

**BLUYEAMA COMMUNITY FOREST
MANAGEMENT PLAN**

OCTOBER/DECEMBER 2011

Acronyms and Abbreviations

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BCFMB	Community Forestry Management Body
CMFP	Community Forest Management Plan
CRL	Community Rights Law with Respect to Forest Lands
dbh	diameter at breast height
FDA	Forestry Development Authority
GPS	Global Positioning System
M&E	Monitoring and Evaluation
NFRL	National Forestry Reform Law of 2006
NTFP	Non-Timber Forest Product
BCFMB	Bluyeama Community Forest Management Body

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1 INTRODUCTION

1.1 Objectives

The primary objective of this plan is to manage the Bluyeama Community Forest (BCFMB) and its surrounding landscapes so that these ecosystems continue to provide products and services for the present and future generations. Specific objectives are as follows:

- Demarcate the boundaries of Bluyeama Community Forest, zone its forest types, and define management action(s) for each zone;
- Assess and inventory the non-timber and timber resources of Bluyeama Community Forest;
- Engage in logging activities;
- Develop and support small and medium forest enterprises by building the capacity of community members to improve harvesting, processing, and marketing of forest products;
- Monitor the impact that community management has on the biodiversity of the Bluyeama Forest.

1.2 Duration of the plan

The duration of this plan is fifteen (15) years, beginning after approval by the BCFMB and the FDA. The plan will be reviewed and revised if necessary, after 5 years.

1.3 Partners to the plan

This plan is the product of a series of consultative work carried out by a number of Community Forest Management Bodies (CFMBs); the Forestry Development Authority (FDA); and selected representatives of resource user groups in the Bluyeama community during the month of October 2011.

1.4 Organization of the plan

This forest management plan is organized into 11 Chapters. Chapter 1 defines the objectives of the plan. Chapter 2 provides an overview of the institutional and legal framework of the plan. Chapter 3 provides a description of the Bluyeama forest and its environs, while Chapter 4 deals with social management issues. Chapters 5 to 7 describe the resources of the forest, forest management regimes, and records and reporting, respectively. Chapters 8 and 9 focus on rules making, standing committees, and monitoring and evaluation, respectively, Chapter 10 outlines the implementation plan, references are found in Chapter 11. Attachments complement content of the 11 chapters.

2 GENERAL OVERVIEW OF INSTITUTIONAL AND LEGAL FRAMEWORKS

2.1 Institutional framework

This section of the manage plan outlines the relevant local and national institutions and their roles and responsibilities with respect to community forestry and the development of the management plan.

2.1.1 Forest Development Authority

The FDA has jurisdiction over community forestry management in Liberia. The FDA gives official recognition to the demarcation of community forest boundaries, may recognize and terminate an Authorized Forest Community, and coordinates with other government institutions and relevant parties on the implementation of community forestry programs.

Consistent with the FDA Community Rights Law regulations, the FDA has the following roles and duties:

- Monitor and evaluate Community Forestry Management Programs;
- Facilitate the resolution of conflicts upon request by an Authorized Forest Community;
- Assist in building the capacity of Authorized Forest Communities in sustainable community forest management;
- Assist in securing financial and technical assistance for forest communities in support of their community forest management programs.

In addition, it should be noted that the FDA has the authority to revoke the authorized status of a community engaged in community forestry if:

- Forest resources are being seriously damaged,
- the CFMB is not complying with provisions of the Community Rights Law, its Regulations,
- or the community forestry program is being implemented in serious breach of the Agreement, Policy, or the Management plan between the Community and the Authority.

Community Forest Management Body

The Bluyeama Community Forest Management Body (BCFMB) represents the interests of the Bluyeama community. The BCFMB entered into a Forest Management Agreement with the FDA following the provision of information regarding the community, its management intent, the demarcation of the Bluyeama Forest, an inventory of its resources, and payment of a \$250 fee. The Management Agreement was signed on January 10, 2012 and grants obligations and rights to the community for 15 years. Among those rights and obligations include the obligation to:

- operate in accordance with the terms and conditions in this Community Forest Management Agreement, community forestry rules and other relevant legislations and regulations;
- develop and implement community forest management plans under guidelines and specifications issued by the FDA for the Bluyeama Forest;
- prepare and implement community forestry rules/guidelines for the Bluyeama Forest;
- conduct awareness raising activities in the community; and
- represent the community in all matters and negotiations related to the Bluyeama Community Forest

Legal Framework

This section summarizes the obligation that the management plan must meet within the legal framework of Liberia's laws.

The 1986 Constitution of Liberia

The constitutional basis for community forestry is found in Article 7 of the Constitution which provides for public participation in the protection and management of the environment and natural resources in Liberia.

The National Forest Reform Law of 2006 (NFRL)

Chapter 3 §3.1 states that the FDA must "assure sustainable management of the Republic's Forest Land, Conservation of the Republic's Forest Resources, protection of the Republic's Environment,

and sustainable development of the Republic's economy, with the participation of and for the benefit of all Liberians.

The Community Rights Law (CRL)

The goal of the CRL is to support communities' full engagement in the sustainable management of the forests of Liberia by creating an enabling legal framework. This framework, which includes implementing regulations promulgated in 2011, requires a management plan (§3.2(b)) that is prepared by the CFMB (§ 4.2(c)) consistent with FDA guidelines and specifications.

The Management Law for Wild Animals

This law is under development. However, the community forest management plan will need to comply with the requirements of this law as it relates to wild animals in community forests.

The NTFP Regulation

The NTFP regulation imposes an "unprocessed NTFP Commercialization Fee" and local processing fees on collectors and processors of NTFPs but exempts the quantities of certain NTFP from taxation. The CFMB is responsible for ensuring that the management plan is compliant with the requirements of this regulation.

The Regulation for Chainsaw Logging

This regulation is currently under development. The regulation may impose restrictions on the location and use of chainsaws. The CFMB is responsible for ensuring that the management plan is compliant with the requirements of this regulation.

Profile of Community Forest Management Institutions

Chapter 3 of the CRL gives communities the right to form a group called a Community Forest Management Body (CFMB) that is responsible for the day-to-day management of the community forest. The Community Assembly, comprises representatives from a community of people who have rights to access and use a forest's resources who empower the CFMB to do its work. The CFMB must draft a Community Forest Management Plan (CFMP). This plan must ensure the community manages the forest in a sustainable manner based on principles of inclusivity, transparency, and accountability. The plan must be accepted and agreed on by the Community Assembly and the FDA.

The BCFM B manages the day-to-day management responsibilities of the Bluyeama forest

GENERAL DESCRIPTION OF THE COMMUNITY FOREST

History of past and current management

Past and current management and use in Bluyeama include: , chainsaw logging, shifting cultivation, and unregulated hunting and collection of a variety of non-timber forest products (NTFP). The forest has been traditionally considered a place to hunt and collect NTFP, and to clear in order to farm.

Commercial logging occurred in the 1980s but in recent years, most of Bluyeama and adjacent forested landscapes have been used primarily by local people for their own household consumption of timber and NTFP. There is limited management of the landscape and a system of open access for members of the community is the current management regime.

Natural features

Metes and Bounds/Technical Description

SEE ATTACHMENT A 1

Brief description of location, natural features, and climate

Bluyeama is an important part of a larger landscape consisting of primary forests, , rivers, hills, and other natural features in Lofa.

The Bluyeama Forest itself comprises 121,846 hectares, of which 49,444 hectares¹ has been allocated for commercial logging. A map of the area is attached in Attachment A 2 which depicts the location of the Bluyeama Forest, along with the major towns, villages within the larger landscape of Lofa.

The climate of Bluyeama is influenced by its location and elevation. Bluyeama is placed in the low altitude with an elevation of approximately (210/250m) meters above sea level. The area lies in the tropical climate zone. The main rainy seasons of Liberia runs from April to late October with heavy rainfall occurring between June and September.

Temperatures vary throughout the year. In the wet season, temperatures tend to be consistent, varying approximately 4°C between day and night, compared to 8° during the dry season, when reduced cloud cover results in hotter days and cooler nights.

Major vegetation types and wild animals

Vegetation in Bluyeama as a whole consists of high forest bushes interspersed which are the product of human activities such as farming, mining, Pit sawing, and settlements. Moist semi-deciduous forests are the most common forest types in Bluyeama, Lofa county.

No significant large animals have been observed in the area in recent times.

In Bluyeama as a whole, there are a number of watercourses, including the Via Rivers and many creeks used for drinking, cooking, bathing, washing, and, at times, swimming. It is, therefore, a critical watershed

2.1.2 Topography and soils

Bluyeama is characterized by shifting cultivation with patches of disturbed natural forests and settlement in the area. The cultivated land is confined to well drained reddish brown soils, covering upland and hills due to the traditional belief of the rural dwellers. The land uses are mainly for crop production such as rice cassava. Peanuts and cocoa.

2.1.3 Threats to the forest and its resources

The Bluyeama forest faces a number of direct and indirect threats to its integrity as a whole and to its biodiversity resources specifically. The major direct threats are shifting farming, uncontrolled hunting and fishing, fire, destructive logging (including chainsaw logging commonly known as pit sawing), and charcoaling.

¹The metes and bounds description of the Bluyeama forest found in the Forest Management Agreement with the FDA estimates the Bluyeama Forest at 49,444 hectares. This figure was arrived at by calculating the area based on a series of waypoints and connecting them with straight lines in a spatial database. However, the forest area used in this management plan is derived from the actual boundaries that the FDA assisted the community to demarcate. Rather than a series of points and straight lines, these area estimates are based on the actual boundary polygon and is reported at 49,444 hectares.

Local bushmeat hunting, which provides food and income, is another threat to biodiversity. Although rodents comprise the majority of bushmeat, primates are particularly threatened because their long reproductive cycles mean slower population increase – and because they fetch higher prices on the market.

2.2 Demographics

The current population of Bluyeama is approximately ^{25,000}25,000, consisting of 57% females and 43% males. Bluyeama has 12 towns. The major ethnic groups — economic summary of local communities

The main livelihood activities related to forests and land use include farming (shifting cultivation), hunting, fishing, artisanal mining, and collection of non-timber forest products (NTFP).

The Bluyeama community is located in Zorzor District, the main livelihood activities related to forests and land use include farming (shifting cultivation), hunting, fishing, artisanal mining, and collection of NTFP.

2.2.1 Production systems and use of forest resources

There are four main production systems in the towns and villages surrounding Bluyeama. These production systems include harvesting/collecting forest resources; mixed rice-based farming (upland); backyard gardens; and tree crops. Timber and non-timber forest products are used extensively, for household consumption and for income generation as well as medicinal products, and area key component of local livelihoods. NTFP collection far outweighs timber production in terms of direct economic benefits gained through products such as fruits, snails, rattan, monkey vine, medicinals, bush meat, firewood, construction materials.

One of the principal ways of earning cash income is through the cultivation of cash crops. Tree crops fall in this category include cocoa, oil palm, avocado, eddoes, plantains, oranges, mango, and banana.

2.3 Description of the use and management of surrounding/adjacent landscapes

Upland rice farming relies on shifting cultivation. By contrast, growing swamp rice is more productive and does not require new practices. In most communities of Bluyeama there are suitable areas for swamp rice farming and this type of farming has a strong potential to undercut shifting cultivation. However, upland rice farming is more popular than swamp rice production, in large part due to insecure tenure in rural areas and the higher labor demands of cultivating swamp rice. Lack of knowledge about swamp rice cultivation techniques also hampers expanding use.

Animal husbandry is often an integral part of farming. Many families in the Bluyeama community have animals but these are not properly managed. For example, animals are not housed or fed: they simply roam freely. Before the war, many households raised several species of animals for home consumption and for generating income. The degree to which the war-induced decline in the number of domestic animals has influenced hunting is not known. Regardless, income earned from selling meat from domestic animals could generate income.

3 SOCIAL MANAGEMENT

3.1 Permanent consultation process between the FDA and the BCFMB

This plan calls for quarterly meetings between the BCFMB and the FDA. The technical manager of the Department of Community Forestry of the FDA will always be invited to these meetings, along

with representatives of the Commercial Departments. Such a gathering is expected to create a platform for open and quality discussion about a range of resource management planning, administrative and institutional issues and challenges that are bound to emerge. People in the community, for example, may seek advice in an informal fashion for technical forest management activities they may want to undertake such as resource inventory, nursery establishment management and agro-forestry. Dialogues of this nature could help address these and related issues and concerns.

3.2 Benefit sharing

The BCFMB shall establish a benefit sharing committee that will be responsible for developing rules and systems to ensure fair and equitable benefit sharing of resources.

This benefit sharing committee's ultimate objective would be to develop, test and transparent, fair and simple processes by which the benefits of sustainable and profitable forest management and use are clearly defined and shared equitably. Specific tasks are to: define the sources or streams (timber harvesting, permits, ecosystem services, etc); how they will be shared within and between households, individuals, the FDA and community; and develop proper procedures for reporting, auditing and monitoring benefit streams. This will require the facilitation and support of the FDA and other resource providers.

4 FOREST RESOURCES

4.1 Zonation of Forest

This section describes the major ecological zones found in Bluyeama, namely: dense forest, secondary, and old growth forests. A map of these zones is presented in Figure 1 below.

4.1.1 Swamp forest

Small patches of this forest type are located in relatively lower elevations and some are being used for swamp rice production. This forest is dominated by hydrophilic tree species such as Abura (*Mitragyna ciliata*) and Niangon (*Heitiera utili*). In total, swamp forest covers about 1000 hectares and accounts for 0.3% of Bluyeama.

4.1.2 Secondary successional forest

These forests, which are in varying stages of succession, are found at lower elevations and are characterized by rich top soils on which shifting cultivation has been practiced. On the basis of existing vegetation, these secondary forests can be categorized as: (1) recently farmed (1-2 years ago) and dominated by grasses, herbs and shrubs; (2) areas fallowed about 5-10 years ago, largely populated by herbs and shrubs, with minimal grass cover; and (3) areas cleared more than 10 years ago that have some trees of pole size along with herbs and shrubs in the understory.

In forests that have been fallow for more than 10 years, pioneering species such as *Xylopia* (*Xylopia quintasi*) and *Musanga* (*Musanga cecropioides*), among other. Scattered trees of pole size are found in this type of forest as well as few trees more than 60cm or more in diameter that have not been felled by agriculturalists because of their size. Tracks of huge logging equipment such as trucks and bulldozers as well as the stumps of trees felled 20 or more years ago are evident in some parts of this forest type. This confirmed reports from nearby residents that some parts of Bluyeama had been logged but there is good regeneration in these areas. The secondary forest is estimated at 40.0% of the forest.

4.1.3 Old growth/high forest

The old growth forest type has remained intact largely out of benign neglect. Few patches are found on other slopes that are relatively lower and these have not been either farmed or logged. Dominant timber tree species are Dahoma (*Piptadeniastrum africanum*), *Chrysophyllum* spp., *Chidlowia sanguinea*, and Ekki (*Lophira alata*). The old growth forest occupies about 20.0% of Bluyeama forest.

5 MANAGEMENT OF THE FOREST

This section describes the current types of forests and the various forest resources found in the Bluyeama forest. It provides an overview of current conditions and a summary of proposed management actions. Tables 4 and 5 at the end of this section, summarize this information by forest zone.

5.1 General management approach

The term "management," as used in this plan, refers to how rural people harvest, use, care for, reproduce, and improve their forest resources including trees, wild animals, water, and plants.

There has been limited management of the Bluyeama Forest in recent memory. Management could be characterized as one of open use and open access. Preliminary information has been collected regarding the resources and the use therein, but much more information needs to be collected in order to ensure the sustainable use and management of the Bluyeama Forest resources. **Accordingly, this management plan will focus on information collection, development of best practices, the development of rules for use of forest resources, and monitoring the results of these practices.**

Under the CRL, a management plan is a requisite for FDA's approval of a community's right to manage a given forest. A management plan, however, is not a static document, but rather a dynamic and flexible set of actions to guide towards managing targeted resources.

The design and implementation of this management plan is an ongoing process that must remain consultative so that local knowledge is integrated in its design and execution. An Action plan for the first five years is presented in Attachment G, but is provided for guidance purposes only as management of the forest should adapt to the changing circumstances.

5.2 Demarcation and boundary maintenance

5.2.1 Current description.

There have been relative calm in this community for many years. The only major land dispute stems from the confusion in determining the exact border separating the Belle clan area caused by the creation of the Gbapulo County. In the midst of this however, no conflict ensued during the forest demarcation that was not amicably resolved by the community elders.

5.2.2 Management actions.

The boundary of the Bluyeama forest will need to be re-cleared twice a year. Trees, such as rubber, cocoa and other trees with potential commercial value will be planted along the boundaries to create a visual boundary and to provide supplementary income to the BCFMB. Signs indicating where the boundary is located and depicting the boundaries will be erected in strategic locations. The Committee on Forest Protection and Rules Enforcement (Bluyeama Rangers) will have primary responsibility for implementing management actions associated boundary demarcation and maintenance.

the establishment of permanent sample plots which can be used to assess growth rates, and better understand the ecology of the Bluyeama forest. The CFMB will be supported in this by the FDA

Secondary forests: In order to improve the stand quality in these areas, selective harvesting will be permitted in these areas. However, harvesting will only be conducted after a permit is obtained and approved by the BCFMB and an operation plan filed. This will also require the calculation of an annual allowable cut, along with a series of reconnaissance to identify and mark the timber tree species that are to be harvested. Here too, simple harvesting and processing equipment and low-impact harvesting methods will be used limit damage to the remaining stand and minimize to waste. The selection of trees for harvesting will be done such that trees with straight and tall stems and no signs of pest and disease attacks remain to provide a strong gene pool for the next generation of trees in the forest.

Agro-forestry techniques will also be used to provide livelihood alternatives and to demarcate boundaries of the forest. Tree crops such as citrus, mango, cocoa and coffee, along with NTFP (e.g. *Griffonia simplicifolia*, Grain of Paradise) will also be introduced in the secondary forest areas. Areas will be identified by the Committee on Agro-forestry which will take the lead on identifying areas, establishing nurseries and establishing agro-forestry systems in the secondary forest areas and buffer areas.

Swamp forest: As a freshwater swamp, this compartment is a type of wetland and as such, serves as habitat for fish, mammals, and other types of aquatic life. It also is a critical watershed supporting many creeks, streams and rivers in this and adjacent communities. Given this, the only management option proposed for these zones are protection against fishing, logging, farming and mining.

5.4 Fire management

5.4.1 Current description

Fire is used in hunting and for site preparation in shifting cultivation. Fire as a threat to forest and biodiversity resources was identified during a 2011 field reconnaissance of Bluyeama. However, because of the importance of fire in the shifting cultivation system, many locals do not perceive it as an important threat. However, without further study, this cannot be determined.

5.4.2 Management actions

While being a useful management tool for agriculture, fire can also represent a threat to forests. Management activities will include rules development, education and awareness of the community regarding the danger that fire poses to the forest. The Membership and Rules Committee will develop rules regarding the use of fire in the managed forest and its buffer zone. Education and awareness of the rules will be disseminated through media such as signage, community meetings and other specific actions determined by the rules committee. Enforcement will be pursued through patrols, fines, and other forms of penalty. The BCFMB will also work with other stakeholders in the region to support ecological studies to assess the impact and role of fire on the landscape.

5.5 Water management

5.5.1 Current description

Traditionally in communities around Bluyeama, codes of conduct set aside certain creeks, streams and rivers as sacred where fishing, swimming, and fetching water are forbidden. However, these bodies of water are a fraction of existing ones and in almost all cases, the code is no longer respected. There are

many creeks and rivers that are littered with logs and other debris felled for shifting cultivation or as a result of road construction from concession operations.

In Liberia, in general, and in the Bluyeama Community in particular, management of rural water supply for the purposes of water sanitation, hygiene, and delivery systems for drinking water and so on does not exist. As a large percentage of the local population depends on water bodies as their primary water source, the protection of watersheds is vital.

5.5.2 Management actions

FDA rules state that a buffer strip of 20 meters should be left along the banks of rivers, creeks, and streams bordering farms. In practice, there are no such strips along riverbanks in Bluyeama where farming is taking place. The first action is to draft and enforce rules to protect watersheds that drain from or pass through Bluyeama, specifically establishing buffer strips of about 30 meters along the banks of creeks, streams, and rivers and establishing rules about depositing wastes. All water bodies shall be protected against water fencing and the use of chemical or organic poisons as fishing methods. Education and awareness campaigns will support enforcement of these rules through signage at critical sites and education.

5.6 Management of wildlife (animals and plants)

5.6.1 Current description

Conservation of flora and fauna is accomplished through taboos or social restrictions placed on the collection and harvesting of certain animal and plant species (out of tradition or a sense of scarcity). In the Bluyeama community, the local tribes, specifically, the Lorma, maintain binding norms to which members adhere. In particular, there are taboos that protect various habitats or animal species because some clans forbid members from hunting and eating such animals. Others prohibit certain types of hunting and fishing practices in some parts of the forest and in creeks and rivers.

Many clans reserve sacred groves where hunting and cutting of trees is forbidden because they believe ancestral or evil spirits reside in those areas. Such cultural traditions and beliefs can contribute to the protection of fauna and flora but are not sufficient to stem the tide of people's needs as culture erodes and population explodes while forest cover depletes. There is widespread acknowledgement in this community that large mammals and commercial timber tree species are fast depleting because of overexploitation, the result of uncontrolled hunting and destructive logging.

The community did not identify any premium timber species that are overexploited or endangered but provided a list of non-timber plant-based species that will require future management in order to avoid over-exploitation. These include griffonia (*Griffonia simplicifolia*), black pepper (*Piper nigrum*), xylopia (*Xylopia quintasii*), wolor (*Beilschmiedia manii*), rattans, wild oil palm (*Elaeis guineensis*), walnut, mat straw, and raffia. Listed also under this category were other species valued for their medicinal uses, spices, animal food and other use categories such as *Ricidodendron heudelotii*, *Ongokea gore*, *Afrosia cidacia*, *Mamea africana*, *Parkia bicolor*, *Fagara macrophylla* (Gayelee for drum), *Bussea occidentalis*, wild yam, mushrooms, bamboo, bitter cola, raffia palm and palm thatch.

5.6.2 Management actions

The Membership and Rules Committee will work closely with the Committee on Forest Resource Management to develop a permitting system, collect data, and develop rules related to wildlife and NTFP.

The first step will involve setting up a permitting system that will allow the BCFMB to monitor the users accessing the forest for various resources. The Committee on Forest Resource Management will be responsible for developing the permitting and reporting systems with support from FDA and others.

Permit holders will not initially be required to pay a fee, but they will be required to report on their activities. This will allow the committee to better understand what is being extracted from the forest and in what numbers to inform the rules development process. This will also serve as a monitoring system.

The Membership and Rules Committee will develop initial rules and will support the Committee on Forest Resources Management to create awareness around the rules. They will also be responsible for developing signage and creating awareness for the rules in the community. Within a year, more comprehensive rules will be developed based on data collected from the permitting system. Rules will be updated annually as the community gathers more information through the permitting system.

Where regulations or laws have been broken, violators will be immediately reported to FDA for enforcement. Enforcement will be through patrol and issuing of fines and/or revocation of permits. Violations of BCFMB rules, will be dealt with by penalties approved by the BCFMB.

In addition, certain NTFP that can be cultivated, will be introduced into gardens to reduce the pressure on wild resources. *Camwood* is one such resource that has already been domesticated and introduced into the community and has the potential to provide income to cultivators. Cultivation of plant-based NTFPs can take several forms, including commercial plantations, smallholder cultivation (fallow farming, home gardens, etc), and enrichment planting in forest areas. The CFMB will seek support for these activities from the FDA and other experts. This will be the responsibility of the Agro-forestry Committee

5.7 Mineral prospecting and mining

5.7.1 Current description

Artisanal and industrial mining for diamond and gold, respectively, are a major activity around Bluyeama, but there is limited evidence of mining or mineral prospecting within the boundaries of the forest.

5.7.2 Management actions

Mining of any kind in Bluyeama and its buffer zone shall be forbidden until rules have been developed.

5.8 Fisheries management

5.8.1 Current description

In the project area and its surrounding communities fishing will be monitored and limited until rules are formulated.

5.8.2 Management actions

This plan intends to establish rules that regulate current fishing methods in communities around Bluyeama, which include damming, poison (organic, inorganic), and the use of fine mesh nets. Such unsustainable fishing practices will be totally banned and monitoring systems put in place to ensure

compliance and the apprehension of offenders. A permitting and reporting system may also be considered in order to understand the resource better and to revise rules accordingly.

5.9 Education and awareness

5.9.1 Current description

Currently, a number of education and public awareness activities have been undertaken in pilot communities. This effort has been quite limited and much is left to be done to broaden and deepen the level of education and awareness. A critical aspect of successful public participation in the use and management of a common property resource is creating an atmosphere in which the relevant stakeholders are aware of and understand community forestry activities so that they can contribute to and own the process.

5.9.2 Management actions

Education and awareness is critical to the success of the management plan implementation. BCFMB will work with the FDA to develop an overall education and awareness approach. This could involve organizing training in facilitation and management skills for selected individuals in the community. Community Assembly, chiefs, opinion leaders, teachers, media/the local press. Media used for education efforts will include radio/cultural performances, billboards, posters and handouts. The various committees will be responsible for developing materials and coordinating with the BCFMB to maximize education, awareness and outreach efforts.

5.10 Enforcement of rules and monitoring

5.10.1 Current description

In addition to the laws of the Liberian government and specific regulations of the FDA related to forests, there are traditional rules that have served to protect a range of biological resources (animals, plants). These rules have regulated shifting farming, mining, poison fishing, uncontrolled hunting, trapping, and logging, but are, by and large, no longer enforced because of the breakdown in traditional systems as the result of war and the mistrust and the cultural erosion that ensued. Since 2005, there has been no effective enforcement of rules and result-oriented monitoring in and around Bluyeama by either the FDA or the community.

5.10.2 Management actions

While efforts will focus primarily on education and awareness, a certain amount of enforcement will be necessary. Management actions will be the primary responsibility of the enforcement committee, but they will need to work closely with community educators and the Rules Committee. In and around the Bluyeama Forest and its buffer zone, enforcement shall be carried out by patrols of trained forest guards. Training of these guards and establishing patrol routines will comprise the focus of management actions under this component. Special emphasis will be placed on distinguishing between BCFMB rules (which will be dealt with at the community level) and violations of Liberia law (which will be dealt with by FDA or the appropriate authority). In addition, special emphasis shall be placed on maintaining the road infrastructure that will be developed by our commercial logging partner.

Table 3: Summary of Management Action for areas zoned as Old Growth Forest

Zones	Forest Condition	Area [ha]	Management Conditions	Mgmt Actions	Issues	Opportunities	Management Goal
P1-P2	Primary Forest	20,000 ha.	<ul style="list-style-type: none"> • Flat topography • Difficult access • Located far from villages so difficult to monitor activities therein 	Timber	<ul style="list-style-type: none"> • Some illegal harvesting is taking place 	<ul style="list-style-type: none"> • Some big timber trees that could be selectively harvested 	<ul style="list-style-type: none"> • Preservation of critical habitat • Tree stand improvement
				NTFP	<ul style="list-style-type: none"> • Harvesting common 	<ul style="list-style-type: none"> • Medicinal plants and other household products • Some products with commercial value 	<ul style="list-style-type: none"> • Establish quotas for NTFP collection • Monitor compliance through permitting system • Eliminate illegal collection methods through rules development, education and enforcement
				Fire	<ul style="list-style-type: none"> • Used to prepare agricultural sites adjacent to the old growth area 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Zone areas where clearing will be allowed in the buffer zone • Prevent clearing in non-permitted areas • Develop rules for fire management
				Water	<ul style="list-style-type: none"> • Some misuse of water resources • Destructive fishing practices • 	<ul style="list-style-type: none"> • Extensive water resources 	<ul style="list-style-type: none"> • Draft and enforce rules to protect watersheds
				Wild Animals	<ul style="list-style-type: none"> • Extensive hunting • Threatened chimpanzee population 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Establish rules and quotas for hunting • Monitor compliance through patrols and record keeping • Eliminate illegal hunting methods
				Minerals	<ul style="list-style-type: none"> • Artisanal mining for diamonds and iron ore 	<ul style="list-style-type: none"> • Mining company may provide remediation & community development support 	<ul style="list-style-type: none"> • No mining activities for first five years of plan implementation • Ensure that environmental damage from mining activities minimized

6 RECORDS AND REPORTING

6.1 Records on animals observed in or around the forest.

Records will be kept as part of the monitoring and evaluation system and as standard operating procedures for the organization. Once a year, the BCFMB will organize bio monitoring. This data was entered into a database and annual data can be entered to track changes over time.

The BCFMB will also be setting up a permit system for hunters and non-timber forest gatherers. As part of that permitting system, permit holders will be required to report on animal sightings along with number of animals killed by hunters. For this purpose, a record document sheet shall be prepared and handed over to individuals who will be tasked with undertaking this activity.

6.2 Records on trees and other plants seen in the forest

The inventory will be conducted in 12 to 14 years in anticipation of the development of the next forest management plan. In the interim, permanent sample plots will be established in the old growth and secondary forest areas to assess growth and yield rates. Information collected from the permanent sample plots will be shared with the FDA for analysis.

Information gathered from rules development on NTFP will also be maintained in the records of the BCFMB.

6.3 Reporting.

Three types of reports are expected to be made to designated committees in a given time interval. These are reports on unauthorized incidences (e.g. Wildfire, traps, chainsaw logging, new trails in/around Bluyeama, water fences, etc), minutes of meetings on the various aspects of forest resource use and management (including protection for which patrols will be needed, maintenance of boundary lines, etc) and progress reports to the Community Assembly. For reports on unauthorized incidences, a patrol book will be used to catalogue such events.

7 COMMITTEES

The BCFMC has committed to organizing the following five (5) committees listed below in order to support implementation of this plan.

7.1 Committee on benefit sharing and conflict management

This committee will be responsible for mediating conflicts arising from implementation of this management plan. Members of this committee will seek out and receive specialized training in conflict management and mitigation. This committee will also be responsible for developing the benefit sharing scheme outlined under Section 4.2.

7.2 Committee on Agro-forestry systems and component technologies

The management plan call for the introduction of agro-forestry systems, particularly in the buffer zones and in secondary forest areas. This committee will be responsible for identifying and managing sites agro-forestry stites.

7.3 Committee on forest resources management and use

This committee is charged with ensuring the sustainable harvesting and management of non-timber and timber forest-based products. In consultation with the FDA, this committee will be responsible for developing specific prescriptions for stands within the Bluyeama Forest. This may include: removal of matured and over-matured trees to liberate preferred undergrowth species, selecting the level of harvesting and processing technology that is at par with the capacities of the membership of the committee and other members of the community. This committee will also be responsible for issuing harvesting permits and for maintaining harvest records. The committee will seek technical assistance in these matters from FDA and other partners.

7.4 Membership and Rules Committee

The membership committee will be responsible for recruiting members within the community to be general members of the BCFMB. Members of the committee will also be point people within their specific towns and villages. This committee will also be responsible for developing rules for implementation of this management plan. This includes rules on NTFP harvesting, hunting and other rules deemed necessary to implement this plan. This committee will also need to work closely with the BCFMB and the Committee on forest protection and rules enforcement to design education and awareness initiatives to promote awareness of the rules that are developed.

7.5 Committee on forest protection and rules enforcement

This committee will be responsible for rules enforcement. This will include management of the forest guards, organizing patrols, reporting to the CFMB on violations, and liaising with FDA to for enforcement. In addition, this committee shall establish guidelines for road usage and maintenance of roads once built within the forest area. In addition, this committee will be responsible for developing education and outreach materials to ensure that information is disseminated and understood by the community. This committee will also have primary responsibility for the boundary demarcation activities.

8 MONITORING AND EVALUATION

Monitoring and evaluation is a critical component of the management plan and will ensure the sustainability. A number of on-going management activities will provide the basis for monitoring and evaluation (M&E) so that M&E is integrated into management and not seen as a stand alone activity. These activities are listed below with reference to their descriptions in other sections of this document.

- The number of unauthorized incidences in and around the boundaries of the managed forest will be reported by forest guards and patrols. This information will also be supplemented by information collected by hunters and NTFP permit holders (see Section 6.6.2)

- The number of wild animals sighted or tracked in and around the forest will be monitored through the annual bio monitoring exercise (see Sections 6.6.2 and 7.1) and from records gathered from hunter and NTFP permit holders.
- The types and degree of vegetation changes will be monitored and evaluated through the establishment of permanent sample plots. Information collected will be shared with the FDA for analysis (see Sections 6.3.2 and 7.2).
- Audits of the CFMB will be conducted internally on an annual basis to ensure that all records are in place. A checklist of documents and records will be developed for ease in this exercise.
- The plan will be reviewed at the end of five years to assess the progress of the plan. If necessary, the plan will be revised at that time. Annual action plans will be developed and progress toward annual objectives will be assessed by the FDA and BCFMB on an annual basis at the annual meeting of the BCFMB.

9 PLAN IMPLEMENTATION

Successful implementation of this plan will require a dedicated core of volunteers in the Bluyeama community, general community acceptance and commitment, and cooperation and buy in from the FDA and the local government in Lofa County. The FDA and other organizations and stakeholders will also play an important role in plan implementation. Attachment C includes a table outlining key activities and specific tasks, along with the parties responsible for actions and the proposed deadline.

Attachment C presents proposed activities for the first five years of implementation based on the management actions presented in Section 6. While some of the proposed activities have already been accomplished, implementation of most of what is outlined here shall begin effectively immediately after FDA's approval of the plan. Some activities will be supported through funds generated from the BCFMB. All the sources of this income are yet to be determined and will depend on the recommendations of the Benefit Sharing Committee. Potential sources of income include the following: land rental fees and assessments for commercial logging rights, sale of plant-based NTFPs from CFMB nurseries; permit fees; membership fees; user fees; penalties and fines.

10 REFERENCES

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11 ATTACHMENTS

Attachment A 1 Metes and bounds

Attachment A 2.....Area map

Figure 1.....Zonation Map

Attachment B.....Master Tree list

Attachment C..... Proposed activities. *see temp AOP(AOP)

ATTACHMENT A-1

2. Metes and Bounds/Technical Description of Bluyeama Community Forest Land

Commencing at a point marked (UTM 29N 0414526-0868512); thence a line runs Due-West for 13,197 meters to a point (401429 N- 868511 W); thence a line runs S 64° W for 12,619 meters to a point (390076 N- 862855 W); thence a line runs S 30° W for 6,369 meters to a point (386878 N- 857345 W); thence a line runs S 24° W for 2,542 meters to a point (387862 N- 855033 W); thence a line runs Due-East for 2,834 meters to a point (390651 N- 855010 W); thence a line runs N 67° E for 2,199 meters to point (392831 N- 855918 W); thence a line runs N 72° E for 2,006 meters to a point (394750 N- 856509 W); thence a line runs Due-East for 3,257 meters to a point (397873 N- 856510 W); thence a line runs S 71° E for 2,328 meters to a point (399929 N- 855788 W); thence a line runs S 58° E for 1,937 meters to a point (401484 N- 854844 W); thence a line runs S 51° E for 3,217 meters to a point (404040 N- 852788 W); thence a line runs S 75° E for 3,673 meters to a point (407707 N- 851788 W); thence a line runs S 62° E for 8,800 meters to a point (415461 N- 8847604 W); thence a line runs S 76° E for 1,354 meters to a point (416888 N- 847260 W); thence a line runs S 52° E for 1,506 meters to a point (418019 N- 846325 W); thence a line runs S 78° E for 7,790 meters to a point (425763 N- 844621 W); thence a line runs N 64° E for 2,402 meters to a point (427874 N- 845677 W); thence a line runs N 9° W for 7,670 meters to a point (426651 N- 853288 W); thence a line runs N 84° W for 5,614.5 meters to a point (421096 N- 853899 W); thence a line runs N 16° W for 2,597 meters to a point (420331 N- 856509 W); thence a line runs N 45° W for 5,025 meters to a point (416740 N- 860100 W); thence a line runs Due-North for 4,864 meters to a point (416762 N- 864955 W); thence a line runs N 32° W for 4,021 meters to the point of commencement (UTM 29N 0414526-0868512) embracing a total area of 49,444 hectares and no *MORE*.

ATTACHMENT B

Bulueyama Community Forest Management Plan: October 2011

ATTACHMENT B: Master list of tree species found in Liberia

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
AFRA	<i>Afrosorsalisia afzelii</i>	Akuedao
AFZ	<i>Afzelia</i> spp (bella africana)	Doussie (Afzelia Apa)
ALB	<i>Albizia</i> spp	Albizia
ALBA	<i>Albizia adianthifolia</i>	Albizia, Zu-nass
ALBF	<i>Albizia ferruginea</i>	Musase
ALBZ	<i>Albizia zygia</i>	Albizia, Musase, Zygia
ALSB	<i>Alstonia boonei</i>	Emien, Alston, Duku
AMPP	<i>Amphimas pterocarpoides</i>	Lati (Bokango)
ANI	<i>Aniseia</i> spp	
ANIR	<i>Anigeria robusta</i>	Aningre (Annegre)
ANN	<i>Annickia</i> spp	
ANOK	<i>Anopyxis klaineana</i>	Kokoti, Bodia
ANTA	<i>Antiaris africana</i>	Ako
ANTC	<i>Anthonotha crassifolia</i>	Anthonotha
ANTF	<i>Anthonotha fragrans</i>	Anthonotha (Kibokoko) (Ako)
ANTM	<i>Antrocaryon micraster</i>	Antrocaryon
ANTN	<i>Anthocliesta nobilis</i>	Cabbage Tree
ARAS	<i>Araliopsis soyauxii</i>	Araliopsis
ARAT	<i>Araliopsis tabouensis</i>	Araliopsis (Grenian)
ATAC	<i>Ataenidia conferta</i>	Ataenidia
AUBP	<i>Aubrevillea platycarpa</i>	Biethi, Klekle
BEIB	<i>Beilschmiedia bitehi</i>	Beilschmiedia
BEIM	<i>Beilschmiedia mannii</i>	Kanda (Tawa)
BERC	<i>Berlinia confusa</i>	Pocouli (Ebiara)
BOMBR	<i>Bombax brevicuspe</i>	Bombax br
BOMBU	<i>Bombax buonopozense</i>	Bombax bu
BRAL	<i>Brachystegia leonensis</i>	Naga
BRIG	<i>Bridelia grandis</i>	Doandoh
BUSO	<i>Bussea occidentalis</i>	Samanta
BUST	<i>Bussea thurifera</i>	Nomotcho
CAL	<i>Calpocalyx</i> spp	
CALA	<i>Calpocalyz aubrevillei</i>	Badio (Calpocalz)
CANS	<i>Canarium schweinfurthii</i>	Aiele
CARP	<i>Carapa procarpa/grandiflora</i>	Carapa
CAS	<i>Cassipourea</i> spp	Cassipourea
CEIP	<i>Ceiba pentandra</i>	Ceiba (Fromager)
CEL	<i>Celtis</i> spp (aldolfi-friederiei)	Celtis (Lokenfi)
CHIS	<i>Chidlowia sanguinea</i>	Bala
CHL	<i>Chlorophora</i> spp	Chlorophora
CHLR	<i>Chlorophora regia</i>	Iroko (Odum Kambala)
CHR	<i>Chrysophyllum</i> spp	Akatio (Longui)
COLE	<i>Cola edulis</i>	
COLG	<i>Cola gigantean</i>	Cola (chewing stick) (sra)
	<i>Combretodendron</i>	
COMM	<i>macrocarpum</i>	Abale
COPS	<i>Copaifera salikounda</i>	Etimoe
COU	<i>Coula</i> spp	
COUE	<i>Coula edulis</i>	Coula
CRYT	<i>Cryptosepalum tetraphyllum</i>	African Pine (Pantu)

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
CYNA	<i>Cynometra ananta</i>	Apome
DAC	<i>Dacryodes</i> spp	
DAC	<i>Dacryodes</i> spp	
DACK	<i>Dacryodes klaineana</i>	Monkey plum
DANT	<i>Daniella thurifera</i>	Faro
DIA	<i>Dialium</i> spp	Dialium
DIAA	<i>Dialium aubrevillei</i>	Kropio (Eyoum)
DIDA	<i>Didelotia afzelii</i>	Didelotia a
DIDB	<i>Didelotia brevipaniciata</i>	Didelotia b
DIDI	<i>Didelotia idea</i>	Bondu
DIO	<i>Diospyros</i> spp	
DIOA	<i>Diospyros abyssinica</i>	Diaspyros
DIOS	<i>Diospyros sanzaminika</i>	Ebony
DISB	<i>Distemonanthus benthamianus</i>	Movingui
DRY	<i>Drypetes</i> spp	
ELAG	<i>Elaeis guineensis</i>	Palm tree (oil palm)
ENAP	<i>Enantia polycarpa</i>	Enantia
ENTA	<i>Entandrophragma angolense</i>	Tiama (Edinam)
ENTCA	<i>Entandrophragma candollei</i>	Kosipo (Abourd Kro)
ENTCY	<i>Entandrophragma cylindricum</i>	Sapele (Sapelle Aboudikro)
ENTU	<i>Entandrophragma utile</i>	Sipo (Utile)
ERY	<i>Erythrophleum</i> spp	Tali
ERYI	<i>Erythrophleum ivorensis</i>	Tali (Sassawood)
ERYM	<i>Erythroxyllum mannii</i>	Landa
FAGM	<i>Fagara macrophylla</i>	Olondu
FICA	<i>Ficus abutilifolia</i>	Ficus
FUNE	<i>Funtumia elastica</i>	Funtumia (Mutundu)
GARI	<i>Gardenia imperialis</i>	Gardenia
GARK	<i>Garcinia kola</i>	Garcinia kola
GILP	<i>Gilbertiodendron preussii</i>	Limbali
GLUI	<i>Gluema ivoransis</i>	Adiepingoa
GUA	<i>Guarea</i> spp	
GUAC	<i>Guarea cedrata</i>	Bosse
GUIE	<i>Guibourtia ehie</i>	Amazakoue (Bubinga)
HALC	<i>Hallea ciliata</i>	Abura (Bahia)
HANK	<i>Hannoa klaineana</i>	Hannoa (Effeu)
HAPM	<i>Haplormosia monophylla</i>	Black gum (Idewa)
HARM	<i>Harungana madagascariensis</i>	Harungana
HERU	<i>Heritiera utilis</i>	Niangon (Whismore)
IRVG	<i>Irvingia Gabonensis</i>	Irvingia
KEEB	<i>Keetia bridsoniac</i>	Keetia
KHAA	<i>Khaya anotheca</i>	Khaya (Acajou blanc)
KHAI	<i>Khaya ivorensis</i>	Khaya
KLAG	<i>Klainedoxa gabonensis</i>	Klainodoxa (Eveuss) (kroma)
LOEK	<i>Loesenera kalantha</i>	Loesenera
LOPA	<i>Lophira alata</i>	Ekki (Azobe)
LOV	<i>Lovoa</i> spp	
LOVT	<i>Lovoa trichilioides</i>	Lovoa (Dibetou) (African Walnut) (sra)
MAC	<i>Macrocarpum</i> spp	Abale (Macrocarpum spp)
MACB	<i>Macaranga barteri</i>	Macarana
MAEB	<i>Maesobotrya barteri</i>	Cherry
MAMA	<i>Mammea africana</i>	Mammea (Oboto)

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
MAN	Manilkara spp	
MANA	Mansonia altissima	Mansonia (Bete)
MANL	Manilkara lacera	Manikara
MANM	Manilkara multinervis	Kpangkum
MANO	Manilkara obovata	Duka (false Makore)
MARA	Maranthes aubrevillei	Maranthes
MEM	Memecylon spp	
MONC	Monopetalanthus compactus	Ekop
MONS	Monopetalanthus spp	Monopetalanthus
MUSA	Mussaenda afzelii	Mussaenda
MUSC	Musanga cecropioides	African corkwood
MYR	Myrianthus spp	
MYRA	Myrianthus arboreus	Myrianthus
MYRL	Myrianthus libericus	
NAUD	Nauclea diderrichii	Kusia (Bilinga Opepe)
NESP	Nesogordonia papaverifera	Danta (Kotibe)
NEW	Newtonia spp	Newtonia
NEWA	Newtonia aubrevillei	Pellegrin
OLDA	Oldfieldia africana	Oldfieldia (Dantoue)
ONGG	Ongokea gore	Angueuk (Kuwu)
PACB	Pachystela brevipes	Bokulolo
PACS	Pachypodanthium staudtii	Ntom
PAR	Parinari spp	
PARB	Parkia bicolor	Parkia (Lo)
PARE	Parinari excelsa	Parinari (Songue)
PEN	Pentadesma SPP	
PENB	Pentadesma butyracea	Timber-lacewood
PENM	Pentaclethra macrophylla	Oil-bean tree
PERE	Pericopsis elata	Afromosia
PIPA	Piptadeniastrum africanum	Dahoma
PROM	Protomegabaria macrophylla	Protomegabaria
PTEH	Pteleopsis habeensis	Pteleopsis
PTEM	Pterygota macrocarpa	Koto (Ake)
PYC	Pycnanthus spp	Raphia
PYCAF	Pycnanthus africanus	Ilomba
PYCAN	Pycnanthus angolensis	Pycnanthus
RAPV	Raphia vinifera	Piassava
RHOB	Rhodoguaphalon brevicuape	Alone (Kondrotti) (Bombax) (Kapokier)
RICH	Ricinodendron heudelotii	African Oil tree
SAB	Sabicea spp	Abobonkahyire
SACG	Sacoglottis gabonensis	Ozouga
SAMD	Samanea dinklagai	Monkey Pod
SANL	Sansevieria liberica	Africana Hemp
SCOC	Scortella coriacea	Scortella
STA	Stachyothyrsus spp	
STE	Sterculia spp	Sterculia
STEO	Sterculia oblongata	Sterculia o
STR	Stremphonema spp	
STRG	Strombosia glaucescens	Afina
STRO	Strombosia spp	
STRP	Strombosia pustulata	
SYMG	Symphonia globulifera	Symphonia

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
SYN	Synsepalum spp	
SYND	Synsepalum dulcificum	Sweet Berry
TERI	Terminalia ivorensis	Framire (Baji Emire)
TERS	Terminalia superba	Frake, Limbali
TETT	Tetraberlinia tubmaniana	Tetra (Sikon)
TIEH	Tieghemella heckelii	Makore (Baku Douka)
TREG	Trema guieensis	Trema
TRID	Trichilia djaloni	Trichilia d
TRISC	Triplochiton scleroxylon	Obeche (SambaWawa)
TRISP	Trichilia splendida	Trichilia s
TRIT	Trichilia tessmannii	
TURA	Turraeanthus africanus	Avodire
UAP	Uapaca spp.	Uapaca
UNK	Unknown	Unknown
UVA	Uvariastrum spp	
UVAP	Uvariastrum pierreanum	
VEP	Vepris spp	
VIT	Vitex spp	Vitex
VITC	Vitex chrysocarpa	Vitex c
VITM	Vitex micrantha	Vitex m
VOCA	Voacanga africana	Voacanga
XYL	Xylopiia spp	Xylopiia
XYLA	Xylopiia aethiopica	Guinea Pepper Tree (Okala), Xylopiia
XYLE	Xylia evansii	Dan (Mano)
XYLI	Xylia spp	Xylia
XYLQ	Xylopiia quintasii	Xylopiia q
XYLR	Xylopiia rubescens	
ZEHC	Zehneria capillacea	Zehneria