Reserve

1.9.1. Climate

The area has a sub-equatorial montane climate with distinct wet (April-November) and dry (December-March) seasons. The annual rainfall is approximately 3,000 mm, which is considerably more than the lower lands to



the south. Relative humidity sometimes reaches 99% and the temperature ranges from 14°-30°C. There is a persistent cloud belt that exists between 850 and 950 m.

1.9.2. Geology

The mountains consist of Precambrian basement rocks. Granite predominates, but dolerite, gneiss, schist and quartzite are also present.

1.9.3. Soils

Lithosols are the most common soil type on many of the mountains, although variations exist due to aspect and degree of weathering. The soils are fertile and those around ENNR are rich in iron ore and other minerals.

1.9.4. Hydrology

In addition to its international status and appeal as a biodiversity hotspot, the ENNR is also an important and critical watershed that supports water bodies which are the only source of water for human consumption (drinking, bathing, cooking) and as habitats for animal and plants. Examples of creeks, rivers and streams draining the ENNR are Seka, Yah, Yeah and Yiti. These water bodies have been polluted by silt and waste products from mining, and are no longer viable habitats for animal and plant lives (ENNR Management Plan 2014-2018¹²). Much work needs to go into mapping out these and other water bodies so that actions for their effective management are planned and carried out.

2. BIODIVERSITY

2.1. Fauna. The ENNR is exceptionally endowed with variety of animals and plants. Table 2 is a list of some of the major mammals species of the Reserve.

Table 2. Common and Scientific Names of the Major Mammal Species of the East Nimba Nature Reserve and the Level of Threat each Faces According to the IUCN Red List* .

English name	Scientific name	IUCN Red list	Protection	ENNR	Tokadeh	Gangra
West African Chimpanzee	<i>Pan troglodytes verus</i>	EN	FP	●	●	●
<u>Sooty Mangabey</u>	<i>Cercocebus atys atys</i>	VU	FP	●	●	●
Diana Monkey	<i>Cercopithecus diana diana</i>	VU	FP	?	?	—
Western Black-and-white Colobus	<i>Colobus polykomos</i>	VU	FP	?	●	?
Olive Colobus	<i>Procolobus verus</i>	NT	FP	?	—	—
Common Bentwing Bat	<i>Miniopterus schreibersii</i>	NT		—	—	●
Nimba Otter Shrew	<i>Micropotamogale lamottei</i>	EN		●	●	?
Buettikofer's Shrew	<i>Crocidura buettikoferi</i>	NT		●	—	●
Doucet's Musk Shrew	<i>Crocidura douceti</i>	DD		—	●	●
Slender-tailed Squirrel	<i>Protoxerus aubinnii</i>	DD		?	?	●
Liberian Mongoose	<i>Liberiictis kuhni</i>	VU	FP	?	?	?
Bourlon's Genet	<i>Genetta bourloni</i>	NT		?	?	?
Johnston's Genet	<i>Genetta johnstoni</i>	VU		?	?	?
Leighton's Linsang	<i>Poiana leightoni</i>	DD		?	?	?
African Golden Cat	<i>Caracal aurata</i>	NT	FP	●	?	?
Leopard	<i>Panthera pardus</i>	NT	FP	?	●	●
African White-bellied Pangolin	<i>Phataginus tricuspis</i>	NT	FP	●	●	●
Giant Ground Pangolin	<i>Smutsia gigantean</i>	NT	FP	—	—	?
Jentink's Duiker	<i>Cephalophus jentinki</i>	EN	FP	?	—	?



Ogilby's (Brooke's) Duiker	<i>Cephalophus ogilbyi brookei</i>	VU	FP	?	?	●
Zebra Duiker	<i>Cephalophus zebra</i>	VU	FP	?	–	?
Lowland Bongo	<i>Tragelaphus e. euryceros</i>	NT	FP	?	–	?

*Explanation of IUCN's Categories for Threatened Species (Endangered), VU (Vulnerable), Near Threatened (NT), DD (Data Deficient), and FP (Fully Protected) in Liberia, mammals recorded (●) or suspected to be present (?) as a result of surveys conducted in 2008-2010.

With so many mammal species only recorded as “expected” there is clearly a scope and need for more, targeted surveys of the key taxonomic groups, including, if possible, permanent camera trapping (as part of bio-monitoring). Figure 2 is a photo of one of the endemic mammals, the Nimba otto shrew (*Micropotamogale lamottei*).



Figure 2. The Nimba Otto shrew (*Micropotamogale lamottei*)

2.1.1. Birds

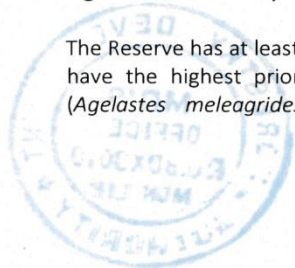
The birds of the Nimba Range and nearby areas are relatively well-studied, as a result of the research station that operated at Grassfield from in the 1960s and 70s. During that period, two species new to science were discovered – Nimba Flycatcher and Yellow-footed Honeyguide. Both species have since also been recorded away from the Nimba Range. All but two of the 15 bird species endemic to the Upper Guinea forests EBA



(Endemic Bird Area) are known to have come from the Nimba Range, although White-breasted Guinea fowl may no longer be present. The IBA/EBA status is only granted to those areas categorized as having the highest possible biological importance and threat level. Figure 3 is a photo of the **Nimba flycatcher** (*Malaenornis annamarulae*), and Figure 4 shows photos of 2 Nimba toads (*Nimbaphrynoides occidentalis liberiensis*).

Figure 3. The Nimba flycatcher (*Malaenornis annamarulae*)

The Reserve has at least 171 resident species of which 9 are listed as Vulnerable by BirdLife International, and have the highest priority for conservation and protection. These are the White-breasted Guinea fowl (*Agelastes meleagrides*), Rufous Fishing-owl (*Scotopelia ussheri*), Brown-cheeked Hornbill (*Bycanistes*



cylindricus), Yellow-casqued Hornbill (*Ceratogymna elata*), Western Wattled Cuckoo shrike (*Campephaga lobate*), White-necked Picathartes (*Picathartes gymnocephalus*), White-eyed Prinia (*Prinia leontica*), Yellow-bearded Greenbul (*Criniger olivaceus*), and Nimba Flycatcher (*Melaenornis annamarulae*). There are also 7 species which are Near Threatened. Annex 3 in the Appendices shows the checklist of birds of the Nimba Range and nearby areas prepared by BirdLife International.

2.1.2.Others

There are two endemic genera of crabs and several endemic fish species. There also are endemic species of frogs that had been found and these include *Astylosternus occidentalis*, *Hyperolius occidentalis*, *Cardioglossa aureoli*, and *Bufo cristiglans*. The Liberian subspecies of the Nimba toad (*Nimbaphrynoides occidentalis liberiensis*) was rediscovered in 2007/2008, close to the former LAMCO mine site. In depth butterfly surveys have been conducted and results have been reported relatively recently.



Figure 4. The Nimba toad (*Nimbaphrynoides occidentalis liberiensis*)

2.1.3.The core management activities of the ENNR

Protection and patrolling are among the key management regimes of the ENNR, and these are guided by high quality and up-to-date data on key species, using existing data, additional baseline surveys and the selection of indicators.

Management Issue No.1: Efficiency in managing the Reserve requires baseline surveys of specific areas in a given time to collect and use high quality data on key species as needed.	
Policy	Actions and guidelines (Ag)
ENNR management will continue to invest in the conduct of baseline surveys on key species and will always be guided by up-to-date data.	<p>Ag1.ENNR must always review existing data and undertake additional baseline biological surveys to fill in knowledge gaps on key / threatened species and / or habitats.</p> <p>Ag2.Management of the Reserve will develop and implement a bio-monitoring project to strengthen its capacity to undertake monitoring and research initiatives.</p> <p>Ag3.Requisite skills and experience will be acquired and used to turn data & information into management tools.</p>



2.2. Vegetation Types

2.2.1. Forest cover

The Nimba mountains are located in one of the Global 200 Ecoregions - Guinean Moist Forests. Forest cover includes lowland rainforest and savanna woodland. Gallery forest is dominated by *Parinari excelsa*, primary forest by *Triplochiton scleroxylon*, *Chlorophora regia*, *Morus mesozygia* etc. and drier mid-altitude forests by *Triplochiton scleroxylon*, *Piptadeniastrum africanum* and *Parkia bicolor*. On the eastern slopes, the vegetation merges into lowland forest. Dense cloud cover frequently persists at ~850m, giving a higher annual rainfall. These moister areas of cloud (gallery) forest at about 1,000m contain pure stands of the tree-fern *Cyathea cylindrica*. Above 1,200m, there is montane forest typified by *Parinari excelsa* and *Garcinia polyantha*.

2.2.2. Riparian vegetation

Two of the main rivers in Nimba, the Yah and the Yiti, contrast in terms of their importance for wildlife and vegetation. The Yah River has been polluted by silt and waste products from the previous LAMCO mine, and is no longer a viable habitat for most plant and animal life. The Yiti River is a healthy mountain stream, flowing between two main ridges of Nimba, surrounded by steep slopes of rainforest. These rainforests contain important chimpanzee habitat, tree ferns. Unusual and rare birds such as the Tiger Bittern (*Tigriornis leucolophus*) have been observed on river shores.

2.2.3. Savannah

Not to be confused with the degraded, deforested and now grass-covered areas where mining once took place, natural savannah occurs close to the Nimba range, at the foot of the mountain and along the border with Guinea. *Hyparrhenia diplandra* is the most widespread grass and is extensive, forming a favored habitat for several species of snakes. Thickets of dense, scrubby vegetation have also become an important habitat at Nimba given that degradation by human land use can encourage shrubs and grasses to form such „pockets“, normally in sheltered areas, which then act as “islands” among the grassland or savannah.

2.2.4. Wetlands and riparian corridors

The Nimba Area is one of the WWF Ecoregions - Upper Guinea Rivers and Streams, with a large number of wetlands and rivers. Owing to its altitude and isolation, there is a high level of species diversity and endemism including fish, crabs, frogs and toads. Figure 5 below is a map of the main vegetation types of the Reserve.



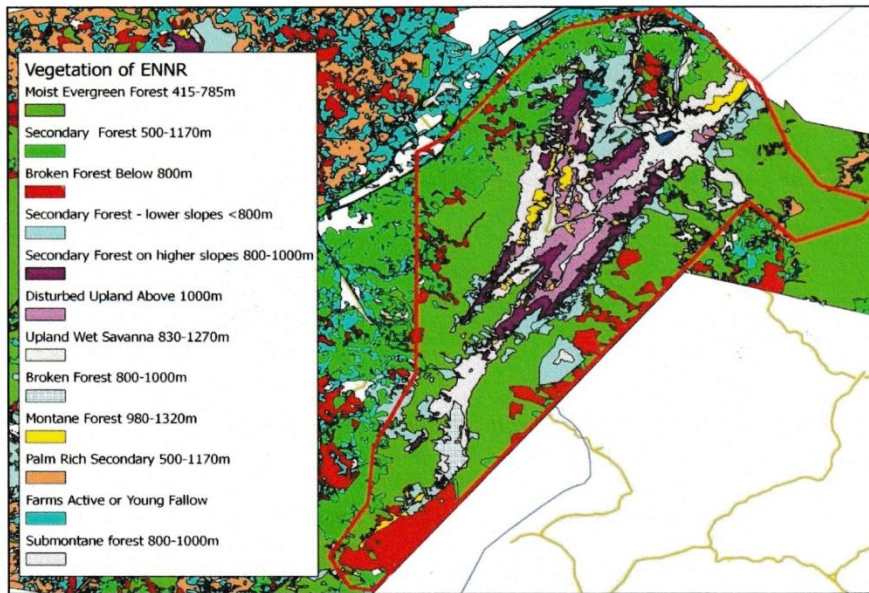


Figure 5. The Main Vegetation Types of the East Nimba Nature Reserve.

2.3. Management History of the Reserve

East Nimba Nature Reserve was established in 2003, out of the East Nimba National Forest, by the East Nimba Nature Reserve Act. No significant management presence was evident in the National Forest Reserve from the time of establishment of the Bureau of Forest and Wildlife Conservation, around 1952, until mineral exploitation began in the 1980s. The Bureau of Wildlife Conservation was attached to the Ministry of Agriculture, and was renamed the Forestry Development Authority in 1976 by an Act of the Liberian Legislature.

2.4. Archaeology and cultural values

There are no known archaeological remains in the area, except perhaps for two caves that might have been used for shelter by hunters about hundreds of years ago. The people living around the reserve have many traditional cultural values related to the land, the forest and the wildlife. The name "Nimba", originated from "Nenbaa ton" which means "slippery mountain where beautiful young girls slip and fall". It is said people used to make gunpowder on the mountain.

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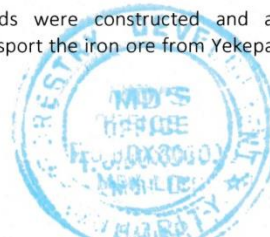
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2.5. Mining

most conspicuous feature of ENNR is the site of former Liberian American Minerals Company (LAMCO) iron ore mine. At least 10% of the reserve been severely damaged by mining operations. Iron was discovered in 1953 and the mine operated the 1960s to 1989. Mining expanded to Mt Tokadeh in 1973. A huge opencast mine was created. Figure 6 depicts the Blue Lake, a creation mining that has become a tourist sensation.

Access roads were constructed and a railway built to transport the iron ore from Yekepa



to Buchanan from where it was finally shipped abroad. Timber harvested from nearby forests was used for making the railway ties or sleepers. Mining was done by blasting and scraping and caused massive impact to biological diversity both directly through habitat loss and indirectly through pollution by tailings and spoils washed down the mountain into rivers. An area 8 km by 0.5 km was affected by the disposal of 30 million tons of waste rock to new sites. Much of the waste is toxic and does not support life. Parts of Nimba, which used to be high forest, are now savannah. The streams and rivers which flow from the area were very badly affected during mining, and the Yah Creek and St. John River are still red with mine waste.

Figure 6. The Blue Lake

2.6. Socioeconomic Surveys of the 3 Composite Communities (Gba, Sehyi, Zor) of the ENNR

Socioeconomic surveys undertaken in the 3 closest communities to the Reserve put current population at about 95,000, and other socioeconomic values and variables as per the following table.

Table 3. Summarized Results of the Socioeconomic Surveys of ENNR-Fringed and Adjacent Communities

Socioeconomic Variables	Value and Summarized Description of Variables
Population	Current population is about 95,000.
Average age	45 years (Only 5% of the population is older than 58 years).
Language	Gio, Mano are the most commonly spoken dialects.
Ethnicity	Most towns and satellite villages are a mix of Gio, Mano, Mandingo, Vai, Mende, Kru, Gio, Kissi, Gola, Grebo, Kpelleh, Lorma and many more.
Religion	Muslim (10%), Christianity (15%), Traditional religion and others (75%).
Facilities	Electricity (0%), Generators (28%), Radio (88%), Public toilets (5%) and Cemented floors for solar drying (15%).
Services/Infrastructure	Primary school (40%), Health clinic (9%), Pharmacy (5%), Police station (5%), Shops of products for sale (21%), Construction shops (13%), Mosque (5%), Church buildings (42%), Palava huts (55%), Local wells (47%), and Handpumps (25%).
Livelihoods	Farming, Hunting (Mostly commercial), Mining, Chainsaw logging, Small-scale enterprises (Buy-and-sell businesses) (dry goods), Palm wine, weaving of mats, water baskets, fishing nets, collection and sale of bitter kola, etc.
The names of ethnic groups and languages spoken by such groups are synonymous. Mandingo, for example, is an ethnic group that speaks Mandingo, Gio speaks Gio, Mende speaks Mende and so on. Result of a consultative meeting with some members of the CMC on 21 August 2023, Zortapa, including Dada Konkah and Saye Thompson, informed this particular socioeconomic report.	



2.7.Threats to the Reserve

The Reserve faces a seemingly endless list of direct and indirect threats, and these will remain a challenge to management as long as the protection of this priceless landscape remains an objective as it must. The most significant threats are shifting farming, collection and harvesting of Non-timber Forest Products (NTFPs), climate change, and non-sustainable hunting and fishing practices. The indirect threats which, arguably, are the most dangerous are industrialized mining activities that know no limits and poor governance; their direct counterparts are artisanal mining and those threats first mentioned above as the most significant. Surveillance of the property must be assured to dissuade those practices that continue to damage the integrity and longevity of the Reserve. Also, capacities of the staff and officials of the Reserve must be reinforced both, at the technical and human resource level as well as that of funds. The full, informed and sustained participation of the neighboring populations in conservation measures is also indispensable to remedy these hydra-headed problems.

3.GOALS,OBJECTIVES,IMPORTANCE, KEY VALUES & INTERNATIONAL STATUS OF THE RESERVE

3.1.Goals

- Improve the health and stability of the ENNR through responsible governance, active management and restoration of habitats to strengthen the ability of habitats to respond to a changing climate.
- Define and undertake activities to improve, sustain and enhance suitability and connectivity of the Reserve with other forest ecosystems as a wildlife corridor in Liberia, Cote d'Ivoire and the Republic of Guinea.
- Develop and nurture a long-term ownership and management solution of the ENNR that will enhance and sustain its cultural, conservation and a host of other key values, through collaborative and improved stewardship.
- Conserve and protect the multiple representative forest and aquatic habitats of the Reserve promptly, efficiently and wisely under such conditions as will ensure continue benefits to the present and future generations of Liberians and the world as a World Heritage Site.
- Re-classify the Nimba National Forests into a protected forest area category to support a tri-national program for the integrated conservation of Mount Nimba between Liberia, Cote d'Ivoire and the Republic of Liberia.

3.2.Specific objectives

- Maintain biological diversity of the Reserve through the control, or avoidance of all threats such as mining, hunting, fire, farming and other forms.
- Encourage and facilitate community and cultural stability by promoting diverse economic initiatives such as eco-tourism and other alternative livelihood strategies.
- Working with partner institutions and other stakeholder groups, develop and implement Conservation Agreements with ENNR-fringed communities as their contribution to the protection and conservation of the Reserve as guided by the goals and objectives of a management plan.
- Train, build capacity and employ suitably qualified individuals from ENNR-fringed communities in disciplines that will support the responsible governance and sustainable management of the Reserve.



- Plan and undertake socioeconomic and biological research, and coordinate research activities with stakeholders and partners.
- Develop and support conservation education, including awareness creation and environmental education, in schools and for out-of-school youth and the elderly.
- Demarcate the external boundary of the Reserve and its buffer zone.
- Support and facilitate trans-national conservation initiatives with Cote d'Ivoire and the Republic of Guinea.
- Contribute to developing and sustaining a balanced relationship between the community and the rest of nature.
- Identify and integrate the cultural values and local knowledge systems into approaches to conserve nature.

3.3.Importance

- The Nimba Mountains rise from lowlands at about 400 meters to peaks at over 1,750m. This change in altitude is unique in humid West Africa, and gives rise to an enormous variety of habitats from lowland rainforest and savanna, through mid-altitude rainforest, to high altitude forest and grasslands.
- It is thought that the mountains served as a refuge for many Upper Guinean species during the Pleistocene climate changes. This has led to extraordinary biodiversity – (more than 2000 plants, 2500 invertebrates, and 317 vertebrates) and more than 20 endemics such as the Nimba Otter-shrew, the viviparous toad and many high-altitude plants. In recognition of high rate of biological diversity and endemism, ENNR is an IBA, EBA, KBA and a Global Ecoregion.
- The Nimba Mountains extend into Guinea and Côte d'Ivoire where there is a transboundary Natural World Heritage Site. However, the mountains also contain some of the best iron ore in the world which was mined in Liberia from 1963 to 1989. This mining led to serious environmental degradation in about 10% of the area that became East Nimba Nature Reserve in 2003.

3.4.Key Values

The main values of ENNR can be summarized as follows:

- Very high biodiversity – Key Biodiversity Area, Alliance for Zero Extinction site.
- High levels of endemic species – one of only 2 Endemic Bird Areas in W. Africa.
- Important Bird Area.
- Good legal and policy framework.
- Co-Management Agreement; and a model for other PAs in Liberia and globally.
- Tri-National Agreement with Côte d'Ivoire and Guinea.
- Excellent partnerships between FDA, AML, CMC, FFI, CI and others
- Related to biodiversity, the provision of a range of ecosystem goods and services (e.g. Carbon storage, watershed protection and irrigation, aesthetic and touristic value, cultural and spiritual value, and pollination)

3.5.International Status of the Reserve

- East Nimba is a Key Biodiversity Area (KBA) and the most important Alliance for Zero Extinction (AZE) site in Africa.
- The Nimba Mountains were designated as an Important Bird Area (IBA) by Birdlife International in 2001. It is also part of the Upper Guinea Forests Endemic Bird Area (EBA).



The East Nimba Act, 2003, states that the World Heritage Council of UNESCO has declared the Guinea-Côte d'Ivoire side of the Nimba Mountain complex as a World Heritage Site and so *“the Liberian side is likely to meet the criteria for such designation”*. This updated Plan (ENNR 2024-2029) interprets the boldened phrase in italics as a clear, albeit indirect, declaration of the ENNR by the WHCU as a World Heritage Site. World Heritage Sites are intended for practical conservation for posterity, which otherwise would be subject to risk from human or animal trespassing, unmonitored, uncontrolled access or threat from local administrative negligence. Liberia must do all she can to fulfil these and related obligations if ENNR must remain in the World Heritage column. The benefits for keeping ENNR's World Heritage Site status from the WHCU include provision of emergency assistance for sites in danger, offering technical assistance and professional training, and supporting State Parties' public awareness activities.

- Management Category: As Liberia's designations closely follow the IUCN Protected Area Management Categories, ENNR corresponds most closely to Category II (national park), although under the 2003 Act it is a Nature Reserve.

4. POLICY AND LEGAL FRAMEWORK

4.1. National Policy and Legal Instruments

- **The National Forestry Reform Law (NFRL 2006) (October 2006)**. Key provisions relevant to the Preparation for the Management of Protected Areas are that (NFRL 2006) it:
 - Mandates that the FDA protect the Republic's economy, with participation of and for all Liberians in the management of the country's forest ecosystems and resources and to benefit equitably from the sound management of these resources.
 - Declares Protected Areas Management Plans as legal documents, and therefore charged PA managers with the responsibility to manage PAs and expend public funds carefully and judiciously.
 - Pays keen attention to the requirement of donors supporting Protected Areas development and management, that a Management Plan should be an integral part of any funding agreement. This requirement, in donors' view, is essential for the effective management of Protected Areas, thus encouraging the wise use of funds and introducing a framework of clear objectives for the plan.
- **Act for the Establishment of a Protected Forest Areas Network (COPAN) (October 10, 2003)**. COPAN (Consolidation of Protected Areas Network) is the foundation of the conservation of biodiversity in Liberia. Its principal provisions most fitting for the Preparation of the Management of Protected Areas are that it:
 - Introduces and defines for the first time in Liberia the rationale for expanding those incredibly valuable landscapes that serve as repositories of biodiversity, while mandating that productivity of natural forests be sustained to protect wildlife and maintain genetic diversity.
 - Pioneers the recognition of the need for Liberia to commit to establishing biological representative network of PAs covering at least 30% of existing forest types and areas covering 1.5 million hectares (1.7 million acres), as a permanent set-aside for conservation.
 - Defines various categories of PAs and prohibits activities that would threaten biodiversity of those PAs.
- **The Act Adopting the National Wildlife Conservation and Protected Area Management Law of Liberia (the Act) (October 25, 2016)**. Supreme provisions of the Act relevant to Preparation for the Management of Protected Areas are that it:
 - Aims to maintain, protect and preserve Liberia's unique biodiversity in a manner that supports both the recovery of wildlife and the sustainable use of its products by forest dependent communities.
 - Serves as an important mechanism to implement Liberia's obligations under international law as party to the convention on the wetlands of international importance, especially as waterfowl habitats.



- Contains provisions regulating Protected Areas, wildlife conservation, wildlife use rights, institutional arrangements (including functions of the FDA under this Act), offenses and penalties, and more importantly provides for community-based forest management to meet their needs while accomplishing conservation objectives.

4.2. International Agreements and Conventions

Liberia is a signatory to dozens of international Agreements and Conventions, few of the most relevant ones for our purpose are presented here:

- **The Convention on Biological Diversity (CBD) (May 22, 1992).** The leading provisions of CBD pertinent to the Preparation for the Management of Protected Areas are that it:
 - Aims to fulfil the 3 main objectives of conserving biodiversity, using the components of biodiversity sustainably, and sharing the benefits out of the use of genetic resources equitably and sustainably.
 - Encourages and effectuates Liberia's commitment to transform 10% of her legal conservation area of 1.5 million hectares, to any number of the IUCN Protected Area categories since she ascended in 2000 to the Convention.
 - Contributes not only to influencing parties to commit to conservation outcomes, but also to achieve the goal of the Secretariat of the CBD (SCBD), which is to promote the integration of biodiversity conservation and poverty alleviation objectives in both conservation planning and development planning.
- **The International Union for the Conservation of Nature (IUCN) (October 5, 1948).** IUCN remains the world's leader and a towering giant of conservation. The major provisions appropriate to the Preparation for the Management of Protected Areas are that IUCN:
 - Works tirelessly consistently with organizations, institutions, and countries, including Liberia, to establish and ensure best practices and standards that maximize the effectiveness of protected and conserved areas, and advances justice and equity in conservation, including the rights of indigenous peoples and local communities whose support conservation professionals need to succeed.
 - Defines Protected Areas to avoid confusion around the world about what Protected Areas really are or should be: "A clearly defined geographical area of land or sea, recognized, dedicated and managed through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values".
 - Gives concrete examples of Protected Areas that include national parks, wilderness areas, community conserved areas (such as Sande and Poro secret forests in Liberia), and nature reserves.
- **The Ramsar Convention on Wetlands (Ramsar) (February 2, 1971).** The main provisions of Ramsar germane to Preparation for the Management of Protection Areas are that the Convention:
 - Creates and nurtures commitment of parties (to this Convention) not to treat wetlands as wastelands, especially those that serve as waterfowl habitats, but to use them wisely.
 - Initiates, enhances and ensures consciousness/awareness of Liberians that the country's wetlands are as equally qualified as her tropical and largely lowland rainforest, to become Protected Areas. The more than a dozen of wetlands established since the advent of Ramsar is an outstanding contribution to protected areas expansion, hence the need to have them managed.



5. MANAGEMENT OF THE RESERVE

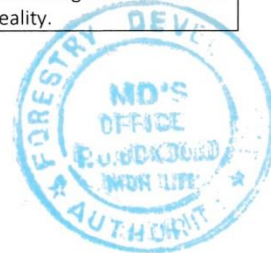
5.1. General Management Policy of the Reserve

- The Nimba Mountains are internationally recognized for their high biodiversity and need strict protection. NNR must be protected and conserved quickly, efficiently and wisely, and
- ENNR should contribute to the socio-economic, scientific and educational welfare of Liberia and be managed for conservation.

5.2. Boundary Demarcation

A boundary dispute lingers for many years now between the Cote d'Ivoire and Liberia, specifically with a portion of the Zor Community Forest. It needs to be resolved once and for all at the soonest possible.

Management Issue No.2: Demarcation of the segment of the ENNR boundary line occurring at some point between Cote d'Ivoire and Liberia .	
Policy	Actions and guidelines (Ag)
The boundary of ENNR must be clearly demarcated with a clean cutline, with signs at 1km intervals and numbered concrete pillars at turning points. The legal boundary description must always be updated to match the situation on the ground.	Ag4. A 6ft/2-meter wide strip should be cleared each year, 1 meter on each side of pillar starting with the drier areas in December to March by cutting the vegetation close to the ground and by pulling out roots where possible. Ag5. Any big trees that have fallen across the boundary should be cut and removed so that people can easily walk along the boundary. Ag6. Metal signboards should be made and fixed on the boundary at intervals of about 1km.The signs should be planted wherever a path crosses the boundary. Ag7. It is proposed that bright red non-toxic paint should be applied to trees at intervals of about 20 meters, so that the boundary can still be found even if it is overgrown. Ag8. Law Enforcement Rangers should patrol the boundary regularly (about once a month) and report any missing or damaged signboards.
Management Issue No.3: Boundary line re-demarcation in response to communities' complaints that the original demarcation infringes on a huge area of their ancestral land on the eastern boundary of the ENNR. Figure 7 shows the disputed area between the boundary line of Zor Community Forest, Liberia, and Cote d'Ivoire.	
Policy	Actions and guidelines (Ag)
The ENNR Act should be updated to reflect the situation on the ground	Ag9. During the boundary cleaning GPS waypoints should be taken (in decimal Lat-Long format, not UTM) at 1km intervals and particularly at all the "Metes" – the changes of direction of the boundary. Ag10. These points should then be displayed on a large-scale map and used to revise the description of the eastern part of the boundary. Ag11. The new "Metes and Bounds" should be formally gazetted to become law. Ag12. FDA should use the revised boundary as established for all maps, and change the number of acres/hectares to reflect reality.



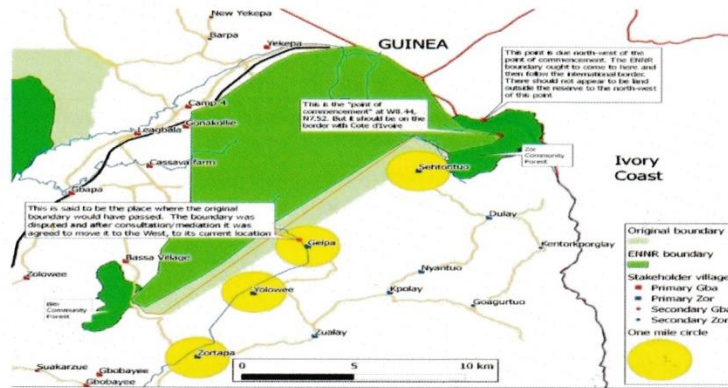


Figure 7. Map Showing Details of the Eastern Boundary of ENNR

5.3. Landscape Management

Two aspects of the vegetation/landscape of ENNR need some keen attention. These are habitat restoration of the previous, no longer operations of LAMCO mine area, and fire, especially the mountain scrub and savanna areas. During the life span of this management plan, specific management interventions will be identified, in line with conservation priorities of ENNR and the wider Tripartite Nimba Massif plan, for each habitat type and or management zone. Figures 8 and 9 show a mountain side in ruin and a landslide, respectively, caused by the damaging impact of mining.

5.3.1. Habitat restoration

Management Issue No.4: Restoration of habitats degraded by intensive and industrial mining (see the figures below showing a landmark damaged by mining).	
Policy	Actions and guidelines (Ag)
Actively seek the best method of habitat restoration	<p>Ag13. Support / observe AML's research to find the best methods for habitat restoration. Other mining companies on other landscapes adjacent to ENNR should be requested to help fund restoration efforts.</p> <p>Ag14. When the experimental plots established to determine species-compatibility have provided results, put such results to work in proposal for funding to undertake restoration experiments on degraded sites of the Reserve.</p> <p>Ag15. Design new action plans as part of site restoration studies and experiments.</p>



Figure 8. A Mountain Side Ruined by Mining

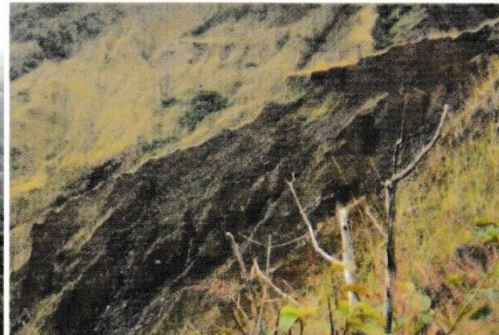


Figure 9. A Landslide on a Steep-sloping Mining Site



5.3.2. Fire management

Management Issue No 5: Fire management	
Policy	Actions and guidelines (Ag)
Education and awareness are among the best means of preventing fire, but these activities must be carried out by trained Liberian and transboundary fire management teams.	<p>Ag16. Ensure that awareness about fire is always a part of community sensitization, including transboundary fire detection and fighting teams.</p> <p>Ag17. Follow up to ensure that letters of complaints from the FDA to GSM company on the actions of its employees are timely received, and those who did engage in hunting and other forbidden acts in the Reserve are brought to justice.</p> <p>Ag18. Enforce the law if illegal activities continue.</p> <p>Ag19. Procure basic firefighting equipment for all ranger stations, Rangers, CMC and Auxiliaries.</p> <p>Ag20. Provide basic training on fire prevention and firefighting to FDA, CMC / Auxiliaries and GSM tower workers.</p>

Fire continues to be the single most dangerous threat to the Reserve. In 2007, it almost destroy the GMS Towers built in the Reserve (See Figure 10 below). In February 2024, a massive wave of fire dealt an incalculable damage on the Reserve.



Figure 10. The GSM Towers Fire in 2007

5.3.3. Exotic invasive plant species

Management Issue No.6: Identification and destruction of alien plants or plants found in the ENNR which are non-Liberian	
Policy	Actions and guidelines (Ag)
Invasive exotic plants should be destroyed by the most effective method so that they don't become a serious problem. <i>Chromolaena</i> could only be controlled if there is an international campaign to destroy it. It cannot be eradicated in ENNR because it continues to re-invade from outside of the Reserve.	Ag21. Raise awareness with stakeholder groups regarding <i>Acacia mangium</i> , an alien plant species that is spreading like fire in some parts of Sinoe, Grand Cape Mount and Grand Bassa Counties. Ag22. Ensure that alien species are added to monitoring protocols. Ag23. Act (eradicate) if and when required (A <i>Guava</i> spp. had recently been identified as the newest exotic plant species in the ENNR).

5.4. Wildlife Management.

The wildlife of ENNR needs protection from illegal (all) hunters and the prevention of habitat loss, due to logging, fire, mining and NTFP collection.

Management Issue No.7: Management of the wild animal population of the ENNR.	
Policy	Actions and guidelines (Ag)
ENNR's wild animals should be protected from trapping, shooting and any other activities that will hurt, harm or kill them.	Ag24. Develop and implement a training and capacity building course in the protection of animals in the ENNR. Ag25. Provide the equipment needed to carry out effective and efficient programs for wildlife, and enforce the Wildlife Law to the letter.

5.5. Conflict between Humans and Wild Animals:

The conflict between human and wild animals (HWAC) is an important issue for FDA and effective advice is needed and must be provided. FDA policy attempts to ensure that people's livelihoods are not adversely affected by protected areas so management must do whatever is possible to reduce conflict. It has been reported that:

- There are minor problems with chimps in Kpolay, which are said to damage/eat bananas, plantains and cocoa.
- Buffalos sometimes scare people
- The most important problematic mammals are the "Groundhog" (Cane rat), squirrels and porcupines, but these are not protected and people may hunt and trap them outside the ENNR.
- Rice birds (village weavers) are a pest of rice so rice farmers normally scare them away by noise and by throwing stones at them. "Flashy tape" is also effective.
- There have also been records of HWAC around Zor, involving protected species

A solution to the HWAC challenge needs a sober reflection on the part of conservation development practitioners at the FDA and a more serious attention than it currently receives, to say the least.

Management Issue No.8: Conflict between humans and wild animals in the ENNR.	
Policies	Actions and guidelines (Ag)
It is a policy that people's livelihoods should not be adversely affected. It is therefore right that people should be able to take appropriate actions against the so-called "pest" species in crop production areas, IF they are not protected by law.	Ag26. Undertake community consultation and data collection (specific HWAC surveys) to develop a plan of action (list of HWAC issues, hotspots) and context specific mitigation measures (e.g. fences, changes in cropping, land use planning etc.). Ag27. Some initial advice / actions (while we undertake the action above), include:



<p>Protected species should never be killed.</p> <p>ENNR needs to investigate and address (plan for) HWAC issues.</p>	<ul style="list-style-type: none"> • Ag28.In the case of chimps (raiding farms), advise people against farming close to the boundary, and against planting bananas, plantains and cocoa. • Ag29Advise farmers that they may act against common “pests” (non-protected species) to protect their crops. • Ag30.Pests need to be identified and defined for the community . • Ag31.Advise people to act to keep animals out of their farms. Sometimes simple fences can be effective (and other measures will be explored). • Ag32.Advise people not to feed primates – as it encourages them to steal food and crops. • Ag33.Include HWAC into the emerging Grievance Mechanism, and investigate any allegations of serious damage by animals and report to the Reserve Warden. • Ag34.Never suggest that compensation could be offered .Losses due to “pest” species are natural and most of them are found outside reserves as well as inside them.
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5.6. Introduction or Re-introduction of Domestic Animals into the Reserve.

There have been no known introductions or re-introductions of wild animals to date. However, there is a risk that people working in the mines may have purchased a species of a wild animal (often these are primates) as pets. At the end of their contracts many wonder what to do with their pets; they may decide to release the animals back “into the wild” in the ENNR. This is illegal (under current laws/regulations).

<p>Management Issue No.9:Introductions and re-introductions of domestic animals.</p>	
Policy	Actions and guidelines (Ag)
<p>Introductions of native or exotic species of wild animals as pets must never be permitted.</p> <p>Re-introduction of locally extinct species may only be considered after expert analysis and recommendations.</p>	<p>Ag35.Prepare pamphlets and distribute copies to individuals from Reserve-fringed communities and visitors to the Reserve who own animals as pets. All animal owners must register their pets at a designated office of ENNR Headquarters and should be given permits; they are to take full responsibility for keeping their animals from entering the Reserve.</p> <p>Ag36. Visitors to the Reserve and employees who own animals as pets will be monitored for compliance and will be fined a certain amount of money if they violate the guidelines.</p> <p>Ag37.The ENNR public should be constantly reminded of the guidelines and the penalty for non-compliance.</p>



5.7. Handling of Dead, Injured and Abandoned Domestic Animals

Management Issues No.10: Dead, wounded and animals that are no longer cared for.	
Policy	Actions and guidelines(Ag)
Any animal found in the ENNR alive, dead or wounded should be left alone, but any of these incidents should be reported to authorities at ENNR, FDA Headquarters or at the Ministry of Agriculture in Monrovia for appropriate action.	<p>Ag38.The presence of domestic animals, including for grazing and recreation in the Reserve or its buffer zone, is outlawed. Wild animal(s) found dead with suspected disease or found alive with clinical signs of disease, should be reported to the appropriate authority at the FDA so action is taken as relevant in consultation with other agencies in the country for assistance.</p> <p>Ag39. Design a visitor code of conduct to avoid handling of live animals by tourists/visitors to the Reserve. If dogs are on site for security purposes or as pets for visitors and employees of the Reserve, they should be vaccinated and tethered in a facility.</p>

5.8. Diagnosis and Control of Zoonotic Diseases

Zoonotic diseases are illnesses often spread by animals between humans and animals. Historically, these diseases have been a disastrous threat to both human and animal health and lives and at such must be timely and correctly diagnosed, controlled or cured. Ebola is a painful example of a zoonotic disease that all Liberians will never ever forget. A UN organization has been working with the Liberian Ministry of Agriculture in recent years to improve animal health services¹⁴, and the need is quite urgent to a point where some officials and staff of our Protected Areas system should be fully prepared to provide services. The FDA is quite aware of the danger zoonotic diseases pose on humans and wild animals and would want to see some activities in this field in our national parks and forest reserves. An outbreak of zoonotic diseases may come from the mishandling of injured, dead or captured animals that are kept at home as pets.

Management Issue No:11: Human and animal health services	
Policy	Actions and guidelines (Ag)
An office for zoonotic diseases will be established at FDA Headquarters, with a staff sent to the ENNR at times, to keep track of any occurrence of zoonotic illnesses.	<p>Ag40. Identify, select, train and deploy a team to routinely monitor and control zoonotic diseases.</p> <p>Ag41. Develop and implement a risk assessment and surveillance plan for the ENNR to proactively monitor zoonotic illnesses in a bid to reduce the changes for their likely occurrence.</p> <p>Ag42. Provide continuing education and training services for officials and staff of the zoonotic team.</p>

5.9. Collection, Harvesting and Use of Animal and Plant Products from the ENNR, which do not include Timber

Management Issue No.12: The collection, harvesting and use of plant and animal products that exclude timber	
Policy	Actions and guidelines (Ag)
The collection, harvesting and using animal and plant products from the ENNR are declared illegal activities.	<p>Ag43. Prepare and distribute leaflets to all ENNR-fringed communities of the policy on collection, harvesting and using any plant and animal products from forests near the ENNR.</p> <p>Ag44. Organize and conduct a series of workshops with all residents of ENNR-fringed communities about the policy against anyone collecting/harvesting and using any animal or plant products from the ENNR.</p>



5.10. Abandoned Mine Equipment.

Tools, vehicles and other materials which had outlived their usefulness are occupying a good amount of land and people feel these should be removed. The CMC had informed that abandoned mine equipment is no longer found within the boundaries of the ENNR because an organization of scrap iron dealers have been collecting and trading such objects for cash. ENNR's management should ascertain that abandoned equipment or material of any kind must not occupy any space at the Reserve.

Management Issue No.13:Removal of abandoned mine equipment.	
Policy	Actions and guidelines(Ag)
ENNR will facilitate removal of all mining equipment.	<p>Ag45.Assemble an action plan to guide the removal of scrap metal or any of such material , or leave some on site for their potential cultural and historical values.</p> <p>Ag46.Hold initial discussion with scrap dealers before they begin to remove any scraps, making sure they are not to cause fire or leave any rubbish behind.</p> <p>Ag47.Monitor the cutting and removal of scrap metal, including the ESIA process, to ensure that all activities avoid negative environmental impacts.</p> <p>A48. Conduct an inventory after scraps are removed to find out if anything is left on the site that could turn out for any use.</p>

5.11. Water Pollution

Mining has resulted in serious pollution of some rivers and other fresh water bodies. In modern mining, great care must be taken to reduce impacts to acceptable levels, with investment from the start in the control of materials and the design, construction and maintenance of protective structures. Figures 11 and 12 are a vivid reminder of the negative impact of mining on the Yenhn River and the Blue Lake; the Lake is now an integral part of a tourist destination.

Management Issue No.14:Reduction in the pollution of rivers , creeks and streams from mining.	
Policy	Actions and guidelines (Ag)
Habitat restoration may be able to gradually reduce the pollution from the old mine, although this is not guaranteed or uniformly true, and should be explored.	<p>Ag49.Where possible, investigate options to mitigate water pollution from the old mines, although this is not guaranteed or uniformly true, and should be further researched.</p> <p>Ag50.Work with AML to ensure that no new water pollution takes place within the Nimba landscape.</p> <p>Ag51.Employ re-vegetation as an initial option.</p>





Figure 11. Yenhn River Polluted by Mining



Figure 12. The Blue Lake Mine Sediment Near Sehtontuo

5.12. Historical and cultural sites

Currently, there are no known sites of historical or archaeological importance in the ENNR, except for some caves which are reportedly found elsewhere in the Reserve but with no further specifics.

Management Issue No.15: The search for and management of historical and cultural sites	
Policy	Action and guidelines (Ag)
Because of their strong ecotourism potential, there must be a strong determination to search for and discover more historical and, in fact, cultural sites at the ENNR.	Ag52. Carry out a reconnaissance of ENNR's landscape and consult with its surrounding communities through focus group discussion, to probe into the possibilities for historical and cultural sites.

5.13. Mineral Prospecting and Mining

Mineral prospecting and mining are outlawed by the Forestry Reform Act of 2006. As such no mineral prospecting and mining should take place in the ENNR.

Management Issue No.16: Mineral prospecting and mining	
Policy	Actions and guidelines (Ag)
Prospecting of any kind and mining are not allowed in the ENNR and its buffer zone.	Ag53. Law enforcement/patrols must take account of the risks involved when acting against offenders, and must develop and deliver a plan to remove miners/camps that are established close to or are found in the Reserve.

5.14. Environmental and Social Impact Assessments (ESIAs)

Management Issue No.17: Conduct of Environmental and Social impact Assessment	
Policy	Actions and guidelines (Ag)
ESIA must be conducted for all proposed developments (trails, roads and buildings, etc.) in the Reserve to ensure that any necessary environmental safeguards are adopted.	<p>Ag54. Carry out ESIA's to evaluate any physical/infrastructural development in the Reserve.</p> <p>Ag55. If the ESIA is satisfactory subject to mitigation measures, these must be specified in any lease or permit.</p> <p>EPA and FDA will monitor the situation to ensure</p>

	<p>compliance.</p> <p>Ag56.Specifically for any ecotourism development, an Environmental and Social Impact (ESIA) is required.</p>
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5.15.Climate Change Adaptation

Climate change will present additional threats to biodiversity conservation. Primarily , changing climatic conditions may result in shifting habitats and the need for species to move or migrate elsewhere. It is also important for us to note the deleterious impact of climate change on Liberia’s climate-dependent farming system – shifting cultivation. Relatively recently, increased temperatures, rising sea levels, unusually abundant rainfall, and changing rainfall patterns and intensity in Liberia have been observed and reported¹⁵.These are among the deadliest of the threats to Liberia’s climate-dependent farming communities. The risks of climate change to our lives cannot be reduced to zero no matter what we do, but government, the public in general and scientists must, individually or collectively, take decisive actions to help households and businesses manage these risks. This plan adopts the 6 ways suggested¹⁶ to help us build resilience to climate change as actions and guidelines. These hold true for Liberia in general and specifically for ENNR-fringed communities.

Management Issue.No.18:Climate change adaptation	
Policy	Actions and guidelines (Ag)
<p>We need to be aware of climate change and to adapt as appropriate by learning from others and climate change experts around the world.</p>	<p>Ag57.Investigate impact of climate change on ENNR’s functions as a forest ecosystem as well as on its management.</p> <p>Ag58.Provide information from or to government agencies and stakeholders.</p> <p>Ag59.Give support for informed decision-making on resource management and conservation.</p> <p>Ag60.Prepare a climate change adaptation plan to advise ENNR-fringed communities on what to do in a changing climate situation.</p> <p>Ag61.Build resilient foundations with rapid and inclusive development.</p> <p>Ag62.Encourage and help people and firms to do their part in climate change adaptation or mitigation.</p> <p>Ag63.Review and revise land use plans and protect critical infrastructure.</p> <p>Ag64.Help people and firms recover faster and better from the impact of climate change.</p> <p>Ag65.Manage climate change impacts on the macro level.</p> <p>Ag66.Prioritize according to needs, implement across sectors and monitor progress (Ag61-66,World Bank).</p>



6. ZONATION OF THE RESERVE

Two main categories of zones are the focus of this plan. These are the core and administrative zones (See Figure 13 below).The core zone constitutes biodiversity hotspots or habitats of rare and endemic species which must be delineated to serve protection and conservation imperatives. Administrative zones are set aside for purposes other than biodiversity conservation. Spatial location of both types of zones is not necessarily discrete for the ENNR and following is a brief description of the various zones.

6.1.Core Zone

Management Issue No.19:Establishment of various types of zones of the Reserve.	
Policy	Actions and guidelines (Ag)
Most of the Reserve will be managed for the protection of wildlife and forest, with minimum intervention except for law enforcement and monitoring.	<p>Ag67.All the Reserve will be managed for conservation.</p> <p>Ag68.Ecotourists may visit any part of the Reserve, except when an on-going research project requests that there be no disturbance in a particular area at a certain period of time.</p>

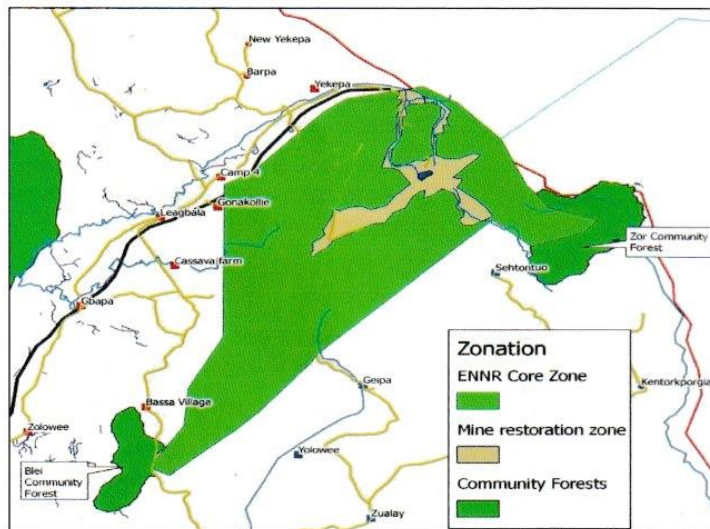
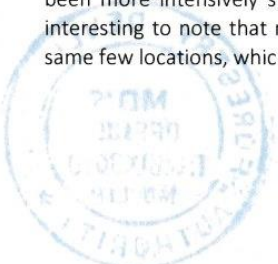


Figure 13. A Map of the Various Zones of the Reserve

6.1.1.Biodiversity Hotspots

Research has shown that wildlife is never found to live in equal numbers everywhere in a given space. It is however thought that some areas (such as the southern tip of ENNR and the Bleich Community Forest) have been more intensively studied than other areas and so appear to have more IUCN Red List species. It is interesting to note that many rare species (of mammals, birds, bats and others) have been observed in the same few locations, which are all places with adequate road access.



6.1.2. Rare amphibians and crab species that are also found in the southern tip of the Reserve, and Bleih Community Forest.

Management Issue No.20: Mapping out threatened species of the Reserve is an essential requisite for determining appropriate management regimes for the habitats these species inhabit.	
Policy	Actions and guidelines (Ag)
"Known Hotspots" should be patrolled frequently and thoroughly.	Ag69. Use data from patrols to find out which areas and species are most threatened. Ag70. Ascertain that those threatened areas are thoroughly patrolled.

6.1.3. Habitats of Potential Importance

Many of the distribution maps that are shown below are concentrations of rare species in these areas. It is thought that these places only appear to have higher concentrations of special species, because they have been studied in much greater intensity than the rest of the Reserve. Much work has been done on the relative potential importance of different habitats for different types of wildlife. The lower parts of the Reserve are most important for most large and small mammals and butterflies, but the higher ground is of great importance for many bird species (and, surprisingly perhaps) for crabs and some rare amphibians. See the first two maps below that feature important habitats for mammal (Figure 14) and birds (Figure 15); the third map reflects high altitude savannah, moist forests and other key habitats for various species of wild animals (Figure 16) and, finally, a map exhibiting the habitats of potential importance to amphibians (Figure 17).

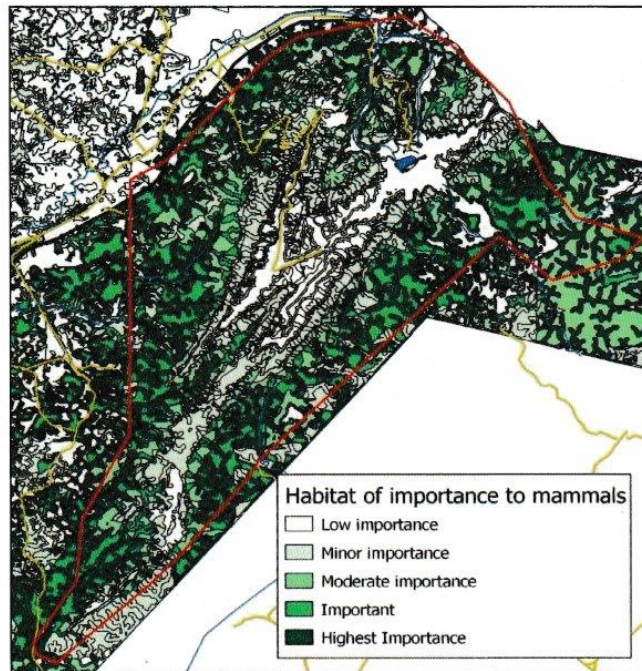


Figure 14. Map for Habitats of Importance to Mammals (AML)



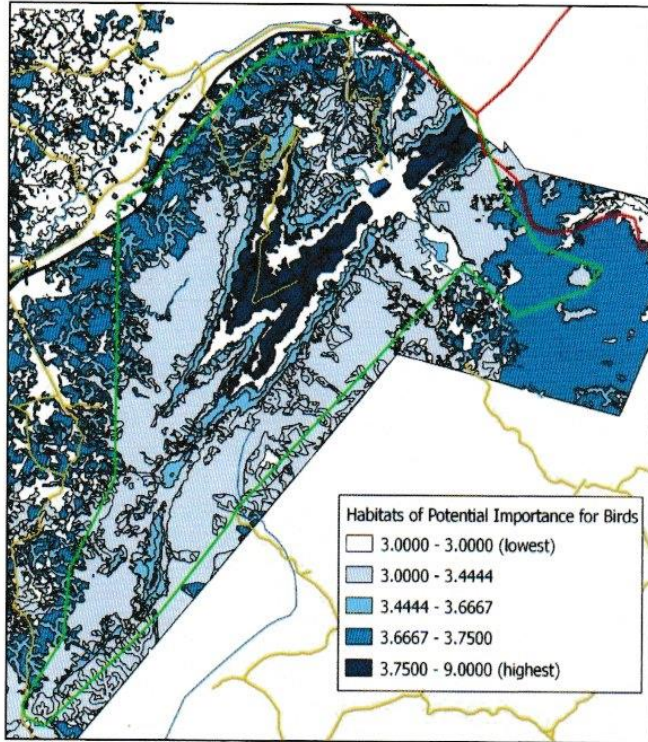


Figure 15. Map for Habitats of Potential Importance to Birds



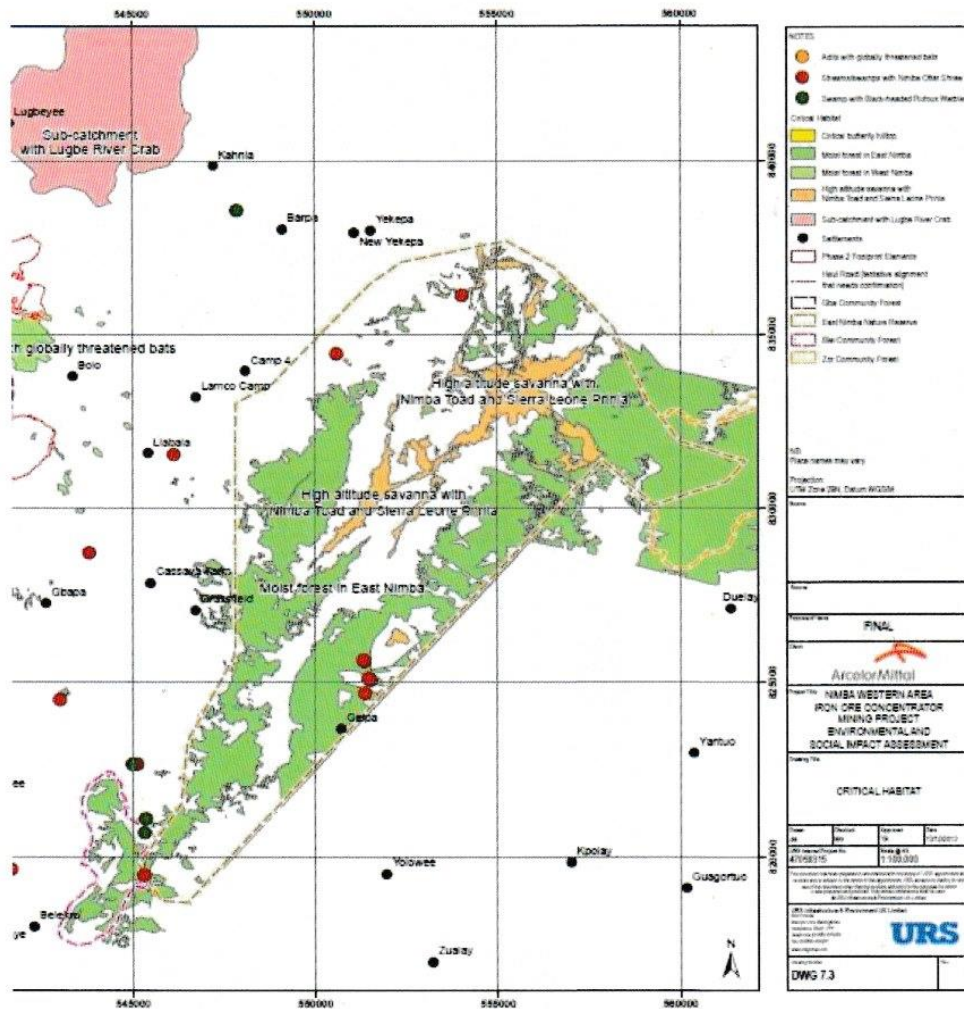
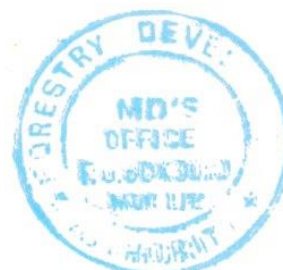


Figure 16. High Altitude Savannah, Moist Forest and Other Habitats for Various Species of Wild Animals (AML)



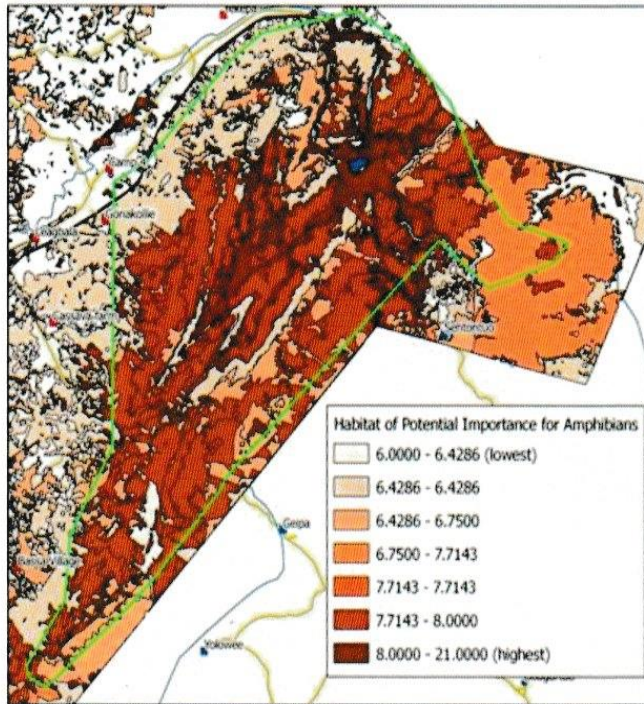


Figure 17.A Map Showing Habitats of Potential Importance to Amphibians (AML)

In each of the maps above, a number of key habitats had been identified across the landscape of the Reserve that include the habitat of the famous Nimba toad. These are moist forests and high-altitude savannah.

6.2. Restoration of degraded mine lands

The land that had been degraded from iron ore mining by LAMCO and AML must be brought to some form of usefulness for the communities and the natural environment.



Management issue No.21:Restoration of old mines and establishment of a buffer Zone	
Policy	Actions and guidelines
We must work to restore lands which have been degraded by mining, and must practice sustainable forestry by increasing forest cover through tree growing(not by only planting trees).	<p>Ag71. AML should invest in reclaiming some of the mined lands through the introduction of carefully selected Agroforestry innovations and a tree growing effort.</p> <p>Ag72. AML and other companies operating within ENNR's surrounding landscapes should support the establishment, development and management of a number of small-scale village-based tree nurseries to produce planting stocks of quality germplasm (seeds, cuttings etc.) for the rehabilitation and final restoration of old mining areas.</p> <p>Ag73. Identify and select suitably qualified candidates to be trained in the management of tree nurseries and the establishment and maintenance of small-scale tree plantations in vacant lots of towns and villages and in the field. The local knowledge of communities must be tapped in the effort to rehabilitate and finally restore degraded land.</p> <p>As gathered from locals, the failed tree-growing activity of AML's was due to a number of factors, among them, poor nursery management in the cultivation of planting stock, inferior germplasm, and species-site incompatibility.</p>

6.3. Buffer zone:

Many legal and policy instruments mandate the creation of a buffer zone around National Parks or Nature Reserves(e.g. Wildlife and National Parks Act of 1988,National Forestry Reform Law of 2006).However, there is yet to be a buffer zone policy much less a buffer zone for the Reserve since its creation 20 years ago. Patches of Secret Forests (Sande, Poor) are said to exist in the immediate areas outside the Reserve that could become the equivalence of buffer zones. Two community forests in close proximity to the Reserve are also being considered to help make ENNR's buffer zone possible. Defining and establishing ENNR's Buffer Zone must be the single most important activity which this updated management plan must prioritize and accomplish at its inception.

Management Issue No.22:Definition and demarcation of ENNR's Buffer Zone	
Policy	Actions and guidelines (Ag)
Creation of buffer zones around National Parks and Nature Reserves has been mandated by a number of legal and policy instruments as quoted above, and the ENNR is no exception.	<p>Ag74. Meet with key representatives of ENNR-fringed communities, the CMC and ENNR's partners to discuss the plan to create a buffer zone around the ENNR.</p> <p>Ag75. Peacefully negotiate the size of the buffer zone, and ensure an interactive participation of all parties with the common understanding that the ENNR belongs to us (all) – Liberians and the world.</p> <p>Ag76. Organize and train a team to cut the boundary line of the buffer zone after an agreement is reached among all parties, especially for those whose land the buffer zone boundary line would run through.</p>



	<p>Ag77.If the core and other zones (e.g,Stakeholder , administrative, old mine restoration) of the Reserve had already been demarcated, these zones will have to be defined again so as to update the boundary of the core zone on the ground with respect to the other zones.</p> <p>Ag78.Prepare an action plan, detailing the activities that would constitute the creation of the buffer zone, who will do what, how and when.</p> <p>Ag79.Execute the action plan as agreed.</p>
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Buffer zone is primarily meant to form a protected seal around any protected area against the scourge of encroachment and the series of threats that are engendered when no buffer is established around a given protected area, as is the case with the ENNR.Efforts must be redoubled to ensure that a functional buffer zone is established in the first quarter of the first year of implementation of the Plan,

6.4. Stakeholder zone

Various communities have been identified that were affected by the establishment of ENNR, and therefore deserving of support to reduce or mitigate negative impacts. Figure 18 shows the approximate extent of this zone, though it should be noted that not every community within the thick red line on this map is designated for support.(Some villages are not marked on the map).



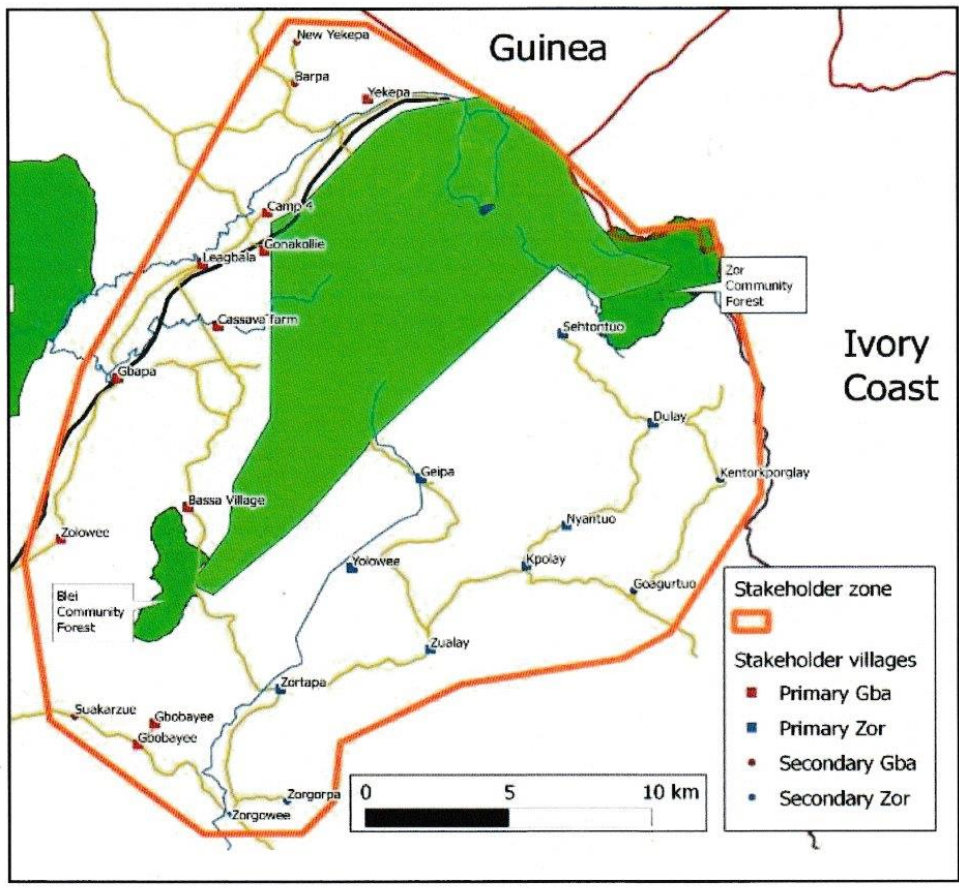


Figure 18. Stakeholder Zones of the ENNR

6.5. Administrative Zones

Administrative zones are areas where the Reserve Headquarters at Zortapa, Camp 4 and Geipa zones are established. ENNR management plans to replace these zones by Ranges when the proposed new ENNR Headquarters is built on the western side of the Reserve.

Management Issue No.23: Establishment of administrative zones of the Reserve	
Policy	Actions and guidelines (Ag)
ENNR zoning should support the conservation of biodiversity and should only be revised to improve said conservation effectiveness.	<p>Ag80: Zoning must be recognized and enforced.</p> <p>Ag81: Revisions to zoning should only be made to improve conservation efforts.</p> <p>Ag82: Existing research findings and the data collected from forthcoming surveys and biomonitoring should be used to identify</p>



	key areas and/or habitats for targeted research and, above all, protection.
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7.AFFECTED COMMUNITIES

7.1.Co-management of the ENNR

Given its uncommon and multiple uses and qualities as manifested in its importance, key values and national and international status, the ENNR is a common property resource (CPR). Common property resources (CPRs), such as forests and fisheries among them, present a complex management challenge. A CPR is a public good in that it is difficult or impossible to deny user access to the resource. But it is also a private good in that consumption (and non-consumptive use) by one user precludes or significantly diminishes others' consumption. Because of these strikingly difficult properties, a CPR is especially vulnerable to what Harding calls the "tragedy of the commons" in which individuals acting in their own self-interest tend to over-exploit the resource¹⁷.

Theoretically, there are four management solutions for CPRs in the context of ownership: (i) Open access (in which no one owns the resource and so anyone uses the resource as s/he sees fit), (ii) Private property (with a clearly defined owner or group of owners), (iii) State property (where the government regulates access to and use of the resource, as a coercive force) and (iv) Communal property (which communities own and make and enforce management and use rules and decisions^{18,19,20}). Communal ownership has received more attention in several decades worldwide than the other 3 types of ownership. It requires that communities of resource users devise their own management institutions, including the allocation of access rights, rules for decision-making and conflict resolution^{21,22}. The four management scenarios mentioned are ideal types. In reality, the management of a CPR combines different types of control²³.

Fisheries scholars have recently highlighted a management strategy, called co-management, that combines aspects of state and community control^{18,19,23}. It involves a partnership between the government and a community of resource users in which the community develops a system of access rights and rules, while the state provides the legal and political authority needed to enforce this system. As such, co-management offers the opportunity to leverage the unique capabilities of both the state and the resource community.

7.1.1. Major phases of co-management*

In practice, co-management has a series of key activities that are categorized into phases into the table that follows. **Table 4. The four principal phases of co-management.**

Phases	Summarized Description of the Activities Involved in Each Phase
Phase I: Preplanning Phase	<ul style="list-style-type: none"> • Assess the need for co-management and its feasibility. • Assess the available human and financial resources. • Establish a Start-Up Team.
Phase II: Organization of Partnerships	<ul style="list-style-type: none"> • Gather information and tools (such as maps) on the main ecological and social issues at stake. • Undertake a preliminary identification of the Natural Resource Management (NRM) unit(s) and the institutional actors at stake. • Launch and maintain social communication initiatives on co-management in the local context. • Contact institutional actors, facilitate appraisal exercises and continuing with them the ecological, social and stakeholder analyses. • Assist the institutional actors and propose a set of rules and procedures for the negotiation phase, including explicit equity considerations.
Phase III: Negotiation of Plans and Agreements	<ul style="list-style-type: none"> • Agree on the negotiation rules and procedures. • Develop a common vision of the desired future for the NRM units (e.g., forests, grasslands, fresh water bodies, wild animals, etc.) at stake.



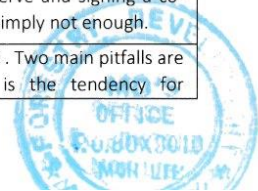
	<ul style="list-style-type: none"> • Ritualize** the agreed common vision. • Review the current socio-ecological situation and trends. • Agree a strategy towards the common vision. • Negotiate specific co-management plans and agreements for each component of the strategy (including clarifying what will be done by whom and with what means, mediating conflicts, establishing zoning arrangements, and the sharing of NRM functions. • Agree on co-management organizations and initiatives to institutionalize co-management. • Publicize the co-management plans, agreements and organizations.
Phase IV: Learning by Doing (Adaptive Management)	<ul style="list-style-type: none"> • Apply and implement the co-management plans, agreements, and organizations. • Clarify the entitlement and responsibilities of the institutional actors as necessary. • Collect data and information on results and process, as specified in the follow-up protocols. • Identify the main factors impacting upon natural resources and stakeholders, and experiment judiciously with innovations. • Organize review meetings at regular intervals to evaluate results and lessons learned, modifying the co-management plans, agreements and organizations as necessary.
*Key References ^{24,25,26,27}	
<p>**An agreement is ritualized/legitimized when it is accepted and recognized as binding not only by the various institutional actors (call them partners if you wish) who developed it, but also by society as a whole. The process by which such legitimization is achieved, however, differ according to the importance of the agreement. A simple local rule is easily legitimized and easily undone if the need arises. Instead, a common vision for the future desired by an entire community is a sort of constitutional agreement that cannot simply be invalidated or changed otherwise.</p>	

7.1.2. Conditions under which co-management can be successful

The key requisites for a successful co-management arrangement are highly likely to be more than those covered in this document, and are reflected in Table 5. Limitation in space and time could only afford an opportunity to search and review only few of the growing body of published experiences on the subject.

Table 5. The Three Most Common Requirements for a Successful Co-Management Arrangement

Requisites for a Successful Co-management Arrangement	Summarized Description of the Requisites for Success
An appropriate Balance of Power and of Responsibilities	Scholars of various disciplines rarely agree on anything, but on this subject most agree that co-management works best if the local community focuses on formulating a system of rights and rules, while government focuses on formulating a legal framework to back up the system. This allocation of responsibilities takes into account the "comparative advantage" of each partner ²¹ . However, maintaining this appropriate balance of power has several pre-conditions. First, government must be willing to devolve power to local communities. Often this is a difficult task for state bureaucracies, which tend to want to manage a resource directly rather than take "the back seat" role of a facilitator. Simply creating a reserve and signing a co-management plan, as our government has done, are simply not enough.
Managing Equity Issues	Equity issues do play a central role in co-management. Two main pitfalls are associated with equity considerations. The first is the tendency for



	government to dominate local communities in a range of issues , particularly on co-management decision-making. The second is a tendency for social inequities to be reflected in or intensified by community institutions. This, for example, is seen in the number of people who are serving as members of the co-management committee of the Reserve, and so on. The first concern can be addressed by devolving more authority from government to communities. The second can be addressed by requiring more transparent and accountable local systems of government , providing community members with recourse to higher level government channels, and enlisting third parties, such as suitably qualified NGOs, to “audit” or watch over the co-management system.
Low Transaction Costs	Co-management can be most efficiently and effectively applied where transaction costs of implementation are low. Transaction costs arise mainly from two sources (i) Characteristics of the resource and (ii)The community . A resource that presents low transaction costs is one for which boundaries can be clearly defined and from which outsiders can be easily identified and excluded. A community that presents low transaction costs has strong organizational capacity and capable leadership, is relatively homogenous in livelihood and culture, has a high level of dependence on the CPR and few alternative livelihood options and, finally, has high visibility (people can easily monitor each other’s behavior).Experience teaches and tells and suggests that the ENNR community presents low transaction costs ²² .

7.1.3.The basic aim of co-management

The central aim of co-management is to work together in partnership in order to:

- Establish a management body for the co-management of the ENNR made up of representatives of the JFMC and FDA and hereinafter referred to as the ENNR Co-management Committee.
- Promote the conservation and management of biodiversity in the ENNR and jointly reduce and/or avoid threats to that biodiversity.
- Establish a process of shared responsibilities regarding use & management of ENNR.
- Provide information to the Communities and raise awareness about sustainable use, management and conservation and the value of forest resources to the community and the nation;
- Ensure sharing of the costs and benefits of ENNR management, between the state (FDA) and community.
- Identify and resolve, through a consultative process, any conflicts that may arise in the management and conservation of resources in the ENNR.
- Ensure the effective and efficient management of the ENNR for this and future generations, and
- Assist the management of the ENNR.



7.1.4. "Rights and Obligations"

Section 4.04 The Co-Management Committee shall:

(a) *In consultation with Communities, develop, draft and submit to FDA for approval, rules for ENNR management regarding control of hunting, mining, fishing, farming, settlement, and wildlife protection within the ENNR; domestic animal control; fire control; illegal entry; and nontimber Forest Product (NTFP) collection and management.*" Annex 4 lays out details of the co-management agreement.

Some use of forest resources is permitted within the Community Forests, and other forest areas that abut ENNR (forming a *de facto* buffer zone).

Management Issue No.24: The need to update the Co-management Agreement to correspond with the provisions of the Act that created it in 2003.	
Policy	Actions and guidelines (Ag)
The Co-Management Agreement should be updated to correspond with the provisions of the ENNR Act, 2003, which has precedence	<p>Ag83:The Co-management Agreement should be reviewed by the CMC,with support from FDA.</p> <p>Ag84.The Legal Department of the FDA has to be prepared to play a role here, given its current difficulty with prosecutors.The policy proposal of an update is the best approach towards clarity on this important issue of resource extraction in the Reserve.</p>

7.1.5. Other key tenets of a Co-management arrangement

Management Issue No.25: Co-management actions and guidelines.	
Policy	Actions and guidelines (Ag)
<p>Promote the conservation of biodiversity and reduce threats.</p> <p>Share responsibilities regarding management of ENNR.</p> <p>Raise awareness and inform communities about conservation.</p> <p>Support for improved livelihoods initiatives.</p> <p>Resolve conflicts that may arise, through consultation.</p>	<p>Ag85.A plan needs to be agreed that will specify how the community and the FDA members or the CMC will operate; this will require a Terms of Reference for the CMC workplan</p> <p>Ag86.The Terms of Reference should say who will do what or say how tasks will be assigned.</p>

7.1.6. Additional information on the affected communities

In October 2013 the CMC met and agreed on the criteria for how communities should be selected as stakeholders (affected communities).Figure 19 is a map that reflects the agreed zones for primary and secondary stakeholder communities. Whether the proposed communities for this stakeholder category are to be considered in this plan should be finally determined during implementation of the plan.

It should be noted that this is preliminary and can change over time. The 3 main selection criteria for primary and secondary stakeholder communities are listed below:

- Closeness to the reserve



- Previous exploitation of the resources in the reserve
- The communities that previously used the reserve the most (forest dependency)

On 25 October, it was also agreed in a meeting at ArcelorMittal Office, Yekepa, Nimba County with CMC and affected communities, on which of the affected communities would be regarded as primary (most impacted) and secondary (less impacted), by ENNR, and these are listed in Table 6.

Table 6. Categories and Criteria for Selection of Corresponding Names of Communities, and Commitment Under Conservation Agreements to the ENNR and Community Forests.

Category	Criteria	Names	Commitment (under Conservation Agreements)
Primary Zor	Farmland sharing common boundary with ENNR and majority of people using NR resources	Sehtontuo Geipa Zortapa Dulay Nyantuo Kpolay Zualay Yolowee	To ENNR
Gba Primary		Gbobayee Zolowee Gbapa Cassava Farm Yekepa Gonakollie Camp 4 Leagbala Bassa Village	
Zor Secondary	Further away; farmland not sharing common boundary with ENNR and minority using NR resources	Goagurtuo Kentorkporglay Zorgorpa Zorgowee	To local / community forest (CFs)
Gba secondary		New Yekepa Suakarzue Barpa	



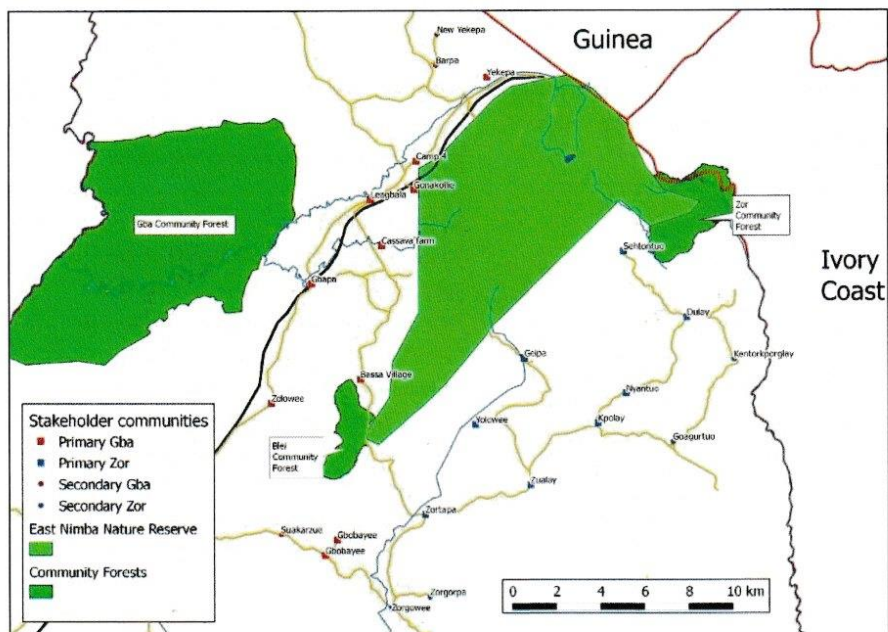


Figure 19. A Map of Currently Agreed Zones for Primary and Secondary Stakeholder Communities

7.1.7. Socio-economic background of Nimba County

Nimba County is one of the most important counties in Liberia in terms of population, politics and exports. The civil war had a severe negative impact and most of the social services infrastructure was destroyed. This resulted in extreme vulnerability in terms of food security, health care and education. Even now the basic infrastructure remains in poor condition despite the efforts of local communities, government, UN and NGOs. The mining of iron ore is very important for Liberia, being one of the biggest contributions to the national economy, and provides many jobs in Gba District. The economy of Nimba County is based on agriculture with palm oil and rubber being two of the major income sources, though there are less of these around ENNR. Palm wine, soap and charcoal are also produced and there is small scale production of livestock including sheep, goats, pigs and some cows. The main crops are rice (including swamp rice), cassava and plantain.

7.1.8. Effect of ENNR on local communities

Some communities were farming inside the reserve when it was created and still have tree crops growing there. These include oil palm, avocado, cocoa and mango. These crops are adjacent to Camp 4, Gonakollie, and Geipa. The law states that **no farming is allowed inside a Nature Reserve**, however, these farmers will continue to harvest their tree crops, until some kind of alternative can be arranged, but they are not allowed to do any new planting or weeding. GPS coordinates will be taken of existing tree crop areas and this will be checked annually. Anyone found to have expanded their area of cultivation will have their crops destroyed. Other communities use the area that is now the ENNR for hunting, fishing and for gathering Non-Timber Forest Products (NTFPs). All of these activities are now illegal.

Management Issue No.26: The effect of ENNR on the lives of local communities .

Policies	Actions and guidelines (Ag)
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<p>Harvesting existing tree crops until alternative sustainable livelihood is found, remains No planting, brushing and any activities which may expand the area of further encroachment are forbidden.</p>	<p>Ag87.Set a target for the deadline for the ending of these activities inside the ENNR.</p> <p>Ag88.Use local radio and the community consultation tour to inform all farmers that they must register any crop in the Reserve with the CMC.</p> <p>Ag89.The nearest CMC staff records each farmer's village , name, and phone number.</p> <p>Ag90.This information is given to the Reserve Warden. Reserve Warden will then organize for verification and assessment visit.</p> <p>Ag91.During verification, record GPS position, and the quantity and type of crop.</p> <p>Ag92.Assess the amount of compensation due.</p> <p>Ag93.Obtain the funds.</p> <p>Ag94.During payment of compensation, the farmer must sign to say he has been compensated and he should be photographed while signing and is being paid.</p>
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7.1.9.Community impact on the ENNR

The collection/harvesting and use of the Reserve's resources for livelihoods clearly threaten the Reserve. Hunting/fishing, mining, farming are examples of a host of activities into which people in ENNR-fringed communities are engaged that negatively impact the Reserve.

7.1.10. Cultural Values

The population of Nimba County was about 735,000 in 2007. The Gio and the Mano are the two dominant ethnic groups although all 16 of Liberia's ethnic groups are present. Christianity is the main religion and Islam and the Baha'i Faith are also common. (Barpa is mostly Muslim). It is said that by day many people are Christian, but become traditional in the evenings. In Geipa they kill chickens every 2 months for traditional reasons. In the Mano regions they do not eat buffalos or pythons, while in Zor people do not gather or eat honey. The traditional forest schools of Poro (men) and Sande (women) have scared masks, and these used to be kept in the ENNR but they are now kept outside in other „special“ areas of forest. Figure 20 shows the areas of the various Clans surrounding the Reserve.

<p>Management Issue No. 27:Recognition of the cultural values of the people of Nimba that are highly likely supportive of conservation.</p>	
Policy	Actions and guidelines (Ag)
<p>Ensure communities have access to the cultural services of the ENNR while looking for alternatives, e.g. finding or moving sacred forests outside of the ENNR.</p>	<p>Ag95.Search for any forests outside the ENNR which are protected by communities for cultural reasons,e.g. finding or moving sacred forests , outside of the ENNR.</p> <p>Ag96.Explore options for moving sacred forests from the ENNR to community forests or other areas, with support/facilitation of ENNR management</p>



7.2. Conservation Agreements

Conservation Agreements (CAs)¹ offer direct economic benefits to the stakeholder communities in exchange for commitment and actions (performance) to stop illegal activities in the ENNR. The CAs are funded by AML and delivered through NGO partners. It is important to recognize that CAs are an attempt to reduce/mitigate negative social impacts of ENNR, and to incentivize conservation-oriented behaviors, but they are not a method or means to address all and every impact on an individual basis. Figure 21 shows the location of pilot Conservation Agreements. The CAs around ENNR include the following:

7.2.1. *The Parties and their responsibilities*

The stakeholder community agrees to support conservation and stop destructive activities, and the donor/implementer agrees to provide various benefits as incentive to support conservation and to compensate for loss of access to forest resources. FDA is responsible for monitoring activities. A CA can also include other parties.

7.2.2. *Conservation commitments*

The Agreement records what the stakeholders will do to support conservation. For example, they might stop hunting, to stop NTFP collection, stop charcoal burning or farming in the reserve, depending on what they are currently doing. They might agree to do positive conservation activities too, such as assisting with patrols. It is essential that the stakeholders are serious about their commitments.

7.2.3. *Benefits*

In return for specific conservation commitments and performance (compliance), AML/CI will provide stated benefits, but this therefore requires monitoring of impacts and performance. These benefits should attempt to match the value of the things that the community has “lost” – e.g. income reduced by not hunting and the value of any conservation actions (e.g. time spent patrolling). Benefits are usually support for livelihoods. It is important to try to ensure that the people who have lost income are among those who benefit, to achieve broad-based community support. If possible, the benefits should help to reduce pressure on ENNR e.g. reduce forest loss from shifting cultivation by helping to improve production from farms on permanent plots.

7.2.4. *Penalties for non-compliance*

The communities must keep their commitment in order to receive this performance-based benefits and incentive. If they don't, the benefits will be reduced. The communities themselves propose the penalties in advance, when the agreement is being written. If an agreement is broken there is a gradual, temporary reduction in benefits. When the community improves its behavior the full benefit package is restored. An Agreement can be ended if the community continues to break its rules.

7.2.5. *Performance monitoring*

As benefits depend on the community keeping to its side of the agreement, there must be monitoring. This monitoring often encourages improved, conservation orientated behavior. This means that it must be possible to monitor the implementation and performance of the community, and this must be planned from the start.

7.2.6. *Finance*

CAs need long-term finance if they are going to be successful. CI is securing CAs around the world by establishing dedicated trust funds, promoting government programs that fund agreement benefits, and exploring sources of



funds. For ENNR it is likely that AML will be a crucial source of funds, i.e. in capitalizing the trust fund, in the medium to long term.

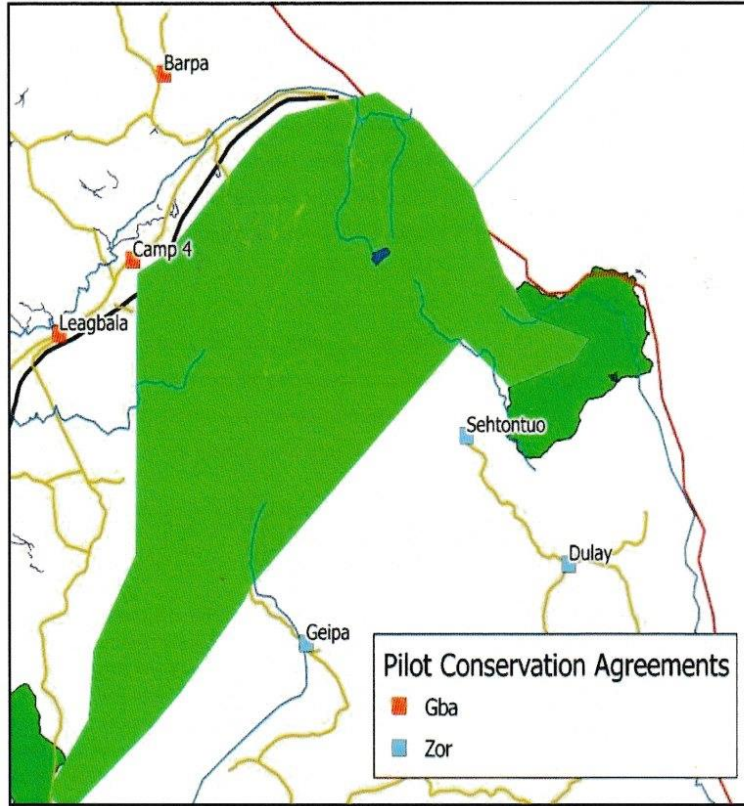


Figure 21 . The Map Indicating the Location of Each of the Six Pilot Conservation Agreements to Incentivize Support for Conservation and Protection of the Reserve

7.2.7.Current situation

CMC, CI and partners are developing Conservation Agreements in 6 pilot stakeholder communities. These communities were selected by a multi-stakeholder workshop. They are Sehtontuoh, Geipa, and Dulay in Zor, and Gbapa, Camp 4 and Leagbala in Gba.

7.3.Policy and Actions to Sustain Support for Cultural Values

Management Issue No.28:Conservation Agreements and the search for an incentive system to drive compliance with conservation and protection objectives and actions.	
Policy	Actions and guidelines (Ag)
Incentivize communities to secure support for and participation in conservation and protection of the ENNR.	Ag98.Work with NGO partners to support careful expansion of CA programme. Ag99.Ensure that all livelihood support around



	<p>ENNR is delivered through CAs.</p> <p>Ag100. Plan and carry out baseline surveys to show that: (a) livelihoods have been improved (output); (b) biodiversity has improved (outcome); and (c) there is any statistical link between the two (output and outcome).</p> <p>Ag101. Support CI to avoid the problems described in the next section .</p> <p>Ag102. CMC should work with AML and NGO partners to develop a plan for monitoring CA implementation and impact, and then initiate that monitoring. This should include an investigation into the role that the Environmental Protection Agency (EPA) could play in supporting the monitoring)</p>
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7.4. Support for livelihoods

Protected Area managers and (PA Projects) often try to support local livelihoods – to reduce conflict, reduce illegal activity and, for ethical reasons, try to ensure that PAs minimize negative impacts on local communities (who are often poor and faced with the biggest impact to their livelihoods). ENNR and its partners will try to support local livelihoods, to reduce negative impacts and maximize incentives (towards conservation outcomes), through the CAs. An updated SAPA (Social Assessment of Protected Areas)²⁸ and/or Basic Needs Assessment Surveys (BNS)^{29,30} will be conducted with the ENNR community to inform any choice(s) from existing and proposed livelihood interventions to avoid costly and deadly mistakes. Indeed, these assessments will help to ascertain the current and understand what is desired in the future and comparing the 2, make a decision on what needs to be done.

7.5. The Challenges Associated with “Alternative” Livelihoods

Experience has shown that “Alternative” Livelihood initiatives often fail or are not sustainable over a long period. The NR/CMC and partners must avoid repeating previous mistakes and learning from previous lessons, as summarized below:

- Livelihood support often only operates for the lifetime of a project, while there are still cheap or even inputs and technical support, and quickly fails when this is no longer available.
- Frequently the support for livelihoods is driven by a project and supported by temporary specialists but is not a part of the core business of FDA, so there is inadequate buy-in by government.
- Even when support for livelihoods has been successful, and has been adopted by the local communities, there are sometimes “unintended consequences”, in direct opposition to the original objectives of reducing reliance on natural resources.
- There may be considerable resistance by people to adopt unfamiliar activities. This can be because of the risk of starting a new activity in an environment where they have few economic buffers.
- The people who take up the new livelihood ideas may not be the people who are most affected by the protected area. They may already be small business people who are more open to new money-making ideas.



- The new activity may simply not be financially viable. E.g. soap making in rural areas, where the product costs more than soap that is already commercially available, and is less effective. Or cane rat production, where the domesticated cane rat costs more than wild cane rat.

The above are just a few of the central issues associated with many livelihood approaches – there are more that could be listed, but the above gives a flavor of the difficulty of making meaningful improvements to people’s lives.

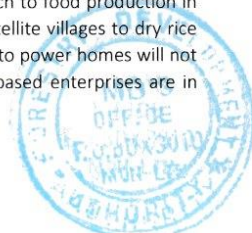
7.6. Livelihood-Focused Interventions

In the previous section above (Section 8.5) of this document, the challenges of livelihoods, alternative livelihoods in particular, have been ably examined briefly. As experts have it, a livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living^{31,32,33,34}. Livelihoods are further typologized by terms such as “alternative livelihoods”^{35,36}, “livelihood strategies”^{37,38,39} and “sustainable livelihoods”^{40,41,42}. Livelihoods are labelled “alternative” if they are aimed at reducing the prevalence of activities deemed to be environmentally damaging, by substituting such activities with lower impact livelihood activities which could provide equivalent benefits. As it is true with this case of ours, Alternative livelihood projects (ALPs) are widely implemented in a range of conservation regimes around the world.

As “strategies”, livelihoods are primarily meant to ensure household economic and social security⁴³. A livelihood is “sustainable” if it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, provide opportunities to the next generation, and contribute net benefits to other livelihoods at the global and local levels in the short and long-term. Sustainable livelihoods were developed and field tested by many scholars and development agencies^{32,34,42}. Relatively recently, a group of experts critically examined the conceptual design of ALPs, focusing on the 3 underlying assumptions as embodied in the notions of substitution, the homogenous community and scalability of alternative livelihoods⁴⁴. The effectiveness of these assumptions has been of some concerns⁴⁵, while the conservation world continues to tap such assumptions as the basis for alternative livelihood projects. The assumptions were found flawed and the expert team of researchers lament the consequence(s) of relying on such assumptions to design ALPs in too many countries.

For example, ALPs designed on the basis of flawed assumptions about people’s needs, aspirations and the factors that influence the choices made of livelihoods for conservation projects, are unlikely to achieve conservation objectives. This eminent team of researchers⁴⁴ recommend that the sustainable livelihood approach be adopted to help development and conservation professionals understand the role and functions of environmentally damaging behavior(s) within livelihood strategies, differentiate between households in a community that have the greatest environmental impact, and those most vulnerable to resource access restrictions to improve intervention targeting and learn more about the social-ecological system within which household livelihood strategies are embedded. Rather than using livelihood-focused interventions as a direct behavior-change tool, it may be most appropriate to focus on either enhancing the existing livelihood strategies of those most vulnerable to conservation-imposed resource access restrictions or use livelihood-focused interventions as a means of building good community relations.

As recommended⁴⁴), this document replaces ALPs with the broader term “livelihood-focused intervention”, which avoid the implicit and at times flawed assumption that alternatives can fully substitute for natural resource-based livelihood regimes. This plan, drawing its strength of choice from the increasing body of published experiences on livelihoods as presented in brief, strongly recommends Agroforestry Innovations, Livestock Husbandry, Small-scale Forest-Based Enterprises and Solar Energy-Powered source of electricity. These interventions have been in practice in ENNR-fringed communities for decades. Agroforestry, for example, shares so much with shifting cultivation which still is the dominant approach to food production in Nimba and across Liberia. Solar energy is tapped in all ENNR-bordered towns and satellite villages to dry rice and a range of vegetables so that their storage life is lengthened. Using solar panels to power homes will not be such a new idea in northern Nimba. Livestock husbandry and small-scale forest-based enterprises are in



practice for time immemorial in northern Nimba. Working closely with communities, these interventions can be improved to meet a host of livelihood needs. Livelihoods are at the core of conservation initiatives and should get the attention they rightfully deserve in this document⁴⁶.

7.6.1. Agroforestry innovations (Agl)

Agroforestry is a collective term for land-use systems and component technologies in which woody perennials (e.g. Shrubs, trees, etc.) are deliberately introduced on the same land units as agricultural crops or domestic animals, in spatial and temporal arrangements. This robust land-use system and the practices it embodies are a dynamic, ecologically-based, natural resource governance and management system that, through the integration of trees on farms and across the agricultural landscape, diversifies and sustains production for increased economic, environmental and social benefits for land users at all levels^{47,48,49,50,51}. In secondary forest areas of Bleih, Gba or any other community forests that are easily accessible to households, small-scale plantations of a mix of trees (woody perennials) and agronomic crops(food, cash) can be established ,developed and managed. Households interested in growing and planting any tree species of their choice on their private land are at liberty to do so and should be trained for that matter.

For purposes of this Plan, only in secondary forests or largely grassland areas in established community forests will development and management of Agroforestry systems and component technologies be encouraged and supported. Source(s) of quality germplasm (seed, cuttings, etc.) and the propagation of these genetic materials in small-scale , village-based nurseries(to raise planting stocks) are among the most important requirements for successful plant-based Agroforestry systems and component technologies. Alley cropping , Home gardens and Small-scale tree plantations are examples of Agroforestry innovations. The selection and choice of the various plant species as component of any Agroforestry innovation will depend on farmers' choice, availability of germplasm for the species of choice, and the requisite resources for the establishment, development and management of tree nurseries, among others. Those who will be interested in this Agroforestry approach to livelihoods, if successful, will acquire the skills to grow and plant trees all by themselves, not gathering wildlings from any nearby forest to be planted elsewhere(robbing an existing forest of its future to thrive and expand), actively support a tree-growing culture that Liberians lack, and build sustainability in forestry in a country where forest management is entirely unsustainable.

Note: By all means, do not collect wildlings from any forest for this activity as it would violate two central principles: Sustainability and Responsibility. We must learn how to regenerate planting stocks, and not simply collect wildlings from the forest where they are actually serving succession purposes. Second, we must be responsible enough to regenerate planting stocks to restore what we have damaged, and not depend on nature all the time to right our wrongs.

Management Issue No.29:An innovative Agroforestry approach to livelihoods	
Policy	Actions and guidelines (Ag)
Conservation and protection efforts for the ENNR will be invested into Agroforestry innovations simultaneously meet the multiple needs of ENNR-fringed communities for food, fiber, protein, climate change adaptation and mitigation and a host of other products and services.	<p>Ag103.Organize a public meeting with the ENNR community to introduce and discuss Agroforestry innovations in detail.</p> <p>Ag104.Develop criteria for identifying and selecting individuals and households who are interested in Agroforestry and are willing to under go training to become practicing Agroforesters.</p> <p>Ag105.Design appropriate Agroforestry training Modules and have them implemented.</p> <p>Ag106.Working with potential trainees, identify and map out areas in the suitable community forests where various Agroforestry systems and</p>



	<p>technologies will be established, developed and managed.</p> <p>Ag107.Carefully supervise all the multiple activities Involved in nursery establishment, nursery development and management, collection and handling of germplasm, propagation of planting stock, and the laying out of Agroforestry innovations in the field (community forests, farmers' fields).</p> <p>Ag108.Design a monitoring process to gauge challenges and progress.</p>
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7.6.2.Livestock husbandry (LH)

The production and management of scavenging chickens is the proposed livelihood focus for selected households in ENNR-fringed communities. Structures for these systems could be built in backyards of participating groups, and piggery and goat farming may be considered under certain circumstances and conditions. Despite small flock sizes, in aggregate, rural poultry flocks account for 60-90% of the poultry population in many Low and Middle-Income Countries (LMICs) across Africa and Asia^{52,53}, because they have proven to be cost-effective⁵⁴. Poultry is therefore highly recommended to support the seemingly endless quest for the better standard of living for and by ENNR families in terms of making animal protein available and for generating cash income.

Management Issue No.30:Livestock husbandry as a livelihood	
Policy	Actions and guidelines
The management of ENNR will introduce and support livestock husbandry, focusing on scavenging chickens, as a livelihood.	<p>Ag109.Identify and invite an individual in the private sector with proven expertise in livestock husbandry.</p> <p>Ag110.Work with the expert to identify and select households who may be interested in livestock production.</p> <p>Ag111.Build the appropriate structures at backyards or other areas for the production and management of chickens, preferably native chickens.</p> <p>Ag112.Define pertinent training needs and provide such training to the selected households.</p> <p>Ag113.Train suitably qualified individuals in the community to provide extension services to chicken farmers.</p> <p>Ag114.Produce chickens for home consumption and the local and national markets.</p>

7.6.3.Small-scale forest-based enterprises (SSFBEs)

Small-scale forest-based enterprises are business establishments that utilize any material or product derived from forests, woodlands, or trees outside of forests and woodlands for income generation. They are usually small, rural, household-based operations that are technologically simple, requiring limited skills and capital investment. Generally, little attention has been paid to the importance of these enterprises in supporting rural livelihoods in developing countries. At the same time, the income earned from SSFBEs provides an incentive for forest-dependent households to manage their forest resources at sustainable level, as well as helping to alleviate poverty^{55,56}. SSFBEs are , however , not without their problems. They face unstable market situations, lack



sufficient raw materials , have limited financial resources and do suffer from the constraints on forest use and control^{56,57}.

SSFBEs are in abundance in Liberia but are not recognized nor assisted by government and the private sector. But with some level of financial and technical support, SSFBEs are bound to outlive most of the constraints to their success, if the impediment posed by insufficient raw materials and limited financial resources are addressed. Examples of SSFBEs in rural Liberia are **Basketry** (weaving mats , chairs and nets from Rattan and other canes and vines, etc.), **Carpentry** (manufacturing/assembling beds , boxes, doors, door frames, etc., from sawn timber), **Chainsaw logging**(harvesting wood from felled trees) and **the Management** (cultivation, harvesting, processing) and marketing of natural plant products, such as seeds of Griffonia simplicifolia, Xylopia and other NTFPs (Non-timber forest products), which were once harvested and marketed in ENNR-fringed communities a decade or more ago. Existing and newly created community forests will benefit SSFBEs in ENNR-fringed communities as they would serve as the source of the bulk of raw materials for these enterprises if they are managed and used sustainably.

Management of community forests, not only making and enforcing rules to protect them as is the case currently, will give meaning to the stewardship of community forests, which were established in northern Nimba, about a decade or more ago, and from which the expected benefits for communities are yet to be realized. Community forests were established and their governance structures assembled and trained to promote sustainable forest management, support sustainable livelihoods, meet the need of locals for wood and other forest resources and to foster local self-help and business skills.SSFBEs will help keep away a reasonably significant number of people from the ENNR to meet their need for wood, nurture a sustained and profitable entrepreneurial spirit among local resource user groups and generate income.

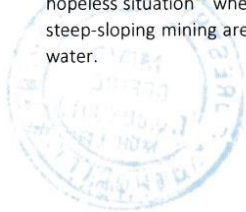
A small-scale (portable) sawmill(with wood processing capabilities), few chainsaws and the requisite training and skills to use and maintain these tools and other equipment are among the key requirements for successful SSFBEs in ENNR-fringed communities. Also needed for successful SSFBEs is the most fitting timber harvesting skills for which new and different silvicultural knowledge becomes a must. The following table briefly defines and illustrates the silvicultural practices that make for a timber harvesting success.

Table 7. The Differences Between Classical Silviculture and Small-holder User-oriented Silviculture in the Interest of Successful SSFBEs.

Classical Silviculture*	Forest User-oriented Silviculture
Guiding goal is timber production	Guiding goal is to satisfy the needs of the local resource user groups for wood and other products
Uniform silvicultural strategy is timber and revenue related	Diversity of strategies to facilitate multiple products from a given forest area
Silvicultural prescriptions are based on considerable technical knowledge for implementation	Simple needs-based treatments that match the capacity of communities for implementation
Silvicultural strategy is decided by the forester because s/he is the experienced technician	Silvicultural strategy is designed by the users and facilitated by the forester with appropriate technical intervention when required
Prescriptive and related to previous working plans and the science of timber production	Treatment is related to the needs of users and building on indigenous practices
Overall, there is a need to move towards generating new silvicultural knowledge to be used by forest user groups by building upon their existing knowledge and to encourage experimentation with these groups.* <u>The art and science for harvesting , tending and cultivating forests and forest trees.</u>	

7.6.4.Solar energy for human health, climate change mitigation and reduced deforestation (SEHH)

One of the major sources of diseases in Liberia, rural Liberia in particular, is the poor quality of the water people use for bathing, cooking and drinking. People may not know this, but the situation is even worst for villages and towns of ENNR-fringed communities where it is highly likely for water bodies to be polluted with toxic and deadly chemicals .Solar energy systems are a reason for some hope in this rather hopeless situation⁵⁸ where people have no alternative to polluted water that almost endlessly flows from steep-sloping mining areas into creeks, streams and rivers that rural folks almost entirely depend on for water.



Solar-powered water pumps and solar lamps will have a life-changing impact on the lives of ENNR-fringed households, by providing clean drinking water and lighting while at the same time eliminating health hazards and habits, such as firewood collection and charcoal production, which contribute to climate change. Among the main effects of mining on human health are breathing complications, cancers due to exposure to radioactive materials, poisoning and organ damage due to heavy metal exposure, water pollution, and exposed hillside erosion (tailing dams and mine dumps^{58,59}). The health of humans and the environment, and climate change mitigation activities are central to quality and sustainable livelihoods.

Management Issue No.31: Solar energy systems, if installed and management efficiently, would solve human and environmental health problems in ENNR-fringed communities.	
Policy	Actions and guidelines (Ag)
ENNR will seek and make funds available for solar energy systems which would provide lighting, charging of batteries, and power water pumps, among others.	<p>Ag115. Identify and invite an individual from the private sector with expertise in solar energy to pay ENNR a visit.</p> <p>Ag116. Working with the solar energy expert, organize a local team to help identify and select households who are interested in solar energy and are prepared to undergo training on how to build and operate solar systems in ENNR-fringed communities and probably beyond.</p> <p>Ag117. Make sure that local capacity is built on the outset and then strengthened after the solar energy systems are structured.</p> <p>Ag118. Assemble a system in which those who are trained to operate solar systems must be able to own, operate and maintain them profitably.</p> <p>Ag119. Develop a continuing education process for all solar energy systems owners in quarterly workshops at the outset and, later, probably annually.</p>

7.7. Community Forests

There are two community forests which are adjacent to ENNR. They are Zor Community Forest at the northeast tip of the reserve, and Bleih Community forests at the southwest tip. These were USAID-funded community forestry projects of the then Land Rights and Community Forestry Program (LRCFP). Both forests are being managed by communities, with support and advice from the FDA and partners, among them AML, CI, FFI and UNOPS. The stewards of few of these forests view conservation as an option towards sustaining beneficial regimes of management and governance, but there is not a single community forest in Liberia that demonstrates how conservation pays in community forest management. Meanwhile, community forests which were primarily and almost entirely established to put "a human face" to Liberian forestry where timber matters most, are now a property of some of Liberia's "get-rich-quick timber merchants" at the expense of Liberia's poorest majority. Community forestry, if not the entirety of forest management in Liberia, urgently needs a messiah today. With this savior, community forests could help serve as buffer zones in the landscapes surrounding ENNR that are battling each day with a rich assortment of conflicting land uses.

7.8. Policy and Actions of Community Forestry in Support for ENNR-fringed Communities

Management Issue No.32: Community forests and the search of and need for buffer zone(s)	
Liaise with the Community Forest managers of Bei and Zor for mutual benefit (s).	<p>Ag120. Find and read existing Community Forest Management plans.</p> <p>Ag121. CMC to work with CF managers to find.</p> <p>Areas of Cooperation, possibility of support (from ENNR) and harmonizing of</p>

	<p>management.</p> <p>Ag122.Work with other communities, e.g. Zortapa, to explore options for establishing new CF(s).</p> <p>Ag123.Produce a joint Action Plan of the Reserve, and this should involve the CMC and activities in the Community Forests.</p>
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7.9. Grievance Procedures

The affected communities may at time feels as though the ENNR and/or the CAs are not supporting them as was agreed, or that new impacts, to local livelihoods, have emerged. There may also be isolated incidents where a community or individual are impacted by the ENNR, e.g. by human-wildlife conflict, like animals raiding a farm to eat crops. A grievance mechanism is a process for project proponents or managers to receive, review and address affected communities' concerns and complaints. Any person or group who is affected by project activities has a right to raise a grievance and the project proponent has the responsibility to respond within a reasonable time period. The existence of a project-level grievance mechanism should not affect local peoples' rights to obtain external and/or legal advice or support.

A grievance mechanism is usually formalized through written procedures and will vary from case to case; any grievance mechanism should be specific to the context, addressing the requirements of both the project and affected local communities. However, a number of common elements, including some basic principles, can be identified and should be adhered to. In practice, the processes and structures of any grievance mechanism should form part of an ongoing community engagement strategy, with regular communication and feedback between staff and community members.

Management Issue No.33: Promised procedures for addressing grievances	
Policy	Actions and guidelines (Ag)
ENNR will establish a grievance mechanism as a platform for community members to challenge other stakeholders over non-delivery agreed activities or benefits and to address new or unforeseen impacts.	<p>Ag124.CMC to work with NGO partners and wider community to develop a grievance mechanism.</p> <p>Ag125.The CMC should liaise in this regard with AML who already have a grievance mechanism in place for community grievances related to mining.</p> <p>Ag126.Make specific references to Human-Wild Animal Conflict (HWAC).</p>

8. LAW ENFORCEMENT

8.1.Poaching in ENNR – Current situation

Rangers and Auxiliaries continue to report the presence of poachers in the Reserve. In the face of this violation, response of Rangers and Auxiliaries has been to only destroy traps, confiscate guns , seize the meat and auction it, and finally pay the money to the Office of Revenue of government.

This strategy in effect is woefully flawed on at least two counts. First, it simply seizes parts of animals that are already dead (is largely more curative than preventive) and finally, second, it pays no attention to the plight of Rangers and Auxiliaries who must stay with hunters (in the hunters' homes) since they do not have anywhere of their own to stay. This is a travesty, not a strategy, to control or interdict poaching.

8.1.1. The urgent need for an effective anti-poaching strategy.

Policy	Actions and guidelines (Ag)
<p>The management of ENNR will continue the hot pursuit for and employment of a workable and effective strategy to control and eventually stop poaching.</p>	<p>Ag127. Organize a Panel of Experts to assemble and present elements of an effective anti-poaching strategy germane to the current situation in and around the ENNR (Several trainings conducted by PAPFor, FFI, HIS, CWA, RSPB).</p> <p>Ag128. Seek and obtain legislative approval of the strategy, if necessary.</p> <p>Ag129. Training and capacity building for Nimba County Prosecutor(s) to pursue cases of individuals charged with poaching.</p> <p>Ag130. Improve capacity of ENNR rangers and auxiliaries to identify key/threatened areas for focused patrolling & to address illegal hunting.</p> <p>Ag131. Prepare and introduce a training course on the establishment and management of Fish Ponds and livestock husbandry to reduce the sole dependence on bush meat in ENNR-fringed communities and possibly beyond.</p> <p>Ag132. Construct housing units for Rangers and Auxiliaries and prepare them on how they can maintain these units so that they could last for a relatively longer time.</p>

8.1.2. Some of the simple but dangerous forms of encroachment.

There are known to be some old farms inside the reserve, which already existed when the reserve was created about 10 years ago. These farmers were given the right to continue to harvest their tree crops (cocoa, oil palm etc.) but are not to expand the areas those plant cover by planting additional crops or plant new crops. Only a small amount of encroachment has been noticed over the boundary, but it is possible that some people might have established farms hidden in the interior of the reserve. The Camp 4 staff say they organize checks on the paths and roads leading into the reserve, to find out what people are doing.

No "chain-sawing" of trees, or logging, or charcoal making has been detected in ENNR.

Remote sensing has shown that there has been some loss of forest inside the reserve in the last 10 years. This new information needs to be investigated on the ground.

<http://earthenginepartners.appspot.com/science-2013-global-forest>.



Go to the above website, the search for Yekepa, Liberia, and you will see the ENNR area. Red areas show forest loss. Another option is the Global Forest Watch, which is maybe even easier to use: <http://www.globalforestwatch.org/>

Management Issue No.35:Encroachment policy and actions	
Policy	Actions and guidelines (Ag)
Encroachment of any sort should not be allowed or tolerated in the Reserve.	<p>Ag133.Patrols should close down the number of paths leading to the Reserve. That means some paths are to remain open for patrols and others used for access.</p> <p>Ag134.Most paths of “would be poachers” may actually, be leading to some secret farms.</p> <p>Ag135.Investigate Global Forest Watch Remote Sensing report that shows forest loss in the ENNR.</p> <p>Ag136.Pay off the owners of the tree crops farms in the Reserve and stop them from entering the area to harvest and maintain their crops.</p>

8.1.3. Auxiliaries

Auxiliaries are volunteers from the local community who support rangers with information and by joining patrols. They are paid a stipend (to cover basic costs). There are currently 6 auxiliaries, but the target is 10-12 based on need and resources. The provision of auxiliary positions also serves to give the community an additional benefit, albeit small, from involved in ENNR’s protection and way of building further links and trust with the community. As of January 2014, the auxiliaries have to travel to collect the stipend losing a reported two-thirds on transport costs; which means they are currently not benefiting from the role at all. FDA has stated that they aim to absorb long standing and hard-working auxiliaries into NR staff (i.e. on full-time, full-pay positions), but that is dependent on funding.

8.1.4. Policy on the Auxiliaries as the local foot soldiers of enduring volunteerism at the ENNR

Management Issue No. 36:Auxiliaries and the circumstances of their functions at the ENNR.	
Policy	Actions and guidelines (Ag)
A critical review of the Terms of Reference of Auxiliaries at ENNR and how to compensate them fairly seem to be a challenge.	<p>Ag137.Hire auxiliaries from the local, affected communities only.</p> <p>Ag138.Provide training for them, both on law enforcement and on other “life skills” (as a form of additional, in-kind payment/benefit .</p> <p>Ag139.Find a way to pay auxiliaries their stipend at the local bank (e.g. Yekepa) to avoid travel costs.</p> <p>Ag140.Work with FDA and partners to raise the stipend of auxiliaries and/or, if possible, move them into paid staff positions after 2-3 years of good service.</p>



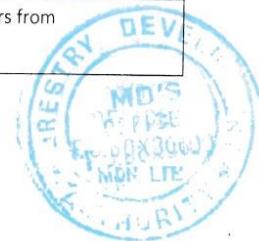
8.1.5. Effective Patrolling

It is not enough for patrols just to go for long walks to collect GPS waypoints to show that they have been deep into ENNR. The patrol teams must apply tactics and think about how they can be smarter than the poachers. Patrols must avoid using the same routes. Even if you are heading for the same destination, try to travel by a different route. CMC must plan their patrols carefully, use a combination of different routes, be unpredictable and base their planning on as much local knowledge as possible. There should also be a link made to conservation agreements, where local people are being offered financial incentive to join / support patrols as community auxiliary rangers.

Management Issue No.37: Building efficiency and effectivity into patrolling	
Policy	Actions and guidelines (Ag)
Rangers should use all their experience and training to be more clever than poachers and undertake extensive, regular patrols. Rangers and Auxiliaries will be frequently trained and equipped to outperform poachers.	<p>Ag141. Zone wardens to develop patrol plans that regularly change, and based on local informant information, and 1th output from SMART.</p> <p>Ag142. Training needs of rangers to be assessed and training provided.</p> <p>Ag143. Monitoring (i.e. SMART) needs to be developed for patrol activity, impact assessment and to guide future patrols (iterative/adaptive management).</p> <p>Ag144. Lead by example (wardens should sometimes patrol with the staff and earn respect).</p> <p>Ag145. Don't just walk down the easy roads to cover distance. It is more important to find and catch poachers or prevent them hunting than to walk a given distance.</p> <p>Ag146. If you find signs of poachers try to work out what the poachers are doing.</p> <p>Ag147. At night, listen for gunshots and try to work out where the poachers are, and look for them the next day.</p> <p>Ag148. If you catch poachers don't talk in front of them. They might learn your tactics, strengths and weaknesses.</p> <p>Maintain high, professional standards</p>

8.1.6. CMC / Rangers should also remember and use The 4 "D's"

Detect	Use "intelligence" to find out or detect what the poachers are doing Use all your skills in the forest to detect or find the poachers
Detain	Track the poachers down and detain or arrest them
Deflect	The presence of patrols in ENNR will help to deflect the poachers from hunting in that area.



Deter	If everyone can see that you 7.5 are applying the law in an effective, professional way, they will think that the risk of being caught is so high that they will stop poaching. They will be deterred from poaching.
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8.1.7. The "Range System"

A good number of countries in Africa have experimented with different systems of law enforcement. It has been found that the old system of having small groups of rangers living in "patrol camps" in communities (e.g. Camp 4) is not good. The men are too few to be useful, and they become too integrated into their communities so that arresting community members is difficult. A growing body of reported experiences support the thesis that the "Range System" is more effective. A Range Camp is often built to provide housing for the staff that is separated from the community. In the case of ENNR there should be two ranges, the Gba Range in the West based at the new Headquarters at a site to be decided (see Chapter 15) and the Zor Range in the East. There should be two teams of 5 law enforcement staff in each range. (i.e. 10 per range, total 20 for ENNR.)

8.1.8. Monthly Patrolling Routines

Patrols have been infrequent. It is reported that this is because of lack of funds – when CI was providing patrol rations patrolling took place regularly. It is very important to establish a regular patrolling routine. Each range should have 2 teams of 5 men each. If one member is sick or on leave, then the patrol strength will be 4 but patrols should still go ahead. The minimum strength of a patrol is 3 Enforcement Rangers. Auxiliaries can make up the numbers.

Every month, each ranger should do 10 days of patrol (8 nights) away from his base on Extended Patrols. The rest of the month will be taken up with two periods of 6 days on standby or undertaking local daily patrols and investigations while working from the range post. The remainder is weekends/time off for 8 or 9 days.

It is important to follow the sequence so that there is always at least one group in the field on an extended patrol, there is always at least one group on stand-by/local patrols and investigations, and there is never more than one group on time off.

8.1.9. Incentives

It has been found in well-funded Protected Areas that "incentives" can be highly effective for motivating staff to do their jobs well and to enforce the law. This depends on funding, and is included as a suggestion only for discussion/decision at FDA HQ. The suggestion is given in Appendix 7

Management Issue No.38: The search for and the value of an effective and motivating incentive system.	
Policy	Actions and guidelines (Ag)
Field staff should spend about 10 days per month on extended patrols in the field	<p>Ag149. Staff at the Range Camps are divided into 2 teams of 4.</p> <p>Ag150. Each team should do 2 extended patrols of at about 5 days each.</p> <p>Ag151. Each team will do 12 days per month of local patrols from the Range Camp.</p> <p>Ag152. The remaining 8 or 9 days per month are rest time.</p> <p>Ag153. Range Wardens/Zone Warden will do 1. extended and 1 local patrol per month.</p> <p>Ag154. Range Wardens must check that the LE Rangers are really</p>



	<p>working.</p> <p>Ag155.The Reserve Warden must regularly check on the Range Wardens and staff to ensure that patrol planning, patrols themselves and patrol data entry are all taking place and are to the required standard.</p> <p>Ag156.The Warden must also check on the processing of cases (individual accused) of illegal activity and confiscations.</p>
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8.2.Routes for patrols

It is important that patrols try to cover the whole reserve and should try to vary their routes. They should use a GPS to produce a map of all the existing trails in the reserve. When that has been done they can study the map and determine where new trails should be opened, so that they can cover the whole area. There may be some areas that are particularly swampy or steep or with thick vegetation but remember, if poachers are going into those areas, the ENNR rangers should do so too.

Management Issue No.39: The need and significance for patrols to cover the entire Reserve at any given time frame.	
Policy	Actions and guidelines (Ag)
The whole Reserve needs to be covered by Patrols, but particular focus should be made on Biodiversity or law enforcement(infringement) hotspots.	<p>Ag157.Use GPS to record all existing trails.</p> <p>Ag158.Produce map of all existing trails.</p> <p>Ag159.Study map together to decide where new trails ought to go .</p> <p>Ag160.Cut new trails.</p> <p>Ag161.Varies the routes of patrols – try to get into a all areas where there could be poachers.</p>

8.2.1.Patrol rations

Partners (i.e.PAPFor,etc., are (is) providing patrol rations. It is very important that plans for patrols are kept secret from all local people. A problem arises when the staff go out to buy food to prepare for a patrol. It is then obvious to local people that the guards are going on patrol. It is much better to buy the food needed for patrols centrally. The cost of food is small compared with the other running costs of the Reserve and its three advantages are that:(a) Staff will always be ready for patrols (and will not have excuses for delays),(b)Local people will not be alerted by Rangers buying food before a patrol, and (c) The staff should be properly fed while on patrol.

Management Issue No.40: The lingering challenges of the efficiency and effectivity of patrol rations.	
Policy	Actions and guidelines (Ag)
Food will be bought in bulk for patrols, to improve secrecy and readiness.	<p>Ag162.Reserve Warden to fix the rate and procedures for the rations.</p> <p>Ag163.Range wardens to organize purchases and controls.</p> <p>Ag164.Wardens to emphasize the importance of secrecy.</p>



8.2.2. Records, Monitoring, Written Reports and Analysis.

The following recording systems are used:

- SMART - Spatial Monitoring & Reporting Tool
- SMART is a computer program which has been designed for wildlife patrols and is easy to use. It is available free of charge from this website (<http://smartconservationtools.org/>) Vision: Effective management of conservation areas delivered through implementation of tools and standards

Advantages

- Designed by conservation practitioners
- Motivate rangers
- Empower conservation managers
- Guide conservation strategy
- Ensures accountability and good governance
- Peer learning and support network
- Free

The SMART system dramatically improves the Law Enforcement. All patrols have GPS units to record where they have been and what they have seen. The SMART system plots and shows:

- Patrol paths and areas
- Illegal activity
- Wildlife observations

8.2.3. The Garmin GPS map 62s: An ideal GPS for this purpose.

Management Issue No.41: The SMART system and its advantages in improving Law Enforcement	
Policy	Actions and guidelines (Ag)
The SMART system should be adopted to monitor patrols, wildlife and illegal activities	<p>Ag165. GPS positions are recorded every 30 minutes during patrols and/or at the location of any illegal activity or important wildlife observations.</p> <p>Ag166. The standard report sheet will be used for all patrols.</p> <p>Ag167. Biologist should visit ranges to download the waypoints into his laptop regularly.</p> <p>Ag168. The SMART print-outs (tables and maps) must be provided to the Range Warden.</p> <p>Ag169. Biologist will help Range Wardens to compile monthly reports.</p> <p>Ag170. CMC should liaise with AML and the CFMBs on SMART data collection as AML already has (supported) a system for biodiversity and law enforcement data collection in the CFs.</p>



8.3. Personnel

8.3.1. Officer Participation

Warden participation, management and oversight are regarded as the most important element of successful law enforcement. In 90% of cases where rangers have poached, the lack of supervision and senior staff participation was a major factor.

Regular patrolling and participation in other activities with rangers by officers will establish good morale and respect. The temptation for guards to poach should then reduce as the chance of an officer detecting it will be greater.

Good leadership is much more effecting than sitting in an office writing emails. Wardens who go on patrol with their guards are respected and trusted.

A system of unannounced checks should make sure that staff are operating correctly. If the system is formalized any feelings of resentment will be avoided.

Policy : The ENNR Manager/Warden and Zone Wardens should go on patrols regularly.

8.3.2. Personnel – Current and Planned Law Enforcement Staff :

Expected staff	Number of Staff
Zone Wardens	2
Rangers	9
Auxiliaries	10
Total*	21

Training and capacity building needs of personnel must also be identified and addressed

8.4. Logistics

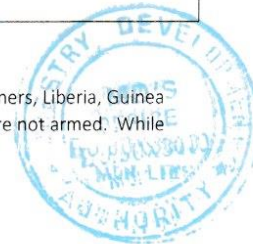
8.4.1. Communications

ENNR is fortunate that it has good mobile phone coverage. It might therefore not be necessary to spend money on a radio communications system, although FDA have highlighted radios as a critical tool for management and protection.

Management Issue No. 42: The various forms of communications and their overall value to conserving and protecting ENNR.	
Policy	Actions and guidelines (Ag)
Mobile phones will be used for communications until radios are provided (if these are deemed Necessary?)	<p>Ag171. Staff will use their own mobile phones to communicate (at least in the interim).</p> <p>Ag172. Scratch cards (phone credit) should be provided by key staff and all rangers to enable them to work effectively.</p> <p>Ag173. ENNR should also undertake an assessment of the need and viability of radios for ranger stations and individuals to improve communications.</p>

8.4.2. Firearms

It is normal for Rangers to be armed in other countries – including the Tri-National partners, Liberia, Guinea and Côte d'Ivoire. However, in Liberia it is illegal to have firearms and so the Rangers are not armed. While



it might be desirable for the Rangers to be armed, the situation is unlikely to change during the lifetime of this plan, although this may change in the future (and with forthcoming plans). The Rangers report that sometimes they have had to run away when threatened by armed poachers.

Management Issue No.43: Firearms and what their forbidden use has proposed as replacement.	
Policy	Actions and guidelines (Ag)
Rangers and protection staff cannot be armed.	<p>Ag174.Rangers and protection staff must only use their uniforms to get their presence felt.</p> <p>Ag175.Staff and Rangers must aspire to acquire and employ good communication skills, good Intelligence, and patrol in large groups(minimum of 4 Rangers) as ways to mitigate the impact of the lack of firearms).</p>

8.4.3.Other Equipment

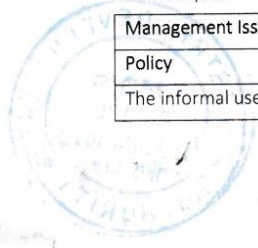
Patrol equipment should include 10 lightweight 2-man tents, 20 backpacks, 20 sleeping mats, 20 sets of cooking equipment, 6 GPS units, 20 torches. Rangers also need uniforms, rainboots and raincoats, and if possible, digital cameras.

Management Issue No.44: Equipment other than firearms which are as almost equally useful.	
Policy	Actions and guidelines (Ag)
It is essential that staff on patrol are properly equipped.	<p>Ag176.Procure equipment.</p> <p>Ag177.Divide equally between the two ranges</p> <p>Ag178.Set up and apply strict storekeeping Regulations. so that items do not get "lost".</p> <p>Ag179.Equipment should be signed out of the store before each patrol.</p> <p>Ag180.It must be cleaned, checked and signed back in after each patrol.</p> <p>Ag181.Replace as necessary.</p>

8.4.4."Intelligence"

Law Enforcement is unlikely to succeed without intelligence. Patrolling is much more effective if you have some information about where poachers might be operating. Establishing an informer network is a very good idea. It is not a system that can be written down as it is an informal relationship that may happen after someone has been arrested. They become informants and change sides to avoid punishment. Informants can be compensated through goodwill, and by the possibility of employment. But be careful, some may just be boasting or may be trying to mislead you.

Management Issue No.45: Intelligence gathering and key informants	
Policy	Actions and guidelines (Ag)
The informal use of informants should be	Ag182. Try to find out as much as possible, following a



encouraged.	logical sequence of questions. Ag183. Reward informants after checking the information, if the info is useful. (Buy scratch cards, pay for transport).
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8.5. Prosecutions

8.5.1. FDA Lawyer

Although it is a problem that affects all the protected areas in Liberia, the need to have an FDA lawyer to come and prosecute every case in every PA is clearly impractical, given the distances involved. Even if funds and transport were available the lawyer could be travelling all the time.

Management Issue No.46: Prosecuting cases in our PAs is fraught with serious challenges and difficulties for an FDA Lawyer.
Policy: The system by which an FDA lawyer is required to prosecute all cases in court does not work, must be reviewed and a more practical solution found. County Prosecutor should be facilitated to take on this role (from the FDA lawyer), with the FDA lawyer providing training and remote oversight.
Actions: A Strategic Plan will be developed /designed and undertaken for the Training and Capacity Building of the Legal Unit/Department of the FDA. The Plan will cover patrol techniques, human rights, training for surveillance officers, arrests, lawyers, court proceedings/procedures, among others.

8.5.2. Judiciary

The FDA staff report that even if a prosecution is carried out, the judge may not be aware of the wildlife and forestry laws, and may not care to impose any punishment. In other countries which have faced this situation, an effective solution is to organize a training course for the judges. This not only increases their knowledge of the wildlife laws, but it also makes them more supportive of conservation issues.

Management Issue No.47: Weak and unfair judiciary system when it comes to violations of Liberia's Laws on Protected Area. Forestry Laws.	
Policy	Actions and guidelines (Ag)
Judges need to be informed about the wildlife and forestry laws.	Ag184. Ensure that one judge is fully briefed on the current wildlife and forestry laws. Ag185. Engage the FDA lawyers to train the best local judge. Ag186. Organize a training session for the other judges in the county. Ag187. Provide bound copies of the current laws, accommodation and DSA.



9. MONITORING AND RESEARCH

9.1. Adaptive management

Managing a Protected Area is not straightforward and the relationships between different environmental factors are often poorly understood. Thus, management decisions may have to be made without adequate information. The term "Adaptive Management" accepts that as circumstances change and more knowledge is gained from research, and with feedback from management itself, it may be necessary to adapt the management plan.

A primary objective of PA management is to maintain ecosystems with as little human intervention as possible. Ecological processes should be usually allowed to proceed, even if they involve fluctuations in ecosystem structure. In any case, there is not sufficient capacity to monitor resource status closely - only major changes can be detected.

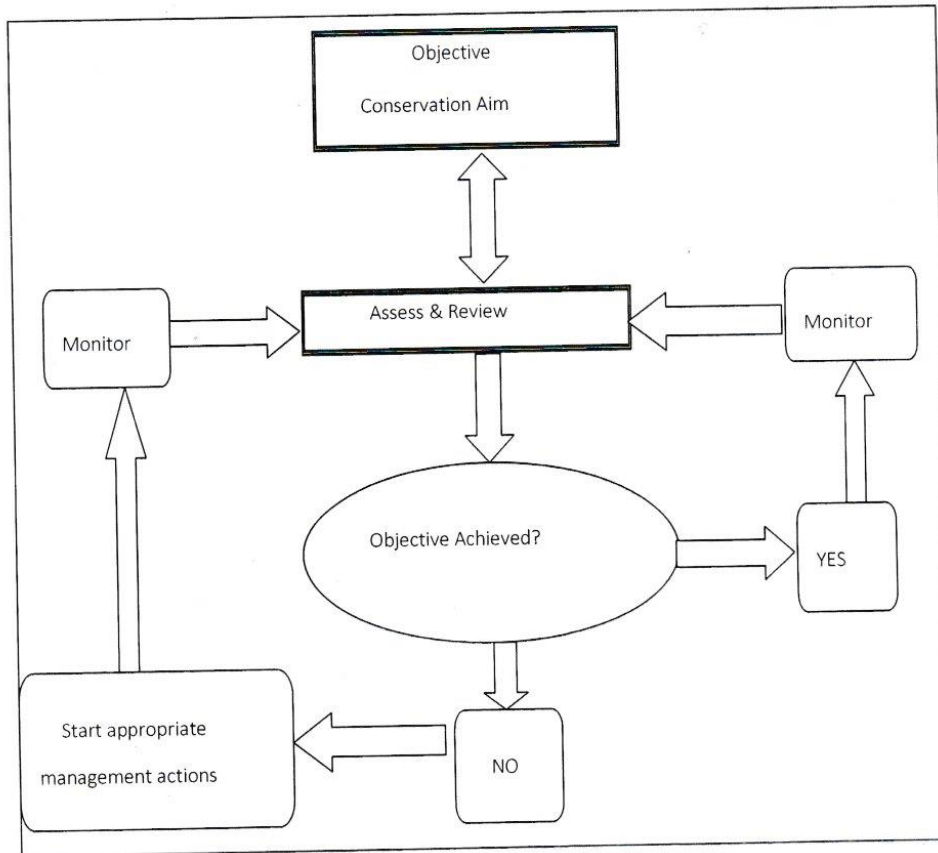


Figure 22. A Diagrammatic Presentation of Adaptive Management

9.2. Monitoring Methods

Three monitoring methods are recommended for the ENNR:



9.2.1. **SMART**: SMART is a new and improved tool for measuring, evaluating and improving the effectiveness of wildlife law enforcement patrols and site-based conservation activities. SMART was started by a diverse group of conservation practitioners who understood the needs of front-line enforcement and who recognized the day-to-day difficulties faced by many conservation managers across the world: operating on thinly stretched resources in the face of escalating threats to biodiversity. SMART recognizes the power of information and importance of accountability in directing resources to where they are most needed. SMART is not owned by any one individual or organization: its free and available to the whole conservation community.

It is a relatively simple GIS system for displaying and analyzing data that has been gathered by Rangers on patrol. It can be used to direct and monitor patrols, so that, for example, they go to areas where there has been insufficient ground coverage. SMART provides a lot of data about the distribution of wildlife and the incidence of poaching, and more details are to be found here: http://smartconservationtools.org/brochures/user_english.pdf. SMART can also be used to monitor the distribution and relative abundance and population trends of mammals from observation of tracks (footprints) and dung (droppings). It has the advantage of being easy to use, and easy to analyze. Inaccuracies in data collection are likely to be reduced because many different staff are gathering the data. Population trends can be determined from changes in encounter rates over time.

Management Issue No.48: Adaptive management.	
Policy	Actions and guidelines (Ag)
SMART should be adopted to improve the effectiveness of the Wildlife Law enforcement patrols, among others.	<p>Ag188.When funding available with new project, procure GPS units, laptop for biologist.</p> <p>Ag189.Arrange with NGO partners for essential skilled training .</p> <p>Ag190.Require that the biologist produces monthly reports .</p> <p>Ag191.Ensure that the reports are widely circulated, and are well archived.</p> <p>Ag192.Use the data to monitor trends and advise adaptive management .</p> <p>Ag193.Training and term capacity building for biodiversity (bio-) monitoring.</p>

9.2.2. **METT – Management Effectiveness Tracking Tool** – One of the most widely used/adapted globally applicable generic systems developed to assess protected area management effectiveness. It is used to report progress towards the Convention on Biological Diversity. METT been designed to track and monitor progress towards worldwide protected area management effectiveness.

The methodology is a rapid assessment based on a scorecard questionnaire. The scorecard includes all six elements of management identified in the IUCN-WCPA. Framework (context, planning, inputs, process, outputs and outcomes), but has an emphasis on context, planning, inputs and processes. It is basic and simple to use, and provides a mechanism for monitoring progress towards more effective management over time. It is used to enable park managers and donors to identify needs, constraints and priority actions to improve the effectiveness of protected area management. METT can be used as a donor / treasury evaluation, to improve management (adaptive management), and for accountability / audit.

Protected areas receiving funding from the World Bank or from the Global Environment Facility are asked to complete the METT as part of the assessment of project activities. Similarly, protected areas which are also designated under



international conventions such as the World Heritage Convention and Ramsar Convention are also being asked to undertake convention specific reporting. - See more at: <http://www.wdpa.org/ME/PDF/METT.pdf>

9.2.3. **Impact assessment & Safeguards** – In addition to the above management tools, ENNR must also strive to identify, avoid or mitigate environmental (or social) impacts of management activities. The CMC should develop a realistic, manageable system to achieve this, based on / drawing from the following tools:

- **ESIA – Environmental and Social Impact Assessment:** ENNR must have an ESIA framework and undertake an ESIA for all planning developments like roads, building, trails and so on. THE ESIA methodology could also be pursued to help develop the NR’s safeguard system .
- **FPIC – Free, Prior and Informed Consent:** FPIC has been adopted by the Trinational Nimba Massif initiative and should be seen as a guiding principle for gaining community consent before undertaking activities that will affect them
- **SES – Social and Environmental Safeguards:** Developed primarily for forest carbon projects by the CCBA, Rainforest Alliance and CARE, these are useful tools and guidelines for identifying, monitoring, avoiding and mitigating impacts of forest conservation on the environment and local populous
- **SESA – Strategic Environmental and Social Assessment:** The World Bank’s EIA/SES tool, also linked to forest carbon projects but also a very useful reference for the NR in developing they’re of impacts/safeguards system
- **SIS – Safeguard Information Systems:** Across the world many countries are developing SIS for the developing or landscape scale or nation-wide forest conservation activities, in acknowledgement of the need to systematize the data collection, analysis and use of safeguard information. **ENNR would draw on existing SIS research and systems to produce:**
 - A set of safeguards for ENNR
 - A system of data collection, analysis and use (liked to the SMART system and the overall method by which data collected under this plan is analyzed and used to inform revised management interventions)

Management Issue No. 49:Developing Interlinked work plans	
Policy	Actions and guidelines (Ag)
ENNR will develop and use a number of interlinked work plans, work programmes and monitoring tools, in conjunction with the (this) management and business plan.	<p>Ag194.Develop work plan and programmes for the NR, its departments and staff .</p> <p>Ag195.Develop a system and tools to monitor implementation</p> <p>Ag196.Develop system and tools to monitor impacts. .</p>

9.3. Indicators and Milestones

The main purpose of monitoring is to find out whether the reserve is being managed effectively. We need to establish **indicators** to that will show whether ENNR is being well managed or not. This can be done by establishing “indicators”. They should be SMART (Specific, Measurable, Achievable, Relevant, Time-bound) – note that this is not the same as the “SMART” patrol monitoring in the earlier sections.

Management Issue No.50:Defining indicators to gauge progress and success.	
Policy	Action and guideline (Ag)
Monitoring should show whether the reserve is being managed effectively	Ag197. Decide on Indicators & Milestones through consultation with FDA headquarters and NGO partners.

9.4. Research

9.4.1 Current Research

- A case study on chimps in general and on their cultural variation is on-going.
- Species-site compatibility studies with indigenous tree species to revegetate ENNR, as an approach to restore sites degraded by mining.
- Production of high-quality distribution maps of a variety of animal species, including mammals and snakes, to collect systematic baseline information for future monitoring.

9.4.2. Future Research

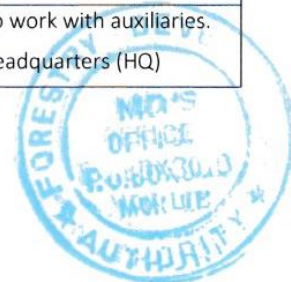
- Systematic survey of large mammals of ENNR in its entirety, as a baseline for monitoring trends.
- Assessment of the causes and impact of fire on mountain tops.
- Conduct of socio-economic research covering the 3 main categories of socio-economic analysis, notably, economic (e.g. Changes in well-being, employment, etc.), social (e.g. Changes in community cohesion, cultural vitality, confidence, demographic makeup.) and environmental (e.g. Changes in environmental quality).
- Independent assessment of performance effectivity and efficiency of livelihood endeavors and Conservation Agreements in ENNR-bordered communities.
- Explore ENNR forest-cover change and have this followed immediately by household surveys, to define the impact ENNR-fringed communities and shifting mining have on the Reserve since the birth of co-management about a decade ago.

Management Issue No.51: The future research agenda of ENNR's conservation and protection.	
Policy	Actions and guidelines (Ag)
Future reach should be encouraged and well Coordinated to ensure the Reserve in not negatively impacted and, where possible, support its future protection and management.	<p>Ag198.Communicate/coordinate with the Nimba Community College, other academic institutions and NGO partners on research opportunities.</p> <p>Ag199.Develop own (ENNR) research goals and objectives, and decide which should be handled internally and which require support .</p> <p>Ag200.Ensure that all proposed research is approved by FDA and the NR biologist and discuss with NGO partners for feedback on risks, approach, methods and priorities.</p>

9.4.3. Research Regulations

ENNR should ensure that researchers deliver their reports to the reserve HQ and to the FDA library. There should also be efforts to ensure that the researchers work with counterparts from among the park staff, where possible. Many of the auxiliaries have worked with researchers in the past and rightly gain some income and useful experience from doing so. This situation should continue to be encouraged ,

Management Issue No.52: Regulating research for quality and accommodating the Auxiliaries(invariably locals) for research value addition purposes, among others.	
Policy	Actions and guidelines (Ag)
Research should be carried out by independent researchers or FDA staff.	<p>Ag201.Assist researchers to work with auxiliaries.</p> <p>Ag202.Request that FDA Headquarters (HQ)</p>



	<p>issue research permits and copy submitted to ENNR Headquarters.</p> <p>Ag203.Request FDA HQ to give ENNR details of what researchers are authorized to do.</p> <p>Ag204.Turn results into management and monitoring tool. Copy of research report be given to the FDA.</p>
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10.PUBLIC RELATIONS, EDUCATION & ECOTOURISM DEVELOPMENT

10.1.Public Relations and Education

10.1.1 School groups and wildlife clubs

NGO partners, School Environment Clubs have already been set up in 10 schools around ENNR.

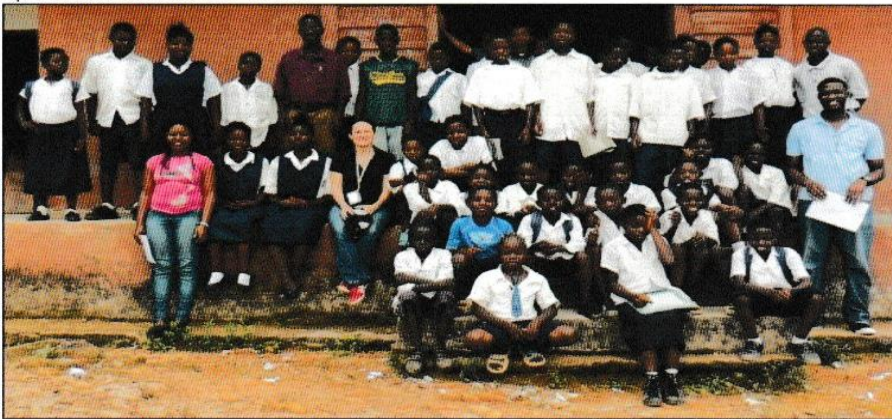


Figure 23. Officials and Members of the Zortapa School Environment Club

The Environmental Clubs run as an extra-curricular activity, so are voluntary, outside of normal lessons and the school time-table. So far 30 lesson plans have been developed; with 10 already operational and a further 20 being piloted in 2014. The clubs are for mixed ages (all grades) as none of the children have received environmental education before, meaning they are of a similar academic level. The clubs and lesson plans focus on ENNR, its wildlife, and why that is important, and the wider environmental services and values the NR (and all forests) provide to humans.

The schools programme is funded by AML and implemented by CI and partners and it will be important to ensure there is on-going funding to keep the programme going. In January 2013 the CMC carried out awareness about the reserve at all the primary stakeholder communities. They accepted the principle, but do want to see benefits coming to them. In January 2014 there will be a consultation process at the primary stakeholders, to get their views on the management plan. It is very important to maintain awareness, especially as people will be moving from the site of the new mine at Mount Tokadeh, which could cause more pressure on ENNR.



Management Issue No.53: School groups and wildlife clubs for environmental education and awareness creation and enhancement.	
Policy	Actions and guidelines (Ag)
ENNR will work with partners to provide support to the schools programme and maintain ongoing awareness raising and engagement regarding ENNR's management.	<p>Ag205.CMC, in collaboration with the FDA awareness and in consultation with all partners, will develop a community out-reach plan for on-going engagement, education and awareness raising regarding ENNR, its values, regulations/laws and involvement in the community.</p> <p>Ag206.Explore options for "field trips" for the community to visit ENNR regularly.</p> <p>Ag207.Explore options for building an educational visitor center at ENNR.</p>

10.1.2. Ecotourism Development

It is a part of the Vision for ENNR that it "will be the best protected area in Liberia and will be famous internally for eco-tourism ...". However, there are many challenges and constraints on tourism development and any tourism development that could be achieved will be, for short to medium-term, very small in scale and thus unable to bring significant benefits to the NR or local communities in terms of revenue and/or employment. Specifically, both the 2010 Ecotourism Action Plan⁶⁰, and an analysis by Conservation International of ecotourism as a potential revenue stream for East Nimba Nature Reserve⁶¹, provide a clear analysis of the current constraints associated with any form of tourism. These findings concluded that :

- The potential for ecotourism in Liberia is currently limited; the principal barriers to international tourism development in particular are:
 - High air fares from Europe (~ 3 x cost to South Africa)
 - Expensive hotels (\$100-150 per night average in Monrovia)
 - Little accommodation of acceptable standard outside Monrovia
 - Single entry tourism visas make trans-national trips problematic
- There is a significant lack of data, including the number of potential visitors and their willingness-to-pay for ecotourism opportunities at different sites; and
- Any effort to support ecotourism development should focus on small-scale projects, targeting the domestic expatriate market.

10.1.3. Tourism and the Defined Choices of Tourism Typologies :Opportunities and challenges.

Opportunities

The heightened interest in tourism. Relatively recently, a variety of approaches to tourism have been advanced in the ENNR and proximate landscapes by various institutions and organizations almost within the same time frame. The basic research and development programs these approaches entail as opportunities are: (i)Assessment of Ecotourism Opportunities on the Mount Nimba Landscape⁶²,(ii)Sustainable tourism in Liberia⁶³ and (iii)Nimba Ecolodge and Reserve⁶⁴.These on-going efforts are a reason to hope for a better turn of events in an otherwise hopeless situation for ENNR in the determined search for a viable, practical and sustainable alternative livelihoods for the bordered communities of the Reserve. See the next table for a summary of proposed research and development programs for the ENNR and adjacent landscapes , and their planned deliverables.

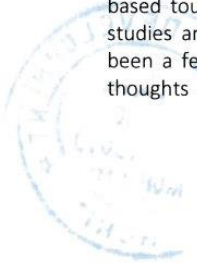


Table 8.Planned Tourism Types of Programmes and Their Objectives for ENNR and Surrounding Landscapes.

Tourism** and Ecotourism Research/Development Programmes	Objectives/Planned Deliverables of Ecotourism Research and Development Programs
<i>Assessment of Ecotourism Opportunities in the Mount Nimba Landscape of Liberia.</i>	<p><i>Conduct a reconnaissance on ecotourism offers, opportunities and actors across the Mount Nimba Landscape.</i></p> <p><i>Assess options to increase ecotourism activities across the landscape with focus on community forests .</i></p> <p><i>Identify challenges , objectives and opportunities to increasing ecotourism.</i></p> <p><i>Provide recommendations for short- and medium-term investments with significant potential to bolster ecotourism on the landscape, including proposals for integrated circuits.</i></p>
Sustainable Tourism in Liberia	<p>Conserve the natural environment.</p> <p>Promote the cultural heritage of Liberia.</p> <p>Stimulate economic growth.</p>
Nimba Ecodge and Reserve	<p>Preserve nature.</p> <p>Create jobs for the 24 communities.</p> <p>Promote "tourism" , while generating revenue for the entity.</p>
<p>**Tourism: A social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal and business/professional purposes⁶⁵.</p>	

Challenges to successful ecotourism initiatives

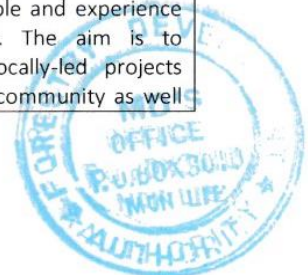
- **The design of ecotourism initiatives as an approach to livelihood** .While the clearly defined objectives of the Nimba Ecodge and Reserve Program are not only about generating alternative livelihoods, providing such livelihoods, arguably, is a vital pivot to success. All livelihood interventions intended for the rural poor in protected areas, are embedded in a village context^{31,32,40,66}.Less time than actually needed is always put into efforts to get to know and understand this context, before getting any number of individuals or households involved in a livelihood initiative, ecotourism being the case in point .While it is not possible to propose any particular time frame for learning a bit more about the village or local context, it must be said here that from the lessons so far learned in the pursuit of alternative livelihoods in rural Liberia, the time required for the degree of success desired has been "less", compared to an acceptable "more" in relative terms.
- **Inadequate definitional clarity.** Terms such as tourism, ecotourism , sustainable tourism, community-based tourism and responsible tourism are at times used interchangeably, and in some of the studies and development programs reviewed for purposes of this consultancy, this challenge has been a felt reality. It, indeed, is a serious challenge that may eventually result in a paralysis of thoughts and actions in development endeavors where livelihoods do matter most. How, for



example, do we expect to correctly evaluate effectivity of a project that is ill defined in terms of what its objectives actually are, hence its deliverables ? . The challenge here is not about the lack of definition , but rather the inadequacy of clarity of which form of tourism is of interest , for example, to the NER. The table that follows is an attempt to demonstrate the challenge we must meet to ensure success, although this statement may easily be dismissed by some as being all about semantics. It would help if the reader will keep the definition of tourism in mind as this table is perused. We must be clear about the form of tourism of focus, not just tourism as mentioned in the objectives of such a promising program that NER really is.

Table 9. Definitions and Terms ENNR Tourism Researchers and Development Professionals Employed, Versus Definitions and Meaning of such Terms by “Globally Recognized Experts” .

Terms employed by a sample of studies and development programs on tourism, focusing on the ENNR and the landscape of which it is an integral part	Summarized description or definition from what “experts” say should be the closest to the correct meaning of the terms used
Ecotourism	“Responsible travel to natural areas that conserves the environment and improves welfare of local people”. The key principles of ecotourism include minimizing impact, protecting biodiversity, building environmental awareness, and respecting local culture. Typically, the primary attractions for ecotourism are floral, faunal and cultural heritage ^{67,68} .
Sustainable tourism	Businesses that support environmental, social development and local economies. Examples of sustainable tourism business practices include conserving water and energy, supporting community conservation projects, recycling and treating wastes, hiring staff from the local community and paying them just wages, providing good quality training and sourcing locally-produced products for restaurants (such as those the Nimba Ecolodge and Reserve promises), and gift shops. Sustainable tourism businesses take concrete actions to enhance the well-being of communities and make positive contributions to the conservation of natural and cultural heritage. In doing so, they often cut down on their own costs (not passing it on to the community in any way), and preserve the longevity of their businesses in addition to attracting responsible travelers. In order for sustainable tourism to thrive, it has to be profitable. Sustainable tourism and ecotourism are similar in concepts and share many types of travel and destinations, from luxury to backpacking and bustling cities to remote rainforests ^{68,69} .
Community-based tourism	A type of tourism that emphasizes development of local communities. It involves giving visitors the chance to meet local people and experience authentic cultural exchanges. The aim is to support locally-conceived , locally-led projects that directly benefit the local community as well

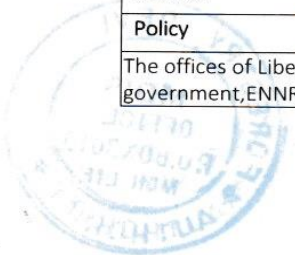


	<p>as travelers. Community-based tourism enables tourists to discover local habitats and wildlife, and celebrates and respects traditional culture, rituals and wisdom. It also has economic benefits for the entire population of a given landscape, such as equitable redistribution of income and job creation⁷⁰.</p> <p>USFS uses community-based tourism and applies it absolutely correctly in all her deliberations, including the intended achievements for the research she ably and clearly defines and delivers⁶². One of the most important aspects of community-based tourism is the support it often enjoys from the local community itself. Ecotourism and community-based tourism can go hand-in-hand. At its best, community-based tourism is sustainable, providing environmentally friendly experiences and attractions. This is particularly important as nowadays so many places world-wide are struggling with the negative impacts of mass tourism, thus making environmentally sustainable projects so important. For example, the economic opportunity that comes with community-based tourism can encourage local people away from other, less environmentally friendly ways to make money such as unsustainable logging or poaching⁷⁰.</p>
Responsible tourism	Tourism that promotes responsibility to the environment through its sustainable use, responsibility to involve local communities in the tourism industry and responsible government, employees, employers, unions and local communities ⁷¹ .

10.1.4. Ecotourism and management of the Reserve

In spite of the challenges mentioned and many others whose inclusion time and space could not permit, ecotourism has a strong potential to support sustainable alternative livelihoods as well as provide a considerable amount of the money needed to protect and sustainably manage the ENNR as an ecosystem and its cultural, geographic and natural resources. The 3 tourism-focused research and development programs presented above are a reason for this fresh air of optimism. For example, an Ecolodge is being constructed in the Reserve. There is every reason to assume that ENNR-fringed communities have been fully consulted and quite informed about the goal and objectives of the Ecolodge and have no doubt that it will benefit them as much as it will do for the Reserve and the investor(s), keeping equity in mind.

Management Issue No.54: Ecotourism and its potential to provide livelihoods and protect the Reserve	
Policy	Actions and guidelines (Ag)
The offices of Liberia's central and local government, ENNR-fringed communities (by the aegis	Ag208. Identify, select, organize and train suitably qualified individuals, including some members of



<p>of the CMC) and partners of the Reserve will lend unflinching support to the Nimba Ecodge and Reserve Program in fulfilment of its clearly defined objectives to preserve nature, create jobs for ENNR-bordered communities, and promote Ecotourism (not "tourism") as per the Vision Statement of the ENNR Management PLAN (2014-2018⁶⁹) and as maintained by the updated version (2024-2029).</p>	<p>the CMC and greater community, to serve as members of the Implementation Team.</p> <p>Ag209. The Management Plan (2024-2029) and its Implementation Team should regard Ecotourism as a high priority in the quest to deliver on the management goals and objectives of this the Management Plan.</p> <p>Ag210. Each member of the implementation Team must obtain a copy of the NER Program and must carefully read and understand the actions it proposes, how it will accomplish its goals and objectives, and so on.</p> <p>Ag211. Define the duties and responsibilities of each member of the implementation Team.</p>
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11. PERSONNEL MANAGEMENT

11.1. Staff of the Forestry Development Authority (FDA)

11.1.1. Number of Current FDA Staff

	Zortapa	Geipa	Camp 4	Total
Chief Park Warden	1	0	0	1
Biologist	1	0	0	1
Zone Wardens	1	1 (Ag)	1	2
Enforcement Rangers	2	2 (+1 Ag ZW)	1 (+1 rtd)	7
Community Engagement Rangers	1	0	1	2
Auxiliaries	4	3	3	10
Driver	1	0	0	1
Secretary	(Vacant)	0	0	0
Security	1			

11.1.2. Proposed Number of CMC Staff

Staff numbers should only be increased if:

- Monitoring shows that the current staff are working effectively;
- There is a need;
- There is available budget

The organogram below represents an ideal situation. It assumes that a new Headquarters has been built on the western side of the Reserve and the Range System has been adopted. Even without the range system, these numbers should be considered as a useful guide for administratively and technically staffing of ENNR:



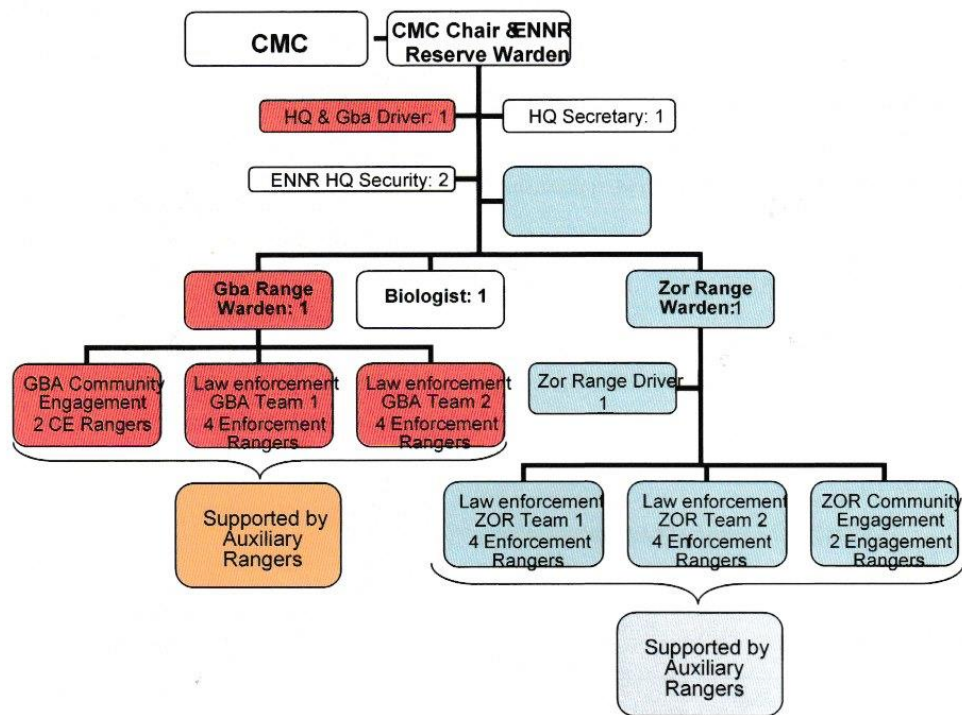


Figure 24. The Organogram presenting the Administrative and Technical Staffing of the ENNR

The numbers of staff required have been determined on the basis of their functions, and the adequate performance of duties. In the case of the Enforcement Rangers, the numbers provide for the fact that at any one time, some may be on leave, or off sick or have other reasons for absence. The empty box in the organogram is a vacancy for another secretary.

11.1.3 Proposed Number of future CMC staff

	Gba HQ Rang	Sehyi	Zor Range	Total
Chief Park Warden/ CMC cochair	1	0	0	1
CMC Chair (from Gba)	1	0	0	1
CMC Co-chair	0	0	1	1
CMC (community)	1	2	1	4
Biologist (FDA)	1	0	0	1
Range/Zone Warden (FDA)	1	0	1	2
Senior ranger (FDA)	1	0	1	2
Total CMC				12
Support staff				

Enforcement Ranger	7	0	7	14
Community Engagement Rangers	2		2	4
Drivers	1		1	2
Secretary	1		0	1
Security	1		1	2
Auxiliaries*	5		5	10
Total support staff				33
TOTAL				55

* Auxiliaries include the 2 security (so 12 in total). It is hoped that auxiliaries will be absorbed into permanent posts, but they will need training and available budget to facilitate this.

11.1.4. CMC Community Members

At present the CMC are paid for work done, on a daily-rated basis. However, the ENNR should work with partners to bring CMC members into the pay structure of the Reserve. Equal management responsibility (co-management) should equate to equal man-hours and equal-pay.

11.2. Personnel Management Issues

11.2.1 Code of Conduct and Discipline

It is essential that good discipline is applied to all staff.

Management Issue No.55: Personnel management issues and concerns, including the code of conduct.	
Policy	Actions and guidelines (Ag)
Develop a code of conduct based on the one developed by FDA for Sapu NP, but also develop specific code for the CMC.	<p>Ag212.Use the FDA (Sapo) code of conduct; develop additional code specific to ENNR. Inform all staff about the code(s) of conduct .</p> <p>Ag213.Give all staff a copy of the code(s).</p> <p>Ag214.Take disciplinary action against staff who break the code(s).</p>

11.2.2. Terms of Reference / Job Description

All staff should have copies of their Terms of Reference which defines each job and its responsibilities. They should have been issued with ToR at the time of recruitment. Staff should understand the contents of their ToR.

Management Issue No.56: Job descriptions for all staff	
Policy	Actions and guidelines (Ag)
Staff will work more effectively if they understand what they should be doing	<p>Ag215.Ensure that all staff have "Terms of Reference".</p> <p>Ag216.Ensre that everyone understands</p>



and why.	the contents of their ToR. Ag217. Assess each person's ToR annually and correct where necessary.
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11.2.3. Staff Performance Evaluations:

The Reserve will need to established system for annual appraisals of staff performance, based on FDA rules.

11.2.4. Staff Selection:

Staff selection will follow FDA rules and procedures.

11.2.5. Transfers :

Transfers between other PAs and ENNR and within ENNR should be encouraged and undertaken following FDA rules and procedures

12. TRAINING AND CAPACITY BUILDING

Some of the CMC staff are well trained (mostly those coming from FDA) - but some of them, and all of the Auxiliaries and community members of the CMC have received no training to date (January 2014).

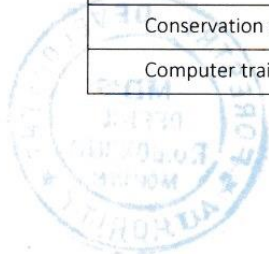
12.1.Suggested Training and Capacity Building Themes and Potential Trainees

At a workshop in Sanniquellie, training requirements were identified in April 2013 by the different groups in attendance. These training themes or requirements are listed in the table below in a particular order of importance, from the top to the bottom(e.g.High-low) in the table. Any assessment of training needs in the future should prioritize training courses on the dictates of the various assignments per staff. Experienced trainers for future training and capacity building courses should be required to undertake training needs assessment and the rest of the planning that must be done before a training course is implemented.

Since the current management plan was completed (2014-2018), ENNR's partners had undertaken a good number of training and capacity building courses. One of such short training courses was a UNOPS-funded IMET (Integrated Management Effectiveness Tool) training held in Sanniquellie (1-4 August 2023) in which about 15 persons participated, all of them males, with a single female in exception. The female and males tapped to conserve and protect what is left of Liberia's fast-depleting forest ecosystems across the country, urgently need to learn, understand and employ IMET as a tool for: (i)Self-assessment; (ii)Making good management decisions; (iii)Planning, monitoring, and advocacy; and (iv)Reporting. The table that follows shows the suggested training themes in the recent past. These, among others, remain relevant and should therefore be carefully reviewed and prioritized for current and future training and capacity building endeavors.

Table 10. The Variety of Training Themes Proposed in the Past But Are Still Important For ENNR Staff

Subject	CMC	FDA	Auxiliaries
Training in law enforcement techniques		X	X
Setting up patrol and monitoring systems		X	X
Community engagement training at ENNR HQ		X	X
Awareness and Mobilization	X	X	X
Conflict Management	X	X	
Conservation and Forest Resource Management	X		
Computer training: Word and Excel	X	X	X



Use of GPS and compass	X	X	X
Setting up of bio-monitoring systems		X	
Bio-Monitoring, survey and inventory	X	X	X
Use of basic map software (QGIS)		X	
Organizing meetings and workshop facilitation	X	X	
Finance and Administration	X	X	
Study tours	X	X	X
Training in driving at Sanniquellie		X	X
Project Planning	X	X	
Data collection, analysis and reporting systems	X	X	X
Tourist guide: how to handle visitors` expectations, and visitor management		X	X
Report Writing		X	X
Training in camera trapping		X	

12.2. Routine Assessment of Training Needs

There is a long term need for external support in capacity building for CMC, and for Rangers and Auxiliaries, on a range of Protected Area management skills from project management and administration, through law enforcement, SMART (Specific, Measurable, Achievable, Relevant, Time-bound) research and biomonitoring, and this should be built into future planning and budgeting. If ENNR is to be a role model for conservation and co-management both in Liberia and the wider region, and for at least the life span of this plan, then outside support will be required, to some degree. Moreover, there is always an opportunity to improve capacity, especially in regard to scientific knowledge and research, and that should be seen as an on-going need and opportunity. More specifically, ENNR will need to develop capacity to turn research (data) into management tools, and to create or adapt these management tools. This will require not only high quality and appropriate research undertaken in ENNR, but also the capacity to guide, analyze and use this data to solve nagging problems in conservation and related fields in the ENNR and beyond.

Management Issue No.57: Training and Capacity building	
Policy	Actions and guidelines (Ag)
Training should be provided to all CMC , ENNR staff, rangers and auxiliaries, to enable them to function more effectively, and to reduce the risk of conflict or exploitation of resources by disgruntled people now and in the future.	<p>Ag218. Prioritize capacity building and training needs assessment for individuals and teams.</p> <p>Ag219. Explore a range of capacity building tools (beyond training) like field trips, study tours, exchanges, on-line courses, and so on.</p> <p>Ag220. Seek agreement on a capacity/training priority for each group.</p> <p>Ag221. Seek source of training (NGO partners, other FDA staff, scientists/academics); make arrangements bookings, accommodation, transport etc. as necessary.</p> <p>Ag222. Use in-service training wherever</p>



	<p>possible.</p> <p>Ag223. Developed phased approach to funding based on need, with phase one being for urgent training needs and phase two for important but not urgent needs.</p> <p>Ag224. Follow up to ensure that the training is used and was effective .</p> <p>Ag225. Learn lessons and revise arrangements for subsequent training.</p> <p>Ag226. Training from CMC and partners to improve capacity and life skills of auxiliaries as an “in-kind” benefit for volunteering at ENNR (e.g. driving, IT, farming, car mechanic, etc.), which will also give them greater opportunities in life.</p>
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12.3. Training Typology for ENNR field Staff and Senior Administrators from FDA Headquarters

Any effort to bolster Liberia’s protected areas must start bolstering the individuals and agencies charged with managing these areas .Although the protected area authorities have overall responsibility for managing protected areas, much of the weight of responsibility falls upon the man or woman who holds the highest managerial position in the field. That person – whether s/he is called a warden, regional officer, senior warden , or any other title(s) – is often the one who makes the difficult day-to-day decisions that dictate whether the protected area will meet its goals and objectives. This overall chief and his foot soldiers (Rangers, Auxiliaries), Reserve Biologist, members of the CMC, Department Heads and Staff at the Authority’s Headquarters and many others, need and deserve to be trained in a variety of disciplines as per their terms of reference. The table below reflects the types of training that may be possible for ENNR and FDA staff and senior administrators , including the Managing Director.

Table 11. Examples of the Types of Training and Capacity Building Possible and a Brief Description of Each

Types of Training*	Summarized Description
Formal training	Training received at an institute or university, acknowledged by some formally recognized certificate.
In-service training	Training organized by an employer, such as a governmental protected area authority (FDA for instance), provided during an individual’s term of service, and lasting less than six consecutive months. There are both external in-service and internal in-service trainings. External in-service training is provided by an entity other than the employer. Internal in-service training is provided by the employer. In-service training provided to new employees before they assume their responsibilities is sometimes called induction training.
On-the-job training	Training received informally during the normal course of work. This sort of training includes guidance from colleagues and supervisors, learning by doing (adaptive management), using library facilities, and learning from predecessors or the notes they leave behind.
	Training received through means other than formal



Other training	institutions, in-service training, or on-the-job training. This sort of training includes workshops, seminars and conferences.
*Training needs and opportunities among protected area managers in Eastern, Central and Southern Africa. Washington , DC: Biodiversity Support Program ⁷²	

13. INFRASTRUCTURE AND EQUIPMENT

13.1 Buildings

There are three main buildings for CMC at ENNR. These are the Zortapa HQ office building, the Geipa Zone Office and the Camp 4 Zone Office.



Figure 25. Geipa Zonal Office and Staff



Figure 26. ENNR HQ Office in Zortapa



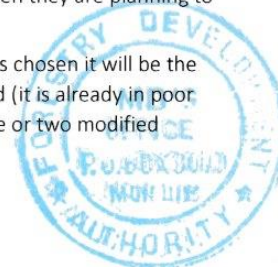
Figure 27. Camp 4 Office

Although the Zortapa HQ is in reasonable condition, it is not a good strategic location, and is not close to the reserve. Some options for building a new HQ in a better location are given in the next section. Geipa Zone Office is in good condition, and should continue to be used. The Camp 4 office is in poor condition.

13.2. ENNR Headquarters

The Reserve Warden has observed that HQ is not in a good place. Zortapa is more than 4km from the reserve, and the road to the reserve is poor and will not be upgraded. Also, the staff live in the village, among the community and so the local people know what they are doing and when they are planning to go for a patrol.

So, it makes sense to build a new HQ, with housing for the staff. Whichever site is chosen it will be the new Gab Range Camp and Camp 4 will have no further purpose and will be closed (it is already in poor condition). As an interim measure, the first new ENNR HQ could be housed in one or two modified



shipping contains. Note that AML uses such shipping contains for offices (e.g. with doors, windows, electricity and air conditioning added) and could provide the CMC with guidance on how to proceed.

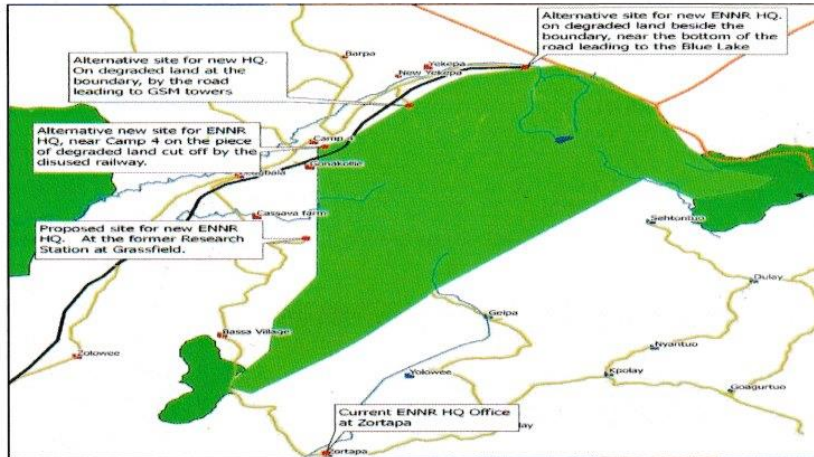


Figure 28. A Map of the Various Options for a New ENNR Headquarters.

13.3. ENNR Headquarters Office Requirements

The new Headquarters should have the following (approximate) specifications:

- An office each for the Park Warden, the Zone or Range Warden, the Biologist and the Secretary. Two offices should also be available for the community members of the CMC to use. Total 6 office rooms.
- A large meeting room, big enough for meetings of about 25 people.
- Restroom/ toilets
- Storeroom for equipment, with shelves all around the walls
- A room for auxiliaries, to work from and for their storage

If a new HQ is going to be built in a new location, it is wise to consider all the options and pick the best one. The following table proposes the advantages and disadvantages of the different sites.

Table 12. Suggested Possible Sites For the New ENNR Headquarters and Advantages and Disadvantages of Each

Site	Advantages	Disadvantages
Grassfield	Famous site where Nimba Flycatcher was discovered.	Isolated location. There could be access in the rains. No possibility of getting electricity from Yekepa. Additional journey back to the main road at the start of journeys to other sites.
Camp 4	This site could stop access to this part of the reserve by farmers/ hunters. Close to partners at AML	Probably no chance of getting electricity from Yekepa?

Orange road	It is thought that there are many illegal activities happening up this road – beside the road, and at the Orange Liberia and other towers. This site would provide some better control of access to GSM towers and to the new Palaver Hut. Close to partners at AML	Best situation to get electricity from Yekepa?
Blue Lake road	This site could help to control and record tourist and other access to the Blue Lake area. Close to Guinea border for the “Trinational” future. Close to partners at AML	Probably no chance of getting electricity from Yekepa?

Others may think of additional advantages and disadvantages of the above sites, or a site that is even better than any of these.

13.4. The Series of Actions Taken in the Search For The Most Suitable Location of The New ENNR Headquarters

Management Issue No.58: The search for the most advantageous location for the new ENNR Headquarters.	
Policy	Actions and guidelines (Ag)
The new ENNR HQ should be located in the most advantageous location.	<p>Ag227.FDA, CMC and stakeholders should discuss and consider the above options.</p> <p>Ag228.Think of more advantages and disadvantages.</p> <p>Ag229.Visit sites and review options and check for access to clean water.</p> <p>Ag230.Seek advice on the possibility of getting electricity from Yekepa</p> <p>Ag231. Visit Grassfield during heavy rain and road condition.</p> <p>Ag232.Make decision with wide stakeholder consultation and advice.</p> <p>Ag233.Carry out “due diligence” of all aspects of the site.</p> <p>Ag234.Consider shipping containers and explore options / costs, with input from AML Begin design and construction when the new project starts.</p>

13.5. Staff Houses

Houses will be provided for the staff (this is normal in most Protected Areas in Africa).

There will be 16 housing units at the new Gba HQ site



The houses sizes / specifications will reflect the positions of the intended occupants

House type /Expected Occupant?	Gba	Zor
House for Warden	1	-
Senior staff houses	2	1
Junior housing units for other staff	13	11
TOTAL	16	12

The detailed specification and budgets can be established when implementation of this Management Plan begins.

13.6. Roads and Trails

The old road from Zortapa, through Coldwater, to Gbapa is not in good condition. It is overgrown, and blocked by a few fallen trees. It would not be difficult to re-open it for vehicle use, but it is widely agreed that it would be unwise to do so, because a better road would encourage more farming in the area, and improve access for poaching.

However if there is to be an FDA camp at Coldwater it would be possible to monitor/control use of the road, and would be required for the Camp – although a narrow trail, accessible by motorbike but not by car, might be the most appropriate.

No new roads need to be created for ENNR management but additional patrol trails might be required in the future. If a new trail is required then the CMC must undertake an EIA to assess and mitigate possible negative impacts, and ensure that the new trail is regularly and thoroughly checked and patrolled, to make sure it is not supporting illegal activity. No new roads need to be created for ENNR management but additional patrol trails might be required in the future. If a new trail is required then the FDA, CMC and Partners should undertake an ESIA to assess and mitigate possible negative impacts, and ensure that the new trail is regularly and thoroughly checked and patrolled, to make sure it is not supporting illegal activity.

13.7. Vehicles

Currently, Geipa camp and Camp 4 have one motorbike each that is said to be 6 years old. There is also one based at Zortapa. All rangers stations need to have a least one motorbike, although ideally two or three bikes, depending on the number of rangers for patrol purposes and general transport, six rangers would require 3 motorbikes. The NR (CMC) will require at least one car (4x4) but preferably more. The Reserve Warden currently has a vehicle and that should be sufficient for the life of this plan. Provision should be made for both vehicle maintain (in budgets) and for the replacing of both motorbikes and cars. A financing and budgeting framework has been prepared to deal with the issue of estimated costs .

This narrative on the current situation at ENNR about vehicles roughly 6 years ago, gives one a picture of the urgency of this matter and the attending cost. The cost is probably doubled if not tripled since the statement I am now responding to was made. I spent few hours in the heart of Monrovia a day ago to gather firsthand information on the types of vehicles most suitable for ENNR's terrain, motorbikes included, to address the concerns of Rangers, Auxiliaries, the Chief Reserve Warden and a host of the personnel at ENNR. Land cruisers or pickup trucks and quality motorbikes appear to be most appropriate. I learnt that a Land cruiser will sell at USD45,000.00 a piece (duty free) or USD48,000 (duty). Probably, pickup trucks would do if Land cruisers are found a bit costlier. For quality motorbikes, Yamaha stands out quite clearly. Yamaha is USD3950.10(duty free) or USD4200.00(duty). Supported by information about the number of personnel at ENNR who would need vehicles, the types of vehicles of preference and the cost of these vehicles, and the cost for fuel and maintenance (replacement of parts,etc.), the total cost for vehicles at ENNR could be reasonably estimated.



13.8 Equipment

13.8.1 Patrol equipment

All rangers must have the clothing, communication and data recording equipment to perform their roles properly. They also need to be armed but without carrying firearms, in line with FDA policy and national law. Patrol equipment is covered in section 10

13.8.2. Uniforms

The FDA staff at ENNR have not received uniforms since 2022. It is essential that they should have uniforms as it would give them greater respect and the authority, with which to perform their roles, by the communities (and the poachers). Uniforms will also help giving rangers confidence and sense of pride and professionalism.

The normal FDA ranger uniform is required, with the addition of the department logo.

13.8.3. Office equipment

There are two desktop computers at Zortapa HQ. One is used by the biologist, and the other for administration. As of 2022 the offices have no stationery.

The Office requires:

- Checking the working order of the computers and ensuring they have updated anti-virus software;
- A Printer and ink cartridges
- Stationary (printer paper, notebooks and pens – various)
- Desks and chairs for all office staff
- Air-conditioning or fans
- Mobile phones and phone credit (scratch card)

13.8.4. Maintenance

The ENNR will need to devise a system for the safekeeping and maintenance of all equipment and property. It is advisable that individuals be given the responsibility to keep certain items or areas clean, safe and accounted for. Equipment held in „common“ ownership is likely to get spoiled or be lost.

Management Issue No.58: Maintenance of equipment	
Policy	Actions and guidelines (Ag)
ENNR will be a fully equipped NR with all necessary equipment, vehicles/transport and infrastructure provided in accordance with FDA norms, this line with this plan and the evolving needs of the CMC and NR staff.	Ag235. Develop a full list of required equipment and procurement plan. Ag236. Develop systems and policy for procurement, invoicing, cleaning, safekeeping and maintenance . Ag237. Train staff of ENNR and print and make public, the rules and policy on equipment.

14. FINANCIAL PLANNING

14.1 Costs of Plan Implementation

As a priority, the CMC needs to identify and provide costs, associated with this plan, and from those develop annual and monthly budgets and spending/work plans .

14.2 A List of Potential Funding Streams

There are a range of ways that ENNR can acquire and/or generate funds, as listed below.



- State budget (FDA)
- AML / Trust Fund (note the trust fund is yet to be confirmed / capitalized)
- Protected area entrance fees
- Recreation service fees, special events and special services
- Accommodation (guest houses/visitor centers)
- Transportation and guiding
- Parking
- Equipment rental
- Food sales (restaurant and store)
- Merchandise sales (equipment, clothing, souvenirs)
- Licenses, permits, and taxes
- Licensing of intellectual property
- Sale or rental of image rights (e.g. for taking photographs)
- Tourism concessions (leased to private or community tourism operators over an extended period(e.g. 10-25 years)

As discussed earlier in the plan, tourism and associated income stream are considered to be a minimal significance for this plan and the NR will be dependent upon state allocated PA budget, partners and support provided by AML (and potentially the trust fund, if that becomes a reality). The CMC should be constantly aware of, manage and update:

- Budgets
- The current cost/revenue balance sheet for the NR
- The need for long terms financial sustainability; New funding sources and opportunities.

14.3 Revenue: Current and Expected

See 16.1 & 16.2 - the CMC will need to identify all income / revenue streams and amounts, and from that produce a detailed cost/revenue spreadsheet, budgets and spending/work plans

14.4. Profitability: Comparison of Income and Expenditure

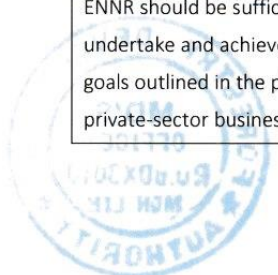
As above, the CMC will need to develop a cost/revenue balance sheet (using Excel) to identify the current balance; shortfall or profit and then maintain use of that that tool to monitoring profitability or shortfalls and, moreover, as managers, use the information to change or reduce spending and/or seek new funds, to ensure that the budgets (outgoings and income) are balanced

14.5 Business Plan

A business plan is an essential roadmap for success. It is a living document that will project 5 years ahead, in-line with this plan, and outlines the route that CMC intends to take to grow revenues. It should be a strategic document, link to this plan and the plan/strategy developed for the Tri-national Nimba Massif.

This management plan prefers a private-sector business plan over its public-sector counterpart, and it will be developed outside this plan. A private-sector type of business is the economic segment that consists of "for-profit" businesses and its employees and managers, generally, do earn high wages than their public-sector or government counterparts, but typically has less job security and shorter tenure^{73,74,75}. Management efficiency and performance effectivity at ENNR will be best served by a private-sector business plan and a successful implementation of that plan.

Management Issue No.59:A framework for a Business plan	
Policy	Actions and guidelines (Ag)
ENNR should be sufficiently financed to undertake and achieve the activities and goals outlined in the plan and the proposed private-sector business.	Ag238. CMC should work with FDA management to review the existing draft Business Plan (from CI) to see if it can be used or updated to support or become ENNR Business Plan.



	<p>Ag239. Calculate the costs of implementing this plan.</p> <p>Ag240. Investigate all sources of funding, existing and potential.</p> <p>Ag241. Produce a cost/revenue balance sheet for ENNR.</p> <p>Ag242. Produce a strategic, integrated business plan for the ENNR.</p>
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14.6. Financial and Budgeting Framework

Within the planning horizon of 5 years, Annual Work Plans, proposed activities and corresponding schedules will be prepared, examined and undertaken. For the first year (2024), however, much attention should be paid to identifying activities which deserve immediate funding and it is for such activities that an estimated budget is proposed in the table below. The purpose of this budget is not, by any means, to present an exhaustive list of activities that are to be funded in the future and their actual costs.

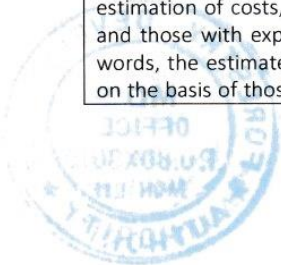
Table 13 . A User-friendly, Illustrative Budgeting Framework for Financing and Budgeting Tasks

Ref.No: (Section)	Activity	Examples of the Types of Information Required for Reasonable Accuracy in Estimating Costs	Cost Estimates (USD)
5.2	Demarcation of external boundary of the Reserve	A fairly accurate information and data are required on the number and size of farms, settlements, degraded areas, abandoned mining sites, and ancestral land claims. The external boundary line is highly likely to run through all or many of these areas. Many land disputes and conflicts should therefore be expected and all should be done to have these cases settled before the external boundary line is finally established.	36,000.00
6.2	Identification and restoration of degraded areas , and location of cultural and historical sites.	Restoration is possible through artificial and natural regeneration. Naturally assisted regeneration has no cost but takes so much time; artificial means of regeneration are normally faster but must be adequately funded.	60,000.00
6.3	Demarcation of buffer zone of the Reserve	A fairly accurate information and data are required to determine the man power need for the layout of the line, the number and size of land/farms through which the line will run, how many pillars are to be planted on the line and how much is each, compensation for the compass/GPS team, determination of the compensation package(daily rate, contract),the timing (wet/dry season) of the event , and so on.	50,000.00
6.5	Establishment of administrative and resource management zones	Zonation is a key activity. The number of administrative and resource management zones in practice can only be determined during the zonation process. When zones are actually defined on the ground from the printed pages, then the cost per zone can fairly accurately be determined.	25,000.00



7.1	Collaborative management	FDA,CMC and Partnership planning meetings, how many meetings, venue, how many days, transport, catering services, meals, work plans, etc.	60,000.00
8.0	Law enforcement	The projected number (55) of suitably qualified Auxiliaries and Rangers of the Reserve should be able to handle this job.	50,000.00
10.0	Public education and conservation awareness creation	The number and types of education and awareness creation methods desired, how many of such events are to be held at a given time in the first year, the number of participants, the cost per participant, catering services, DSA, food, materials and supplies, transport and so on.	35,000.00
11.0	Staff recruitment and deployment	Sufficient knowledge about the various Reserve Administration and resource management assignments required, the number of staffs needed for each assigned task and projections of what human resource management need in retirement, wages and salaries are variables that could inform staff recruitment and deployment	125,000.00
12.0	Identification and assessment of training and capacity building needs, and commencement of training and capacity building activities	Training and capacity building begin with needs assessment. After needs are assessed and are matched with trainees, a decision has to be taken on how many people are to be trained, where (at home, abroad) and how long is the training going to be and then the cost per trainee, among others.	60,000.00
13.0	Establishment of infrastructure	The number, size and types of infrastructure have to be determined before establishment costs can be estimated, and this with an acceptable degree of accuracy. Considered under the various types of infrastructure are staff housing, zonal and Reserve Headquarters, roads, trails and so on.	615,000.00
13.7.5	Maintenance of the external boundary of the Reserve	The current management team of the Reserve has the experience to determine the man power need for this activity, its frequency and cost per year	20,000.00
Administrative and inflationary costs			75,000.00
Total			1,211,000.00

Note: Eleven(11) activities are proposed to deliver on the sixty-five Policies, 50 Management Issues and the 250 Actions and Guidelines identified in the body of this Plan. Preparation of Annual Work Plans and the Estimated Costs associated with them will pay keen attention to the identification and selection of each of the Implementation Milestones listed in Section 17.3. In spite of the examples given to inform a relatively accurate estimation of costs, illustrative cost estimates are also projected per activity but only realities on the ground and those with experience in each of the proffered activities could make the final judgement here. In other words, the estimated costs that totaled USD1,211,000.00, are largely hypotheticals as they are not suggested on the basis of those realities which can only be captured through implementation. The Implementation Team



will determine the reality of these activities and corresponding cost estimates; these sets of actions are, however, proposed as credible and essential elements, arguably, of a financing and budgeting framework.

15. TRANS-BOUNDARY CONSERVATION AND TRI-NATIONAL AGREEMENT

15.1. Trans-Boundary Conservation

One of the aims of the creation of ENNR is to *“support a tri-national program for the integrated conservation of Mount Nimba and collaboration between Liberia and the countries sharing this landmark.”* Because of the felt significance of this aim, it was repeated in the National Forestry Reform Law (NFRL 2006) where it was quoted thus: *“Improve co-operation with neighboring countries to address trans-boundary conservation issues”*. Routine transboundary patrols on fire hazards and other conservation issues and concerns among the three (3) countries (Liberia, Guinea and Cote d’Ivoire) should be meticulously planned and undertaken, and should be elevated to the national security level. Bilingual training is a must for transboundary patrols and other activities.

15.2. Tri-National Agreement

On December 12, 2012, the Governments of the Republic of Liberia, Cote d’Ivoire and Guinea jointly signed a framework agreement *“for integrated and sustainable conservation of the Nimba Mountains”*, as follows:

Article 1: The three parties recognize the Nimba Mountains Massif as a common biosphere reserve with a cross-border status, to be integrated to the Afri-MAB network and the Global Network of Biosphere Reserves.

Article 2: The Parties recognize Mount Nimba as an exceptional site of biological diversity that must integrate the Global Network of Biosphere Reserves and the AFRI-MAB Network (for Côte d'Ivoire), the AFRI-MAB and Biosphere Reserves networks as well as the World Heritage Sites (for Liberia).

Article 3: The Parties pledge to correctly apply the principles of ecosystems and biodiversity conservation, in accordance with:

- The Seville Strategy;
- The Maputo Convention on the conservation of nature and natural resources;
- The principles of the United Nations Environment Programme concerning the transboundary management of shared natural resources and;
- The regional planning measures jointly adopted in the framework of the Mano River Union.

Article 4: A tripartite annual consultation framework is hereby instituted to discuss all the issues related to the tripartite management of the Nimba Mountains, in particular concerning:

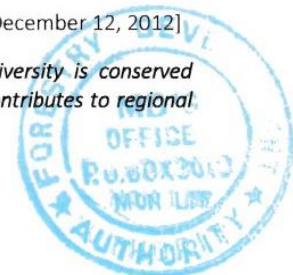
- Regular contacts between the institutions in charge of the management of the Nimba Mountains (exchange of experiences, field visits, scientific meetings, exchange of document, etc.);
- The establishment of legal frameworks for the implementation of identified actions;
- The harmonization of policies and management objectives.
- The coordination of management and protection actions;

Article 5: The three parties pledge to strengthen their cooperation efforts with international institutions and organizations for technical and financial assistance in the tripartite management of the Nimba Mountains range.

Article 6: In this regard, a Technical Committee for the monitoring and implementation of the present Framework Agreement is hereby established. The organizational structure and operation thereof shall be decided through a Protocol that shall determine the rules concerning participation therein and its management.

Article 7: This Framework Agreement shall enter into force on the date of its signature. [December 12, 2012]

The Tri-National Vision Statement by the Tri-National Committee: *Nimba Massif biodiversity is conserved effectively for the well-being of current and future generations of all stakeholder’s and contributes to regional peace and security.*



15.2.1. *The Tri-National Vision developed in the December 2013 Meeting of the Tri-National Committee*

Management Issue No 60: The vision of the Tri-national Committee of Nimba Massif Biodiversity	
Policy	Actions and guidelines (Ag)
AT The broad policy will be to work towards an international framework for the sustainable management of the Nimba Massif	<p>The CMC and/or FDA (central) will:</p> <ul style="list-style-type: none"> • Ag243. Have a permanent member on the Technical Committee. • Ag244. Produce a final list of priority species for conservation. • Ag245. Produce a draft threat analysis. • Ag246. Establish PA boundaries on the ground. • Ag247. Adopt new text of boundaries into law to reflect reality (Especially in Liberia). • Ag248. Finalize management plans at national Protected Area level. • Ag249. Strengthen capacities, judiciary, Law Enforcement, and communities . • Ag250. Support better livelihoods for communities. • Ag251. Provide education and awareness to improve understanding of biodiversity and its importance . • Ag252. Develop a framework for the Trans-boundary management plan or strategy

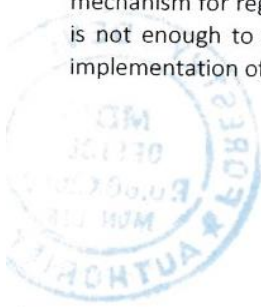
15.2.2. *Economic Policy for poverty alleviation and food security through protected area management*

One of the main aims of the National Forest policy of 2006 is *“to contribute to the national development goals of poverty alleviation and increased food security, by increasing the opportunities for forest-based income generating activities.”* This should be achieved through the following wildlife and protected area management activities:

- Increase community participation in protected area management in all forest areas, where possible, and in particular, through collaborative management of the reserve;
- Strengthen and improve alternative livelihood opportunities to reduce rural dependence on forests and wildlife.

16. IMPLEMENTATION OF THE PLAN

With limited management capacity and resources in government, and the FDA and Co-management Committee (CMC) tasked with implementation of the Management Plan, actual management of the Reserve and its resources will fall on a mosaic of actors with a presence in the area. Government agencies, prominent among them the Forestry Development Authority (FDA), conservation NGOs, the private sector and the local communities – all will bring an array of capabilities and resources to help implement the Plan. Structuring the appropriate advisory and management teams is therefore critical to success. The management team will create a public participation strategy that should describe how the various stakeholders are to be involved in helping the principal institutions (FDA, CMC) management decision making and plan implementation. This participation strategy should include formalized periodic stakeholder meetings, and this set of actions will serve as a platform that should provide a mechanism for regular communication and dialogue between the management team and pertinent stakeholders. It is not enough to designate the CMC and the FDA as bearing the responsibility for managing the ENNR and for implementation of this Plan. A core, credible and experienced body is needed for this giant endeavor.



16.1. Organization of an Advisory and Implementation Team

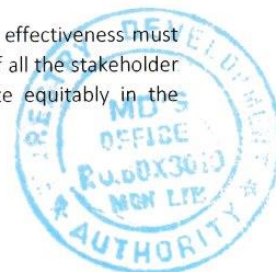
Management Issue No.61. Creation of an advisory and management team to implement the Plan	
Policy	Actions and guidelines (Ag)
An Advisory Team is needed for the overall Management of the Reserve and Implementation of the Management Plan.	<p>Ag253.Set up an Ad Hoc Committee to form an Advisory and Implementation Team.</p> <p>Ag254.Identify and select members of the Advisory Team so that suitably qualified legal minds are represented as well as conservation experts, international and national NGOs who have been active within the Mount Nimba Landscape of Liberia, public health specialists, social researchers, economists, respected elders and young people of the traditional leadership, the CMC and representatives of pertinent fields.</p> <p>Ag255.Decide on the number of people constituting the membership of the Team and the schedule, venue, duration and number of meetings per year.</p> <p>Two meetings per year is suggested and membership should be about 17 or less; It may be more, but must be manageable considering the diversity of experiences that are to be tapped and the economics of its all.</p> <p>Ag256.The Advisory and Implementation Team, working with the CMC and FDA, should plan and conduct formalized meetings with ENNR's multiple stakeholders (e.g. communities ,funding agencies, etc.) in the delivery on its mandate.</p>

16.2. Take into Account The Major Implementation Priorities

16.2.1. Staffing and Personnel Recruitment and Management:It is a compelling preposition that the required/experienced staff and corresponding administrative officials be meticulously and timely identified and recruited, and in the most fitting numbers.

16.2.2. Infrastructure: Unless the required buildings (proposed new or better equipped/renovated Headquarters, staff houses, Ranger posts, official access roads to the Reserve, etc.) and other facilities are put to place, many of the activities this plan proposes to protect and manage the Reserve will be unattainable.

16.2.3. Collaborative Management/Co-Management and County Integration:If success and effectiveness must be the watchwords of management performance, then the capability and acquiescence of all the stakeholder groups and partners -as multiple as they should be in consequence- must participate equitably in the



protection and management of the Reserve. In these respects, trans-boundary relationships and commitments are as quintessential as the requisite elements of collaborative management mentioned.

16.2.4. Equipment and Vehicles: Unquestionably, equipment (e.g. field radios, telephones, internet services, , cameras, GPS units, Audio-visuals, computers, printers, video cameras, sleeping bags and mats, tents, binoculars, boots torch, etc.), uniforms, protective clothing, and vehicles (4x4 pick-up trucks/any suitable vehicles for ENNR's challenging roads and terrain, motorcycles, etc.) are a vital pivot to the challenging drive to a successful protection and management of ENNR.

16.3. Preparation of Annual Work Plans

The management team will define priority issues and activities in this plan and from those, produce Annual Plans in adherence to a set of prioritized issues and activities. In the definition and prioritization process, pertinent stakeholders should fully participate. Within the first few days of the first year of implementation of this Plan, Annual Work Plans for various activities by a variety of actors will be prepared. This would mean that before activities actually take off in each of the five years of the Master Plan, a thorough and detailed planning for the activities of that year would be done, discussed and carried out. As is commonly practiced, such planning normally takes 2-3 days. Annual Work Plans are to be prepared on the basis of what the Master Plans proposes and with respect to the business plan.

16.4. Monitoring of Progress

An essential activity in the successful and effective management of the Reserve is the regular , internal assessment of what has been accomplished in view of proposed actions. Progress monitoring should be undertaken on: (i) Activities the Management Plan promises to perform, (ii) Annual Work Plans, and (iii) At individual output level. Quarterly management meetings will be held to review progress in activity implementation. Minutes of these quarterly meeting should be carefully filed as these will serve as one of the important sources of reference when a final review is done as part of each Annual Work Plan. Monitoring is primarily performed to gauge progress and impact of the management plan and its implementation so as to : (i) Provide feedback for iterative and adaptive management, (ii) Check that targets are being met, including those outlines in the plan, and (iii) Identify and avoid unwanted internal (biodiversity) or external (social) impacts.

16.5. Updating the Plan

On the basis of reviews of performance and continuous monitoring, changes to planned activities will definitely be recommended and effected. It will be useful if recommendations are made prior to the development of each annual work plan so that actions for each year can be adapted to meet the experiences of the year's implementation and of changing circumstances or new knowledge. In the final year of implementation, a comprehensive review should take place on what must have been achieved as far as the proposed goals and objectives of the Plan, and such lessons should be incorporated into the next planning cycle. Modifying and updating this Plan, including its policies and objectives, can only be carried out by the production and publication of a new Plan which must be approved by the FDA Managing Director.

Table 14. Implementation Milestones[2024-2029] . The Matrix Below is not an Annual or any Type of Work Plan. Rather, it is Simply Purposed to Inform, Instruct and Illustrate the Planning Process from Which Beginners May Learn.

Ref.No** (Section)		Schedule of Activities (In Years)				
		2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
5.0	MANAGEMENT OF THE RESERVE					
5.2	Establish and maintain the external boundary line of the ENNR annually.	█	█	█	█	█
5.3.1	Design and implement an annual habitat restoration plan.	█	█	█	█	█

13.0	INFRASTRUCTURE AND EQUIPMENT												
13.3	Whether a new Headquarter is built or not, the current Headquarter of the Reserve needs and deserves to be better equipped in the first year of implementation with modern desks, chairs, computers, printers, functional bathrooms / toilets, lodging rooms for visitors, offices for Reserve officials, staff and visiting scientists, sustained source for electricity, a conference hall capable of accommodating 30 persons, a kitchen, etc.												
13.4	Construct staff apartments and issue guidelines on how staff houses are to be used and maintained. It should be made clear at the outset to occupants the activities which are allowed or not allowed in these public housing units.												
13.5	Identify and map out all the roads and trails from surrounding towns and villages leading to the Reserve. Close down some of these roads and keep others open to serve the ENNR as official paths of access to and from the Reserve in the second quarter of the first year of implementation.												
13.6	Determine the number and types of vehicles needed at the ENNR to serve field staff and officials in the daily performance of their various tasks. It appears useful to prepare the list within the first quarter of implementation.												
13.7	List and report to the procurement officer of the FDA in the first quarter of the year of implementation the number and types of equipment needed to serve the staff and officials of the Reserve, including patrol equipment, uniforms, and office equipment (computers, desks, printers and so on.												
13.7.4	Develop and enforce rules for safe-keeping and maintaining all equipment and property so that individuals using them will take responsibility for keeping the items or areas clean or accounted for. Equipment held in "common" ownership is likely to get spoiled or lost quickly and easily if there are no rules about their use and maintenance.												
14.0	FINANCIAL PLANNING												
14.5	Prepare, submit , discuss and implement a Business Plan, including how the CMC												



cultivation on the Liberia Mount Nimba landscape will support ENNR's natural resource conservation and protection efforts. What is needed here is to think a little bit more about how such research agenda should be engendered. It may be useful if an Ad Hoc committee on research is formed to inform the research agenda. It is suggested that representations be made from AML, CI, FFI, UNOPs, FDA, EPA and other institutions with a presence in the Liberian Mount Nimba landscape, to compare notes on the definition of research themes and to help make funds available to get such work accomplished through any desired and agreed arrangements among these giant research and development institutions. Researchers must work together to avoid needless competition and duplication of efforts in a world of scarce resources in time and funds, among others.

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APPENDICES

Annexes

Annex 1. Names of Individuals Consulted During Preparation of the First ENNR Management Plan (2014-2018 and the Institutions they Represented

Participants at Project Planning Workshop, Sanniquellie, April 15-18, 2013
Roger W.Luke ,Helen Weanquoi, Saye Thompson, Abu B.Kaba, Albert Gbarto, Joseph N.Greene,Saye Thompson, Abu B. Kaba, Albert Gbarto, Joseph N. Greene, James Karmen, Joe Dayee, Amelia Korden, Dada S. Konkani, Edward J. Smallwood, Francis S. Karborkpeh, Gaye Dokpah, Harrison Y.Geh, Korvah K.Vaynabah, Lawrence Zulu, Moses N.Gonsahn, Peter D.Gamloe, Robert G.Dolo.
Participants at the ENNR Management Planning Workshop,Ganta, April 2013
Harrison S. Kanweah,Managing Director ,FDA Catfish Brownell, Environmental BHP Billiton/Euro Nimba Darlington Tuagben,NRM specialist, USAid Harry S.Carson,EPA, Nimba D.Nuah Biah,PROSPER Forestry Officer Darlington Jacobs, Community Forest Management Body, Gba Community Edward G.Gbeintor,Wildlife Manager, FDA John Manito ,Vice President

Annex 2:ENNR ACT AND BOUNDARY GAZETEMENT

AN ACT FOR THE ESTABLISHMENT OF THE EAST NIMBA NATURE RESERVE, **APPROVED: OCTOBER 10, 2003**
PUBLISHED BY AUTHORITY MINISTRY OF FOREIGN AFFAIRS NOVEMBER 4, 2003 MONROVIA, LIBERIA

WHEREAS, it has been the policy of the Government of the Republic of Liberia to adopt such measures as deemed conducive in the interest of the State; and

WHEREAS, our forests are among our greatest natural resources and may be made to contribute greatly to the socio-economic, scientific and educational welfare of Liberia by being managed in such a manner as to ensure their sustainable use; and

WHEREAS, the protection, conservation and sustainable utilization of these resources must be carried out promptly, efficiently and wisely, under such conditions as will ensure continued benefits to present and future generations of Liberia, and

WHEREAS, the Nimba Mountains complex is internationally recognized as a high priority site for its biological richness and Nimba National Forests is on a Government of Liberia list of representative forest habitats recommended for strict protection; and



WHEREAS, the World Heritage Council of UNESCO has declared the Guinea-Côte d'Ivoire side of the Nimba Mountain complex as a World Heritage Site and the Liberian side is likely to meet the criteria for such designation; and

WHEREAS, reclassifying the Nimba National Forests into a protected forest area category will support a tri-national program for the integrated conservation of Mount Nimba and collaboration between Liberia and the countries sharing this landmark:

NOW THEREFORE it is enacted by the Senate and the House of Representatives of the Republic of Liberia, in Legislative Assembled:

Section 1.1 Title: An Act for the Establishment of the Nimba Nature Reserve.

Section 1.2 Short Title: This Act may be cited as the Nimba Nature Reserve Act

Section 2.3 Definitions:

"Chains" means a measurement unit that is 80 chains to a mile.

"Bounds" means lines defining distance between metes.

"Metes" means point of direction change in demarcating boundary lines.

"Metes and Bounds" means the perimeter of a demarcated area.

"Nature Reserve" means an area that does not represent a complete ecological unit, legally set-aside for the preservation and enjoyment of features that have outstanding natural beauty, cultural or biological significance, which may require management intervention.

2.1 Metes, Bounds and Description:

The Nimba Nature Reserve is located in the north-Central section of Liberia in Nimba County. *It lies within latitudes 7 degrees '00 to 8 degrees 00' North and longitudes 8 degrees 00' West:*

1. Commencing at a point on the border between Liberia and Cote d'Ivoire at 8.44E,N;7.52.N;
2. 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;
3. thence due south west for 144.8 chains to -8.52E, 7.58 E, 7.57 N where it meets a tributary of the St John River;
4. thence the line runs along the northwest side of the St John River tributary for 316.8 chains to where it crosses the tributary of the St John at -8.57 E and 7.53 N;
5. thence south along the western ridge of the mountain for 362.4 chains to -8.57E,7.47N;
6. thence due south west for 134.4 chains to -8.58E,7.45N;
7. thence south for 90.4 chains to -8.58E,7.43N;
8. thence southwest for 103.2 chains to -8.59E 7.42N;
9. thence the line runs southeast along the south-western slope of the mountains ridge for 59.2 chains to -8.59E,7.41N;
10. thence 54.4 chains to -8.58E,7.41N;
11. thence due northwest for 786 chains to just north of the town of Sostenuto at 8.47E,7.51N;
12. here, the line meets the Cavalla River and follows its southeastern bank for 193.6 chains to the point of commencement embracing 33,528 acres of land and no more.

Annex 3: CHECKLIST OF BIRDS

From BirdLife Database (<http://www.birdlife.org/datazone/sitefactsheet.php?id=6458>). IUCN Red List Threat Category Legend: DD=Data Deficient, NR=No Records, LC=Least Concern, NT=Near Threatened, V=Vulnerable



Scientific name	Common name	IUCN Red List Threat Category
<i>Agelastes meleagrides</i>	White-breasted Guineafowl	V
<i>Francolinus lathamii</i>	Forest Francolin	LC
<i>Francolinus achantensis</i>	Ahanta Francolin	LC
<i>Pteronetta hartlaubii</i>	Hartlaub's Duck	LC
<i>Bostrychia rara</i>	Spot-breasted Ibis	LC
<i>Tigrionis leucolopha</i>	White-crested Tiger-heron	LC
<i>Dryotriorchis spectabilis</i>	Congo Serpent-eagle	LC
<i>Accipiter erythropus</i> ,	Red-thighed Sparrowhawk	LC
<i>Urotriorchis macrourus</i>	Long-tailed Hawk	LC
<i>Aquila africanus</i>	Cassin's Hawk-eagle	LC
<i>Sarothrura pulchra</i>	White-spotted Flufftail	LC
<i>Himantornis haematopus</i>	Nkulengu Rail	LC
<i>Canirallus oculus</i>	Grey-throated Rail	LC
<i>Columba uncinata</i>	Afep Pigeon	LC
<i>Columba iridorques</i>	Western Bronze-naped Pigeon	LC
<i>Turtur brehmii</i>	Blue-headed Wood-dove	LC
<i>Psittacus erithacus</i>	Grey parrot (Western ssp)	NR
<i>Tauraco macrorhynchus</i>	Yellow-billed Turaco	LC
<i>Cercococcyx mechowi</i>	Dusky Long-tailed Cuckoo	LC
<i>Cercococcyx olivinus</i>	Olive Long-tailed Cuckoo	LC
<i>Centropus leucogaster</i>	Black-throated Coucal	LC
<i>Otus icterorhynchus</i>	Sandy Scops-owl	LC
<i>Bubo poensis</i>	Fraser's Eagle-owl	LC
<i>Bubo shelleyi</i>	Shelley's Eagle-owl	NT
<i>Bubo leucostictus</i>	Akun Eagle-owl	LC
<i>Scotopelia ussheri</i>	Rufous Fishing-owl	V
<i>Jubula lettii</i>	Maned Owl	DD
<i>Glaucidium tephronotum</i>	Red-chested Owlet	LC
<i>Caprimulgus binotatus</i>	Brown Nightjar	LC
<i>Telacanthura melanopygia</i>	Black Spinetail	LC
<i>Rhaphidura sabini</i>	Sabine's Spinetail	LC
<i>Neafrapus cassini</i>	Cassin's Spinetail	LC
<i>Apus batesi</i>	Bates's Swift	LC
<i>Eurystomus gularis</i>	Blue-throated Roller	LC
<i>Halcyon badia</i>	Chocolate-backed Kingfisher	LC
<i>Ceyx lecontei</i>	African Dwarf-kingfisher	Lc
<i>Alcedo leucogaster</i> ,	White-bellied Kingfisher	LC
<i>Merops gularis</i>	Black Bee-eater	LC
<i>Merops muelleri</i>	Blue-headed bee-eater	NR
<i>Phoeniculus castaneiceps</i>	Forest Woodhoopoe	LC
<i>Tockus hartlaubi</i>	Black Dwarf Hornbill	LC
<i>Tockus camurus</i>	Red-billed Dwarf Hornbill	LC
<i>Tockus fasciatus</i>	African Pied Hornbill	LC
<i>Tropicranus albocristatus</i>	White-crested Hornbill	LC
<i>Bycanistes fistulator</i>	Piping Hornbill	LC
<i>Bycanistes cylindricus</i>	Brown-cheeked Hornbill	V



<i>Ceratogymna atrata</i>	Black-casqued Hornbill	LC
<i>Ceratogymna elata</i>	Yellow-casqued Hornbill	V
<i>Gymnobucco calvus</i>	Naked-faced Barbet	LC
<i>Gymnobucco peli</i>	Bristle-nosed Barbet	LC
<i>Pogoniulus scolopaceus</i>	Speckled Tinkerbird	LC
<i>Campethera nivosa</i> ,	Buff-spotted Woodpecker	LC
<i>Buccanodon duchaillui</i>	Yellow-spotted Barbet	LC
<i>Tricholaema hirsuta</i>	Hairy-breasted Barbet	LC
<i>Trachyphonus purpuratus</i>	Yellow-billed Barbet	LC
<i>Prodotiscus insignis</i>	Cassin's Honeyguide	LC
<i>Melignomon eisentrauti</i>	Yellow-footed Honeyguide	DD
<i>Indicator willcocksii</i>	Willcocks's Honeyguide	LC
<i>Melichneutes robustus</i>	Lyre-tailed Honeyguide	LC
<i>Campethera maculosa</i>	Little Green Woodpecker	LC
<i>Campethera nivosa</i>	Buff-spotted Woodpecker	LC
<i>Campethera caroli</i>	Brown-eared Woodpecker	LC
<i>Dendropicos gabonensis</i>	Gabon Woodpecker	LC
<i>Thripias pyrrhogaster</i>	Fire-bellied Woodpecker	LC
<i>Dryoscopus sabini</i>	Large-billed Puffback	LC
<i>Smithornis rufolateralis</i>	Rufous-sided Broadbill	LC
<i>Megabyas flammulatus</i>	African Shrike-flycatcher	LC
<i>Batis occulta</i>	West African Batis	LC
<i>Platysteira castanea</i>	Chestnut Wattle-eye	LC
<i>Platysteira blissetti</i>	Red-cheeked Wattle-eye	LC
<i>Prionops caniceps</i>	Chestnut-bellied Helmet-shrike	LC
<i>Malaconotus cruentus</i>	Fiery-breasted Bush-shrike	LC
<i>Malaconotus lagdeni</i>	Lagden's Bush-shrike	NT
<i>Dryoscopus sabini</i>	Large-billed Puffback	LC
<i>Laniarius leucorhynchus</i>	Sooty Boubou	LC
<i>Coracina azurea</i>	Blue Cuckooshrike	LC
<i>Campephaga lobata</i>	Western Wattled Cuckooshrike	V
<i>Oriolus brachyrhynchus</i>	Western Black-headed Oriole	LC
<i>Oriolus nigripennis</i>	Black-winged Oriole	LC
<i>Dicrurus atripennis</i>	Shining Drongo	LC
<i>Trochocercus nitens</i>	Blue-headed Crested-flycatcher	LC
<i>Terpsiphone rufiventer</i>	Black-head Paradise-flycatcher	LC
<i>Elminia nigromitrata</i>	Dusky Crested-flycatcher	LC
<i>Erythrocercus mccallii</i>	Chestnut-capped Flycatcher	LC
<i>Picathartes gymnocephalus</i>	White-necked Picathartes	V
<i>Parus funereus</i>	Dusky Tit	LC
<i>Anthoscopus flavifrons</i>	Forest Penduline-tit	LC
<i>Pholidornis rushiae</i>	Tit-hylia	LC
<i>Psalidoprocne nitens</i>	Square-tailed Saw-wing	LC
<i>Psalidoprocne obscura</i>	Fanti Saw-wing	LC
<i>Hirundo nigrita</i>	White-throated Blue Swallow	LC
<i>Prinia leontica</i>	White-eyed Prinia	V
<i>Apalis nigriceps</i>	Black-capped Apalis	LC
<i>Apalis sharpii</i>	Sharpe's Apalis	LC

<i>Camaroptera superciliaris</i>	Yellow-browed Camaroptera	LC
<i>Camaroptera chloronota</i>	Olive-green Camaroptera	LC
<i>Andropadus gracilis</i>	Grey Greenbul	LC
<i>Andropadus ansorgei</i>	Ansorge's Greenbul	LC
<i>Andropadus curvirostris</i>	Plain Greenbul	LC
<i>Calyptocichla serina</i>	Golden Greenbul	LC
<i>Baeopogon indicator</i>	Honeyguide Greebul	LC
<i>Ixonotus guttatus</i>	Spotted Greenbul	LC
<i>Chlorocichla simplex</i>	Simple Greenbul	LC
<i>Thesclocichla leucopleura</i>	Swamp Greenbul	LC
<i>Pyrrhurus scandens</i>	Leaf-love	LC
<i>Phyllastrephus baumanni</i>	Baumann's Greenbul	LC
<i>Phyllastrephus albigularis</i>	White-throated Greenbul	LC
<i>Phyllastrephus icterinus</i>	Icterine Greenbul	LC
<i>Bleda syndactylus</i>	Common Bristlebill	LC
<i>Bleda eximius</i>	Green-tailed Bristlebill	NT
<i>Bleda canicapillus</i>	Grey-headed Bristlebill	LC
<i>Criniger barbatus</i>	Bearded Bulbul	LC
<i>Criniger calurus</i>	Red-tailed Bulbul	LC
<i>Criniger olivaceus</i>	Yellow-bearded Greenbul	V
<i>Nicator chloris</i>	Yellow-spotted Nicator	LC
<i>Bathmocercus cerviniventris</i>	Black-headed Rufous Warbler	NT
<i>Macrosphenus kempii</i>	Kemp's Longbill	LC
<i>Macrosphenus concolor</i>	Grey Longbill	LC
<i>Hylia violacea</i>	Violet-backed Hylia	LC
<i>Hylia prasina</i>	Green Hylia	LC
<i>Eremomela badiceps</i>	Rufous-crowned Eremomela	LC
<i>Sylvietta virens</i>	Green Crombec	LC
<i>Sylvietta denti</i>	Lemon-bellied Crombec	LC
<i>Illadopsis cleaveri</i>	Blackcap Illadopsis	LC
<i>Illadopsis rufescens</i>	Rufous-winged Illadopsis	NT
<i>Illadopsis puveli</i>	Puvel's Illadopsis	LC
<i>Illadopsis fulvescens</i>	Brown Illadopsis	LC
<i>Phyllanthus atripennis</i>	Capuchin Babbler	LC
<i>Sheppardia cyornithopsis</i>	Lowland Akalat	LC
<i>Poeoptera lugubris</i>	Narrow-tailed Starling	LC
<i>Neocossyphus poensis</i>	White-tailed Ant-thrush	LC
<i>Stizorhina fraseri</i>	Rufous Flycatcher-thrush	LC
<i>Zoothera princei</i>	Grey Ground-thrush	LC
<i>Alethe diademata</i>	White-tailed Alethe	LC
<i>Stiphornis erythrothorax</i>	Forest Robin	LC
<i>Sheppardia cyornithopsis</i>	Lowland Akalat	LC
<i>Cossypha cyanocampter</i>	Blue-shouldered Robin-chat	LC
<i>Erythropgia leucosticta</i>	Forest Scrub-robin	LC
<i>Fraseria ocreata</i> , LC	African Forest Flycatcher	LC
<i>Fraseria cinerascens</i>	White-browed Forest Flycatcher	LC
<i>Melaenornis annamarulae</i>	Nimba Flycatcher	V
<i>Muscicapa ussheri</i>	Ussher's Flycatcher	LC
<i>Muscicapa olivascens</i>	Olivaceous Flycatcher	LC



<i>Muscicapa epulata</i>	Little Grey Flycatcher	LC
<i>Muscicapa comitata</i>	Dusky-blue Flycatcher	LC
<i>Muscicapa cassini</i>	Cassin's Grey Flycatcher	LC
<i>Myioparus griseigularis</i>	Grey-throated Tit-flycatcher	LC
<i>Anthreptes fraseri</i>	Scarlet-tufted Sunbird	LC
<i>Anthreptes rectirostris</i>	Green Sunbird	LC
<i>Nectarinia seimundi</i>	Little Green Sunbird	LC
<i>Nectarinia cyanoaema</i>	Blue-throated Brown Sunbird	LC
<i>Nectarinia fuliginosa</i>	Carmelite Sunbird	LC
<i>Nectarinia adelberti</i>	Buff-throated Sunbird	LC
<i>Nectarinia minulla</i>	Tiny Sunbird	LC
<i>Nectarinia minulla</i>	Tiny Sunbird	LC
<i>Nectarinia johanna</i>	Johanna's Sunbird	LC
<i>Nectarinia superba</i>	Superb Sunbird	LC
<i>Ploceus nigerrimus</i>	Vieillot's Black Weaver	LC
<i>Ploceus tricolor</i>	Yellow-mantled Weaver	LC
<i>Ploceus albinucha</i>	Maxwell's Black Weaver	LC
<i>Ploceus preussi</i>	Preuss's Weaver	LC
<i>Malimbus scutatus</i>	Red-vented Malimbe	LC
<i>Malimbus nitens</i>	Gray's Malimbe	LC
<i>Malimbus malimbicus</i>	Crested Malimbe	LC
<i>Malimbus rubricollis</i>	Red-headed Malimbe	LC
<i>Parmoptila rubrifrons</i>	Red-fronted Antpecker	NT
<i>Nigrita fusconotus</i>	White-breasted Negrofinch	LC
<i>Nigrita bicolor</i>	Chestnut-breasted Negrofinch	LC
<i>Pyrenestes sanguineus</i>	Crimson Seedcracker	LC
<i>Spermophaga haematina</i>	Western Bluebill	LC

Annex 4: CO-MANAGEMENT AGREEMENT

Co-Management Agreement for the East Nimba Nature Reserve between Forestry Development Authority, and the Joint Forest Management Committee of Sehyi, Gba and Zor Communities

WHEREAS, our forests are among our greatest natural resources, an endowment from nature to the people of Liberia: and

WHEREAS, Sections 2.2 and 3.1(a) of the National Forestry Reform Law (NFRL) of 2006 empower the FDA to manage the forest estate of Liberia;

WHEREAS, the Nimba Mountains complex is internationally recognized as a high priority site for its biological richness; and

WHEREAS, the 2003 Act for the Establishment of the East Nimba Nature Reserve establishes the authority of the Forestry Development Authority of Liberia to promulgate rules and regulations for the purpose of managing the East Nimba Nature Reserve and

WHEREAS, Effective management of wildlife and protected areas is best achieved by the full involvement of those who live closest to them - taking their needs into consideration; and WHEREAS, the 2006 National Forestry Reform Law and the Community Rights Law of 2009, recognize the use and management rights of communities; and

WHEREAS, Chapter 10 of the 2006 National Forestry Reform Law grants the Forestry Development Authority the power through regulation to transfer user and management rights to communities and the obligation to develop the capacity of communities for sustainable forest management; and



<i>Muscicapa epulata</i>	Little Grey Flycatcher	LC
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<i>Nectarinia johannae</i>	Johanna's Sunbird	LC
<i>Nectarinia superba</i>	Superb Sunbird	LC
<i>Ploceus nigerrimus</i>	Vieillot's Black Weaver	LC
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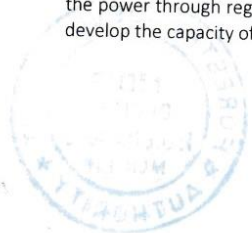
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WHEREAS, Effective management of wildlife and protected areas is best achieved by the full involvement of those who live closest to them - taking their needs into consideration; and WHEREAS, the 2006 National Forestry Reform Law and the Community Rights Law of 2009, recognize the use and management rights of communities; and

WHEREAS, Chapter 10 of the 2006 National Forestry Reform Law grants the Forestry Development Authority the power through regulation to transfer user and management rights to communities and the obligation to develop the capacity of communities for sustainable forest management; and



WHEREAS, the communities of Sehyi, Gba and Zor living around the East Nimba Nature Reserve have confirmed their willingness to participate in co-management of the said reserve and have organized themselves by forming a Joint Forest Management Committee (hereinafter referred to as "JFMC");

THEREFORE, in consideration of the foregoing premises,

A Co-Management Agreement (hereinafter referred to as the "Agreement") is made for the East Nimba Nature Reserve, hereinafter referred to as ENNR, and entered into by and between the Government of Liberia, represented by Forestry Development Authority, hereinafter referred to as "FDA" and the Community Administrations of Sehyi, Gba and Zor, represented by their (JFMC), collectively referred to as "The Parties".

Article I. AUTHORITY

Section 1.01 The FDA is the legislatively mandated agency responsible for the management of the ENNR and has the authority to enter into this Agreement under Section 2.2 of the 2003 Act for the Establishment of the East Nimba Nature Reserve.

Section 1.02 The JFMC is the representative body of the Sehyi, Gba and Zor communities of hereinafter referred to as "the Communities" and represents the ENNR co-management interests of these Communities. The JFMC has the authority to enter into this agreement on behalf of these Communities as attested by the attached signatures of the Sehyi Clan Chief Gba Clan Chief and Zor Paramount Chief and the Commissioners of Sanniquellie-Mah, Yarmein and Gbehley-Geh districts.

Article II. PURPOSE

Section 2.01 The JFMC, representing the Communities' ENNR interests, and FDA, representing the interests of the citizens of Liberia, desire to work in partnership in order to:

- (a) Establish a management body for the co-management of the ENNR made up of representatives of the JFMC and FDA and hereinafter referred to as the ENNR Co-management Committee.
- (b) Promote the conservation and management of biodiversity in the ENNR and jointly reduce and/or avoid threats to that biodiversity;
- (c) Establish a process of shared responsibilities regarding use & management of ENNR;
- (d) Provide information to the Communities and raise awareness about sustainable use, management and conservation and the value of forest resources to the community and the nation;
- (e) Ensure sharing of the costs and benefits of ENNR management;
- (f) Identify and resolve, through a consultative process, any conflicts that may arise in the management and conservation of resources in the ENNR;
- (g) Ensure the effective and efficient management of the ENNR for this and future generations, and
- (h) Assist the management of the ENNR.

Article III. GUIDING PRINCIPLES

Section 3.01 One of the best ways to conserve and manage the resources of the ENNR is through a partnership between the JFMC and FDA.

Section 3.02 A key to the success of this partnership is to incorporate the spirit and intent of co-management by building trust and by establishing close cooperation between the Parties. Shared decision-making shall be through consensus, based on mutual respect and understanding.

Article IV. OPERATIONAL STRUCTURE

Section 4.01 The Parties agree to establish a co-management body to be called the ENNR Co-Management Committee hereinafter referred to as the CMC, to provide guidance and oversight for the implementation of this Agreement.



Section 4.02 Upon effect of this Agreement the FDA shall appoint six (6) members to the CMC to represent the FDA. The JFMC membership comprising also of six (6) shall be in equal proportion of two (2) persons each from Sehyi, Gba and Zor to represent the Communities, The members of the CMC will serve at the pleasure of the Party by which they are appointed, The CMC shall decide on the chairperson at the first meeting. Each party shall select a co-chair to the CMC. One (1) co-chair shall be a representative of the FDA and one (1) a representative of JFMC.

Section 4.03 The CMC shall hold at least four (4) meetings a year and may hold other meetings, as necessary, at the request of either party. The CMC meetings will be held and conducted at the ENNR Headquarters Office unless mutually agreed otherwise. A quorum of two thirds of the CMC members is required to conduct a meeting. Decisions of the CMC shall be through consensus, based on mutual respect.

RIGHTS AND OBLIGATIONS

Section 4.04 The Co-Management Committee shall:

- (a) In consultation with Communities, develop, draft and submit to FDA for approval, rules for ENNR management regarding control of hunting, mining, fishing, farming, settlement, and wildlife protection within the ENNR; domestic animal control; fire control; illegal entry; and nonTimber Forest Product (NTFP) collection and management (Letter (a) contradicts the Legislative Act that created ENNR in 2003).
- (b) Provide management oversight for implementation of the Agreement and five (5) year co-management Plan, and enforcement of ENNR rules and regulations.
- (c) Identify and prioritize training and support to Communities for co-management activities. This may include: enforcement, monitoring of biodiversity, and biodiversity surveys.
- (d) Jointly agree on the criteria and standards for employment of Community members.
- (e) Submit a quarterly budget to FDA to fulfill specific responsibilities stated in this Agreement for each quarter that the Agreement is in effect based on Action plans prepared jointly by the CMC. The CMC will disburse the annual funds provided by FDA and provide an accounting of the funds to FDA. Any unused funds will be returned to FDA.
- (f) Jointly identify and distribute sources of revenue that can be shared jointly between the Communities and FDA.

Section 4.05 The FDA will:

- (a) Provide guidelines, training and other technical assistance to the members of the CMC on jointly identified topics including management planning, enforcement, biodiversity monitoring and biodiversity surveying.
- (b) Support awareness raising activities of the JFMC through technical support and provision of materials regarding control of farming, hunting, mining, fishing, fire, domestic animal control, illegal entry; wildlife protection; and NTFP collection,
- (c) Provide annual funds to the CMC to carry out the annual work plan activities.
- (d) Ensure that forest co-management activities are carried out according to rules and regulations applicable in the ENNR, and in case of violations, impose the pertinent fines and other penalties.
- (e) Support community-management of identified and protected cultural sites within ENNR Section

4.06 The JFMC shall:

- (a) Contribute to the development of a five (5) year co-management plan, and annual work plans for ENNR.
- (b) Conduct awareness raising activities of the JFMC through technical support and provision of materials regarding control of farming, hunting, mining, fishing, fire, domestic animal control, illegal entry; wildlife protection; and NTFP collection.
- (c) Organize community-based work teams to be trained for co-management planning and other management activities.
- (d) Consistent with the five (5) year co-management plan and other rules and regulations jointly developed for ENNR, oversee ENNR forest use by villagers and regularly monitor settlement, hunting,

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- (b) Provide management oversight for implementation of the Agreement and five (5) year co-management Plan, and enforcement of ENNR rules and regulations.
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- (d) Jointly agree on the criteria and standards for employment of Community members.
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- (d) Ensure that forest co-management activities are carried out according to rules and regulations applicable in the ENNR, and in case of violations, impose the pertinent fines and other penalties.
- (e) Support community-management of identified and protected cultural sites within ENNR

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- (b) Conduct awareness raising activities of the JFMC through technical support and provision of materials regarding control of farming, hunting, mining, fishing, fire, domestic animal control, illegal entry; wildlife protection; and NTFP collection.
- (c) Organize community-based work teams to be trained for co-management planning and other management activities.
- (d) Consistent with the five (5) year co-management plan and other rules and regulations jointly developed for ENNR, oversee ENNR forest use by villagers and regularly monitor settlement, hunting,

mining, fishing, farming, wildlife protection, domestic animal control, illegal entry, and collection of various forest products and other customary forest-use activities, (e) Seek guidance from the FDA on ENNR Buffer Zone Management.

(f) identify and protect cultural sites within the ENNR.

Article V. FUNDING

Section 5.01 Recognizing that costs may be associated with the implementation of this Agreement, the Parties agree that:

(a) Any requirement of this Agreement for the obligation or expenditure of funds by the CMC, JFMC or FDA for the use of staff or agency resources shall be subject to the availability of appropriated funds.

(b) The FDA, JFMC and CMC will assist each other to seek funding from a variety of sources to support co-management of the ENNR.

(c) The FDA will review the annual budget and will assist with the obligation and provision of funding as deemed appropriate under the authorities specified in this Agreement.

ARTICLE VI. EFFECTIVITY, SUSPENSION, AND TERMINATION OF THE AGREEMENT

Section 6.01 The agreement shall take effect immediately upon signing by all parties concerned and shall continue to be effective for a period of 5 years from the date of signing. Thereafter the parties concerned shall negotiate for the renewal of the agreement for a similar period.

Section 6.02 The FDA may terminate the Agreement and shall notify the JFMC in writing signed by the Managing Director. The JFMC may terminate the Agreement and shall notify the FDA in writing signed by the chair of the JFMC.

Article VII AMENDMENT

Section 7.01 Upon the proposal of any of the parties, agreement may be amended a mutually agreed by all the parties concerned.

Article VIII ARBITRATION

Section 8.01 In case of any conflict relating to this Agreement that the parties cannot resolve by themselves. arbitration shall be done in a meeting chaired by a representative of the FDA, and a chair from the Communities. If this fails to resolve the conflict a third meeting shall be held and be chaired by a third-party mediator to be jointly selected and agreed upon by the FDA and the JFMC. If still this fails, the matter shall be brought to the proper Courts for settlement.

Section 8.02 Either party shall have the rights to engage a legal adviser or any suitable party for assistance.

The Provisions of this Agreement have been thoroughly discussed and fully negotiated in a language understandable to all parties concerned. The Agreement is hereby signed in – original copies, a copy each for the JFMC and FDA.

For the JFMC

Saye Thompson

Chairperson, JFMC Sept 18, 2010

Commissioner of Sanniquellie-Mah Administrative District, Sept 18, 2010

Commissioner of Gbehley-Geh Administrative District, Sept 18, 2010

Yarmein Administrative District,

For the Government

Hon. Moses Wogbeh

MD, FDA, Sept 18, 2010



Annex 5: ABBREVIATIONS & ACRONYMS

AML	ArcelorMittal Liberia
AZE	Zero Extinction Area
CA	Conservation Agreement
CFs	Community Forests
CMA	Co-management Agreement
CMC	Co-management Committee
CPR	Common Property Resource
CRW	Chief Reserve Warden
EBA	Endemic Bird Species
ESIA	Environmental and Social Impact Assessment
ENNR	East Nimba Nature Reserve
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization of the United Nations
FDA	Forestry Development Authority
FFI	Fauna & Flora International
FourD's	Detect, Detain, Deflect, Deter
FPIC	Free, Prior, Informed Consent
GPS	Global Positioning System
GSM	Global Systems for Mobiles
HQ	Headquarter
IBA	Important Bird Area
IMET	Integrated Management Effectiveness Tool
IUCN	International Union for the Conservation of Nature
JFMC	Joint Forest Management Committee
KBA	Key Biodiversity Area
LAMCO	Liberian American Mineral Company
LRCPF	Land Rights Community Forestry Programme
METT	Management Effectiveness Tracking Tool
MICAT	Ministry of Information, Cultural Affairs and Tourism
NER	Nimba Ecolodge and Reserve
NGO	Non-governmental Organization
NTFPs	Non-Timber Forest Products
PA	Protected Area
PAPFor	Support Programme for the Protection of Forest Ecosystems in West Africa
RSPB	Royal Society for the Protection of Birds
SWOT	Strengths, Weaknesses, Opportunities, Threats
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNOPS	United Nations Office for Project Services
USFS	United States Forest Service

