



**FOREST
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**GEF Project: Assessing HVC in SLIMF for certification purpose
Cameroon Component**

Biodiversity Management Plans of HCV Bimbia Bonadikombo Community Forest (BBCF)

Introduction

The BBCF is situated in Limbe, South West Province. It has a surface area of 3735 ha. The BBCF was created in May 18, 2002 and comprises 05 (five) villages. BBCF signed a management agreement with the government on 2002.

Baseline data

Map showing location of HCV within the community forest

BBCF is divided into 09 compartments for management purposes. Three (03) of these compartments (Dikolo, Likomba la Mbenge and Likomba Lelu), with a surface area of 1200 ha, have been set aside as HCV forest for research, ecotourism and environmental education activities, namely (Annex1).

Vegetation types and ecosystems

The vegetation of the BBCF is dominated by the following vegetation and/or ecosystems:

- mangrove,
- fresh water swamp forest,
- littoral vegetation,
- coastal bar forest,
- Lowland forest and
- fresh water ecosystems.

Threatened and endemic species at local, national and regional levels

Species known to be endemic or under threat (rare, endangered and/or protected) and that have been identified within the BBCF are listed in the table I below.

Table I. Threatened and endangered species found in BBCF. Classes are defined according to Cameroon regulation as follows: (A) integral protected animals; (B): protected animals hunted under license or permit.

Species types	Plants	Animals
Regional level		
Threatened	<p>More than 10 species of those:</p> <p><i>Milletia sp,</i> <i>Azalia spp,</i> <i>Entandrophragma spp,</i> <i>Khaya anthotheca,</i> <i>Nauclea diderrichi,</i> <i>Lophira alata,</i> <i>Baillonella toxisperma,</i> <i>Diospyros spp,</i> <i>Triplochiton scleroxylon</i> <i>Prunus africana</i></p>	<p><i>Pan troglodytes,</i> <i>Python sebae,</i> <i>Ostealemus tetracus,</i> <i>Chelonia mydas,</i> <i>Eretmochelys imbricata,</i> <i>Lepidochelys olivacea,</i> <i>Dermochelys coriacea,</i> <i>Caretta caretta</i></p>
National level		
Threatened	<p><i>Prunus africana</i> <i>Diospyros spp.,</i> <i>Baillonella toxisperma</i></p>	<p><i>Papio leucophaeus</i> (class A), <i>Pan troglodytes</i> (A) <i>Ostealemus tetracus</i> (A) <i>Vivera civetta</i> (B) <i>Python sebae</i> (B) <i>Chelonia mydas</i> (A) <i>Eretmochelys imbricate</i> (A) <i>Lepidochelys olivacea</i> (A) <i>Dermochelys coriacea</i> (A) <i>Caretta caretta</i> (A)</p>
Local level		
Endemic	<p><i>Oxygen triandra</i> <i>Neoschumannia kamerunensis</i> <i>Oxystigma mannii</i> <i>Afrothismia sp.</i></p>	
Threatened at local level but not yet identified as under threats at national level	<p><i>Pterocapus soyauxii</i> <i>Terminalia superba</i> <i>Ricinodendron heudelotii</i> <i>Gnetum africanum</i> <i>Carapa procera</i></p>	

<i>Ceiba pentandra</i> <i>Pycnanthus angolensis</i> <i>Terminalia superba</i> <i>Coelocaryon preussii</i> <i>Irvingia gabonensis</i>	
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Environmental services provided by the BBCF

The BBCF is located in a very hilly area with very sharp slopes. For this purpose, BBCF as a forest area is protecting those slopes to avoid erosion and landslides. The three compartments identified as HCVF i.e Dikolo, Likomba la Mbenge and Likomba Lelu, are protecting water catchments and sources of several rivers of the rivers network. Because of agriculture pressure and the closeness of Limbe city, the three compartment identified as HCFV serve as refuge for animal species.

Other services provided by the forest to the community: eg. employment generation, products used by community households (construction, consumption, medicine, fuelwood, recreation), income generation (sale of NTFPs, timber, hunting permits, ecotourism).

The BBCF is a high sources or services for the communities.

Communities highly extract timber from the forest for construction purpose, commercialization and fuel wood. The following species are used for timber production: *Ceiba pentandra*, *Lophira alata*, *Strombosia grandifolia*, *Musanga cecropides*, *Pycnanthus angolenses*, *Terminalia superb*, *Coelocaryon preussi*, *Desbordesia glaucescens*, *Milicia exelca*, *Lovea tricholides*, *Ceiba pentandra*, *Albizia spp.*, *Staudia camerunensis*, *Pterygota macrocarpa*, *Entandropragma spp*, *Erythrophleum ivorenses*, *Alstonia boonei*.

For fuel wood and charcoal production, the following species are used by local communities: *Desbordesia glaucescens* (mango wood), *Uapaca guineensis* (matanda), *Strombosia grandifolia* (kerosene stick), *Lophira alata* (iron wood), *Cedrela odorata*.

The following plant species are used as NTFP for consumption as food: *Dacryodes edulis* (fruits), *Riciodedron heudelotii* (seeds), *Piper guineensis* (leaves and fruits), *Tetrapleura tetrapleura* (fruits), *Afrostryax lepidophylus* (seeds), *Irvingia gabonensis* (fruits and seeds), *Gnetum africanum* (leaves).

Many species are used by local communities for medicinal purpose. A list of those species as well as their uses and related names are given in the table below.

Table II. Plant species used in BBCF for medicinal purposes

Scientific names	Common names	Uses
<i>Aframumum</i> spp.	Alligator pepper(mbongo)	Grains are used as cough expectorant, use as charm
<i>Alstonia boonei</i>	Milk stick	Mix root with that of mango and sterile pawpaw in palm wine to treat typhoid
<i>Baillonella toxisperma</i>	Moabi(njabe)	Use to remove excess fat from the stomach of infertile women
<i>Bryophyllum pinnatum</i>	Yoka	Warm leaves squeeze and drop in painful ears
<i>Canarium schwenfurthii</i>	Bush plum	Use to disinitiate people from bad societies
<i>Cieba pentandra</i>	Buma tree	Boil bark and take as enema for stomach growth

<i>Costus aferker-gawi</i>	Monkey sugar cane	Roots use for sleeping sickness
<i>Elaeis guinensis</i>	Palm tree	Kernel oil use as poison antidote
<i>Garcinia mannii</i>	Chewing stick	Chew stem with salt for running stomach
<i>Kigeli Africana</i>	Sausage tree	Use for conjunctivitis
<i>Milicia excelc</i>	iroko	Use bark for stomach problems
<i>Pterocapus soyauxii</i>	camwood	Use as skin cream
<i>Piper guinensis</i>	Bush pepper	stimulant
<i>Rauwolfia vomitoria</i>		Use for malaria treatment
<i>Senna alata</i>	cassia	Mashed leaves are used for fungal infection
<i>Prunus Africana</i>	Prunus	Solution from boiled bark to treat chest pain

Wildlife is used by local communities as bush meat. Among others, the following species are hunted: Cane rat , Antelope , Pangolin, Viper, Squirrel, Mona monkey, Brush tail porcupine.

Income generation

Incomes are generated through ecotourism, charcoal production, fire wood exploitation, agriculture, fishing, timber exploitation, NTFP commercialization and hunting.

HCVF

Indicators used for HCV identification

Indicators used to define HCVF were those described in the “Toolkit for HCV for Cameroon community forest” whose development is ongoing. Among others these are:

- Presence of species defined at regional at national levels as threatened or endemic using IUCN regional or national red list, protected species at the national level;
- Presence of species identified by local communities themselves as rare, endangered or threatened.
- Presence of areas for special importance for local communities: ecological, cultural and historical
- Presence of NTFP
- Services provided by the forest as identified by local communities themselves

Values identified within the BBCF, and geographic area to which the value applies.

HCV1. According to the SMP prescription, Lokomba la Mbenge, Likomba la Lelu and Dikolo peninsular are protected areas of the BBCF. In addition, threatened species at regional, national and regional levels and endemic plants species at local level found in the 03 compartments identified as HCVF as well as within the whole BBCF. Mangrove is an area containing a seasonal concentration of marine tortoises.

HCV2: In one hand, main vegetation types of the BBCF are landscapes within the community forest area. In the other hand, mangrove at the Dikolo peninsular and primary forests found at the Likomba la Mbenge and Likomba la Lelu are areas containing viable population of species existing in natural distribution and abundance. *Heisteria parviflora* found in Likomba la Mbenge is a species wich is living in a natural association with *Thurreanthus africana* in primary forests.

HCV3. Dikolo Peninsular contains mangrove an ecosystem threatened by illegal wood harvesting for firewood or charcoal and fish smoking. Likomba la lelu and Likomba la Mbenge are areas containing remained primary forests that are threatened by slash and burn agriculture and palm oil plantations.

HCV4. As described above, BBCF is located in a very hilly area with very sharp slopes. For this purpose, BBCF as a forest area is protecting those slopes to avoid erosion and landslides. The three compartments identified as HCVF i.e Dikolo, Likomba la Mbenge and Likomba Lelu, are protecting water catchments and sources of several rivers of the rivers network. In particular Liwanda and Mawoh areas protect against landslides.

HCV5. As listed above, the whole BBCF is used by local communities for many purposes: income generation, consumption products, medicine products, agriculture, ecotourism, construction material, fire wood, timber, etc.

HCV6. Areas used by local communities for traditional rites as well as slaves routes are found in Bimbia village. Burial grounds and graves of historical importance are found in Bimbia and Dikolo villages. Mangroves for ecological importance are found in the Dikolo peninsular.

Threats - Management practices, techniques or strategies

Identified threats, informal management practices used by local communities and proposed management practices or strategies are listed in table III below.

Table III. Threats, informal and proposed management practices for identified HCV in BBCF.

HCV	Threats	Informal management practices	Proposed management practices/strategies
HCV1 The 03 protected compartments (areas) Threatened and endemic species	Slash & burn agriculture Poaching Charcoal production	Integral ban of any activity within identified HVCF Repressive practices if prescriptions not respected: chainsaws, rifles, and animal traps seized from illegal exploiters and poachers in close collaboration with the Ministry of Forest and Wildlife	Development of simple parameters for the monitoring of biodiversity and HCV Identification of conflicts related to the implementation of the SMP: solutions in close collaboration with all stakeholders
HCV2 & HCV3 Mangroves and primary forests	Fuel wood production Timber exploitation	NTFP unsustainable harvesting techniques	Training, Sensitization and education of communities on:
HCV4. Areas protecting water catchment Areas protecting slopes against erosion and landslide	Unsustainable hunting and fishing techniques Fish smoking	Release of animal species in the forest: more than 10 dwarf crocodiles and other Reptiles released in the forest in partnership with the Limbe Wildlife Center	<ul style="list-style-type: none"> – SMP prescriptions, national and international regulations; – sustainable harvesting of NTFP; – domestication of wild plant species;
HCV5. Communities usages		Training, Sensitization and education of communities on:	<ul style="list-style-type: none"> – Agroforestry for fuel wood and other usages; – Identification of protected resources; – monitoring of biodiversity and HCV; – Environmental friendly and best yield charcoal production;
HCV6. Areas of cultural, historical and ecological importance for communities		<ul style="list-style-type: none"> - Agroforestry for fuel wood production - Ecotourism tours and behavior - Biodiversity 	

		management	<ul style="list-style-type: none"> – Collaboration with research institute; – Fund raising through projects drafting; – Markets research; – Organization (institutional framework) – Certification of Environmental services
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Monitoring

The monitoring process is described in the following table IV.

Table IV. Monitoring process of HCV in BBCF.

HCV type	What will be monitored	What for?	How?	Who will monitor?	How often?	Who is responsible for results analysis?	With whom will be monitoring results shared
HCV 1							
HCV 2							
HCV 3							
HCV 4							
HCV 5							
HCV 6							

NB. The monitoring process should still be discussed by local community, mainly by the management community. Consultation process to fill the above table IV is ongoing.

Annual updates

To be updated annually:

- Results of monitoring
- Changes made to management practices in response to monitoring results.

Annexes

Annex1. Sketch map of BBCF HCV location

