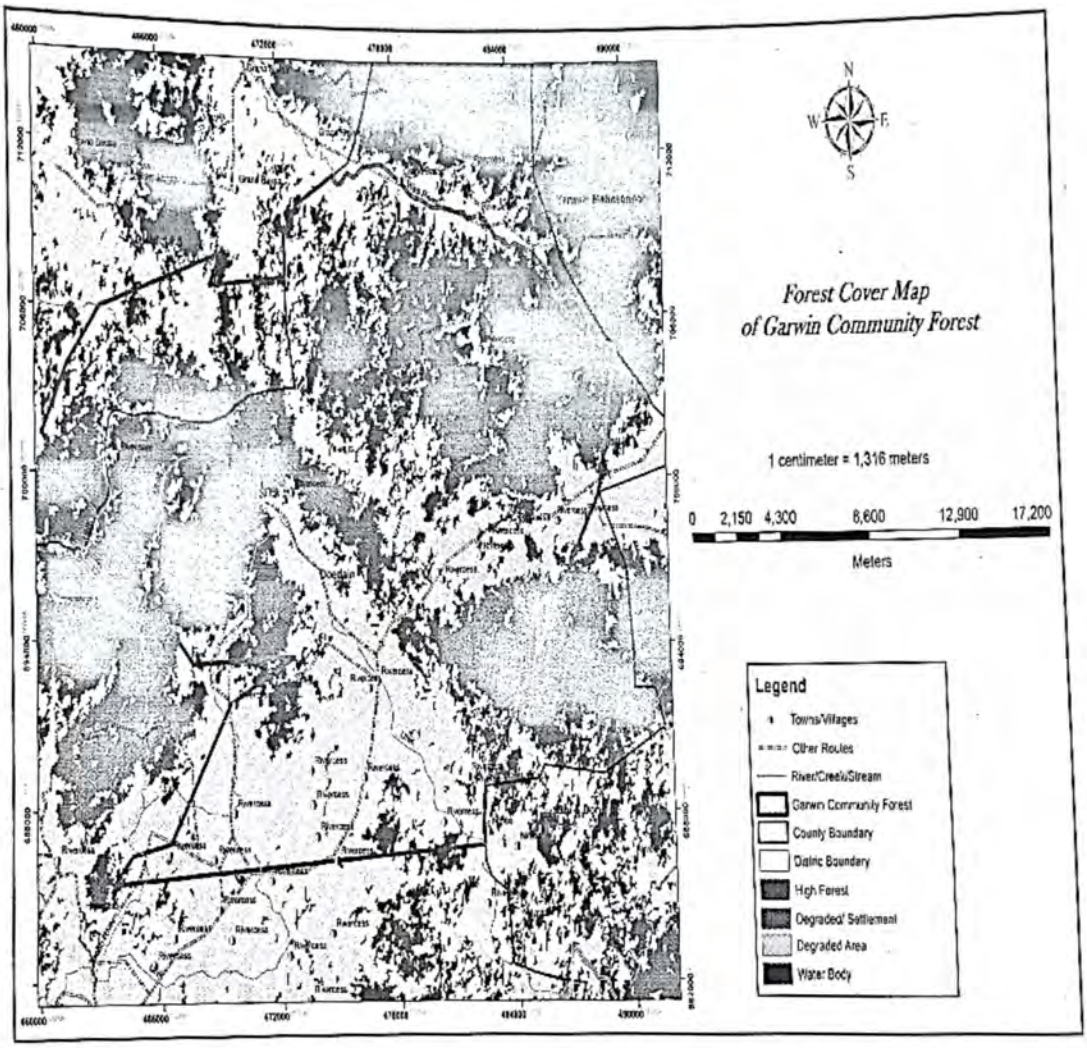
GARWIN COMMUNITY

FOREST MANAGEMENT PLAN
RIVER CESS COUNTY
REPUBLIC OF LIBERIA



SUBMITTED TO: FORESTRY DEVELOPMENT AUTHORITY
WHEIN TOWN
BERNARD FARM
PAYNESVILLE, LIBERIA

Acronyms and Abbreviations

CFMB	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
GCFMB	GARWIN Community Forest Management Body

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1 INTRODUCTION

1.1 Management Information:

Garwin Community Forest Community Forest Management Plan (GCFMP) by **the CFMB**, will address the sustainable harvesting of timber, protection other critical area such as water courses etc. as contained in the Liberia Code of Forest Harvesting Practices and the Community Forestry Rights Law and its implementing regulation (§3.2(b))

1.2 Mission Statement:

The Community Forest Management Body of the Garwin Community Forest will:

- To promote a sustainable and productive community forest by engaging in commercial forestry activities as a mean of job creation and infrastructural development.

1.3 Objectives

The primary objective of this plan is to manage the Garwin Community Forest (GCF) 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 Community Forest, zone its forest types, and define management action(s) for each zone;
- Assess and inventory the non-timber and timber resources of the 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 Garwin Forest.

1.3.1 Effective Date of the Plan & Duration

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

1.3.2 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 Garwin community.

2 General Overview of Institutional and Legal Frameworks

2.1 Institutional framework

In this management plan are the roles and responsibility of relevant local and national institutions with respect to Garwin community forestry.

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 Chapter 5 of the Community Rights Law, 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.

2.1.2. Community Forest Management Body

The Community Forest Management Body (CFMB) represents the interests of the Garwin communities and their Community Forest Management Bodies. The CFMB entered into a Forest Management Agreement with the FDA following the provision of information regarding the community, its management intent, the demarcation of the Garwin Forest, an inventory of its resources. The Management Agreement was signed on February 22, 2017 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 Garwin Forest;
- prepare and implement community forestry rules/guidelines for the Garwin Forest;
- conduct awareness raising activities in the community; and
- represent the community in all matters and negotiations related to the Garwin Community Forest

3.0 Garwin Forest Community

3.1. Demographics

The current population of Garwin is 11,813, consisting of 6200 females and 5613males. The forest is located in the Rivercess County in Bah & Zarque clans; there are about eighteen town and villages in and surround the community forest. The major ethnic group is Bassa.

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

3.1.2. Description of surrounding landscape and its management

An important part of a larger landscape consisting of primary forests, , rivers, flat land, and other natural features in Rivercess County.

The Forest itself comprises 36,637 hectares. A map of the area depicts the location of the Forest, along with the major towns, villages within the larger landscape of Rivercess County.

4.0. General Description of the Community Forest

4.1. Area and Location

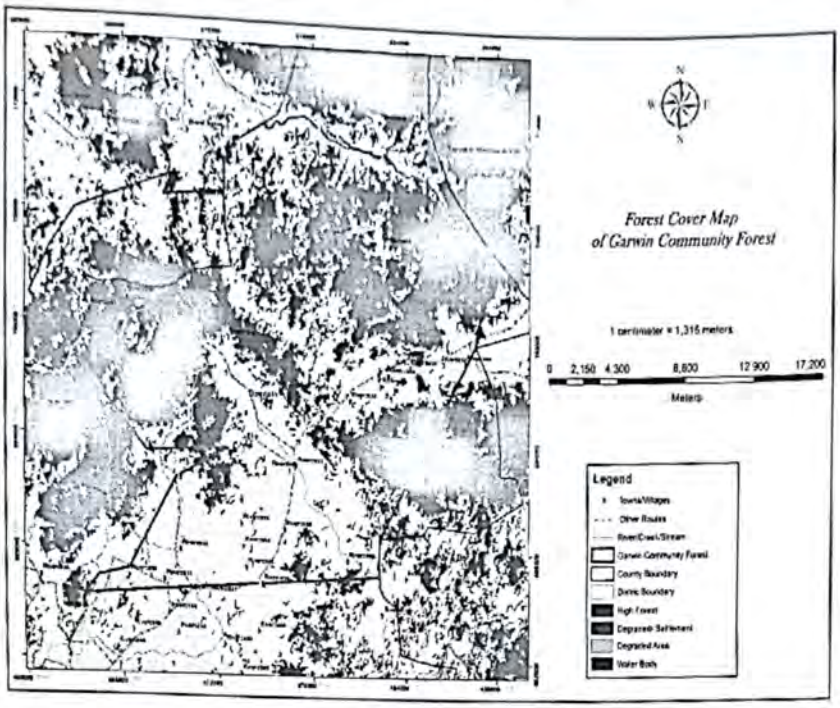
The Garwin Community Forest lies within Latitude 461655 710691 North of the Equator and Longitude 461655 684299 West of the Greenwich Meridian and it is located in Doedain District, Rivercess County, Liberia/West Africa.

Commencing at a point (482280- 686736) on the surface of the Earth; thence a line runs S 86° W for 18,990 meters to a point (463560- 685417); thence a line runs N 41° E for 1448 meters to a point (464515- 686415); thence a line runs N 76° E for 2,092 meters to a point (466487 – 686830); thence a line runs N 30° E for 5,955 meters to a point (469362 – 691771); thence a line runs N 62° E for 3,701 meters to a point (472608 – 693450); thence a line runs S 88° W for 5,311 meters to a point (467520 – 693172); thence a line runs N 42° W for 7,242 meters to a point (462782 – 698450); thence a line runs N 28° E for 161 meters to a point (462885 – 698650); thence a line runs N 50° E for 322 meters to a point (463178 – 698899); thence a line runs N 35° E for 322 meters to a point (463394 – 699214); thence a line runs N 11° E for 322 meters to a point (463459 – 699571); thence a line runs N 14° W for 805 meters to a point (463276 – 700362); thence a line runs N 4° w for 644 meters to a point (463237 – 700996); thence a line runs N 12° E for 966 meters to a point (463454 – 701949); thence a line runs N 33° E for 322 meters to a point (463595 - 702166); thence a line runs N 70° E for 322 meters to a point (463866 – 702263); thence a line runs S 73° E for 483 meters to a point (464296 -702131); thence a line runs S 80° E for 483 meters to a point (464690 – 702075); thence a line runs N 83° E for 644 meters to a point (465404 – 702166); thence a line runs N 86° E for 483 meters to a point (465902 – 702198); thence a line runs S 75° E for 644 meters to a point (466487 – 702034); thence a line runs Due East for 483 meters to a point (467016 – 702034); thence a line runs S 8° W for 90 meters to a point (467005 –

701949); thence a line runs S 78° E for 92 meters to a point (467089 – 701933); thence a line runs S 86° E for 644 meters to a point (467804 – 701890); thence a line runs N 87° E for 805 meters to a point (468551 – 701922); thence a line runs N 73°E for 805 meters to a point (469364 – 702171); thence a line runs N 49° E for 483 meters to a point (469754 – 702509); thence a line runs N 62° E for 805 meters to a point (470507 – 702907); thence a line runs N 78° E for 966 meters to a point (471482 – 703108); thence a line runs N 85° E for 1,287 meters to a point (472792 – 703227); thence a line runs N 74° E for 483 meters to a point (473265 – 703364); thence a line runs N 30° W for 53 meters to a point (473246 – 703405); thence a line runs N 83° E for 322 meters to a point (473519 – 703438); thence a line runs N 73° E for 322 meters to a point (473876 – 703542); thence a line runs N 55° E for 966 meters to a point (474645 - 704083); thence a line runs N 41° E for 1,609 meters to a point (475701 – 705270); thence a line runs N 50° E for 805 meters to a point (476265 – 705714); thence a line runs N 58° E for 966 meters to a point (477023 – 706180); thence a line runs N 66° E for 966 meters to a point (477933 – 706591); thence a line runs N 49° E for 3,219 meters to a point (480387 - 708709); thence a line runs N 19° W for 644 meters to a point (480214 – 709273); thence a line runs N 7° W for 644 meters to a point (480181 - 709587); thence a line runs N 21° W for 322 meters to a point (480079 – 709904) on the Wee River; thence a line runs along

said River for 18,540 meters to a point (489568 – 704621); thence a line runs S 10° W for 5,472 meters to a point (488608 - 699393); thence a line runs S 31° W for 3,380 meters to a point (486911 696542); thence a line runs S 81° W for 483 meters to a point (478672 695169); thence a line runs S 35° E for 7,081 meters to a point (482712 689485) thence a line runs S 31° W for 805 meters to a point (482317 – 688821); thence a line runs S 3° W for 1,609 meters to a point (482223 – 687169); thence a line runs S 37° E for 74 meters to a point (482267 – 687110); thence a line runs S 2° E for 322 meters to a point of Commencement, embracing a total area of 36,637 hectares / 90,532 acres of Forestland and NO MORE

GARWIN COMMUNITY FOREST VEGETATION MAP



4.1.2 History of past and current management

Past and current management and use in Garwin 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 has not occurred in recent years; most of Garwin 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.

4.1.3. Major vegetation types.

Vegetation in Garwin as a whole consists of high forest, , bushes interspersed which are the product of human activities such as farming, mining, Pitsawing, and settlements. Moist deciduous forests are the most common forest types in Garwin Community Forest in Rivercess county. These forest types are characterized by tree species such as *Anthonotha fragrans, Entandrophragma utile, Nesogordonia papaverifera, Lophira alata, Terminalia superba, Tetraberlinia tubmaniana* and *Troplochiton scleroxylon*. Results of a recent assessment in this forest show that 6 of the 7 species are found in the Garwin. These are light-demanding and dominant tree species with quality timber of known market Major water resources and aquatic life. Also found in the forest is the present of animal species.

4.1.4. Wildlife:

Animals population in the Garwin Forest is immense and the CFMB will ensure that animals that are deem protected by the Forestry Development Authority will remain protected. Some of the wild animal that can be found in our forest include *Cephalophusjentinki* (Jentink Duiker), *Choeropsisliberiensis* (Zedra Duiker), *Pantherapardus* (Leopard) just to menetioned as few. See table 3 for list of fauna species found in Liberia and by some degree of transitivity these fauna species can be found in the community forest though a research has to be conducted soon.

4.1.5. Water Resources:

Considering the location of the forest, there are a number of watercourses, including rivers and many creeks used for drinking, cooking, bathing, washing, and, at times, swimming. It is, therefore, a critical watershed; however, and very importantly, serious care will be taken to prevent any harvesting of tree species near any of these bodies of water in line with the FDA Code of Harvesting Practices.

4.1.6 Threats to the forest and its resources

The community 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.

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

4.1.7 Management Action.

The CFMB will ensure that community members are introduced to low land farming, prevent the chain saw activities in the forest and with the help of the FDA and Partners introduce alternative livelihood program to members of the Garwin Community forest.

5. Social Management

5.1 Permanent consultation process between the FDA and the CFMB

This plan calls for quarterly meetings between the CFMB 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 Conservation and 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 and management, and Agro forestry. Dialogues of this nature could help address these and related issues and concerns.

5.2 Benefit sharing:

The CFMB has established 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.

6.0 Forest Zoning and Resources:

6.1 Primary forest:

The majority of the Garwin Forest is characterized as primary forest and comprises approximately 36,637 hectares. More than 40 different species were during the inventory process.

Based on the superficial inventory done, it is observed that most of trees have a dbh of over 60 centimeters. Many of the tree species found in this forest have commercial timber value, while others can be prized locally for their barks, exudates, roots and stems for products such as food, medicine, handicrafts (masks and drums) household utensils and implements, beverages and ropes. Some examples of these species include *Uapaca spp*, *Sacoglottis gabonensis* , African corkwood (*Musanga cecropioides*) and Monkey plum (*Dacryodes klaineana*).

Fruits of certain *Uapaca spp* and *Dacryodes klaineana* are also a source of food for Chimpanzees and some species of monkeys. The seeds of certain *Xylopia spp* serve as spices and medicines and young stems (2-3 years old) are used as rafters in the construction of houses in rural ,peri-urban and urban communities. However, a more detail inventory will be conducted by a third party entering into agreement with us for the purpose of doing commercial logging and as such, species class, diameter etc. will be detailed.

6.2 Management Actions

The forest inventory serves as one of the knowledge bases upon which management decisions are, and will be made. It also provides a baseline of information by which to monitor the efficacy of the forest management actions. Accordingly, forest management actions related to the inventory will include the establishment of permanent sample plots

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

Old Growth Forests

Accordingly, the management objectives for the old growth areas of the forest will be to sustainably harvest of forest resources in line with FDA regulations regarding commercial forestry. However, NTFP extraction will be permitted within the forest will be allowed. Permits will be required to conduct any felling operations, and a forest management & annual operation plans must be developed and filed with the FDA and the CFMB which will monitor these activities.

Although a preliminary inventory has been conducted, further information needs to be collected and an analysis of current data conducted in order to determine an estimate of volume in the Garwin Forest on a per hectare basis. This should be done to determine an annual allowable cut level which is sustainable. Should communities wish to harvest in the old growth forest, this analysis could be done with the support of FDA. FDA could also assist the communities to identify the location from which the volume could be removed. In addition, any harvesting will comply with FDA harvesting regulations and best practices will be employed (e.g. maintain stream buffers and restrict harvesting of trees that provide a food source for endangered species).

This will require a series of reconnaissance to identify and mark the timber tree species that are to be harvested. Simple harvesting and processing equipment and low-impact harvesting methods will be used to reduce waste[1] and minimize damage to the remaining trees in the stand. The selection of trees for harvesting will ensure that healthy trees remain as the gene pool for the next generation of trees in the forest .This work will be conducted primarily through the Committee on Forest Management Use with support from the FDA.

6.3 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 CFMB 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. This work will be conducted primarily through the Committee on Forest Management Use with support from FDA.

Agro forestry techniques will also be used to provide livelihood alternatives and to demarcate boundaries of the forest. Tree crops such as citrus, wolor, 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.

6.4 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.

7.0 Management of the Forest

Tables4 and 5 at the end of this plan, summarize information by forest zone

8.0 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 Garwin 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 Garwin 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.

8.1 Demarcation and boundary maintenance

8.2 Current description

The Garwin community forest has been in the custody of the communities surrounding the area since 1831. The forest has been demarcated based on the metes and bound provided by the FDA and boundary lines will be maintained by selected members of the community

8.3 Management actions.

The boundary of the Garwin forest will need to be re-cleared at least twice a year. Trees, such as coffee, 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 CFMB. 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 will have primary responsibility for implementing management actions associated boundary demarcation and maintenance.

In addition, both formal and informal consultations with community members and leaders living near the Forest will be necessary in order to have the boundary maintained and respected. The communities have given up their claims to farm in the forest, and the CFMB will work with community leaders to ensure that these community members are given alternatives by the community. A series of consultative meetings with inhabitants whose "land" has been part of Garwin community Forest and those not affected this way shall be the major activity to avoid or manage conflict. The Committee on Benefit Sharing and Conflict Management will support these activities.

8.4 Inventory of valuable resources of the forest

8.5 Fire management

8.5.1 Current description

Fire is used in hunting and for site preparation in shifting cultivation. The Garwin communities identified fire as a threat to forest and biodiversity resources. However, because of the importance of fire in the shifting cultivation system, many locals do not perceive it as an important threat. It is also possible, given the extensive and long-term use of fire in the Bah & Zarque clans, that the ecosystem is fire adapted, and requires fire to maintain certain aspects of its biodiversity. However, without further study, this cannot be determined.

8.5.2 Management actions

While being a useful management tool for agriculture, fire can also present 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 CFMB will also work with other stakeholders in the region to support ecological studies to assess the impact and role of fire on the landscape.

8.5.3 Water management

8.5.4 Current description

Traditionally, in communities around the community forest, 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 from shifting cultivation or as a result of road construction from concession operations.

In Liberia, in general, and in the Garwin communities 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.

8.5.5 Management actions

In keeping with FDA Code of Forest Harvesting Practice a buffer strip of 30 meters should be left along the banks of rivers, 20 meters for creeks, and 10 meters for streams bordering farms should be void of logging activities. In practice, there are no such strips along riverbanks in Garwin where farming is taking place. The first action is to draft and enforce rules to protect watersheds that drain from or pass through the Garwin CFMB, 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.

8.5.6 Management of wildlife (animals and plants)

8.5.7 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 Garwin community, the people 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.

8.6 Non - Timber Forest Product Management:

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.

8.6.1 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 CFMB 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 CFMB rules, will be dealt with by penalties approved by the CFMB.

In addition, certain NTFP that can be cultivated, will be introduced into gardens to reduce the pressure on wild resources. *Griffonia* is one such resource that has already been domesticated and introduced into the Garwin communities 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.

8.7 Mineral prospecting and mining

8.7.1 Current description

Artisanal mining for diamond and gold, respectively, are a major activity around Garwin, but there is no evidence of mining or mineral prospecting within the boundaries of the forest.

8.7.2 Management actions

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

9.0 Enforcement of rules, monitoring and reporting

9.1 Enforcement of rules and monitoring

9.1.1 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. There has been no effective enforcement of rules and result-oriented monitoring in and around Garwin CF by either the FDA or the community due to low capacity.

9.1.2 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 Garwin CF 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 CFMB 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)

Table 1: Summary of Management Action for areas zoned as Old Growth Forest

Forest Condition	Area [ha]	Management Conditions	Mgmt Actions	Issues	Opportunities	Management Goal
Old Growth/ Primary Forest	___ ha.	• Steep topography • Difficult access • Located not far from villages so not difficult to monitor activities therein	Timber	• In the process of getting a third party to carry out sustainable harvest of timber	• Carry out selectively & sustainable harvested of timber species	• Provide employment, infrastructure development, etc. • Also preservation of critical habitat • Conduct scientific research for tree stand improvement.
			NTFP	• Harvesting common	• Medicinal plants and other household products • Some products with commercial value	• Establish quotas for NTFP collection • Monitor compliance through permitting system • Eliminate illegal collection methods through rules development, education and enforcement
			Fire	• Used to prepare agricultural sites adjacent to the old growth area	•	• Zone areas where clearing will be allowed in the buffer zone • Prevent clearing in non-permitted areas • Develop rules for fire management
			Water	• Some misuse of water resources • Destructive fishing practices •	• Extensive water resources	• Draft and enforce rules to protect watersheds
			Wild Animals	• Extensive hunting • Threatened chimpanzee	•	• Establish rules and quotas for hunting • Monitor compliance through patrols and record keeping

Forest Condition	Area [ha]	Management Conditions	Mgmt Actions	Issues	Opportunities	Management Goal
				population		• Eliminate illegal hunting methods
			Minerals	• Artisanal mining for diamonds and iron ore	• Mining company may provide remediation &community development support	• No mining activities for first five years of plan implementation • Ensure that environmental damage from mining activities minimized

Table 2: Summary of Management Action for areas zoned as Secondary Growth Forest

Forest Condition	Area [ha]	Management Conditions	Mgmt Actions	Issues	Opportunities	Management Goal
Secondary Forest	___ ha.	• Close to agricultural fields: easy for villagers to cut timber • Flatter topography, advantageous for forest protection and monitoring	Timber	• Some illegal harvesting is taking place	• Some big timber trees that could be selectively harvested	• Introduce selective harvesting • Introduce agro forestry systems • Tree stand improvement
			NTFP	• Harvesting common	• Medicinal plants and other household products • Some products with commercial value	• Establish quotas for NTFP collection • Monitor compliance through permitting system • Eliminate illegal collection methods through rules development, education and enforcement
			Fire	• Used to prepare agricultural sites adjacent to the old growth area	•	• Zone areas where clearing will be allowed in the buffer zone • Prevent clearing in non-permitted areas • Develop rules for fire management
			Water	• Some misuse of water	• Extensive water resources	• Draft and enforce rules to protect watersheds

Forest Condition	Area [ha]	Management Conditions	Mgmt Actions	Issues	Opportunities	Management Goal
				resources • Destructive fishing practices •		
			Wild Animals	• Extensive hunting	• Closer to villages for monitoring purposes	• Establish rules and quotas for hunting • Monitor compliance through patrols and record keeping • Eliminate illegal hunting methods
			Minerals	• Artisanal mining for diamonds and iron ore	• Mining company may provide remediation &community development support	• No mining for first 5 years • Ensure that environmental damage from mining activities minimized through rules development and enforcement

9.2 Reporting

There are three types of reports 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 Garwin, 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 FDA and the Community Assembly). For reports on unauthorized incidences, a patrol book will be used to catalogue such events.

10. Committees

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

10.1 Committee on benefit sharing and conflict management(COBCM)

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.

10.2 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 agro forestry sites. They will also take responsibility for NTFP and tree nurseries.

10.3 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 Garwin Forest. The committee will seek technical assistance in these matters from FDA and other partners.

10.4 Membership and Rules Committee

The membership committee will be responsible for recruiting members within their communities to be general members of the CFMB. 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 CFMB and the Committee on forest protection and rules enforcement to design education and awareness initiatives to promote awareness of the rules that are developed.

10.5 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 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.

Monitoring and Evaluation

Monitoring and evaluation is a critical component of the management plan and will ensure 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 standalone activity. These activities are listed below with reference to their descriptions in other sections of this document.

- 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.
- 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 operational plans will be developed and progress toward annual objectives will be assessed by the FDA and CFMB on an annual basis at the annual meeting of the CFMB.

Plan Implementation

Successful implementation of this plan will require a dedicated core of volunteers in the Garwin community, general community acceptance and commitment, and cooperation and buy in from the FDA and the local government in Rivercess County. It is anticipated that partner funding and programming will support these activities through both funding and technical assistance. The FDA and other organizations and stakeholders will also play an important role in plan implementation.

TABLE 3: LIST OF FAUNA SPECIES IN LIBERIA

Name/group	Scientific Name	IUCN Status	Liberian Protected Status
Jentink'sduiker	*Cephalophusjentinki*	EN	WNPA 1988
Zebra duiker	*Choeropsisliberiensis*	EN	WNPA 1988
Bongo	*Tragelaphuseurycerus*	VU	WNPA 1988
Ogilby's duiker?	*Cephalophus zebra*	NT	WNPA 1988
Yellow-backed duiker	*Cephalophussilvicultor*		WNPA 1988
Liberian mongoose?	*Liberiictiskuhni*		WNPA 1988
Leighton's linsang?	*Poianaleightoni*	VU	
Bourlon's genet?	*Genettabourloni*	DD	
Leopard	*Pantherapardus*	NT	WNPA 1988
African golden cat?	*Profeliisaurata*	NT	WNPA 1988
African white-bellied pangolin	*Phataginustricuspis*	NT	
Western palm squirrel?	*Epixerusebii*	DD	
Pygmy water shrew?	*Micropotamogalelamottei*	EN	

able 4: Master list of tree species found in Liberia

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
AFRA	Afrosersalisiaafzelii	Akuedao
AFZ	Afzeliaspp (bellaafricana)	Doussie (AfzeliaApa)
ALB	Albiziaspp	Albizia
ALBA	Albiziaadianthifolia	Albizia, Zu-nass
ALBF	Albiziaferruginea	Musase
ALBZ	Albiziazygia	Albizia, Musase, Zygia
ALSB	Alstoniaboonei	Emien, Alston, Duku
AMPP	Amphimaspterocarpoides	Lati (Bokango)
ANI	Aniseiaspp	
ANIR	Anigeriarobusta	Aningre (Annegre)
ANN	Annickiaspp	
ANOK	Anopyxisklaineana	Kokoti, Bodia
ANTA	Antiarisafricana	Ako
ANTC	Anthonothacrassifolia	Anthonotha
ANTF	Anthonothafragrans	Anthonotha (Kibokoko) (Ako)
ANTM	Antrocaryonmicraster	Antrocaryon
ANTN	Anthocliestanobilis	Cabbage Tree
ARAS	Araliopsissoyauxii	Araliopsis
ARAT	Araliopsistabouensis	Araliopsis (Grenian)
ATAC	Ataenidiaconferta	Ataenidia
AUBP	Aubrevilleaplatycarpa	Biethi, Klekle
BEIB	Beilschmiediabitehi	Beilschmiedia
BEIM	Beilschmiediamannii	Kanda (Tawa)
BERC	Berliniaconfusa	Pocouli (Ebiara)
BOMBR	Bombaxbrevicuspe	Bombaxbr
BOMBU	Bombaxbuonopozense	Bombaxbu
BRAL	Brachystegialeonensis	Naga
BRIG	Brideliagrandis	Doandoh
BUSO	Busseaoccidentalis	Samanta
BUST	Busseathurifera	Nomotcho
CAL	Calpocalyxspp	
CALA	Calpocalyzaubrevillei	Badio (Calpocalz)
CANS	Canariumschweinfurthii	Aiele
CARP	Carapaprocara/grandiflora	Carapa
CAS	Cassipoureaspp	Cassipourea
CEIP	Ceibapentandra	Ceiba (Fromager)
CEL	Celtisspp (aldolfi-friederiei)	Celtis (Lokenfi)
CHIS	Chidlowiasanguinea	Bala
CHL	Chlorophoraspp	Chlorophora
CHLR	Chlorophoraregia	Iroko (OdumKambala)
CHR	Chrysophyllumspp	Akatio (Longui)
COLE	Cola edulis	
COLG	Cola gigantean	Cola (chewing stick) (sra)
COMM	Combretodendronmacrocarpum	Abale
COPS	Copaiferasalikounda	Etimoe
COU	Coulaspp	
COUE	Coulaedulis	Coula

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
CRYT	Cryptosepalumtetraphyllum	African Pine (Pantu)
CYNA	Cynometraananta	Apome
DAC	Dacryodesspp	
DAC	Dacryodesspp	
DACK	Dacryodesklaineana	Monkey plum
DANT	Daniella thurifera	Faro
DIA	Dialiumspp	Dialium
DIAA	Dialiumaubrevillei	Kroplo (Eyoum)
DIDA	Didelotiaafzelii	Didelotia a
DIDB	Didelotiabrevipaniclata	Didelotia b
DIDI	Didelotia idea	Bondu
DIO	Diospyrosspp	
DIOA	Diospyrosabyssinica	Diaspyros
DIOS	Diospyrossanzaminika	Ebony
DISB	Distemonanthusbenthamianus	Movingui
DRY	Drypetesspp	
ELAG	Elaeisguineensis	Palm tree (oil palm)
ENAP	Enantiapolycarpa	Enantia
ENTA	Entandrophragmaangolense	Tiama (Edinam)
ENTCA	Entandrophragmacandollei	Kosipo (AbourdKro)
ENTCY	Entandrophragmacylindricum	Sapele (SapelleAboudikro)
ENTU	Entandrophragma utile	Sipo (Utile)
ERY	Erythrophleumspp	Tali
ERYI	Erythrophleumivorensis	Tali (Sassawood)
ERYM	Erythroxylummannii	Landa
FAGM	Fagaramacrophylla	Olondu
FICA	Ficusaburtilifolia	Ficus
FUNE	Funtumiaelastica	Funtumia (Mutundu)
GARI	Gardenia imperialis	Gardenia
GARK	Garcinia kola	Garcinia kola
GILP	Gilbertiodendronpreussii	Limbali
GLUI	Gluemaivoransis	Adiepingoa
GUA	Guareaspp	
GUAC	Guareacedrata	Bosse
GUIE	Guibourtiaehie	Amazakoue (Bubinga)
HALC	Halleaciliata	Abura (Bahia)
HANK	Hannoaklaineana	Hannoa (Effeu)
HAPM	Haplormosiamonophylla	Black gum (Idewa)
HARM	Harunganamadagascariensis	Harungana
HERU	Heritierautilis	Niangon (Whismore)
IRVG	IrvingiaGabonensis	Irvingia
KEEB	Keetiabridsoniac	Keetia
KHAA	Khayaanthotheca	Khaya (Acajou blanc)
KHAI	Khayaivorensis	Khaya
KLAG	Klainedoxagabonensis	Klainodoxa (Eveuss) (kroma)
LOEK	Loesenerakalantha	Loesenera
LOPA	Lophiraalata	Ekki (Azobe)
LOV	Lovoaspp	
LOVT	Lovoatrichilioides	Lovoa (Dibetou) (African Walnut) (sra)
MAC	Macrocarpumspp	Abale (Macrocarpumspp)
MACB	Macarangabarteri	Macarana

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
MAEB	Maesobotryabarteri	Cherry
MAMA	Mammeaafricana	Mammea (Oboto)
MAN	Manilkaraspp	
MANA	Mansoniaaltissima	Mansonia (Bete)
MANL	Manilkaralacera	Manikara
MANM	Manilkaramultinervis	Kpangkum
MANO	Manilkaraobovata	Duka (false Makore)
MARA	Maranthesaubrevillei	Maranthes
MEM	Memecylonspp	
MONC	Monopetalanthuscompactus	Ekop
MONS	Monopetalanthusspp	Monopetalanthus
MUSA	Mussaendaafzelii	Mussaenda
MUSC	Musangacecropioides	African corkwood
MYR	Myrianthusspp	
MYRA	Myrianthusarboreus	Myrianthus
MYRL	Myrianthuslibericus	
NAUD	Naucleadiderrichii	Kusia (BilingaOpepe)
NESP	Nesogordoniapapaverifera	Danta (Kotibe)
NEW	Newtoniaspp	Newtonia
NEWA	Newtoniaaubrevillei	Pellegrin
OLDA	Oldfieldiaafricana	Oldfieldia (Dantoue)
ONGG	Ongokea gore	Angueuk (Kuwi)
PACB	Pachystelabrevipes	Bokulolo
PACS	Pachypodanthiumstaudtii	Ntom
PAR	Parinarispp	
PARB	Parkia bicolor	Parkia (Lo)
PARE	Parinariexcelsa	Parinari (Songue)
PEN	Pentadesma SPP	
PENB	Pentadesmabutyracea	Timber-lacewood
PENM	Pentaclethramacrophylla	Oil-bean tree
PERE	Pericopsiselata	Afromosia
PIPA	Piptadeniastrumafricanum	Dahoma
PROM	Protomegabariamacrophylla	Protomegabaria
PTEH	Pteleopsishabeensis	Pteleopsis
PTEM	Pterygotamacrocarpa	Koto (Ake)
PYC	Pycnanthusspp	Raphia
PYCAF	Pycnanthusafricanus	Ilomba
PYCAN	Pycnanthusangolensis	Pycnanthus
RAPV	Raphiavinifera	Piassava
RHOB	Rhodoguaphalonbrevicuape	Alone (Kondrotti) (Bombax) (Kapokier)
RICH	Ricinondendronheudelotii	African Oil tree
SAB	Sabiceaspp	Abobonkahyire
SACG	Sacoglottisgabonensis	Ozouga
SAMD	Samaneadinklagai	Monkey Pod
SANL	Sansevieraliberica	Africana Hemp
SCOC	Scortellacoriacea	Scortella
STA	Stachyothyrusspp	
STE	Sterculiaspp	Sterculia
STEO	Sterculia oblongata	Sterculia o
STR	Stremphonemaspp	
STRG	Strombosiaglaucescens	Afina

ABR	BOTANICAL NAME	LOCAL/TRADE NAME
STRO	Strombosiaspp	
STRP	Strombosiapustulata	
SYMG	Symphoniaglobulifera	Symphonia
SYN	Synsepalumspp	
SYND	Synsepalumdulcificum	Sweet Berry
TERI	Terminaliaivorensis	Framire (BajiEmire)
TERS	Terminaliasuperba	Frake, Limbali
TETT	Tetraberliniatubmaniana	Tetra (Sikon)
TIEH	Tieghemellaheckelii	Makore (Baku Douka)
TREG	Tremaguieensis	Trema
TRID	Trichiliadjalonis	Trichilia d
TRISC	Triplochitonscleroxylon	Obeche (SambaWawa)
TRISP	Trichiliasplndida	Trichilia s
TRIT	Trchiliatessmannii	
TURA	Turraeanthusafricanus	Avodire
UAP	Uapaca spp.	Uapaca
UNK	Unknown	Unknown
UVA	Uvariastrumspp	
UVAP	Uvariastrumpierreanum	
VEP	Veprisspp	
VIT	Vitexspp	Vitex
VITC	Vitexchrysocarpa	Vitex c
VITM	Vitexmicrantha	Vitex m
VOCA	Voacangaafricana	Voacanga
XYL	Xylopiaspp	Xylopia
XYLA	Xylopiaaethiopica	Guinea Pepper Tree (Okala), Xylopia
XYLE	Xyliaevansii	Dan (Mano)
XYLI	Xyliaspp	Xylia
XYLQ	Xylopiaquintasii	Xylopia q
XYLR	Xylopiarubescens	
ZEHC	Zehneriacapillacea	Zehneria

LIST OF TOWN/VILLAGES

1. David Town
2. Karngbo Town
3. Charlie Town
4. Gblor
5. Doe Town
6. Junction 5
7. Suakan Debah
8. Debah Town
9. Dehgar Town
10. Gozohn
11. Gbarsleh
12. Gborgar
13. Buehn Town
14. Bethel Town
15. Suakon
16. Sayon Town
17. Narphala Town
18. Doedain Town

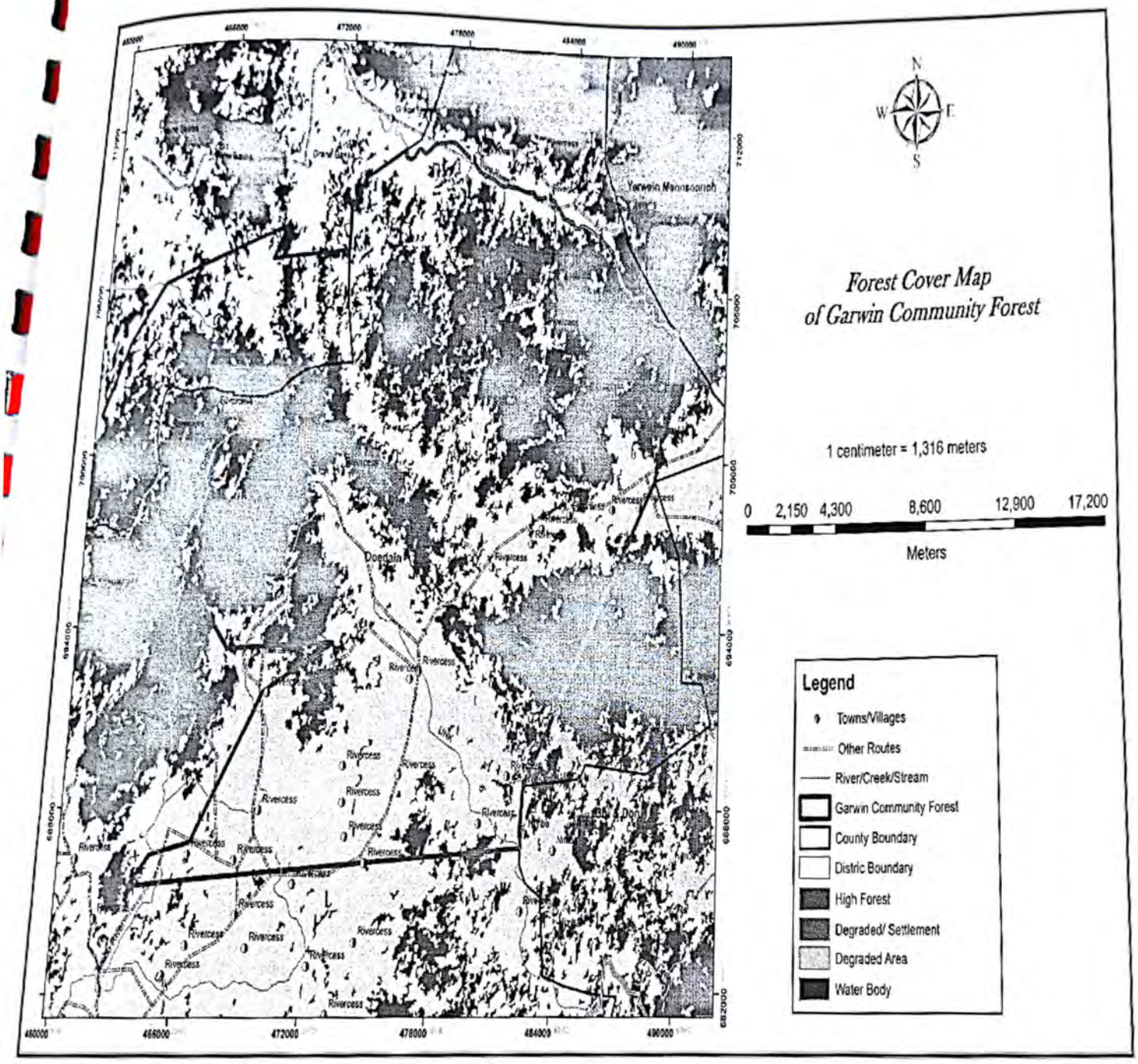
EXECUTIVE COMMITTEE MEMBERS

1. Harry B. Gueh	Chairman
2. Alex Giah	Vice Chairman
3. James W. N. Williams	Secretary
4. Aaron Gbordoe	Finance Officer

LIST OF COMMUNITY FOREST MANAGEMENT BODY OFFICERS

1. Benson T. Sackoh	Chief Officer
2. George Wrogbo	Secretary
3. Marie Willie	Treasurer
4. Amelia Garvlehn	Member
5. George Gbah	Member

MAP OF GARWIN COMMUNITY FOREST



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Attachments

- GCFMB BY - LAWS AND ASSEMBLY MEMBERS
- GCFMB Article OF Incorporation
- GCFMB BUSINESS REGISTRATION CERTIFICATE