

# Consolidating the Conservation of Cross River Gorillas (*gorilla gorilla diehli*) and Nigeria-Cameroon chimpanzees (*P t ellioti*) in the Lebialem-Mone Forest Landscape, Western Cameroon

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## **Final Report to**

**People's Trust for Endangered Species, UK.**



A Gorilla Nest in the proposed Tofala Hill Wildlife Sanctuary

**Prepared by**

**Louis Nkembi and Bernice Muh**

**The Environment and Rural Development Foundation, Cameroon**

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Table of Contents.....	2
Acknowledgements.....	3
Executive Summary.....	4
<b>1.0 Introduction.....</b>	<b>5</b>
1.1 Background.....	5
1.2 Project goals.....	7
<b>2.0 Methods and Materials.....</b>	<b>8</b>
2.1 Study sites.....	8
2.2 Survey methods.....	11
2.3 Training methods.....	12
<b>3.0 Presentation of Results.....</b>	<b>13</b>
<b>3.1 Upgrading of the Bechati-Lebialem forest into a community wildlife sanctuary.....</b>	<b>13</b>
3.1.1 Creation process at the local level.....	13
3.1.2 Creation process at the Regional and Central levels.....	14
3.1.3 Final steps towards the creation of the proposed Tofala Hill Wildlife Sanctuary.....	18
<b>3.2.0 Strengthen the operational capacity of community governance structures in the Lebialelem Mone Forest Landscape.....</b>	<b>19</b>
3.2.1 Creation and strengthening of community forest governance structures.....	19
3.2.2 The Women Association of Tofala.....	20
3.2.3 Village Traditional Councils.....	21
3.2.4 Training and capacity building of village conservation structures.....	21
<b>3.3.0 Reinforcement of bio-monitoring and anti-poaching in Bechati-Mone forest corridor.....</b>	<b>21</b>

3.3.1 Training of field team.....	22
3.3.2 Mapping of the proposed Bechati-Mone forest corridor.....	23
3.4.3 Establish a new bio-monitoring system.....	26
3.3.4 Improved understanding of the status of gorillas and chimpanzees in the Tofala and Bechati-Mone forest corridor.....	27
3.3.5 Support to anti-poaching and wildlife law enforcement operations.....	29
3.3.6 Conservation awareness in the Tofala-Mone East Forest Corridor .....	30
4.0 Project Outcomes and Sustainability.....	33
5.0 Discussions.....	35
6.0 Constraints and challenges.....	37
7.0 Recommendations.....	37

## **Abbreviations**

MINFOF; Ministry of Forestry and Wildlife

ERuDeF: Environment and Rural Development Foundation

FoProF: Forest Protection Fund

VFMC: Village Forest Management Committee

ACF: African Conservation Foundation

FFI: Fauna and Flora International

WWF: World Wide Fund for Nature

CIGMI: Cameroon Independent Green Media Initiative

WCS: Wildlife Conservation Society

PTES: People Trust for Endangered Species

GPS: Geographic Positioning System

TWA: Tofala Women Association

VTC: Village Tradition Council

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ERuDeF would want to acknowledge the untiring efforts of the authorities of the Ministry of Forestry and Wildlife from the Divisional through the Regional to Central levels as well as those of the Ministry of Territorial Administration and Decentralisation in fostering the execution of this project.

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## **Executive Summary**

The project for the Conservation of Cross River Gorillas (*gorilla gorilla diehli*) and Nigeria-Cameroon chimpanzees (*P t ellioti*) in the Lebialem-Mone Forest Landscape was designed to provide a long term conservation and protection status to the subpopulations of these great apes located within the Landscape (or Lebialem Highlands Conservation Complex). The project objectives included: to create a community wildlife sanctuary at Bechati-Lebialem forest, ii) to reinforce bio-monitoring and law enforcement in the Bechati-Mone Forest Corridor and iii) to strengthen the operational capacity of the community conservation governance structures to enhance sustainable biodiversity management.

Biological and socio-economic assessments, training workshops, consultation meetings, media programs and conflict management were a range of methods used to deliver project results.

The Bechati-Lebialem communal forest was moved to the proposed Tofala Hill Wildlife Sanctuary (pending the last phase to permit the Prime Minister to sign the creation of the Sanctuary). Community commitments were achieved through signing of agreements with government. Increased visibility was achieved towards genetically linking the Tofala subpopulation of the Cross River gorillas to that of the Takamanda through mapping of the suitable habitats, increasing community awareness and community readiness to create community forests through the REDD+ process. The project completed the development of the Forest Protection Fund model, a community foundation to support community-based conservation and development initiatives around the Tofala forest area, the community foundation mobilised over US\$50000 of savings to support the local economic development. A total of 720 man-days were spent on bio-monitoring patrols undertaken within the proposed Tofala Hill Wildlife Sanctuary and the Tofala-Mone East Forest Corridor. A total of 234 Cross River gorilla signs were recorded as well as sightings and signs of the Nigeria-Cameroon Chimpanzee. The main recommendations included the capitalisation of the Forest Protection Fund to support the local community conservation, strengthening and support of the locally based conservation committees, support the creation of the community forests within the Tofala-Mone East Forest Corridor through the REDD+ scheme, support the preparation of the management plan of the Tofala Hill Wildlife Sanctuary on completion and the integrated education and public information programme.

The major constraints to the implementation of the project were the very bad roads, resistance from some of the local communities, a fairly used project 4WD Hilux that kept breaking down and rising repairs and the less frequent availability of the government staff (due to other commitments) who mandatorily must lead the protected area creation process.

# 1.0 Introduction

## 1.1 Background

Lebialem-Mone Forest Landscape is located in South Western Cameroon and constitutes the transitional zone from the rainforest to the savannah grassland. The location of this landscape within the Gulf of Guinea's "Highlands and forests" confer an exceptional high biodiversity to this area. It is until 2004, with the discovery of the Bechati (now Tofala) sub-population of the Cross River gorillas by the Environment and Rural Development Foundation (ERuDeF) that some limited international and national attention began to be placed on this landscape.

The design of the long-term community managed conservation programme in this landscape from 2004, has been aided by the use of the following methods namely; (i) sound science focusing on using standard social and biological research methods to inform conservation policy; (ii) social theory focusing on understanding the intimate relationship between history of the people, community organizations, local economic status and local relations to the forest, geo-political interest of the indigenous people and habitat use of the local people; (iii) biological needs of the gorillas and chimpanzees focusing on the their ecology, habitat use and distribution in relation to human habitat; (iv) conservation science focusing on studying the genetics and connectivity of Tofala sub-population with the main population at Takamanda; (v) Habitat suitability between Tofala and Takamanda forests; and (vi) Economic analysis of livelihoods and economic development initiatives to support the longterm community management of biodiversity.

In July 2010, the Environment and Rural Development Foundation (ERuDeF) received a 1-year grant from the People Trust for Endangered Species (PTES) to support the implementation of a project "Conservation of Cross River gorillas and Nigeria-Cameroon chimpanzees in the Lebialem-Mone Forest landscape, SW Cameroon". This project is part of the larger Regional Programme for the Conservation of the Cross River gorillas and Nigeria-Cameroon chimpanzees in the Nigeria-Cameroon border region supported by the Federal Republic of Nigeria and the Republic of Cameroon and implemented by both international and national non-profit organizations including ACF, ERuDeF, FFI and WCS. The PTES funded project sort to cooperate with other partners to create a community-managed protected area at the Bechati-Lebialem forest, strengthen the status of the proposed corridor between Bechati and Mone, train and strengthen capacity of community governance structures to support biodiversity management and support the development of livelihood and economic development initiatives in communities around the Bechati-Lebialem forest (now proposed Tofala Hill Wildlife Sanctuary) and the Tofala-Mone Forest Corridor.

## **1.2 Project Goal and Objectives**

The main goal of the project is to provide a long term protection status to the Cross River gorillas in the Lebialem-Mone Forest Landscape in SW Cameroon.

The specific project objectives were

- i. To up-grade the status of the Bechati-Lebialem forest into a community managed wildlife sanctuary.
- ii. To reinforce and strengthen the capacity of the existing forest management structures within the Bechati-Lebialem forest area for the long-term management and conservation of these apes.
- iii. To reinforce the capacity of bio-monitoring and anti-poaching systems in the Bechati-Mone Forest Corridor.

## 2.0 Methods and Materials

### 2.1 Study sites

The two sites involved in the project included the Bechati-Lebialem forest and the Bechati-Mone Forest Corridor and shown in Figure 1 below in the south eastern portion of the distribution map.



Figure 1: Distribution map of the Cross River gorillas in the Nigeria-Cameroon Border Region



### **2.1.1: The Bechati-Lebialem Forest (now proposed Tofala Hill Wildlife Sanctuary)**

The Bechati-Lebialem forest (formerly known as the Bechati-Fossimondi-Besali forest) is located in the Wabane and Alou Subdivisions of the Lebialem Division of South West Cameroon.

The proposed Tofala Hill Wildlife Sanctuary is located between longitudes 598006m and 609830m and latitude 615778m and 634006m. The proposed Sanctuary has a surface area of over 8000ha. The area is characterised by an undulated landscape from Bechati (200m) in the lower altitudes to Fossimondi (1800m) in the higher altitudes, with a chain of peaks notably the Tofala Hill (866m). The area has a humid tropical climate with an average rainfall of about 3,500mm, (Gartlan, 1989) and a distinct dry (November to February) and rainy (March to October) seasons. Daily temperatures vary between 20°C and 35°C, with the peak in March. The soil composition varies with altitude: humid volcanic soils with average fertility in the higher altitudes around Fossimondi and sandy soils with the lowest fertility around Bechati, in the lower altitudes. The area falls within the tropical lowland rainforests and varies from the lowland rainforest, through sub montane to a montane forest.

The area harbors two great apes species: the critically endangered Cross River gorillas (*Gorilla gorilla diehli*) and the most endangered Nigeria-Cameroon chimpanzees (*Pan troglodytes ellioti*) (Oates et al, 2007 and Bethan et al 2010). Other large mammals found within this site include: Drills (*Mandrillus leucophaeus*) endemic to this region, Bush baby (*Perodicticus pottos*), Putty-nosed monkey (*Cercopithecus nictitans*), the Red-eared monkey (*Cercopithecus erythrotis*), Mongoose and Red River hog (*Potamochoerus porcus*).

The area further has a viable population of some globally threatened species of birds which include: Bannerman's turaco (*Turaco bannermani*), Banded wattled-eye (*Platysteira laticincta*), Cameroon Montane Greenbul (*Andropadus montanus*), Bannerman's weaver (*Ploceus bannermani*), Red headed Picathartes (*Picathartes gymnocephalus*), Green Breasted Bush-Shrike (*Malaconotus gladiator*) and Bangwa forest wabbler (*Bradypterus bangwaensis*).

The following villages surround this area namely; Bamumbu, Egumbo, Banti, Folepi, Bechati, Besali, Bangang, Nkong, Fossungu, M'mockbie, Sabis, Bambat, Nwametaw and Fossimondi.

Socio-economic activities in these villages are focused on farming (with principal crops being palms, plantain and cocoyam), hunting/poaching of wildlife species and harvesting of non timber forest products (NTFPs). They are also involved in aspects of petty trading, minor scale fishing and local craft making like weaving of local baskets for income generation.

### **2.1.2: Bechati-Mone Forest Corridor (now Tofala-Mone East Forest Corridor)**

The Ashukem and Bokwa Hills are located in Manyu Division in the Southwest region of Cameroon. These forest sites are located between the UTM coordinates 600,000 – 670,000 m N and 560,000 – 650,500m E. This forest area is surrounded by villages such as Etoko Mile 22, Bokwa Mile 30, Bokwa Mile 31, Etoko Mile 18, Etoko Mile 28, Kendem and Kepele. Socio-economic activities in this area are centered on the forest and its resources; hunting is very common among the young men in the villages with bush meat constituting a substantial source of protein requirement for the inhabitants as well as contributes to overall household income. Collection of non timber forest products such as rattan, bush mango (*irvingia gaboneensis*) and njangsanga is a major occupation especially for the women. Farming and fishing are also practiced with the common crops cultivated being cocoa and plantains

Bechati-Mone Forest Corridor forms part of the Lebialem-Mone Forest Landscape, located in the Northern part (Manyu Division) of South West Region. This area is located specifically between the UTM coordinates 560000m and 630000m and longitude 570000m and 630000m with an area of approximately 55,000 hectares. The Corridor cuts across a former logging concession (now a production forest), communal lands and some proposed “Sales of Standing Volumes” ie micro-timber exploitation forest of about 2500ha given to individuals.

It lies within the equatorial rainforest zone characterized by two (2) major seasons; the dry season (Nov-Feb) and the wet season (March-October), with the peak in August. Its altitude ranges from 130 to 1200 m a.s.l, giving rise to two broad vegetation types; the lowland forest and the sub-montane forest. This vegetation accounts for the huge flora and fauna diversity of the area.

Large mammals found in the Corridor include two species of great apes; Cross River gorilla (*Gorilla gorilla diehli*), chimpanzee (*Pan Troglodytes ellioti*) Other large mammals found in the site include: forest buffalo (*Syncerus caffer*), the bay duiker (*Cephalophus dorsalis*), Peter’s duikers (*Cephalophus callipygus*), the white-nosed monkey (*Cercopithecus nictitans*), Mona monkey (*Cercopithecus mona*), Red tailed monkey (*Cercopithecus ascanius*) and the Red River hog (*Potamochoerus porcus*).

Some of the main villages within this Corridor include: Kugwe, Anemafon, Nyeneba, Fumbe, Ewa, Etoko Mile 22, Nchinda, Kepoti, Numba, Ditche 1, Ditche 2, Bokwa and Kendem.

Socio-economic activities documented in these communities include: farming (with principal crops being cocoa and plantain), hunting of wildlife species for subsistence and commercial purposes, collection of non-timber forest products. They are also involved in

fishing, petty trading and palm oil production. Hunting and poaching is still very intense within the corridor.

### ***Climate***

The Bechati-Lebialem forest is within the equatorial rainforest zone characterized by two (2) major seasons; the dry season (which runs from November to February) and the wet season (which runs from March to October). The annual rainfall recorded in the area is as high as 3500mm (Gartlan, 1989). The climate is characterized at high altitudes by low temperatures, low rainfall, high relative humidity and the mountain is often covered in clouds.

### ***Vegetation***

The forest on the plateau is similar to lowland forest in structure with a closed canopy, limited under storey but had many dense vine tangles in the mid-storey. On the steeper slopes above the plateau the canopy becomes more open and the diversity of trees appears lower, whilst the under storey remains relatively clear.

Its altitude ranges from 130 to 2500 m a.s.l, which gives rise to two broad vegetation types; the lowland forest and the sub-montane forest. This accounts for the huge floral variety of the area, which in turn determines the variety of habitats and the corresponding distribution and diversity of fauna in this area.

## **2.2 Survey and Data Collection Methods**

The biological survey methods used a combination of conventional line transects, recces and standardized recce transects. With the recce survey method, the bio-monitors follow a regular pattern each day to ensure a consistent search of direct and indirect signs of apes and human activities in the forest area. Easily accessible paths (apes trails, hunters' paths etc) were consistently followed each day to collect signs of apes, other mammals and human signs. Global Positioning System (GPS) points were noted for all nest sites, apes related signs, human signs and other variables considered. The team moved averagely at a speed of approximately 1km per hour to ensure that nests and other signs were not missed (Struhsaker, 1997). Thus an average of 5km walk was done daily during data collection generating a total distance of approximately 75km being covered for 15 days of tracking. Care was taken to differentiate "definite ground nest" which belong to the gorilla from resting nest.

### **Ape nests**

All ape nest sites observed were recorded and tagged to prevent double counting. The age of the nest was estimated and construction of nest documented as follows:

A: Fresh – vegetation green or not wilted

B: Recent – vegetation dry and changing colour  
C: Old – vegetation dead but nest still intact

### **Human activities**

All human signs or direct encounters were recorded including; roads (used or disused), old village sites (used or disused), Cutlass cut, regularly used human trails, honey extraction, snare line (active or abandoned; number of snares), shot gun shells, gun shots, camp sites (active or abandoned), fire places, current or past agricultural activity, sites where nuts such as *Panda oleosa* have been cracked open, hunting, fishing, tree cutting (logging) etc.

The socio-economic surveys used a combination of questionnaires, semi-structured and focused group interviews and priority setting principles as well as participant observations.

## **2.3 Training Methods**

The training methods used a combination of desktop, data control, field training for Bio-monitors and joint Bio-monitors/senior staff on field data collection and control. Senior staff also received field training in the use of camera traps from the project technical partners.

Each month field staff from ERuDeF spend seven days in the field with the bio-monitors, after which they sit together to discuss the results, difficulties encountered and possible solutions before they begin monitoring in the next month. The field staff often goes with a camera to take photos of signs encountered as they assist the bio-monitors.

# 3.0 Presentation of Results and Outputs

## 3.1.0 Upgrading the Bechati-Lebialem forest into a community wildlife sanctuary

### 3.1.1 Creation process at the local level

In order to meet up with the requirements for the creation of a protected area in this landscape, a series of community and elite meetings were held during this reporting period. Meetings were held around the proposed Tofala Hill Wildlife Sanctuary with Bechati, Fossimondi, M'mockbie, Folepi, Bamumbu, Nkong, Besali, Fossongu, Egumbo, Banti and Bangang (Figure 2). These meetings were focused on developing community conservation agreements and validating the commitment of the local communities.



Figure 2: Community meetings in Banti and Bechati villages

This process was followed by negotiating community agreements first between the communities involved and ERuDeF and finally between the communities and the Ministry of Forestry and Wildlife. Eight of such agreements have been signed out of the eleven villages.

From January 2012 through to July 2012, a series of elite consultation meetings were held in Mundemba, Kumba, Buea, Menji Yaounde and Bamenda to explain the logic of the proposed Sanctuary and planned for the hosting of the Divisional Sensitisation Meeting that took place in June 2012 in Menji.

The effective holding of this Divisional Sensitisation Meeting in Menji paved the way for the launching of the last phases of the classification process namely i) village to village consultation process, final farm incursion assessment for compensation determination and holding of the Divisional Classification Commission to settling of final disputes and claims.

Currently, the village to village sensitization meetings have been concluded in the following villages namely Egumbo, Banti, Folepi, Bechati, Besali, Fossongu, M'mockbie, Fossimondi and Nkong. The last phase of the sensitization meetings will be held in Bamumbo and Bangang due to the non-cooperation of these villages even though community meetings were scheduled.

In November 2011, the corrected "Public Notice" **No. 0059 PN/MINFW/SG/DWPA of 02 Nov. 2011** was finally signed by the Minister of Forestry and Wildlife. The notice was distributed to the concerned communities and local administrative authority offices in Menji and within Alou and Wabane Sub-divisions (Figure 3). The issuing out of the Public Notice gave the communities and other key stakeholders a statutory 30 day period to lodge in their complaints and / or objections. It also paved way for formal consultations with affected communities and other key stakeholders.



Figure 3: The distribution and pasting of Public Notice in Communities around the proposed Tofala Hill Wildlife Sanctuary

Furthermore, the following other key activities were conducted in 2012 namely;

- A technical meeting to review the community / stakeholder complaints/ objections was held. A total of 19 complaints/ objections were received from 8 of the eleven concerned villages. The highest number (over 50%) of complaints were related to current farms and the community needs for future farmland within the proposed Tofala Hill Wildlife Sanctuary (THWS).
- A farm reconnaissance survey to get a more detailed understanding of farming within the proposed THWS was undertaken. The results of the survey will be useful during the impending subdivisional/ village to village to consultation meetings to resolve communities/ stakeholder complaints / objections arising from the Public Notice.

Consultations with key local elites, traditional leaders, local government administrators and other stakeholders from the communities adjacent to the proposed THWS were undertaken. Other consultations with key external elites were undertaken in Yaounde, Bamenda, Dschang, Mundemba and Buea. The main purpose of the consultations was to sensitize these key stakeholders on the on-going sanctuary creation process, clarify the issues and misconceptions / misinformation related to the creation of the proposed THWS; as well as to manage the key stakeholder expectations of the benefits to be derived from the establishment of the proposed THWS.

### **3.1.2 Creation process at the Regional and Central levels of government**

#### **Regional Process in Buea**

In order to push through the creation of the wildlife sanctuary, the following outputs were achieved namely;

A regional workshop for the creation of a sanctuary at Bechati-Lebialem forest was organized and hosted by the Regional Delegation of Forestry and Wildlife for the South West in Buea in July 2010 (Figure 4).



*Figure 4: Participants at the Launching workshop for the creation of a community wildlife sanctuary at Bechati-Lebialem forest*

In August 2010 a workshop was held in Kumba to lay the ground work for the development of the Technical Note (Figure 5).





Figure.5: First session on technical note in Kumba-Regional level, Members of the sanctuary creation team

The planned Sanctuary creation team was named in July 2010 by the Regional Delegate for Forestry and Wildlife for the South West (cf. Figure 6) as consisting of Regional Chiefs of Wildlife and Protected Areas, Forestry and Market Information Systems, GIS Officer and Regional Delegate for MINFOF and Executive Director, GIS Assistant, Protected Area Development Coordinator, Socio/economist for ERuDeF.



*Figure 6 : Members of the sanctuary creation team*

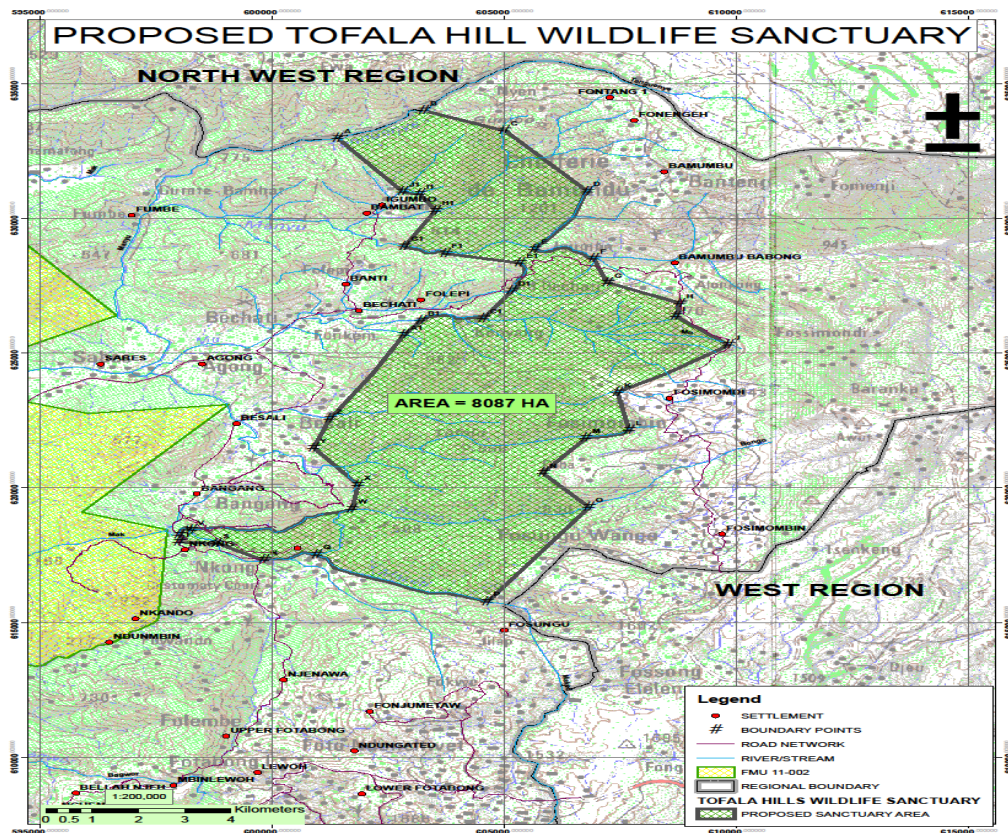
Four technical workshops (cf. Figure 7) were held between August 2010 and January 2011 to prepare the Technical Report, the first requirement for the creation of a protected area in Cameroon. A first draft of the Technical Report was obtained by January 2011.





Figure 7: Review and finalisation of the Technical Note in Bwitingi and Menji

- The final map (Figure 8) for the proposed Sanctuary was fine-tuned by the end of December 2010 and validated in February 2011 after 3 field missions led by the MINFOF



team

Figure 8 : Final map of the proposed Tofala Hill Wildlife Sanctuary

- The name of the proposed Sanctuary was concluded as the Tofala Hill Wildlife Sanctuary (formerly Bechati-Lebialem forest and/or Bechati-Fossimondi-Besali forest)

- Regional Meetings were held respectively in December 2010, December 2011 and January 2012 with the team from the Regional Delegation of Forestry and Wildlife for the South West to review past performance and make planning for next the phases for the Sanctuary creation.

## **Central Process in Yaounde**

The Technical Note (Technical Report) for the creation of the Sanctuary was completed and handed over to the Regional Delegate of Forestry and Wildlife for the South West in June 2011. In July 2011, the Technical Report was taken to Yaounde by the Regional government authority in charge of wildlife. A workshop was held in Yaounde to present to the central authority of the Ministry of Forestry and Wildlife (MINFOF) the project. With several trips made to Yaounde by the ERuDeF team in August and September, the Minister of Forestry and Wildlife finally signed the “Public Notice” in September 2011 declaring the government of Cameroon’s intention to create a Tofala Hill Wildlife Sanctuary in part of the Tofala Hill forest (former Bechati-Lebialem forest or Bechati-Fossimondi-Besali forest). While this achievement was hailed, ERuDeF soon discovered that the Public Notice had some serious mistakes which would have caused serious community conflicts if this were to be distributed as such. Consequently, ERuDeF sent back the document to the Ministry in Yaounde. The final corrected version of the “Public Notice” was signed in November 2011.

In January 2012, a political elite based in the Prime Minister Office decided to block the process and caused the process to come to a stand-still. In February 2012, ERuDeF held a meeting with the Central Authorities of MINFOF that led to defining a new route map to move the process forward. While in Yaounde, 2 meetings with elites from the concerned villages were held to increase the degree of sensitization and importance of the protected area to the local communities. The new route map arrived at consisted of holding a regional meeting with key Divisional and Regional stakeholders concerned with the Tofala proposed protected area, organized a Divisional meeting with key traditional actors chaired by the Senior Divisional Officer, a strong involvement of the Sub-divisional officers to work with the local authorities, conduct a farm reconnaissance survey to identify, review the petitions sent in from the local villages and quantify the number of farms and quantity of damage to be involved when the Sanctuary is created. These were the required pre-requisites to the holding of the Divisional Sensitisation Meeting.

### **3.1.3 Final steps towards the creation of the proposed Tofala Hill Wildlife Sanctuary**

The initial phases for the creation of this planned Sanctuary have been marred by the reluctance of the different local stakeholders especially some elites to effectively get on board the process until recently.

Currently, what remains of the last steps towards the final signing of the decree for the creation of this Sanctuary include essentially, the hosting of the Divisional Commission on the classification of the proposed Tofala Hill Wildlife Sanctuary, final assessment of the

boundaries of the Sanctuary, final assessment of farm damage claims, compilation of the final Sanctuary documents and transmission to Yaounde and follow-up of the dossier for eventual errors correction and signature. This may take at least another six months.

From January to June 2011, the following key actions in Table 1 below were undertaken to move forward with the process of creating the proposed Tofala Hill Wildlife Sanctuary (THWS).

Table 1: Summary of processes for the creation of the proposed Tofala Hill Wildlife Sanctuary from January to June 2011

January 2011	Joint MINFOF and ERuDeF team with resource persons coming in from MINFOF Yaounde and Prime Minister office met in Menji, Lebialem to propose the final version of the Technical Note.
March 2011	Meeting with MINFOF Director of Wildlife and Protected Areas to plan for a national workshop to officially present the proposed TOFALA Hill Wildlife Sanctuary project
March 2011	Reorganization and installation of village forest management committees by Divisional Delegate of MINFOF Lebialem
May 2011	Attend and supported the Wabane Fons' Conference in Egumbo to present the CR gorilla platform with DDF/W Lebialem
May 2011	Commissioning of the President of the Wabane Fons' Conference as the effective Chair of the Fons' Advisory Council for the management of the Tofala Hill Wildlife Sanctuary and supporting his conservation campaign in the area.
June 2011	Technical Workshop in MINFOF Yaounde to present the Technical Note for the Creation of the proposed Tofala Hill Wildlife Sanctuary
June 2011	Preparation with Regional Delegation of Forestry and Wildlife Buea, six month planning schedule of activities towards the creation of the proposed Tofala Hill WS
July 2011	Submission of "Technical Note" for the official signing of "Public Notice" for the creation of the proposed Tofala Hill WS.

The Public Notice is one of the last three steps towards the creation of a protected area. After this signing of the Public Notice, this will be followed by broad consultations with all the internal and external elite, key actors, local communities and government administrative officials as well as holding of a final classification commission and

submission of final Sanctuary documents through central MINFOF to the Services of the Prime Minister for final signature to create the Sanctuary.

### **3.2 : reinforcement and strengthening of the existing village forest management structures to efficiently manage their natural resources into the long-term,**

#### **3.2.1 Creation and strengthening of community organizations**

##### **Village Forest Conservation Committees**

Village Forest Management Committees have been created and strengthened in 9 out of 13 villages of Egumbo, Banti, Folepi, Bechati, Besali, Bangang, Nkong and Fossimondi and M'mockbie. Other community governance systems set up around the proposed Tofala Hill Wildlife Sanctuary included the Tofala Hill Area Beekeepers' Association, Tofala Hill Area Farmers' Association and Association of the Village Forest Management Committees (the Forest Management Council of the proposed Tofala Hill Wildlife Sanctuary).

These associations collectively and in addition to the respective villages' administration signed MoUs with the local MINFOF administration to increase their effective commitment and engagement towards the protection and conservation of gorillas and chimpanzees in the wildlife sanctuary under creation.

The Association of Village Forest Management Committees was put into place to serve as a tier-level organization whose main role is to oversee the coordination of the activities of the respective Village Forest Management Committees.

##### **The Women Association of Tofala**

In order to mainstream and increase women's role in sustainable management of natural resources in the area, an Association of Women of Tofala was formed. to permit the women enter into the main management platform of the Sanctuary. They are currently receiving training on economic development and management.

Meetings were held with the various Women's groups from the various villages. These meetings led to the formation of the following women associations;

- The Nkong Women Association (NWA)
- The Bangang Women Association (BaWA)
- The Besali Women Association (BeWA)
- The Bechati Women Association (BecWA)
- The Folepi Women Association (FoWA)
- The Banti Women Association (BWA)
- The Association Of Egumbo Women (AEW)
- The Fossungu Women Association (FWA)



Figure 9: Executive of Women Association of Tofala

All these Women Associations have been brought together to form the Tofala Women Association (TWA), which will be included in the management board of the Tofala Forest Protection Fund and the Tofala Hill Wildlife Sanctuary Management Board, to increase the role women could play in the management of this planned Sanctuary. Due to community conflicts with ERuDeF, these associations are yet to be formed in Fossimondi, Bamumbo and M'mockbie.

### **3.2.2 Village Traditional Councils (VTCs)**

The VTCs in the adjacent villages serve as the policy and management organ for villages in terms of economic, cultural and political development in the respective villages.

The traditional councils that represent the traditional administrative organ in each village were trained in using some of community-based management approaches to management of natural resources. Furthermore, the local chiefs through the Association of traditional rulers were brought on board the project, as they were assisted to conduct education and sensitization meetings around the proposed Tofala Hill Wildlife Sanctuary on the importance of the site and the rationale of the planned Wildlife Sanctuary.

### **3.2.3 Training and capacity building of village based conservation structures**

In order to continually increase the understanding of the population status and threats gorillas and chimpanzees face in the Lebialem-Mone Forest Landscape, representatives of the village forest management committees were trained in surveys and bio-monitoring and they became part of the project bio-monitoring team in three key areas namely the proposed Tofala Hill Wildlife Sanctuary area, the Ashukem-Bokwa hills (Tofala-Mone East Forest Corridor) and the Mak/Betchou forest. They were trained in survey and bio-monitoring techniques, data recording and quality control as well as reporting.

They received a 2-week training in bio-monitoring in the Ashukem-Bokwa Hills in October 2010 (cf. Figure 10). In the proposed Tofala Hill Wildlife Sanctuary and Tofala-Mone East Corridor, the local eco-guards (bio-monitors) were involved in 20 bio-monitoring surveys involving senior project staff and 10 individual bio-monitoring surveys.



### **3.3: the reinforcement of bio-monitoring and anti-poaching in the Bechati-Mone Forest**

#### **3.3.1 Training of field team**

In November 2010, a new bio-monitoring system based on camera traps was put in place in the proposed Tofala Hill Wildlife Sanctuary with technical support from the Diehli Initiative, a Czech Republic partner. The Diehli Initiative team spent eight months in the Tofala forest training ERuDeF team and the local eco-guards on the use of the camera traps technology to track gorillas and chimpanzees. Only two camera traps were installed. In 2011, we captured the first pictures of chimpanzees and other wildlife species such as the common monkeys, mongoose, duikers, red river hog, etc. Due to the rarity of the gorillas and very few camera traps (2), we have not been able to camera the images of the gorillas. In May 2012, a friend of ERuDeF from Australia donated another camera trap and this increased the number to 3 in a 15000ha forest. This number is still very insignificant.



Figure 10: Training of Bio-monitors in biological monitoring with the use of GPS

Four field assistant/eco-guards were selected from the local poachers, trained for 2 weeks and posted to the Tofala, Tofala-Mone and Mak/Betchou forest areas. This training occurred in the Tofala-Mone Forest Corridor at Ashukem-Bokwa Hills where 2 subpopulations respectively of Cross River gorillas and chimpanzees are located. A regular monthly bio-monitoring has been instituted in the Mak-Betchou, Tofala hill and the Tofala hill-Mone forest corridor, with MINFOF staff actively involved in the bio-monitoring programme to foster law enforcement and anti-poaching. One week training on data quality and management was organized for the local eco-guards from the proposed Tofala Hill Wildlife Sanctuary, Ashukem-Bokwa hills and Mak-Betchou forests in January 2011 in Buea. This training (cf. Figure 11) was aimed at equipping the eco-guards with capacity to collect and record quality data from forest surveillance and bio-monitoring surveys as well as summarized the data for management purposes



*Figure 11: Project staff training Bio-monitors on the use of GPS and tracking of gorillas and chimpanzees*

### **Data management**

A one week training session on data quality and management (cf. Figure 12) was organized for the local eco-guards from the proposed Tofala Hill Wildlife Sanctuary and the Ashukem-Bokwa hills in January 2011 in Buea. This training was aimed at equipping the eco-guards with capacity to collect and record quality data from forest surveillance and bio-monitoring surveys as well as summarize the data for management purposes.



*Figure 12: Data management workshop with Bio-monitors in Buea*



Furthermore, project staff have been trained in the design and management of a biological data base.

### 3.3.2 Mapping of the proposed Bechati-Mone forest corridor

The key output of this objective was the mapping of the corridor and introduction of line transects to improve on the bio-monitoring in the corridor. The final proposed corridor map (Figure 13) have been mapped linking the proposed Tofala Hill Wildlife Sanctuary to Mone Forest Reserve. A new staff was appointed to coordinate bio-monitoring and education efforts in the corridor. Bio-monitoring continued to be conducted in this corridor. Figure 13 shows the location of the respective sub-populations of gorillas and chimpanzees.

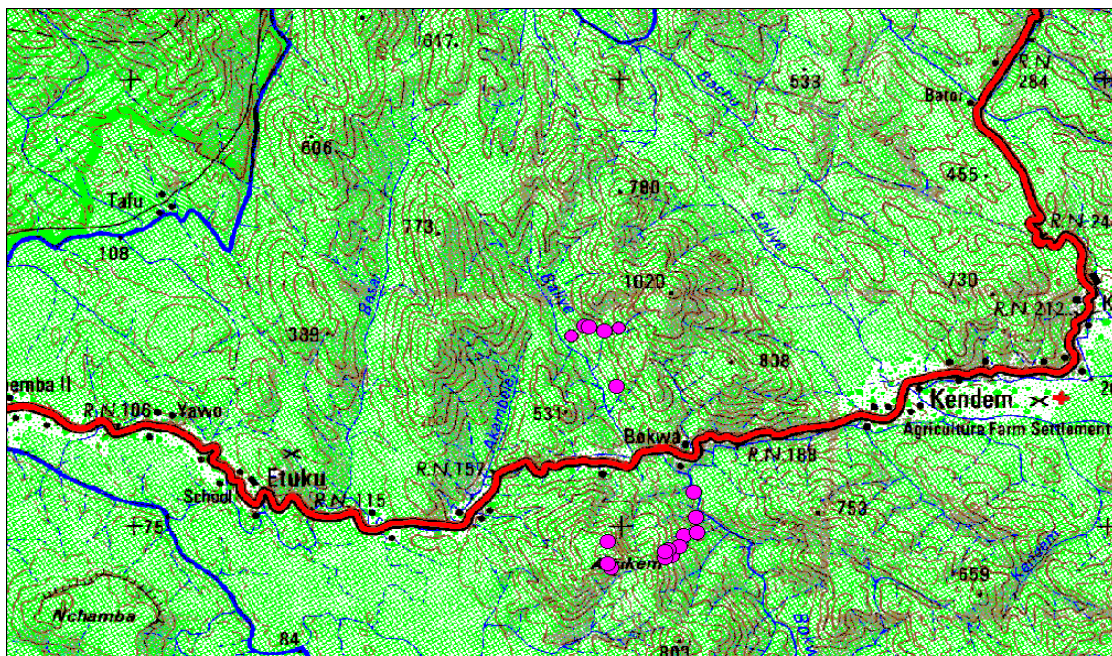


Figure 13: Map of the gorilla subpopulation in the Tofala-Mone Forest Corridor

For the purpose of bio-monitoring, a 2x2 line transect (Figure 14) was designed for the Tofala-Mone Forest Corridor.



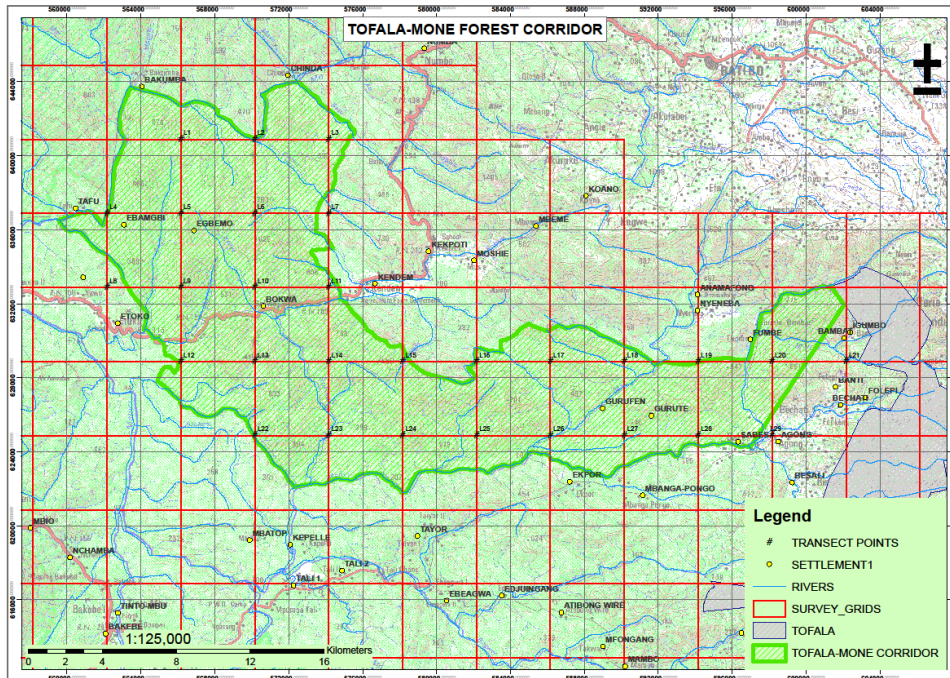


Figure 14: Map of proposed Tofala-Mone Forest Corridor

Collaboration with the University of Dschang/Department of Forestry led to the completion of a land-use and biodiversity assessment within the corridor and beyond. In collaboration with the Regional Delegation of Forestry and Wildlife for the South West, the conservation map of Lebiam Highlands was also completed (Figure 15).

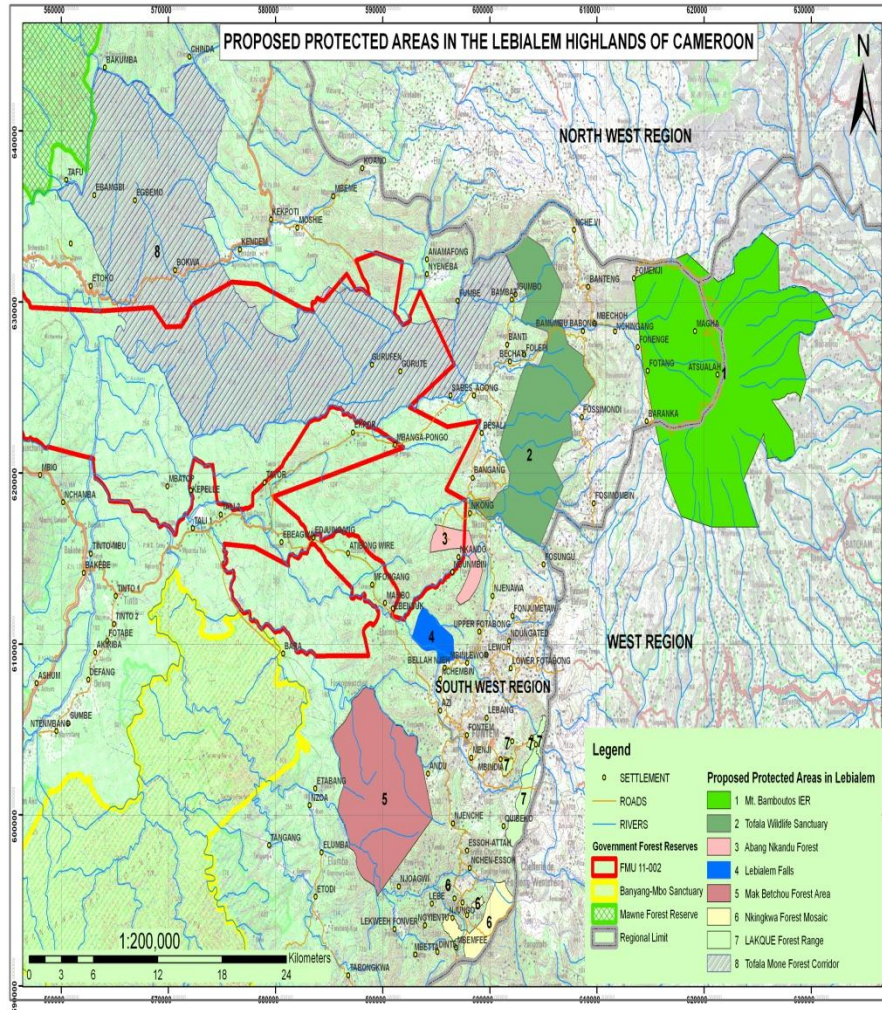


Figure 15: the Conservation map of the Lebialem Highlands Conservation Complex

### 3.4.3 Establish a new bio-monitoring system

In order to harmonise the information we collect through bio-monitoring across the Cross River gorilla landscape, we adopted the line transect and recce lines being used both by WCS and WWF in the region. We adopted a 2x2 transect approach given the small population sizes of these apes. A senior project staff and a bio-monitor have been appointed to oversee bio-monitoring in Tofala-Mone East Forest area, while in the proposed Tofala Hill Wildlife Sanctuary, 3 bio-monitors and another senior project staff are overseeing the bio-monitoring initiative there.

Trail cameras placed in Tofala forest (Figure 16) in January 2011 recorded 4 animal species; 11 chimpanzees with 4 females carrying young, several hyraxes – Western Tree



Hyrax, 1 porcupine, 1 rat mole in the Fossimondi forest area. In March 2011 in the Bechati forest, trail camera recorded 14 chimpanzees including 2 females carrying young, One duiker and 2 squirrels and in Nkando forest red river hogs, duikers, Mona monkeys, palm civet as well as several hunters with their dogs were recorded.



Figure 16: Camera traps installed in the Tofala Hills for bio-monitoring

### 3.3.4 Improved understanding of the status of gorillas and chimpanzees in the Tofala and Bechati-Mone forest corridor

#### ***Improved understanding of the status and distribution of gorillas and chimpanzees in the Tofala forest***

A total of 5 gorilla nest sites (with 9 tree nest, 21 ground nests ), with groups sizes of 6, 5, 4, 3, 2 and 1 were recorded while 36 sleeping nest sites with 417 nests (67 ground nests and 361 tree nests) were recorded for chimpanzees. There were nest groups of 1, 2, 3, 4, 5, 12, 13, 16 and 21 nests per nest site. Assuming that no two groups of the same size exist and that no animal construct two nests per night, results show a total 21 weaned gorillas. And 77 weaned chimpanzees recorded during this period. Gorillas preferred secondary forest and valley areas with more herbaceous plants and highly entangled vegetation while the chimps occupied the hilly areas and also infest the secondary forest and valleys occasionally. Figure 17 below shows the different gorilla signs recorded in the project area.



*Figure 17: Gorilla nesting sites and feeding signs on Afromomun spp fruits on Raffia bamboo stem in the Tofala forest*

This study will help improve on the national and global figures for remaining Cross River Gorillas and chimpanzees in the wild by updating their respective data bases.

In the Tofala-Mone Corridor, about 15 nests were recorded for the gorillas and over 60 chimpanzees nests also recorded.

### ***Improved understanding of the socio-ecology of gorillas and chimpanzees***

Other gorilla signs observed included; trails, resting nest sites and feeding signs mainly on high sugar fruits and plants, soft juicy stems and fruits, 3 resting sites (with/without nests) and 10 trails were recorded. 22 feeding signs were observed for chimpanzees, with more diverse food types including fruits, leaves, stems, tree barks, termites, ants, honey and soil. 12 vocalizations, 6 resting nest sites (with 23 nests), 72 trails and 20 play grounds. Evidence of nest site/nest reuse was greatly observed for chimpanzees while some gorillas were observed to sleep on bare ground during the dry season. Average height range of 13 –

16 m was recorded for chimpanzee tree nests and an average height range of 4 – 6 m for gorilla tree nests.

This study will help improve on the understanding of the socio-ecology of the apes and their habitat use pattern as well as their range with special focus on their differences and cross interaction as they live in sympatry in the study area.

### ***Improved understanding of the threats facing gorillas and chimpanzees***

Human signs recorded were 18 new farmlands, 52 gun shells, 7 gun shots, 4 hunting huts, 8 trails, 43 wildlife snares and 3 fire places of hunters.

This study will give information on the threats facing the apes from direct human activity and may also be used to evaluate conservation success and results of education and sensitization through a measure of the pattern of change (positive or negative) in human behavior as regards involvement in activities affecting conservation. This will also lead to identification of high community conservation priority areas and forecast of future actions.

### **3.3.5 Support to anti-poaching, wildlife law enforcement operations and Education.....**

***Support wildlife law enforcement and bio-surveillance.*** Simplified booklets of the wildlife and forestry laws were designed, produced and distributed to the local communities. Five eco-guards were trained on Cameroon Wildlife and forestry legislation. New MINFOF staff were trained on the conservation program in the landscape through workshops organized in Buea and Menji. These workshops also led to the production of a technical note for the Bechati-Fossimondi-Besali forest block (now known as the proposed Tofala Hill Community Wildlife Sanctuary), which is one of the government requirements for the creation of a protected area in Cameroon. MINFOF staff have also been integrated into our regular bio-monitoring as a way to enhance law enforcement and foster anti-poaching.



*Figure 18: Workshop with MINFOF in Menji    Workshop with MINFOF in Buea*

ERuDeF also supported the MINFOF team in joint anti-poaching and wildlife education and sensitization missions as well as joint forest surveillance and bio-monitoring missions in

the proposed Tofala Hill Wildlife Sanctuary to evaluate the ecological status of the gorillas and chimpanzees as well as the threats they face.



Figure 19: Divisional Delegate MINFOF reading out forestry and wildlife laws in Bechati

### **3.3.6 Conservation awareness in the Tofala-Mone East Forest Corridor**

In order for the subpopulation of the gorillas and chimpanzees in Tofala-Mone Forest Corridor to survive and become fully protected, increased community awareness was reached and the local people became aware of the need to protect these species and their habitats. Consequently, the local people who had previously accepted a local “sales of standing volume” forestry exploitation permits, renounced them and accepted to work with the project team to create a series of community forests under the REDD+ scheme being considered for this corridor area. All the 9 villages adjacent to the proposed three forestry exploitation blocks in the corridor wrote letters to the Minister of Forestry and Wildlife unanimously declaring their intentions towards the creation of community forests in lieu of “Sale of standing volumes” that just a few individuals will benefit. The Minister of Forestry and Wildlife finally approved the creation of a series of community forests in October 2012. This new component of the project will be launched in 2013.



Table 2, shows the attendance in some of the meetings held during the sensitization meetings in the Tofala-Mone Forest Corridor.

Name of Village	Number of people
Etoko mile 22	21
Egbemo	17
Bokwa	27
Kendem	18
Numba	22
Ebangbi	34
Chinda	32
Ayukaba	27
Bakumba	34

In order to raise and obtain community commitment towards the creation of three community forests, a number of pre-sensitisation meetings were held in the Corridor area as shown in Figure 20 below.



**Meeting in Etoko mile22,**



**Meeting in Kendem Village**



**Meeting in Bokwa village**



**Meeting in Numba Village**

Figure 20: Various pre-community forestry sensitization meetings in the Tofala-Mone Forest Corridor



## 4.0 Project outcomes & sustainability

### **Contribution of the project towards longterm conservation of the species and habitat**

The creation of the proposed Tofala Hill Wildlife Sanctuary and a series of Community Forests in the Lebialem-Mone Forest Landscape is a key outcome of this project that will lead to the long term conservation of the species and their habitats. Furthermore, the strengthening of the capacity of the village conservation committees and the local staff of the Ministry of Forestry and Wildlife in bio-monitoring and forest surveillance have increased the technical capacity of the community and government officials to take control of the project. Additionally, the development of the Forest Protection Fund (FoProF), a community foundation to support both community-based conservation and local economic development initiatives is a major steps towards meeting the conservation and economic needs of the local people that have rarely been considered by the other conservation programmes.

### **Contribution of the project towards conservation in the South West Region**

The Lebialem-Mone Forest Landscape (and otherwise known as the Lebialem Highlands Conservation Complex) belongs to one of the biologically and ecologically diverse region in the Gulf of Guinea with exceptional high and rear plants, primates, birds, reptiles, amphibian densities and endemism, including the Cross River gorilla and Nigeria-Cameroon chimpanzee that still remained unprotected. The major contribution of ERuDeF and its partners have been the creation of a new conservation landscape in the Region. This project will help to restore and protect the remaining plants and animal taxa in the Lebialem highlands and the Gulf of Guinea including the Cross River gorillas and the Nigeria-Cameroon Chimpanzee, core species of interest which the project is targeting through the creation of a series of protected areas starting with the proposed Tofala Hill Wildlife Sanctuary and Tofala-Mone Forest Corridor Community Forests. The other planned protected areas within this landscape include the Mak-Betchou Chimpanzee Sanctuary, Lebialem Highlands Important Birds' Area and Mt Bamboutos Integral Ecological Reserve. The local forest adjacent communities are solely dependent on the forest and its resources for their survival, through hunting of wildlife for bush meat trade and protein, clearing of forest for farming and gathering of Non Timber Forest Products. In order to accommodate these needs of the local forest adjacent communities, a Forest Protection Fund has been developed that will provide financial support towards secured alternative livelihood and economic development in these local communities. The Lebialem Highlands Conservation Complex is now officially part of the Regional Action Plans for the Conservation of Cross River Gorillas and Nigeria-Cameroon Chimpanzees between Nigeria and Cameroon.

### **Dissemination of Project Results**

Apart from the soft and hard copies of reports including peer review papers, ERuDeF is developing the first ever Cameroon Independent Green Media Initiative (CIGMI) to support the national-wide publication of results and other green news. The CIGMI will initially consist of producing and disseminating of a green Newspaper and Magazine and subsequently a Green News Cable Network. . Results of the project are also being released through Tv and Radio programmes and local newspapers.

### **Development of the long term funding mechanisms**

The long term funding of conservation programmes in this landscape will use a two-prong approach namely:

- Development of a local financing facility known as the Forest Protection Fund (FoProF). This is a community managed community foundation designed to support village-based conservation actions and local small economic development projects.
- Development of a REDD+ Initiative with Fauna and Flora International
- Developing a long term constituency of international partners committed to the area.
- Support from the government of Cameroon towards protected area management

## 5.0 DISCUSSIONS

Previous surveys conducted by ERuDeF in Tofala and in Ashukem and Bokwa Hills have repeatedly reported gorilla observations (ERuDeF, 2007, 2008, 2009) while no gorilla signs have yet been recorded in the Mak-Betchou area though it houses a high population of chimpanzees. Surveys are not just enough but developing new techniques for data collection and setting up effective gorilla/wildlife bio-monitoring programs as well as integrating law enforcement into conservation is critical to making effective management and conservation decisions.

The Tofala-Mone forest corridor is particularly important because it links the Tofala subpopulation of gorillas to the gorilla sub populations in Takamanda and Mone Reserves. The protection of this corridor is critical in supporting the genetic connectivity, between the Tofala subpopulations to those of the Takamanda/Mone forest. While no gorilla signs were recorded in the Nkong-Nkandu forest, this adjacent forest however has a small population of the chimpanzees and other locally important wildlife species such as the Red River hog, Drill, and Red-ear monkeys. Hence it is important to conserve this small piece of forest.

in the Tofala forest area, peak signs for gorillas were recorded during the rainy season and fruit ripening season corresponding to an increase in their nesting and feeding behavior. July through September corresponds to this peak period. November is the beginning of the dry season, and as observed in the Tofala area, observations reduce in the dry season, as foot prints and maybe trails fade out after a few days. With the dry forest floor, sometimes the animals rest or sleep with building nests. Most chimpanzee signs observations in Tofala forest area were recorded on steep slopes, with closed vegetation cover. Ground nests were mostly constructed on slopes with closed canopy and vegetation cover (low visibility). This may be an adaptation to the increasing human pressure

The use of trail cameras in monitoring is a positive innovation in this program and is important in direct sightings and in determining group sizes. The groups of chimpanzees recorded with the trail cameras had females carrying children. This is a good indication of future population growth if these chimpanzees are protected. This further indicates that breeding is still going on in the wild among these species.

Human pressure in terms of forest conversion to farmlands was considerably high in the Tofala forest area. Though during monitoring, encountered snares are destroyed, gun shells and shots were registered at regular intervals. There is very high poaching in the Tofala-Mone Forest Corridor as well as very high trapping in the Tofala forest. Dog hunting is also very important.

The regular tracking and monitoring of gorillas/wildlife in the landscape will help slow down human pressure. The presence of bio-monitors in the forest has also discouraged hunting (trapping and gun shutting of animals during the day) as they destroy all snares encountered and educate hunters about protected species when they come across them. Bio-monitoring in some months have involved MINFOF staff with the objective of carrying out forestry/wildlife law education and anti-poaching. The constant presence of local eco-guards in the forest has also reduced the level of hunting of protected species as the hunters are aware they shall be reported to the appropriate authorities.

Though the land use pattern and the number of apes' groups present in this forest are still being approximated, recorded data indicate that more variables will gradually become understood as the bio-monitoring exercise continues.

## 6.0 Constraints

- The Bechati-Mone forest corridor is too vast to be monitored by one local guard, added to the fact that the Mamfe-Bamenda border road permanently partitions this forest into two blocks
- Also, additional GPS units for these sites were just recently purchased, thus some signs do not have waypoints.
- Ineffective communication between field monitors and office staff made work some times inefficient as most communication requires to be done over the phone, with spotted network coverage in the field area; it took much time and third parties to communicate with local field monitors, coupled with the fact that they lack mobile phones.
- The constant changing of government staff makes work coordination with difficult and time consuming
- There are a lot of administrative bottlenecks that cannot be overcome by ERuDeF
- Very bad and inaccessible roads from July through to October of each year make work nearly impossible during this period of the year
- The project has just one fairly used vehicle that has become over burden and its regular break down constantly add mounting expenses unto the project. Sometimes due to very high costs, project activities are slowed down.

## 7.0 Recommendations

- The increasing human pressure in this area requires more international support to hasten the creation of this system of protected areas.
- Field Bio-monitors should be provided with field equipments like field booths, rain coats and digital cameras to boost their work.
- The number of Bio-monitors should be raised to 10 from the current 4 to increase efficiency
- The bio-monitoring period should be raised to 30 days up from 15 days.
- Conservation education should be strengthened in these areas to create conservation awareness that will go a long way to reduce poaching.
- The Forest Protection Fund should be supported and/or capitalized to enable it perform its mission properly
- The bio-monitoring unit should be provided with satellite phones for communication while in the field as staff stay unconnected and isolated till they return from the field which is very dangerous in case of accidents and emergencies.
- The project should be supported with new vehicles and motor cycles including office support.