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## ENVIRONMENTAL IMPACT ASSESSMENT FOR THE FOREST MANAGEMENT UNIT N° 11 005

Eyumojock Subdivision, Manyu Division, South West Region



### REPORT

Compiled by:



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**AFRICAN CENTRE FOR APPLIED FORESTRY RESEARCH AND  
DEVELOPMENT**

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## LIST OF ACRONYMS AND ABBREVIATIONS

<b>AIDS</b>	: Acquired Immuno Deficiency Syndrome
<b>CAFECO</b>	: Cameroon Agriculture and Forestry Exploitation Company Limited
<b>CAMTEL</b>	: Cameroon Telecommunications
<b>CAMWATER</b>	: Cameroon water cooperation
<b>CBWM</b>	: Community Based Wildlife Management
<b>CIG</b>	: Common Initiative Group
<b>CITES</b>	: Convention on International Trade in Endangered Species of Wildlife
<b>CO<sub>2</sub></b>	: Carbon Dioxide
<b>CODEV</b>	: Conservation Development Service
<b>COVAREF</b>	: Comité de Valorisation des Ressources Fauniques
<b>Dbh</b>	: Diameter at the Breast Height
<b>EMP</b>	: Environmental Management Plan
<b>FCFA</b>	: Francs de la Communauté Financière Africaine
<b>FMCC</b>	: Forest Management Control Committee
<b>FMU</b>	: Forest Management Unit
<b>GTZ</b>	: Deutsche Gesellschaft für Technische Zusammenarbeit GmbH
<b>Ha</b>	: Hectare
<b>IUCN</b>	: International Union for the Conservation of Nature
<b>Km<sup>2</sup></b>	: Squared Kilometre
<b>m</b>	: Metre
<b>MINADER</b>	: Ministry of Agriculture and Rural Development
<b>MINAS</b>	: Ministry of Social Welfare
<b>MINEDUB</b>	: Ministry of Basic Education
<b>MINEF</b>	: Ministry of Environment and Forestry
<b>MINEFOP</b>	: Ministry of Employment and Professional Training
<b>MINEP</b>	: Ministry of Environment and Nature Protection
<b>MINEPAT</b>	: Ministry of Economy, Planning and Town Planning
<b>MINEPIA</b>	: Ministry of Livestock, Fisheries and Animal Husbandry,
<b>MINESEC</b>	: Ministry of Secondary Education
<b>MINFOF</b>	: Ministry of Forestry and Wildlife
<b>MINT</b>	: Ministry of Transport
<b>MINTP</b>	: Ministry of Public Works
<b>MTN</b>	: Mobile Telephone Network
<b>NGO</b>	: Non Governmental Organisation
<b>STI</b>	: Sexually Transmissible Infection
<b>ToR</b>	: Terms of Reference
<b>UFA</b>	: <i>Unité Forestière d'Aménagement</i>
<b>WCS</b>	: Wildlife Conservation Society
<b>WWF</b>	: World Wide Fund for Nature

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The team of experts who contributed in the collection of data for this report was composed of:

- **TCHOFFO Benjamin:** Forestry Engineer, and Environmental Manager; General Coordinator of the Impact Studies.
- **Dr. MABOUL EBANGA Eustache-Marie Aimé:** Psychologist and Expert in charge of the analysis of Socio-economic aspects: Chief of Mission responsible for the general coordination of the mission activities, who is of blessed memory.
- **Charles NDIFON NCHAMCHAM:** Forestry Engineer and Environmentalist: Expert responsible for studying the biological and environmental impacts of the project and proposition of the Environmental management plan.
- **FONYE CONSTANTINE MENGNO:** Forestry and Civil Engineer: Expert responsible for analysing the biophysical aspect and proposition of mitigation and strengthening measures.
- **NUNGU Abraham-Nerry NKENYEH:** Civil Engineer; assisted in the analysis of the physical milieu.

It is worth mentioning here that **Dr. MABOUL EBANGA Eustache-Marie Aimé** departed from this world on the 9<sup>th</sup> of May 2009 after his return from the mission on public consultations that was carried out from the 24<sup>th</sup> April to the 1<sup>st</sup> of May 2009. Some of the documentation which was at his keeping such as some attendance sheets and signed meeting minutes could not be found.

## ABSTRACT

The forest concession N° 1087 is found in the Eyumojock Council area. It covers an estimated surface area of 80 800 ha. The forest management unit (FMU) n° 11 005 which makes up this concession has been attributed to the Cameroon Agriculture and Forest Exploitation Company Limited (CAFECO) which has a partnership agreement with WIJMA Douala.

CAFECO has a provisional exploitation convention, N° 0592/CPE/MINFOR/SG/DF of the 22<sup>nd</sup> September 2006 signed with the Cameroonian Government represented by the Ministry of Forestry and Wildlife for a period of three years. This will be followed by a 15 - year final convention, renewable once.

In order to comply with the regulations, in force, CAFECO/WIJMA has decided to carry out the environmental impact assessment for the above FMU. In this light, it has requested the expertise of the African Centre for Applied Forestry Research and Development (CARFAD), which is an approved firm by the Ministry of Environment and Nature Protection (MINEP) to carry out environmental impact assessments and environmental audits.

The methodology used consisted of literature review and field missions. The first field mission focused on participatory planning of public consultations meetings. It took place from the 13<sup>th</sup> to the 18<sup>th</sup> of February 2009. This involvement of the public was to increase the public acceptance of the project and to increase the likelihood of the project's sustainability. The different stakeholders concerned were equally consulted. The public consultations meetings programme was established and submitted to MINEP for approval.

The second mission was carried out on the 16<sup>th</sup> to the 24<sup>th</sup> of March 2009 to notify all the stakeholders on the public consultations meetings. At this stage dialogue was very important. The consultants listened to the contacted persons and were openminded to their suggestions. During this mission, notification letters and the approved programme were distributed.

The third mission from the 24<sup>th</sup> of April to the 1<sup>st</sup> of May 2009 was for the public consultations meetings. They were conducted to find out the local views and concerns of the population, so that these can be incorporated in the project's planning. These meetings were carried out using two techniques: Information technique, where the public was educated on the project and its likely effects on their lives (briefings and presentations). The participation technique, where the populations were involved in discussions in order to get their opinions (hearings, interviews, questionnaires).

During this mission, consultation meetings were held with villagers, the administration and heads of technical services, municipal and traditional authorities. The different impacts were participatively identified with their activity sources, and then mitigation/strengthening measures were then proposed.

The combination of data from the literature review and that collected from the field helped in the write up of the report.

As concerns the project description, the FMU n° 11 005 is situated entirely in Eyumojock Subdivision, Manyu Division in the South-West Region. The activities of the project likely to create environmental impacts comprise of the following: the demarcation of the limits of the FMU and annual logging units, the creation and maintenance of roads, the creation of landings, the tree felling, the transport of logs and the recruitment of labour.

On the physical environment, the climate of the project zone is the equatorial type, with two seasons. The annual rainfall is about 3 100 mm and the average monthly temperature stands at 26.12°C. As concerns hydrology, the River Manyu and its tributaries such as the River Munaya drain into the Manyu Basin. Other tributaries are the Akarem, the Akam, Berun, Akegam, Akhim, Akwi, Wer, Awa, Akok, Taban, Oroko, Bakep etc.

The soils of the project area are ferallitic on the slopes and sandy-clay on the valleys. The zone presents an undulating topography

The FMU is made up of the dense humid semi deciduous forest having varied species such as Azobe, Okan, Doussie, Faro, Movingui, Ilomba, Mukulungu, Naga, Tchitola, Kossipo, Tali, Angongi, Kumbi, etc. Non timber forest products like cane and Njangsang are also found in the area.

As for wildlife resources, inquiries from the local populations and existing inventory reports show the existence of, chimpanzees, elephants, pythons, vipers, civets and other rare and endangered species.

On the socioeconomic viewpoint, the project area has 25 direct impact villages. These are: Babong, Araru, Keogh, Bakut, Ekogate, Ogurang, Babi, Mbobui, Mbofong, Abakpa, Akwa, Ekoneman Awa, Ekoneman Ojong, Ajaman, Okurikang, Inokun, Mbenyan, Ndebaya, Nsanagarati I, Otu, Okuri, Mbinda, Ayaoke, Onaku, and Eyang Emangha. The total population of these villages is estimated to be about 13 626 inhabitants. Most of the inhabitants are the Ejaghams and other settlers in the zone include the Akwayas, Nkougnes, the Bamendas and Nigerians. The people are God fearing and belong to various religious groups namely: the Catholics, Pentecostals, Presbyterians, Baptists, Bahais and Muslims.

The population lives basically on forest products. Agriculture constitutes their main stay. Animal husbandry is carried out as a secondary activity. There is availability of bushmeat which serves as the main source of animal proteins. There are a handful of business persons and civil servants.

As concerns infrastructures, all the direct impact villages are enclaved. The roads in the project area are in a very bad state due to lack of periodic maintenance. They are practically inaccessible during the rainy season. Health and educational infrastructures are few and under equipped with both personnel and equipment. There are no electricity and functional potable water infrastructures. Few villages have poor market constructed with local materials. Most of their farm products, hunting, fishing and products from animal husbandry are sold in the sub-divisional headquarter at Eyumojock.

The study found that the project has both positive and negative impacts. As positive impacts, the following have been identified:

- development of agricultural and livestock activities;
- development of economic activities and increase in revenues;
- facilitation of the movement of persons and goods;
- creation of jobs;
- amelioration of the living standards of the populations.

After evaluation, it was found that the relative importance of these impacts were minor, medium or major. Strengthening measures were proposed and they go from the sensitisation of the direct impact population on the opportunities offered by the project to their assistance on the creation of tree nurseries; elaboration and support in the execution of agropastoral and livestock projects. These strengthening measures made the positive impacts to have a medium or minor value for the residual impacts.

The negative impacts identified are:

- air pollution;
- noise pollution

- soil pollution and disturbance by solid waste;
- soil erosion;
- pollution of hydrology;
- disturbance of surface water flow;
- threats to wildlife biodiversity;
- decrease in the availability of useful NTFPs to the populations;
- deforestation;
- threats to flora biodiversity;
- destruction of crops;
- risk of degrading road infrastructures;
- threats to cultural heritage;
- risk of degrading the health status of workers and local populations;
- risk in increase of STIs/HIV/AIDS prevalence and unwanted pregnancies;
- increase in road and jobsite accidents;
- increase in poaching;
- scarcity of wildlife products;
- limitation of access to land for the direct impact populations;
- risk of conflicts;
- moral decadence and increase in crime.

The relative importance of these impacts varies from minor to major, but after projecting the application of mitigation measures, the importance of the residual impacts was either limited or minor except for risk in the increase of STIs/HIV/AIDS prevalence and unwanted pregnancies which is medium. This means a particular attention should be put on this impact.

The measures proposed to mitigate and strengthen the identified impacts are centred on the following:

- the training of the Site Manager of CAFECO/WIJMA on environmental management
- the development of the environmental component of the internal regulations of CAFECO/WIJMA;
- the sensitisation of personnel and populations on many aspects among which, STIs/HIV/AIDS, unwanted pregnancies, divorce, poaching, security, job opportunities and existing opportunities offered by the project;
- the conservation of cultural heritage;
- the capacity building of workers;
- the construction of concrete surface and a vehicle and machine washing point;
- the installation of a staff store where meat and fish are stocked;
- the compensation of destroyed crops;
- the assistance of the populations in the creation of tree nurseries;
- the assistance of the populations in agropastoral and piscicultural projects ;
- the prioritisation of local populations during recruitment of local labour.

The cost of all this measures developed in the Environmental Management Plan (EMP) has been estimated at **40 670 000** CFAF. The implementing actors are CAFECO/WIJMA personnel, sub-contractors and the direct impact population through GFMC or organised groups (such as CIGs and cooperatives). The follow up is to be carried out jointly by MINEP and MINFOF, but other technical ministerial departments shall be involved depending on the matter to be followed up.

If the proposed measures are strictly implemented, the exploitation of the FMU 11 005 will have no serious threats on the physical and human environment. But for the project to get smooth insertion in its environment, it has been recommended that CAFECO/WIJMA should encourage dialogue and sensitise the populations on the rights and obligations of the company.

## RESUME

La concession forestière N° 1087 est entièrement localisée dans la commune d'Eyumojock. Elle couvre une superficie totale de 80,800 ha. L'unité forestière d'aménagement (UFA N° 11005) qui occupe la même concession a été transférée à « Cameroun Agriculture and Forest Exploitation Company Limited(CAFECO) » en partenariat avec la société WIJMA.

Une convention provisoire d'exploitation N° 0592/C PE/MINFOF/SG/DF du 22 novembre 2006 a été signée entre CAFECO et le gouvernement Camerounais représenté par le Ministère des Forêts et de la Faune pour une période de trois ans qui sera suivie par une convention finale de 15 ans renouvelable une fois.

Pour répondre aux exigences de la loi N° 96/12 du 5 août 1996 portant loi cadre relative à la gestion de l'Environnement (Art 17), CAFECO a sollicité l'expertise du Centre Africain de Recherches Forestières Appliquées et de Développement (CARFAD) pour réaliser l'étude d'impact environnemental de ladite UFA.

La méthodologie utilisée a consisté à la revue bibliographique et des missions sur le terrain. La première mission du 13-18 février 2009 porté sur la planification des consultations publiques. Elle avait permis d'établir de manière participative le calendrier des consultations avec toutes les parties prenantes.Ce calendrier a été soumis à l'approbation du MINEP.

La deuxième mission du 16-24 mars a porté essentiellement sur la notification des toutes les parties prenantes pour les consultations publiques. A ce stade le dialogue était très important. Les consultants étaient en parfaite harmonie avec les parties contactées.Les lettres de notification et le programme approuvées étaient distribuées.

La troisième mission du 24 avril au 1<sup>er</sup> mai 2009 était pour les consultations publiques. Ces réunions avaient aidées les consultants d'avoir les idées et les préoccupations des populations pour les tenir en compte dans le plan d'action de l'entreprise. Les consultations publiques ont été menées en utilisant deux techniques Technique d'information auxquelles les populations ont été informées; aux activités des projets et leurs effets potentiels.Technique participatives qui ont impliqué ces mêmes populations de manière participative dans les débats.

Pendant cette mission, il y avait les réunions avec les populations, les autorités administratives, municipales et traditionnelles et les représentants de la société civile. Les différents impacts ont été identifiés avec les activités sources d'impacts. Des mesures ont été proposées pour atténuer ou optimiser ces impacts.

La revue bibliographique et les données collectées sur le terrain ont permis d'écrire ce rapport.

L'UFA 11 005 est située dans l'arrondissement d'Eyumojock; Département de la Manyu, dans la Région du Sud-Ouest. Les activités du projet qui pourront engendrer les impacts environnementaux sont les suivants; la délimitation de l'UFA, la création et l'entretiens des routes, la création des parcs à bois, l'abatage des arbres, transport des grumes et le recrutement de la main d'œuvre.

Sur le plan biophysique le climat de la zone du projet est de type équatorial à deux saisons.La pluviométrie annuelle est de 3 100 mm et la température moyenne mensuelle est de 26 12°C Le réseau hydrographique fait partie du système de drainage du Manyu et ses affluents tellesque Munaya, Akarem, Akam, Berun, Akegam, Akhim, Akwi, Wer, Awa, Akok, Taban, Oroko, Bakep etc.

Les sols de la zone du projet sont ferrallitiques sur les pentes et sablo-argileux dans les valleys. La zone présente une topographie accidentée.

L'UFA est composée d'une forêt dense semi décidue avec des espèces comme Azobe, Okan, Doussie, Faro, Movingui, Ilomba, Mukulungu, Naga, Tchitola, Kossipo, Tali, Angongi, Kumbi, etc. On y trouve des produits forestiers non ligneux comme le rotin et le njangsang. En matière de la faune on y trouve les chimpanzés, les éléphants, les serpents, les civets et d'autres espèces en voie de disparition.

Du point de vue socio-économique dans la zone de projet on a identifié 25 villages qui sont, Babong, Araru, Keogh, Bakut, Ekogate, Ogurang, Babi, Mbobui, Mbofong, Abakpa, Akwa, Ekoneman Awa, Ekoneman Ojong, Ajaman, Okurikang, Inokun, Mbenyan, Ndebaya, Nsanagarati I, Otu, Okuri, Mbinda, Ayaoke, Onaku et Eyang Emangha. Le nombre d'habitants est estimé à 13 626. La plupart sont les Ejaghams. Ici on trouve aussi les Akwayas, les Nkounés, les Bamendas et les Nigériens. La liberté de religion existe dans la zone. On trouve les Catholiques, les Pentecotistes, les Presbytériens, les Baptistes, les Bahais et les Musulmans.

Les populations vivent essentiellement des ressources forestières. L'agriculture constitue la principale activité des populations. Il existe quelques éleveurs traditionnels. La présence d'une grande quantité de viande de brousse dans la zone sert comme source de protéine animale. On trouve aussi quelques commerçants et fonctionnaires.

En matière d'infrastructures, les villages sont assez enclavés. Les routes dans la région du projet sont en très mauvais état. Elles sont presque impraticables en saison de pluie. Les infrastructures de santé et les écoles sont peu nombreuses et sous équipées. Il y a manque de l'électricité et l'eau potable. Très peu de villages ont des marchés. Les produits agropastoraux, halieutiques et artisanaux sont vendus dans le chef lieu administratif à Eyumojock. Les populations estiment d'avoir les infrastructures telles que les routes, les écoles, les centres de santé, les points d'eaux potables et l'électricité comme les bénéfices du projet.

L'étude menée avec la participation des différentes parties prenantes, a mis en évidence de nombreux impacts positifs et négatifs, inhérents des milieux biophysiques et humains. Parmi les impacts positifs, on peut citer:

- le développement de l'agriculture et de l'élevage ;
- le développement des activités économiques et augmentation des revenus ;
- la facilitation des mouvements des personnes et des biens ;
- la création d'emplois ;
- l'amélioration de la qualité de vie.

Après évaluation, l'importance relative de ces impacts sont mineurs, moyennes ou majeures. Les mesures d'optimisations sont les suivantes ; sensibilisation des populations riverains sur les opportunités offertes par le projet; l'assistance à la création des pépinières; élaboration et l'assistance dans l'exécution des projets agropastoraux. Ces mesures d'optimisation ont fait que la valeur d'impact résiduel soit moyenne ou mineure.

Le projet a également des impacts négatifs d'importance variable parmi lesquels on peut citer:

- la pollution de l'air;
- les nuisances sonores;
- la pollution et encombrement du sol par des déchets solides;
- l'érosion du sol;
- la pollution des eaux de surface
- la perturbation du régime d'écoulement des eaux;
- menace sur la biodiversité faunique;
- la diminution des PFNL utiles aux populations;
- la déforestation;
- menace sur la biodiversité floristique;



- la destruction des cultures;
- le risque de dégradation des infrastructures routières;
- le risque d'atteinte au patrimoine culturel;
- le risque de dégradation de la santé des ouvriers et des populations riveraines;
- le risque d'augmentation de la prévalence des IST/VIH-SIDA et des grossesses non désirées;
- l'augmentation des accidents de circulation et des accidents de travail;
- la recrudescence du braconnage;
- la réduction des terres cultivables pour les populations riveraines;
- le risque des conflits;
- la dépravation des mœurs.

L'importance relative de ces impacts varie du mineure à majeure. Après l'application de ces mesures d'atténuation proposées l'importance relative d'impacts, est soit mineure ou non significatif sauf le risque d'augmentation de la prévalence des IST/VIH-SIDA et des grossesses non désirées qui est moyenne et mérite une attention particulière.

Les mesures proposées pour atténuer ou optimiser les impacts identifiés sont les suivantes:

- La formation de Chef de Site CAFECO/WIJMA sur la gestion de l'environnement;
- Le développement du volet environnement dans le règlement intérieur de CAFECO/WIJMA;
- La sensibilisation du personnel et la population sur certains aspects parmi lesquels les IST/SIDA; les grossesses non désirées; divorce; le braconnage; la sécurité; les opportunités d'emplois et les opportunités offertes par le projet;
- La conservation du patrimoine culturelle;
- Le renforcement des capacités du personnel;
- La construction des surfaces en béton et les points de lavage des voitures et des engins
- L'installation de l'économat où la viande et le poisson sont stockés;
- La compensation des cultures détruites;
- L'assistance aux populations dans la création des pépinières;
- L'assistance aux populations pour le montage et la gestion des projets agropastoraux et piscicultures;
- Le recrutement prioritaire la population locale.

Le coût de la mise en œuvre des mesures proposées est estimé à **40 670 000 FCFA**. Pour certaines mesures, les coûts sont à intégrer directement dans le coût du fonctionnement de l'entreprise.

Les acteurs de mise en œuvre sont les personnes de CAFECO/WIJMA, les sous-tendants et la population riverains à travers des CPF, les GIC et les ONG. Le suivi sera effectué conjointement par MINEP et MINFOF mais les autres départements ministériels seront impliqués dans le moment opportun.

Si les mesures proposées sont strictement appliquées l'exploitation de l'UFA 11 005 n'aura pas des menaces considérables sur le milieu biophysique. Pour que le projet soit bien inséré dans son environnement il est recommandé que CAFECO/WIJMA doit encourager le dialogue et la sensibilisation des populations sur les droits et les obligations de l'entreprise.

## CHAPTER 1: GENERAL INTRODUCTION

The general introduction presents the context and justification of the study, the goal and objectives of the study, the environmental classification of the project, the presentation of the project promoter and its consultant, the study approach and the organisation of the report.

### 1.1. CONTEXT AND JUSTIFICATION OF THE STUDY

This document represents the report of the Environmental Impact Assessment (EIA) of the Forest Management Unit (FMU) n° 11 005. This FMU constitutes the forest concession N° 1087 of 80 800 ha found in the Eyumojock Council area. The FMU N° 11005 which is found within this concession has been attributed to the Cameroon Agriculture and Forest Exploitation Company Limited (CAFECO) which has a partnership agreement with WIJMA Douala.

CAFECO has a provisional exploitation convention, signed with the Cameroonian Government represented by the Ministry of Forestry and Wildlife for a period of three years. This will be followed by a 15 year final convention, renewable once.

For the sustainable management of this FMU, CAFECO has to elaborate a management plan of which this environmental impact assessment is one of the tools. This study is also justified as one of the requirements of the law N° 96/12 of the 15th of August 1996 relating to environmental management.

This study was carried out following the prescriptions of an environmental impact assessment as presented in the terms of references (ToRs) approved by the Ministry of Environment and Nature Protection (MINEP). The ToRs and of the approval letter are respectively in appendix 1 and 2.

### 1.2. GOAL AND OBJECTIVES OF THE STUDY

The goal of this study is to evaluate the direct and indirect incidences of the logging activities of the FMU n° 11 005 on the ecological equilibrium, the living standards of the people and the environment in general.

This study in part is like an environmental audit since it proposes measures to manage impacts that are already manifesting as the project had already begun.

To be specific, the study aims at:

- carrying out scoping;
- describing the activities to be realised within the framework of the FMU logging project ;
- describing and analyzing the initial state of the project site and its physical, biological, socio-economic and human environment;
- identifying, characterising and evaluating the impacts of the project on the direct impact populations as well as the physical milieu;
- proposing measures to mitigate negative impacts and strengthen positive ones;
- elaborating an environmental management plan.

### 1.3. ENVIRONNEMENTAL CLASSIFICATION OF THE PROJECT

Order N° 0070/MINEP of the 22nd of March 2005 to set out various categories of operations whose realisation is subject to environmental impact assessment classifies the FMU n° 11 005 logging project as one of the activities among which an Environmental Impact Assessment (EIA) should be realised. In effect, according to this order, the FMU n° 11005 logging project under the forestry sub sector of production is to be subjected to a detailed environmental study.

## **1.4. PRESENTATION OF THE PROMOTER AND ITS CONSULTANT**

### **1.4.1. Presentation of the promoter: CAFECO/WIJMA**

#### *1.4.1.1. General presentation*

The promoter of the project is Cameroon Agriculture and Forest Exploitation Company Limited (CAFECO). It is a limited liability company based in Kumba, which was affiliated to the forestry profession by arrête N° 174/CAB/PR of 23 March 1990 .

CAFECO has signed an industrial partnership contract with WIJMA DOUALA in order to exploit and transform wood from its FMU.

WIJMA DOUALA is a private enterprise that was created in 1887, with a social capital of 243 590 000 CFA francs. All its capital comes from Netherlands. It is known as GWZ resulting from the name of the founders Gérard WIJMA & ZONEN. WIJMA has been operating in Cameroon since 1968 and has a staff of about 400 persons. It disburses annually a sum of about a billion CFA francs as salary for the personnel.

WIJMA is involved both in forest logging and transformation. It now carries out tertiary wood transformation; hence supplying semi finished and finished goods "Made in Cameroon" and ready for consumption. The tertiary transformation increases productivity so as to reduce wastes as well as create more jobs and value in the region.

In addition to the activity of forest logging and transformation, WIJMA has extensive experience in other domains like agroforestry and afforestation.

As of date, WIJMA has an investment capital estimated to about 8.5 billion CFA francs, with a global business sum of 15 billion CFA francs.

#### *1.4.1.2. Environmental Policy of WIJMA*

WIJMA has an environmental policy that is presented in appendix 3. Its Board of Directors have pledged for the effective implementation of this policy. The application of this policy is carried out through service notes addressed to all personnel and sub-contractors against poaching in the forest concession. It also carries out anti poaching activities and limits slash and burn farm practices within the logging unit carried out by direct impact populations. Signboards prohibiting these activities in the FMU are visible in the logging site. This policy is well expressed in the internal regulations.

WIJMA has obtained Forest Stewardship Council (FSC) and OLB (*Origine et Légalité des Bois*) certificates attesting for sustainable harvesting of the forest in many of their logging units and sawmills. The situation is as follows:

- FMU 09 021 and 09 024 have FSC and OLB certificates
- FMU 09 022 and 11 005 have OLB certificate;
- The Bidou sawmill has an FSC chain of custody and OLB certificates;
- The Nguti sawmill is certified OLB.

### **1.4.2. Presentation of the Consultant: CARFAD**

#### *1.4.2.1. Missions*

The African Centre for Applied Forestry Research and Development (CARFAD) is a Non Governmental Organisation (NGO) working on research and actions encouraging the protection of the environment and sustainable development. It also seeks to bridge the gap between science and stakeholders concerned with the practical application of existing regulations.

CARFAD is made up of a multidisciplinary team of experts. The organisation has more than ten years of extensive experience and operates in various domains as listed below:

- training and research (supervision of students from diverse universities on internship, back-up study and applied research);

- assistance to local populations and economic entrepreneurs in project elaboration in the domain of community forestry, sustainable management of forests (certification), and promotes alternative measures which dissuades bushmeat consumption;
- counselling on environmental management (environmental impact study, environmental auditing, environmental management of projects and public sensitisation on major environmental consequences of developmental projects).

CARFAD is based in Yaoundé with address; P.O. Box 885 Yaoundé;  
Telephone: (237) 22 31 08 92; Fax; (237) 22 31 08 94;  
Web site: [www.carfad.net](http://www.carfad.net) ; Email: [carfadcameroun@yahoo.fr](mailto:carfadcameroun@yahoo.fr).

#### 1.4.2.2. Presentation of study team

The team of experts which carried out this study is composed of:

- **TCHOFFO Benjamin**: Forestry Engineer, and Environmental Manager; General Coordinator of the study;
- **Dr. MABOUL EBANGA Eustache-Marie Aimé (of blessed memory)**: Psychologist and expert in charge of the analysis of socio-economic aspects: Chief of Mission responsible for the field activities;
- **Charles NDIFON NCHAMCHAM**: Forestry Engineer and Environmentalist: Expert responsible for studying the biological and environmental impacts of the project and proposition of the Environmental Management Plan;
- **FONYE CONSTANTINE MENGNO**: Forestry and Civil Engineer: Expert responsible for analysing the biophysical aspect and proposition of mitigation and strengthening measures;
- **NUNGU Abraham-Nerry NKENYEH**: Civil Engineer; assisted in the analysis of the physical milieu and impacts of logging roads;
- **TCHATO Guy TCHABET**: GIS expert, in charge of the drawing of maps.

### 1.5. APPROACH TO THE STUDY

To realise this study, CARFAD used an approach composed of three principal phases which are: literature review, field missions, data treatment and write-up.

#### 1.5.1. Literature review

During this phase, documents concerning the Forest Management Unit (FMU) from the project promoter were exploited. Other literature on the area was obtained from the following organisations: GTZ, WWF, FORUDEF, ERUDEF and Korup National Park. Some information was also got from the internet.

The socio-economic studies carried out by CAFECO in 2007 and the delimitation plan report of the FMU provided information to work with. The information centered on the following:

- the socio-economic studies;
- materialisation of the limits of the FMU N°11 005 ;
- the project to establish a Management plan follow-up commission;
- wildlife and forest inventories.

This literature review was carried out through all the study period. It was followed closely by the preparation for field missions during which the tools used for data collection were assembled (see appendix 4).

#### 1.5.2. Field missions

Three missions were carried out. These are: the public consultation planning mission, the public consultation notification mission and the mission to carry out the public consultations proper.

#### *1.5.2.1. Public consultations planning mission*

This mission was executed following a programme established by the project promoter. During the planification mission, a participative approach methodology was used to develop the consultation calendar. The different villages concerned were contacted alongside other stakeholders namely the NGOs, the local Administration and the promoter for the planning of the public consultations on convenient days.

A descriptive and explanatory memoir of the project, showing the proposed calendar for the public consultations was then established and submitted to MINEP for approval. Appendix 5 presents this memoir and the programme of public consultations. This program was approved by the MINEP (See appendix 6).

#### *1.5.2.2. Public consultation notification mission*

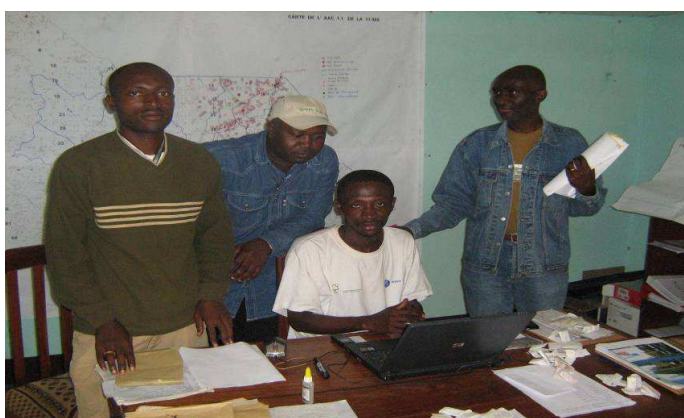
After approval of the proposed consultation meeting programme, different stakeholders were notified so as to prepare for public consultations proper. (See appendix 7).

#### *1.5.2.3. Public consultation meetings execution mission*

During this mission, semi-structured interviews, public consultations meetings and direct observations were carried out.

- *Semi structured interviews*

These interviews were carried out with some resources persons of local administrative services, private and civil society representatives. Picture 1 shows the semi-structured interview with the Site Manager of WIJMA. The list of resource persons consulted is in appendix 8.



**Picture 1 :** *Semi structured interview with the Site Manager of WIJMA*

- *Public consultations proper*

Three types of meetings were held: meetings with the direct impact populations, meeting with the workers of CAFECO/WIJMA and the meeting with the administrative and municipal authorities as well as other technical structures and NGOs operating in the area.

Parallel to the meetings with the populations, socio-cultural and economic information

concerning each village was collected through the answer of the questionnaire elaborated during the first phase and submitted during the planning mission.

The minutes and attendance sheets of the meetings are found in appendix 9. Pictures 2 and 3 illustrate meetings with the Ekok and Ekoneman Awa populations.



**Picture 2 :** Meeting with the population of Ekoneman Awa



**Picture 3:** Meeting with population of Ndebaya

- Direct observations

Direct observations were on the agro-economic activities carried out by the populations, the type of habitat, and the state of the road, the different forest strata and the existing wildlife. These observations permitted the validation of data obtained from existing literature and the public consultations meetings. Picture 4 shows the entrance to FMU 11 005.



**Picture 4:** View of semi base camp entrance at the logging site

### 1.5.3. Data analyses and write-up

The information collected was treated per village or groups of villages, so as to have specific detail at each level. As concerns the identification, analysis and characterization of impacts, the approach is described in chapter 6. All the information were compiled and used for the elaboration of this report.

### 1.6. ORGANISATION OF THE REPORT

This report is presented as follows:

- chapter 1 is structured as stated above;
- chapter 2 brings out the legal, institutional, geographical, ecological and socio-economical frameworks ;
- chapter 3 describes the different components of the project ;
- chapter 4 presents the initial state of the environment of the site and the region on the biophysical and socio-economic aspects;



- chapter 5 brings out the Public Consultation Process;
- chapter 6 analyses the different environmental impacts of the project and proposes appropriate environmental measures;
- chapter 7 proposes an Environmental Management Plan (EMP). It summarises the different environmental impacts, makes the synthesis of environmental measures and estimates their costs. It equally presents different plans, notably on monitoring, follow-up and public participation ;
- chapter 8 concludes the report and gives recommendations to be followed for the FMU n°11005 logging project to be environmentally friendly.

The document also contains references and a series of appendices.

## CHAPTER 2: STUDY FRAMEWORK

This chapter describes the framework of the study, from the legal, institutional, geographical and economic backgrounds.

### 2.1. LEGAL FRAMEWORK

#### 2.1.1. National legal framework

From the national background, the realisation of this environmental impact study is supported by a set of legislative texts and regulations linked to the protection of the environment, the management of forests or the management of natural resources globally.

##### Specific texts on the environment

- *Law N°96/12 of 5th August 1996 relating to environmental management*

This is the base legal instrument for environmental protection. Article 17 of this law stipulates that “any promoter or owner of a maintenance, construction, risky equipment or installations project, due to its scale, nature or potential to affect the environment, is obliged following the contract prescriptions to carry out an impact study to evaluate the direct and indirect incidences of the proposed project on the ecological equilibrium of the area or all other regions, the nature and quality of life of the local populations and its incidences on the environment generally”. The logging project for FMU N° 11 005 is part of this kind of project.

Article 19, paragraph 2 of the same law, presents the different major articulations that an environmental impact study must follow. Articles 21 to 39, deal with the protection of environmental components. It preserves the environment from all kinds of degradations or contaminations by toxic products.

- *Decree N° 2005/0577/PM of 23/02/2005 defining the modalities of realising environmental impact studies*

This decree gives the contents of the different types of studies, notably the summary and detailed environmental impact studies. It also stipulates among others, the procedure to carry out the studies, costing, modalities to carry out public consultations and public audiences (article 11 to 14). The decree gives the procedures for environmental follow up and monitoring of projects.

- *Order N° 0070/MINEP of the 22<sup>nd</sup> of April 2005, defining the different categories of operations that require environmental impact studies*

In conformity to article 6 of decree N° 2005/0577 of 23/02/2005, this order, lists and classifies the different categories of operations that require environmental impact studies. According to this order, the FMU N° 11 005 logging project is part of the forestry sub-sector of the production domain of which; its execution requires a detailed environmental impact study.

- *Decree N°2001/718/PM of 3<sup>rd</sup> September 2001 defining the organisation and functioning of the Inter-Ministerial Committee on the environment*

The Inter-Ministerial Committee on the environment (ICE) is instituted by the 1996 framework law. Decree N° 2006/1577/PM of the 11<sup>th</sup> of September 2006 defining the terms for the organisation and functioning of the inter-ministerial committee comes to complete the dispositions of the above decree.

- *Order N°00001/MINEP of 3<sup>rd</sup> of February 2007 laying down the content of the ToRs for environmental impact studies ;*

This order gives the different elements of the ToRs of an environmental impact study.

- Order N°00004/MINEP of 3<sup>rd</sup> July 2007 laying down the terms of agreement for consulting firms to carry out environmental impact studies and environmental audits

It stipulates the conditions required for the consulting firms to obtain from the Ministry of the Environment and Nature Protection, a certification to carry out environmental impact studies and environmental audits. Its article 11 states that an environmental impact study or environmental audit can only be received by the Minister in charge of the environment, if it has been carried out by an approved consulting firm according to the regulation in force.

#### Other texts related to the study

- Law N° 94/01 of 20<sup>th</sup> of January 1994, to lay down forestry, wildlife and fisheries regulations

This law prescribes the sustainable integrated management framework of forestry, wildlife and aquatic resources. From the environmental perspective, it specifies in article 16, paragraph 2 that "the establishment of any developmental project, susceptible of causing disequilibrium in the forestry or aquatic milieu, requires initially an environmental impact study of the project".

- Law N° 98/005 of 14<sup>th</sup> of April 1998 to lay down the water regime

The legal framework on water as well as texts relative to the conservation, management and protection of public health are defined by this law. In article 4 of this law, it bans all actions susceptible to alter surface, subterranean or sea water or to endanger public health as well as aquatic or submarine fauna and flora. In the same manner, article 6 of this law stipulates that all physical and moral proprietors of an installation susceptible to cause water pollution must take measures to limit or annul these effects.

- Decree N° 95/466 /PM of 20<sup>th</sup> of July 1995, defining the terms of application for wildlife regulation

This decree prescribes the measures put in place by the wildlife administration to apply the legal dispositions. Hence, the protection of wildlife and biodiversity is done through the creation of protected areas; meanwhile the exploitation of these resources is done in conformity to the restrictions established with exploitation licences. The non respect of these restrictions leads to a series of sanctions, varying in function to the degree of offence committed.

- Decision N° 0108/D/MINEF/CAB of 9<sup>th</sup> of February 1998 on the application of intervention norms in the forestry milieu

The intervention norms in the forestry milieu prescribe the environmental directives to be respected during forest logging in order to preserve the different milieus.

- Law N° 96/67 of 08<sup>th</sup> of April 1996 on the protection of the national road patrimony;
- Law N° 92/007 of 14<sup>th</sup> of August 1992 on the labour code ;
- Order N° 95/466/PM of 20<sup>th</sup> of July 1995 to lay down conditions for the implementation of wildlife regulations ;
- Order N° 95/531/PM of 23<sup>rd</sup> of August 1995 to determine the conditions for the implementation of the forestry regulations
- Order N° 95/678/PM of 18<sup>th</sup> of December 1995 to establish an indicative framework for land use in the southern forested areas ;
- Law n° 2003/003 of 21<sup>st</sup> of April 2003 on phytosanitary protection ;
- Decision N° 1354/D/MINEF/CAB of 26th November 1999 to lay down procedures for the classification of the permanent forest of Cameroon

#### **2.1.2. International legal framework**

Cameroon has signed and/or ratified many regional or international legal tools aimed at protecting the environment. Those relevant for this study are:

- the convention on biological diversity;
- the framework convention on climate change;
- the Alger's convention on the conservation of nature and natural resources;
- the Convention on International Trade in Endangered Wildlife and Flora Species (CITES);

- the Ramsar convention on humid zones;
- the Bamako convention on the ban of hazardous wastes in Africa and the control of their trans-border movements;
- the Bâle convention on hazardous and dangerous wastes;
- the Stockholm convention on persistent organic pollutants;
- the Bonn convention on the conservation of migratory species;
- the cooperation and concertation accord among Central African States relating to conservation of wildlife.

The conventions on biodiversity and climate change, prescribe among others, the adoption by signatory countries, of mechanisms to evaluate impacts on the environment. It is the same with the Rio declaration, resulting from the United Nations Conference on the Environment and Development (UNCED) which announces in its principle 17 that, "environmental impact studies as a national tool, should be carried out in activities that risk creating major negative effects on the environment and depends on the decision of a competent state authority".

## **2.2. INSTITUTIONAL FRAMEWORK**

### **2.2.1. National institutional framework**

Many institutions are concerned with the present environmental impact study, both at the realisation and operational phases. They are:

- ***The Ministry of Environment and Nature Protection (MINEP)***

It is the main body in charge of environmental management. It supervises the organisation, approbation of environmental impact studies, as well as the follow up. The structures of MINEP directly following up this study are:

- The Regional Delegation of Environment and Nature Protection of the South- West;
- The Divisional Delegation of Environment and Nature Protection of Manyu.

- ***Ministry of Forestry and Wildlife (MINFOF)***

The Ministry of Forestry and Wildlife is the competent ministry for projects in the forestry sector. It will supervise the elaboration and execution of the management plan of the FMU of which this impact study is one of the tools. The institutions of MINFOF concerned in this case are:

- the Regional Delegation of Forestry and Wildlife of South-West
- the Divisional Delegation of Forestry and Wildlife of Manyu
- Forestry Control Posts of Eyumojock and Ekok.

- ***Ministry of Agriculture and Rural Development (MINADER)***

The document on the rural development strategy stipulates a lack of infrastructure in the local milieu, which increases fragility in living conditions and contributes to poor agricultural production. In the case of the project zone, there is marked absence of roads. The villagers affirm that this situation does not favour the populations' investments in farming, due to poor farm to market roads. The realisation of this project can appear as an opportunity to better follow up farming activities and channelling of products to border and interior markets.

- ***Ministry of Public Health (MINSANTE)***

The organ of the Ministry of Public Health specialised in the fight against HIV/AIDS is the National Committee to combat AIDS. At the regional level, this committee is represented by the Regional Technical Group (RTG). At the grassroot level, there are Local AIDS Control Committees (LACC). These committees carry out sensitisation on HIV/AIDS.

- ***Ministry of Labour and Social Security***

The Ministry of Labour and Social Security (MINTSS) plays a role in protecting the workers. Hence, it will intervene in the follow-up of the measures to assure the well being of workers.

- ***Inter-ministerial Committee on the Environment***

It is in charge of studying and validating ToRs and EIA reports. Presently, the composition of

the committee is as follows:

**President:** Somebody appointed by the Minister of Environment and Nature Protection;

**Members:**

- a representative of the Ministry of Environment and Nature Protection;
- a representative of the Ministry of Territorial Administration and Decentralisation;
- a representative of the Ministry of Agriculture and Rural Development;
- a representative of the Ministry of Mines, Industry and Technological Development;
- a representative of the Ministry of Small and Medium Enterprises;
- a representative of the Ministry of Livestock, Fisheries and Animal Husbandry;
- a representative of the Ministry of Urban Development and Housing;
- a representative of the Ministry of Water and Energy;
- a representative of the Ministry of Scientific Research and Innovation;
- a representative of the Ministry of Tourism;
- a representative of the Ministry of Public Works;
- a representative of the Ministry of Transport;
- a representative of the Ministry of Domain and Land Tenure;
- a representative of the Ministry of Public Health;
- a representative of the Ministry of Defence;
- a representative of the Ministry of Forestry and Wildlife.

## 2.2.2. International institutional framework

From the forestry background, Cameroon cooperates with a certain number of bilateral and multilateral financial organisations. Through the Forest-Environment Sectoral Programme they have set up objectives such as: "assuring conservation, the sustainable management and harvesting of forest ecosystems responding to local, national, regional and worldwide needs of present and future generations.

Many international funding bodies are implicated in the establishment of the PSFE among which we have the World Bank, the African Development Bank, the British Cooperation (DFID), the Canadian Cooperation (ACDI), the German Cooperation (BMZ-GTZ), the Japanese Cooperation, the Netherland Cooperation (SNV), FAO, WWF and IUCN.

Most of these structures have defined policies and procedures for environmental evaluation. These evaluation procedures are at times used as conditions for the financing developmental project.

## 2.3. GEOGRAPHICAL FRAMEWORK

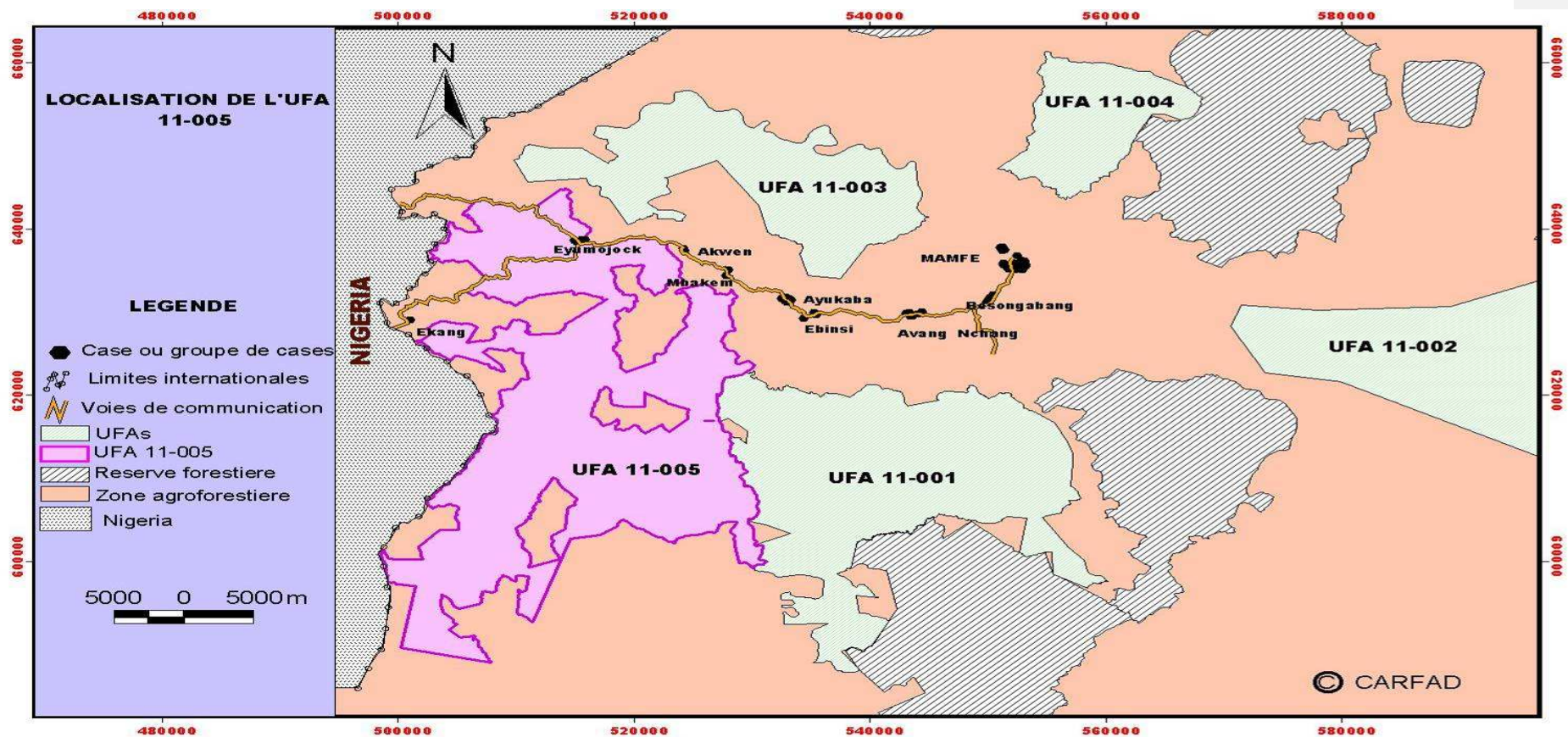
From the administrative perspective, the FMU 11005 is situated in the Eyumojock Sub-division, Manyu Division, of the South-West Region.

The FMU is limited to the east by the River Munaya, to the west by the Federal Republic of Nigeria, to the north by the Mamfe-Ekok road. The map on the following page localises FMU 11 005

## 2.4. ECOLOGICAL FRAMEWORK

The FMU N° 11 005 logging project is sitting in the humid dense evergreen forest zone, characterized by a wide range of biodiversity. The FMU covers part of the Ejagham council forest reserve which has been declassified. In addition, the project zone is not far from the Korup National Park and other conservation zones of the region.

Map 1: Localisation of FMU 11005





## **2.5. SOCIO-ECONOMIC FRAMEWORK**

Twenty five (25) villages are adjacent to the FMU N° 1 1005. These villages live basically from natural resources (bushmeat, NTFPs, etc.).

The implantation of the logging project will surely reduce their activities. This is one of the reasons why part of the Forestry Royalties should be paid directly to the direct impact villages.

After presenting the framework under which this project will be executed, the different project activities will be described because these are the sources of impacts which shall be identified, characterized and evaluated.

## CHAPTER 3: PROJECT DESCRIPTION

This chapter brings out the history of the FMU, its surface area and limits and the description of the activities of the project.

### 3.1. HISTORY OF THE FMU

The FMU N° 11 005 was attributed to CAFECO in 2006 through a provisional convention. In order to transform the wood issued from the FMU, CAFECO has signed an industrial partnership agreement with WIJMA.

A portion of FMU 11 005 is the Ejagham Council Forest Reserve that has been declassified. Exploitation has already begun in the FMU.

### 3.2. SURFACE AREA AND LIMITS

The surface area of the FMU was originally 80,800 hectares. The presence of agroforestry zones within the FMU has led to the carving out of these zones, hence reducing the total area to be logged by CAFECO/WIJMA. The limits of the FMU are illustrated on the map on the next page.

### 3.3. DESCRIPTION OF THE LOGGING ACTIVITIES

#### 3.3.1. Activities in the forest

##### 3.3.1.1. Flora and wildlife inventories

CAFECO/WIJMA has carried out logging inventories on the three annual logging units. These are systematic surveys that helped to expose the potentials of the forest and to plan skidding roads as well as the positioning of landings. This activity will increase the awareness and knowledge of the local population and NGOs operating in the area on the biodiversity of the project zone. This can play a major role in the conservation of the existing species.

It is worth mentioning that general forest inventories were carried out by WWF and GTZ in the project zone.

##### 3.3.1.2. Demarcation of FMU and logging units

The provisional convention permits CAFECO/WIJMA to exploit three (3) annual logging units. These annual logging units as well as the FMU are demarcated on the ground by cleared transects and marked with red paint. The transects are 5 m wide for the FMU and 2 m wide for the annual logging units. It is worth signaling that, the limits are reopened before logging and are kept clean so as to keep them accessible.

This demarcation process is likely to create conflicts between the project promoter and the direct impact populations, if it is not participative. The demarcation can also be a source of frustration to the populations since they might face the limitation of their user's rights.

##### 3.3.1.3. Opening of logging roads and landings

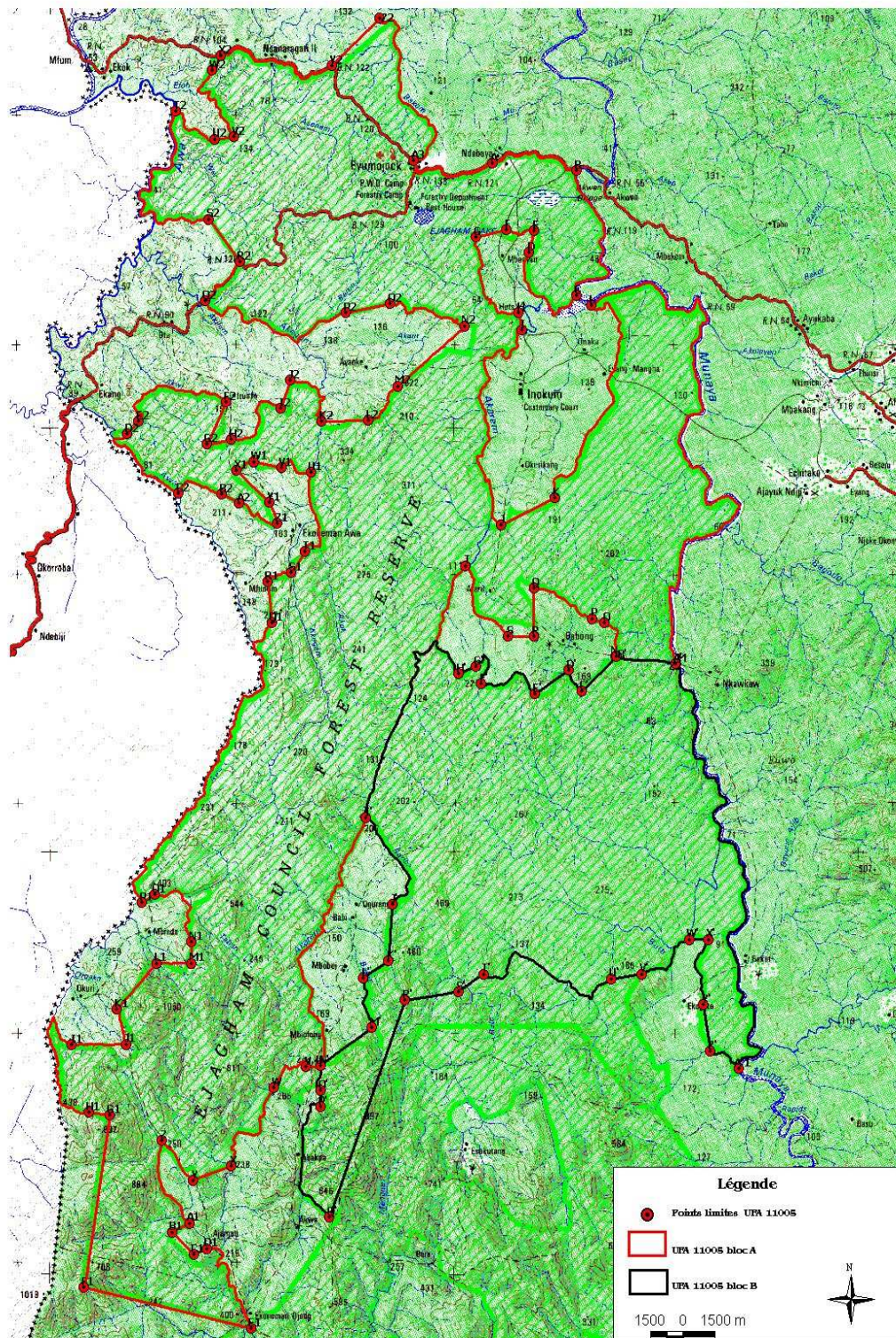
During logging, skidding paths and landings shall be opened. The planning of these works will depend on the topography of the annual logging surface and the diversity (richness) of the exploitable species. However, areas in which these infrastructures can cause negative impacts if constructed are to be avoided, particularly swampy zones, high value forests, very sloppy terrain, riparian zones and sacred sites.

Tracks of width of four (4) to six (6) meters shall be opened using bulldozers. Deforestation is eminent on the entire width of clearing.

The opening of skidding paths and landings will create gaps in the forest canopy and may ease the movement of poachers into remote areas of the forest. This will greatly affect the ecosystem and lead to increase poaching, hence threats to wildlife.



Map 2: Limits of FMU 11005



#### 3.3.1.4. *Installation of a ferry*

In order to convey logs from the logging unit n°1, through River Munaya, which is about 50 m wide, CAFECO/WIJMA has installed a ferry for the crossing over of its products, equipment and personnel. This ferry also serves the direct impact populations for transport, especially, when the Eyumojock-Mamfe road is in bad state during the rainy season.

The ferry operates from 6 a.m to 6. p.m daily.

#### 3.3.1.5. *Tree felling, skidding and yarding*

After the opening of the access roads and skidding paths in the logging unit, trees marked for felling and the operational plan discussed with the supervisor, felling commences with immediate effect. CAFECO/WIJMA practises directional felling notably by giving training to chainsaw operators. The directional felling technique reduces the degree of residual vegetation cover destruction and accidents. This technique is well illustrated in the WIJMA logging procedure manuals.

Skidding is done with a skidder with raised blades. Yarding is done with a cable especially on inaccessible zones. These logging activities are likely to cause soil erosion and accidents among other impacts.

#### 3.3.1.6. *Chemical treatment of logs*

CAFECO/WIJMA uses sarpagrame which is a certified chemical product and is reported to have less harm on the environment. A training on the use of this chemical for the treatment of logs have been given to logging staff and signboards erected to indicate areas where these chemicals are stored. The personnel manipulating these substances have security gears.

A manual prescribing measures to stock hazardous chemicals has been established and put at the disposal of the logging staff.

The use of this chemical can cause air, soil and water pollutions in addition to health hazards to workers manipulating them.

#### 3.3.1.7. *Log transportation and transformation*

The transportation of logs is subcontracted to local companies. The transporters are put under strict scrutiny by the logging firm to ensure that they follow the strict internal rules and regulations of the company. These rules prohibit the transportation of bushmeat as well as arms and cartridges on board. In case of violation of these rules, sanctions can lead to the termination of the contract with CAFECO/WIJMA and the person involved is responsible for any charges imposed.

The wood harvested from the FMU 11 005 is transported to the WIJMA sawmill found in Nguti, where it is transformed. Meanwhile some of the logs are transported to Douala where they are shipped abroad.

A sawmill for the processing of wood from FMU 11 005 is to be installed at Ossing. This is a major source of conflict in the zone since Ossing is not found in the zone covered by the FMU.

The possible hazards that can result from transportation of logs can be air pollution and increase in road accidents.

### 3.3.2. **Road maintenance and traffic signs**

Road maintenance is done with the use of a grader periodically. The treatment of some critical points, particularly mires, gullies, pot holes, etc., are done in case of necessity.

CAFECO/WIJMA is also carrying out traffic signaling on the roads it uses. Hence, one finds traffic signboards showing the entry and exit of the villages, the presence of schools, the exit of trucks and the presence bends, bridges and speed brakes.

CAFECO/WIJMA works in collaboration with the external services of the Ministry of Public Works within the framework of the maintenance of roads used by wood transporters.



### **3.3.3. Material used and maintenance**

#### *3.3.3.1. Material used*

*Material for the opening and maintenance of roads*

- One 140G grader
- One D7 Bulldozer
- Two twenty ton trucks
- One 936 front head loader.

*Tree felling material.*

- Thirteen STHIL 880 chainsaws
- Assorted security equipment for chainsaw operators (boots, jackets, masks, gloves, and helmets).

*Skidding material*

- Two 528 skidders ;
- Four D7G bulldozers.

*Loading and log transport material*

- One 980 C front loader;
- Trailer trucks from sub-contracting companies.

*Communication material*

- One Thuraya telephone ;
- Two radios one at the logging site and the other at Nguti;
- Mobile telephones.

#### *3.3.3.2. Maintenance of the material*

Light maintenance operations are done at the logging site garage. These operations comprise the draining of engines, the replacement of oil filters, etc. The maintenance of chainsaws is generally done on site. The maintenance of heavy equipment is done at the level of the Nguti sawmill.

The maintenance of material is likely to cause soil and water pollutions.

### **3.3.4. Existing personnel infrastructures**

#### *3.3.4.1. Basic necessities*

There is no staff store where the personnel are lodged at Ajayugndip village. They buy their basic necessities from Mamfe town and local stores. There are no butcheries and fish stores at Ajayugndip. In order to satisfy their needs in animal proteins, the staff is obliged to go to Mamfe.

#### *3.3.4.2. Personnel lodgings*

Only the Site Manager is lodged in Mamfe by CAFECO/WIJMA. The other personnel are renting in Ajayugndip, Mamfe and other neighboring villages. CAFECO/WIJMA decided to let its personnel rent so that the populations can benefit from the project fall outs. For this reason, they will move from one place to another as exploitation progresses. They are now at Ajayugndip whereas they were at Babong at the beginning of the exploitation.

Besides the fact that the lodging of personnel in the villages can bring out project fall outs, it is also a source of conflicts. Some of these conflicts happened when the workers were lodged at Babong.

#### *3.3.4.3. Personnel transport*

Three personnel transport lorries are used for the transportation of workers. A Mitsubishi double cabin pick-up is also used for circulation at the project site.

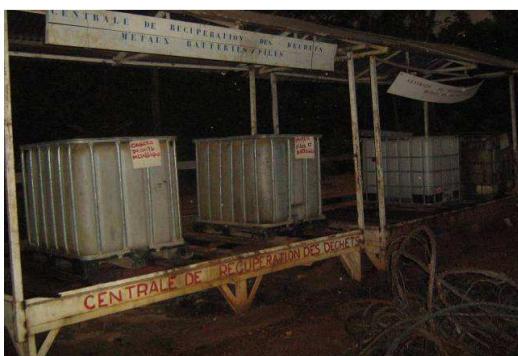
#### 3.3.4.4. Health of personnel

First aid kits are provided for personnel working in the forest. Other health cases are directly handled by the Mamfe District Hospital since most of the workers are living near Mamfe.

#### 3.3.5. Waste management at the logging site

CAFECO/WIJMA has established a waste management programme. There is a waste management unit at the logging site where the waste generated is stored in sealed cans. These cans are suspended on wood. In case of a spillage, the soil can be contaminated.

In the garage, solid wastes (iron bars and old tires) are recovered and stocked inside cans. The collected wastes are then transported to Douala for recycling by BOCOM which is a specialised company in industrial waste management. Pictures 5 and 6 illustrate respectively the stockage of liquid and solid wastes.



Picture 5: Storage of liquid waste at the waste management centre



Picture 6: Storage of metal waste at the waste management centre

#### 3.3.6. Anti-poaching and illegal logging activities

To combat poaching and illegal logging, CAFECO/WIJMA has created a security team, which is charged of carrying out constant patrols in the FMU. The company is also closing down skidding paths as soon as a logging unit is closed.

For efficient implantation of the anti poaching activities in the area, the company is equally carrying out sensitisation campaigns to inform its personnel on the ills of poaching and the potential sanctions to be meted out in case of violations of internal rules and regulations of the company.

#### 3.3.7. Payment of forest royalties and the realisation of charity works

CAFECO/WIJMA is regularly paying its Annual Forest Fee that is distributed following legal prescription, 50% for the State, 40% for the local council and 10% for the direct impact populations.

The council is responsible for the distribution of the 10% attributed to local populations. The procedure is not often transparent and always a source of conflict.

In addition to the payment of the Annual Forest Fee which makes up their contribution for the realisation of charity works, CAFECO/WIJMA carries out some charity works like the construction of health centres and the funding of the activities of the Forest Management Control Committee (GFMC). It has already financed the construction of a health centre at Babong. It believes that these charity works can establish a cordial relationship with the local populations.

This chapter has described the project and certain details on the execution of its activities. To evaluate its incidences on the environment, it is necessary to study the initial state of the project environment. The next chapter treats this aspect.

## CHAPTER 4: ENVIRONMENTAL BASELINE DESCRIPTION

The environmental baseline description brings out the study area limits, the physical, the biological and the human milieus.

### 4.1. DELIMITATION OF THE STUDY AREA

Taking into consideration the degree of impact incidence extension, two zones were distinguished within the framework of this study:

- Zone 1: It receives the direct incidences of the project. It is made up of the FMU proper and the Eyumojock sub division specifically the direct impact villages.
- Zone 2: this zone feels the indirect incidences of the project. It is made up of the Korup National park and the rest of the Manyu Division.

### 4.2. PHYSICAL MILIEU

#### 4.2.1. Climate

The project area climate is characterised by a single distinct dry season from mid November to mid March and a rainy season from mid March to mid November with a peak observed in August (444.23 mm). Despite high annual rainfall rates, the frequency and occurrence of dry months is significant. Extended dry periods have, in recent years, resulted in forest streams drying up. Rainstorms are extremely local and rainfall intensity is very high.

Gross climatic data for a period spanning from 1998 to 2007 was obtained from the Mamfe meteorological station showing that the average annual precipitation for these years is between 2070 mm and 3790, 9 mm. This heavy rainfall influences the logging activities and will make the logging company to concentrate most of its work in the forest during the dry period.

#### 4.2.2. Quality of air

The air quality of the project zone is still very pure. The absence of industrial activities and high circulation in the area due to its enclavement and poor state of roads limit pollution of the air. Hence good air quality resulting from the high oxygen expulsion into the atmosphere and carbon sequestration of the existing virgin humid dense forest is abundant.

#### 4.2.3. Noise level

The noise level in the project area is quite low. There are very few vehicles. The only noise one can hear is the sound of birds which instead make the local populations to live quietly in their environment. The logging project is likely to affect this level of noise.

#### 4.2.4. Relief

In a global sense, the relief of the South West Region shows three distinct aspects:

- the littoral plain (Tiko basin in Rio del Rey) that is interrupted by Mount Cameroon;
- the Ndian basin ( low altitude region that is in contact with the sea);
- the Mamfe caldera (depression zone which is more or less encircled by the western highlands to the east, the Akwaya plateau to the north and the Rumpi mountains to the south).

Between the northern (towards Eyumojock town) and southern (the Korup National Park) parts of the concession n° 1087, the relief is hilly with alternating low altitude zones of averagely 400 m. The height of 1050 m (towards Mbinda and Okuri) is the highest altitude in the zone.

#### 4.2.5. Soils

The nature of the soils in the region can be largely determined from the underlying rock. The following description provided by Gartlan (1985), is largely derived from Hawkins & Brunt (1965), with additional data from survey originally carried out to assess the suitability of soils in the region for the cultivation of palms (IRAF-ONAREST, 1980). The following soil types were identified:

- ferrallitic and sandy soils at certain points with high level of acidity. These soils are derived from the in-situ degradation of sedimentary rock of tertiary origin. They are acidic, low in nutrients and tend to be avoided by farmers. These soils are mostly found in the south eastern zones of the area.
- sandy-clay soils at the level of watersheds that result from continuous deposition from erosion activities occurring at the hilly flanks. These soils are appreciated by the populations for the practice of agriculture.

#### 4.2.6. Hydrology

The South West Region possesses a high density of hydrographical network characterised by two principal basins: the Manyu and the Moungo basins.

The Manyu basin, in the concession N° 1087, drains in the Mamfe watershed, River Manyu and its tributaries, with the River Munaya being the most important. Other small and average flowing water courses are found around the forest massif. Among these, are: the Akarem, Akam, Berun, Akegam, Akhim, Akwi, Wer, Awa, Akok, Taban, Oroako and Bakep.

Lake Ejagham is also another water body that is found in the project zone and it provides along side the other rivers, proteinous food for the local people and serves as a source of portable water.

The water aquifers are not far from the surface. This is testified by the shallowness of wells found in the project area.

### 4.3. BIOLOGICAL MILIEU

#### 4.3.1. Vegetation and flora

The Ejagham forest zone is found in the equatorial rainforest region, made up of dense evergreen rainforest. The zone is rich in flora biodiversity, hence justifying the presence of many protected areas and forest activities in the region like the Korup National Park which spreads right down to Mundemba.

The zone is principally made up of humid evergreen dense forest which is under heavy illegal logging, farming and poaching, hence forest galleries and secondary forests are often noticed.

#### 4.3.2. Wildlife

The project zone is classified among the richest in the country in terms of biodiversity. The FMU n° 11 005 is surrounded by various protected zones like the Rumpi Hills Forest Reserve, the Nta Ali, the Banyang Mbo Wildlife Sanctuary and the Korup National Park being the closest. These protected areas, as well as other conserved zones in the immediate environment contain a rich, diversified and well known wildlife.

The protected areas harbor a vast potential of mammals, avifauna and herpetofauna. Large mammals are composed mostly of great apes, elephants, Buffalo, Bush pig etc. We also find species endemic to the region like; *Potamogale velox*, *Mandrillus leucophaeus*, *Piliocolobus preussi*. Small mammals are composed of monkeys, rodents amongst others.

#### 4.3.3. Project-biodiversity relationship

This section brings out the actual situation of biodiversity of the zone and shows the different ways in which the direct impact populations use these resources. It equally identifies the dangers that these resources are exposed to and the different efforts made by various organisations operating in the zone to preserve the resources.



#### 4.3.3.1. Uses of biodiversity in the FMU n°11 005 zone

The study zone inhabits a vast amount of timber and non timber forest resources, useful to the local populations. Wood products are principally used as construction materials, though small amount is used for the manufacturing of household furniture. Illegal logging is carried out by some local exploiters. The extracted wood product is sold locally in towns like Kumba, Douala, Yaounde and to Nigerian markets. The only hindrance to this activity is the state of the roads as monitoring and control activities by MINFOF services is difficult.

A good proportion of non wood forest resources found in the zone are extracted, for subsistence and medical reasons. We equally find large amounts of these NTFPs being commercialised for income generation like eru (Gnetum Africana), njangsang (Ricinodendron heudelottii), bush mango (Irvingia gabonensis), Baillonella toxisperma, palm wine, mushrooms, cane etc. For medicinal use, many barks, roots and fruits are extracted. Wildlife resources from both terrestrial and aquatic origin serve as a source of protein. The forest also serves as a land reserve for farmlands, since the forest adjacent populations clear down the forest for farming.

Given the rich biodiversity of the zone, many protected areas have been created all around the FMU. These protected zones will help to conserve the biodiversity existing in this particular ecosystem. These reserves provide income generation activities like ecotourism and sports hunting that have minimum or no effect on the environment.

#### 4.3.3.2. Threats to the biodiversity

The various activities (slash and burn, hunting etc.) carried out by the forest adjacent populations in the forest have non negligible consequences on the biodiversity of the region. These activities contribute to the destruction of the natural habitat of animals and the degradation of the forest. These negative impacts can degenerate with industrial logging and road construction.

The biodiversity is equally endangered by the presence of poachers, who are very active in the zone. This is notably the case of well armed poachers from Nigeria, who enter into the forest from the cross river zone.

#### 4.3.3.3. Protected areas in the project zone

**The Korup National Park:** The Korup National Park is the most diversified humid forest in Africa. It was created in 1986 and covers a total surface area of about 1 260 km<sup>2</sup> between Mundemba and Eyumojock in the South West Region. Korup is classified by IUCN as a protected area under category IV (that is a protected area managed essentially for conservation through active management).

More than 620 tree and shrubby species and 480 herbaceous species have been found in the Korup area. Korup is the only low altitude forest with over 400 species of avifauna and herpetofauna (82 reptiles and 92 amphibians) in Africa.

**The Rumpi Hills Forest Reserve:** this massive was created in 1941 and it covers a surface area of 438 Km<sup>2</sup>, composed principally of tertiary volcanic rocks, representing important water catchments providing local communities with pure spring water.

The reserve inhabits an important population of elephants *Loxodonta africana*, drill *Mandrillus leucophaeus*, Chimpanzees *Pan troglodytes* and Preuss's monkey *Cercopithecus preussi* (Usongo, 1995).

**The Nta Ali Forest Reserve:** the small forest reserve of Nta Ali (313 km<sup>2</sup>) with its single mountain peak rising to 1 266 m is situated north east to the Nkwende hills. Nta Ali is an important water catchment area for villages on the east of the reserve. Key species include *Loxodonta africana*, drill *Mandrillus leucophaeus*, Chimpanzees *Pan troglodytes* and Preuss's monkey *Cercopithecus preussi*. Korup project recently completed a management plan for Nta Ali Forest Reserve.

**The Banyang Mbo Wildlife Sanctuary:** Banyang Mbo was originally designated as a forest reserve in 1932 and reclassified as a wildlife sanctuary (the first in the country) in 1996. The revised legal status has so far protected the forests of Banyang Mbo from commercial timber exploitation.

#### 4.4. SOCIO-ECONOMIC MILIEU

The immediate environment of the FMU n° 11005 is made up of 25 villages all situated in the Eyumojock Sub-division. This part of the report brings out the socio-cultural, economic and infrastructural aspects.

##### 4.4.1. Socio-cultural aspects

##### 4.4.1.1. Demography and ethnic groups

The demographic situation of the project zone is presented in table 1.

**Table 1:** Distribution of populations by village in the FMU n°11 005 project area.

DIVISION	SUB DIVISION	VILLAGES	Population
MANYU	EYUMOJOCK	Ndebaya	840
		Babong	3422
		Araru	561
		Nkhogo	345
		Bakut	367
		Ekogate	189
		Ogurang	270
		Babi	320
		Mbobui	90
		Mbofong	67
		Abapka	20
		Akwa	307
		Ekoneman Ojong Arrey	173
		Ajaman	983
		Okurikang	214
		Inokun	619
		Mbenyan	316
		Nsanagarati	326
		Ekoneman Awa	355
		Otu	1691
		Okuri	389
		Mbinda	466
		Ayaoke	692
		Onaku	431
		Eyang Emangha	173
Total population			13 626

*Source:* Socioeconomic report of the forest adjacent populations (July 2007)

It appears from the table that most of the villages in the project zone are less populated. The most populated village in the area is Babong with 3 422 inhabitants representing more than a quarter of the population of the area.

Age distribution of the population in the sub-division shows that about 60% of the populations are made up of youths. The sex distribution shows an equitable distribution between the men and women.

- Level of fecundity and birth control

The fertility of the zone is slightly high due to the decrease in venereal diseases. Women are also increasingly practicing birth control in the area.

- Mortality

The mortality of the region has greatly reduced due to the increase in access to medical situations in the area. That is the traditional and modern health services.

- Presentation of ethnic groups

The table below presents the different ethnicities of the project zone.

**Table 2: Ethnic groups of the FMU n° 11005 project area.**

Ethnic group	Localities																					
	- poorly represented ;      +moderate representation; ++strong representation ; +++ very strong representation																					
	Ndebaya	Ekok	Babong	Inokun	Ayaoke	Ogurang	Okurikang	Okuri	Mbinda	Ekonema	Awa	Onakun	Nsanaraga	ti	Ogurang	Mbobui	Mbenyan	Ajama	Mbofong	Otu	Ekogate	Araru
Bayangs	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Nigerian	++	++	+	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
Ejaghams	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++
Bamenda		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bamileke		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ewondo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Akwaya	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nkougne	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source : Socioeconomic report of the project zone (July 2007)

It appears from the above table that the Ejaghams constitute the most represented ethnic group in the project area. They are followed by the Bayangs and the Nigerians. In Ekok, the Bamenda and Bamileke are also among the major ethnic groups.

#### 4.4.1.2. Migrations and historical events

According to oral sources, the inhabitants of the project zone come from three major areas: Kembong, Eyumojock and Calabar in Nigeria.

The people of Otu and Araru were the first to settle in the area and haven't migrated since then. Outside these two villages, the others have in the past years move from one place to another for diverse reasons before the German colonial period. Tribal wars were the major instigators for the frequent migrations.

Guided by their ancestors Tata Bitemi and Tata Asong, the people of Ekoneman Awa fled from Ikom in Nigeria due to frequent raids by the rival Ajassou tribe. They passed through Ekok, and then followed the Awa and Akheghem watercourses and settled where they are today.

Due to frequent wars with the Boki tribe in Nigeria, the Mbenyan people left Nigeria and crossed over into the interior of Cameroon where they are settled today.

To withstand constant raids from more powerful tribes, some tribes made truces with others and migrated together as a group. This is the case of the Ayaoke and the Okuri people.

The people of Babi, Mbobui and Babong mentioned that they originated from Abagaboga.

In the past, many people migrated because of the abundance of bushmeat in certain areas. This is the case of the people of Nkogho and Inokun who originated from Kembong and Ayaoke respectively.

Other reasons given by other villages for migration are for the search of water (Ekoneman Ojong, Mbofong) and the search for fertile soil (Onaku, Bakut, Akwa, Abakpa).

The Ajaman people were in quest for vast terrain and the people of Onaku, Eyang, Emangha and Ekogate where searching for lands that had no ill luck.

Migration is still very much present in the zone. In the past couple of years, some villages totally disappeared as their populations migrated and joined other villages. This is the case of the Nfunum village that joined with the Ekoneman Awa and that of the Ituoto that rallied up with Otu.

Seasonal migrations are related to the agricultural calendar. The people of Nsanaragati I created a camp close to their plantations in Nsanaragati II where they stayed to carry out agricultural activities during farming season.

As concerns the names of the localities in the area, they come from the names of their ancestors, trees, watercourses, different activities carried out by the initial occupants or the things that were lacking on their arrival. To illustrate this, Ekoneman Ojong (Ekoneman means: no more love, Ojong: name of an ancestor); Nsanaragati (Nsang: Iroko, aragati:crossover, meaning crossing over the river on an Iroko tree); Ajaman and Awa (names of rivers), Ndebaya (Nde: junction, baya: river); Inokun (let us keep it here); Babong (come and harvest); Mbenyan (place of peace); Araru (founder of religion); Okuri (lets go together); Okurikang (lets decamp); Akwa (big town); Onaku (a quality oil); Bakut (arid soil); Nkogho (tree is fallen); Eyang Emangha (Eyang: pond, Emangha: illness, meaning pond of illness); Mbobui (Mbo: road, bui: goat, meaning goat road); Mbofong (cattle road), etc.

#### *4.4.1.3. Mode of inheritance, marriage and settlement*

In the project zone, mixed marriage is practiced, with the villagers inter-marrying and even getting married to foreigners.

The mode of inheritance is through birth right that is the heir being the child of the father.

The hospitality of the Ejaghams is exemplary. This is exhibited by the presence of many non indigenes who are permanently settled in the area.

#### *4.4.1.4. Cultural heritage*

Many villages in the project zone were at one time installed in the present FMU. These sites harbour archeological features which can be uncovered and destroyed especially during the construction of logging roads and landings.

The types of dances found in the area are the Obassanjo juju dance, the Ekpe dance, Elephant dance, etc. There are also taboos of various sorts in the area, like the prohibiting of children and women to eat certain delicacies such as some snakes.

However there exist sacred sites in all the direct impact villages. Some of these sacred sites are within the FMU and may be hampered by the activities of the project.

#### *4.4.1.5. Political organisation*

At the head of each village there is a village head (chief). The chief of the village is an auxiliary of the administration and represents the entire village community during administrative meetings.

The chiefs in the project zone have notables. Some of the chiefs are not permanent residents of their villages. They govern out of their respective villages mainly due to their professional lives. In some cases a regent is appointed who sits in for the chief.

#### *4.4.1.6. Associative life and community organisation*

The community and associative life exists and is mainly towards social (njangies) and occasional community agricultural works on economic development.

The structured groups in the project zone include: Common Initiative Groups (CIGs), associations; njangies and development committees. These groups intervene in activities such as agriculture, fishing and hunting. A list of structured local groups is found in appendix 10.

#### *4.4.1.7. Believes and religions*

In the project zone, many different churches are operating indicating freedom of religious belonging. Most of the churches are founded based on Christianity. Other new generation churches originate from Nigeria. These different denominations coexist peacefully.

#### *4.4.1.8. Land occupation and land tenure*

Land tenure respects the customary rights. Hence, the land belongs to the first occupant and is transferred from generation to generation through inheritance. The land belongs to the family head and women are limited to only users' rights. Strangers are provisionary awarded pieces of land.

#### *4.4.1.9. Habitation zones and types of constructions*

In the project zone, the settlements are linear along the roads. This settlement pattern results from the fact that the people prefer to live closer to roads to facilitate the transportation and sale of their products.

As concern the construction types, houses are mostly made of bricks and are zinced, though one can still find a few thatched homes. Pictures 7 and 8, shows the different types of constructions found in the zone.



**Picture 7:** Thatched house in Inokun



**Picture 8:** Modern zinced house in Ekok

#### *4.4.1.10. Nutrition*

The populations feed mostly on plantain, yam, cocoyam, cassava and some vegetables (with eru being the highest consumed). Bush meat is the principal source of animal proteins as there are neither butcheries nor cold stores in the direct impact villages.

#### *4.4.1.11. Rites*

There are many ritual activities constantly being carried out in the region. Occasions such as marriages, births and deaths have principal ritual processes. The Ekpe society manifests occasionally. These rites are often carried out strictly by initiated members.

#### 4.4.2. Economic aspects

##### 4.4.2.1. Agriculture

Agriculture is the main activity carried out by the populations of the villages found in the FMU n°11005 project area. The agricultural activities in the area are concentrated around two principal types of crops namely cash and food crops.

- *Cash crops*

Cocoa is the principal cash crop cultivated in the area. About 90% of the populations are involved in cocoa farming. Women here are actively involved in cocoa production, contrary to the situation in the Centre and South Regions of Cameroon where this activity is mainly carried out by men.

Cocoa production has dropped in recent years as a result of government's lack of concern on stabilizing prices, increase in the cost of inputs and low prices paid to the farmers (between 300 and 800 CFAF/kg).

Palm oil cultivation is also observed but not as much as cocoa cultivation. 23.84% of the studied populations are palm oil farmers. A total of about 76 ha have been put under palm oil plant cultivation.

Cash crop cultivation is mainly annual and constitutes an important source of income generation for the populations.

- *Food crops*

Food crop cultivation is practiced principally for subsistence and equally for income generation. The surplus of the produce is sold. The most cultivated food crops are: plantains, cassava, yams, banana, groundnuts, maize and fruits like orange, pear, pawpaw, cucumber, watermelon, plum and lemon. The oranges produced are commercialised in big cities like Kumba, Buea, Douala and Yaounde.

The workers of the project will increase the demand in food crops which may bring additional income to the farmers.

##### 4.4.2.2. Animal husbandry

Animal husbandry is not a very popular activity in the project zone. The few animals reared are consumed only during occasions. Only a small portion is sold. The socio-economic study carried out in the area reveals that annual revenue for all the villages drawn from the commercialisation of reared animals is very low. It varies between 3 000 CFAF to 240 000 CFAF for small ruminants, 3 000 CFAF to 400 000 CFAF for reared birds and 45 000 CFAF and 300 000 CFAF for pigs.

##### 4.4.2.3. Hunting

Since bushmeat constitutes the main source of animal proteins of the populations in the project zone, hunting is an activity that occupies many people. One should normally talk of poaching as the hunters do not have permits.

The additional demand in animal proteins resulting from the presence of imported labour is likely to increase this activity.

##### 4.4.2.4. Fishing

Fishing in the project zone is marginal inspite of the dense network of watercourses and their richness in fish species. From the 172 persons questioned during the socio-economic study, only 28.5% are carrying out fishing at low scale and traditionally. It is mostly done in the dry season and in the main watercourses flowing through the region. The fishing tools used are mainly nets and hooks.

The fish harvests are mainly for subsistence and a small percentage for sale. The sale is mostly done along the roads.

#### 4.4.3. Infrastructures and functioning

##### 4.4.3.1. Transport infrastructures

The roads in the project zone are in poor state, particularly in the rainy season. With the poor state of roads, transport activities are very limited in some of the roads like the Eyumojock - Babong, Eyumojock – Ekoneman Awa and Eyumojock – Ekok roads. This is also affecting the movement of people and goods on one hand and rural production on the other. Four wheel drive vehicles and other strong engine cars are the principal locomotion vehicles used for transporting goods and people in the project zone. Most of the areas with no road networks or with poor road conditions are accessed only on foot and motorcycles. Transport cost is expensive in the area due to poor state of roads. Pictures 9 and 10 illustrate the poor state of these roads.



**Picture 9:** Poor state of the road to Babong village



**Picture 10 :** A vehicle being dragged from a mire on Ekok road

##### 4.4.3.2. Sanitary infrastructures

In the project zone, there are four health centres and one Sub-divisional hospital as shown in table 3 below.

**Table 3:** Health services in the project zone

Health service	Category	Designation
Otu	Health Centre	Otu Health Centre
Nsanaragati	Health Centre	Nsanaragati Health Centre
Babong	Health Centre	Babong Health Centre
Eyumojock	Hospital	Eyumojock Sub-divisional Hospital
Ekok	Health Centre	Ekok Health Centre

Source: District Hospital Mamfe

Among the four health centres, three are built by CAFECO/WIJMA, but are managed by the State. They are Nsanagarati, Babong and Otu health centres. Babong was completed in 2008 and is not yet operational.

Other areas like Mbinda, Okuri and Ajaman complained of the need of health facilities in the respective areas since they are too far off from the villages with health services.

##### 4.4.3.3. Touristic infrastructures

Tourism is not greatly developed in the project zone, though there is great potential for ecotourism. The lake Ejagham is a touristic site which is still undeveloped. Hoteling structures are also lacking with the only operating hotel in the area boasting of six rooms in Eyumojock.

#### *4.4.3.4. Markets*

Most of the visited villages don't have markets. The agricultural products grown are sold mostly in the sub divisional head quarter market at Eyumojock. Due to the poor state of the road network in the area this activity is not well developed. It is a hindrance to production.

#### *4.4.3.5. Educational infrastructures*

Fourteen Government primary schools are found in the 25 villages. Children from 11 villages go to schools that are close to their habitation zones. It should be noted that these schools suffer from lack of teachers and classrooms. The only nursery schools in the area are found at the Otu, Ekok and Eyumojock. No secondary school exists in the enclaved zones, including Babong which is highly populated. Its population represents the quarter of the total population of the project zone.

Primary and secondary education in the villages faces numerous problems that have no solutions as yet. The principal problems are; (i) insufficient infrastructures, (ii) lack of staff bureau (iii) shortage of personnel (iv) lack of didactic material, (v) enclavement of the zone etc.

#### *4.4.3.6. Electricity*

Electrical energy is provided in the area uniquely by a generator except Eyumojock where Sonel has a small power plant. The primary lighting source in the area is kerosene lamps.

#### *4.4.3.7. Potable water*

Few villages in the project zone have wells. Many people still fetch potable water from streams. Community water systems established in some of the concerned villages have been abandoned and are not functional. System improvements in the domain of treatment and capacity are needed in order to effectively provide quality service to existing communities.

#### *4.4.3.8. Telecommunication Infrastructures*

Apart from the CRTV radio waves that are limited in the project zone, other foreign radios are being captured in the area. There is good communication network in the area. Communication networks like Camtel, Orange and MTN are operating in the area, except for the much enclave areas like Mbinda, Okuri and Ajaman.

Newspapers are scarcely seen in the zone. Few newspapers can only be seen in administrative services, but they reach there with a great delay because of the bad state of the road.

### **4.4.4. Projects and other operating organisations in the zone**

#### *4.4.4.1. Projects*

The Rumpi Hills Project is the only project operating in the area. This project aids the villagers in the elaboration and implementation of small micro projects. It also provides small funding to some farmers, enabling them to purchase pesticides or fertilizers for their farms.

Other projects operating in the zone are FMU projects, notably FMU n°11 003 and FMU n°11 004 by SEFFECAM and FMU n°11 001 by Tranformat ion Reef Cameroun (TRC). The exploitation of FMU n°11 005 may have cumulative effects with these projects.

#### *4.4.4.2. International organisations*

GTZ is the main international organisation that is operating in the project zone. It works on conservation and encourages the sustainable extraction of natural resources from the forest milieu. GTZ collaborates with the local forestry administration and the council to ensure the effective transmission of forest royalties to the populations and also mediates when conflictual situations arise.



#### 4.4.4.3. *Local non governmental organisations and associations*

There is only one local NGO operating in the project zone known as the Ejagham Natural Resources Management Committee (ENARESMAC). Its objectives are the following:

- encourage the Ejagham people to embrace the sustainable management of their natural resources;
- discourage as well as combat illegal timber exploitation within the FMU n°11 005;
- look for market channels for the sales of NTFPs produced by the villagers;
- sensitise the Ejagham people on the riches of the forest and the possibility to improve their livelihood;
- work in partnership with other NGOs with the same objectives.

Other structured groups exist in the area. These are Common Initiative Groups (CIGs) and associations. Appendix 10 lists these groups.

The NGO and other structured groups can be put into contribution especially as the execution of sensitisation activities is concerned.

#### 4.4.4.4. *Government services intervening in the rural milieu*

The Ministry of Forestry and Wildlife assures the conservation of natural resources, mainly anti poaching and controlling illegal logging, through the local forestry posts of Eyumojock and Ekok. The Ministry of Agriculture and Rural Development assists the populations technically, to ameliorate agricultural production. The services of the Ministry of Livestock, Fisheries and Animal Husbandry are not represented in the project zone. They are only in Mamfe leading to limited supervision of the population concerned.

After describing the project in the preceding chapter and the initial state of the environment in this chapter, it lacks the description of the public consultations process to have all the elements necessary to identify, characterise and evaluate the impacts of the project. The next chapter deals with public consultations.

## CHAPTER 5: PUBLIC CONSULTATIONS

Decree n° 2005/0577/PM of the 23rd of February 2005 laying down modalities to carry out environmental impact studies, stipulates the procedure for public consultations and audiences. The public consultation meetings for the FMU n° 11 005 were held from the 24<sup>th</sup> of April to the 1<sup>st</sup> of May 2009. This chapter briefly resumes the public consultations meetings.

### 5.1. OBJECTIVES

The FMU n° 11005 logging project affects a wide range of people with varied interests. Public consultations are required for diverse reasons such as:

- to allow the affected people to identify environmental and social impacts that can result from this logging project activities;
- to let the populations express their concerns and expectations due to the project existence in the zone;
- to sensitise the populations on the project activities and the potential possibilities to be offered by the project;
- to collect necessary data from resource persons for the write up.

### 5.2. PUBLIC CONSULTATIONS PROCESS

The public consultations process was done in three phases, which were:

- public consultations meetings with the direct impact populations;
- semi structural interviews with the resource persons of the area;
- a restitution meeting with the local administrative and council officials.

#### 5.2.1. Public Consultation meetings

##### 5.2.1.1. Agenda

The adopted agenda for the meetings was as follows:

- an opening prayer;
- presentation of the study team;
- a brief presentation on what the logging project activities entail;
- a brief description on what the EIA is all about;
- a participative identification of positive and negative impacts of the logging project activities and identification of possible mitigation and strengthening measures;
- expression of concerns and expectations of the populations;
- elaboration and validation of the meeting minutes.

The main participants of the public consultations meetings were, the direct impact populations, traditional leaders and elites. The meetings were conducted by the team of experts from CARFAD.

In each meeting, the populations designated a secretary who jointly took down the minutes with the secretary of the study team. At the end of the meeting, the minutes were harmonised, read out for validation by the populations and signed.

The pictures in the next page show participants during consultation meetings in some villages.



Picture 11: Meeting at Eyumojock



Picture 12 : Meeting at Ekok



Picture 13: Meeting in Ekoneman Awa



Picture 14: Meeting in Ekoneman Awa

#### 5.2.1.2. Summary of results

From the different minutes of the meetings, the summary of the identified positive and negative impacts with proposed strengthening and mitigation measures respectively as is presented below. This summary also presents the populations expectations and concerns.

#### • Positive Impacts and their strengthening measures

Impacts	Proposed measures
Development of agricultural and livestock activities	<ul style="list-style-type: none"> <li>- Sensitise the local populations on the possibilities offered by the logging activities in the zones;</li> <li>- Support the populations through the elaboration of projects that forest revenues can finance, notably through micro credits;</li> <li>- Inform the populations of when the workers are to leave one camp to another.</li> </ul>
Development of economic activities and increase in revenue	<ul style="list-style-type: none"> <li>- Develop new marketing channels ;</li> <li>- Encourage the perpetuation of income generating activities ;</li> <li>- Purchase products from the direct impact populations.</li> </ul>
Facilitation of the movement of persons and goods	<ul style="list-style-type: none"> <li>- Sensitise the populations on the creation of rural road maintenance committees to continue maintenance after the company will have left;</li> <li>- Sensitise the populations on the road safety measures;</li> <li>- Sensitise company drivers on speed limits and the risks of excess speed ;</li> <li>- Sensitise the villages on sales opportunities found in other areas of the zone.</li> </ul>
Creation of jobs	<ul style="list-style-type: none"> <li>- Recruit the local labour when it has the required skills;</li> <li>- Institute a transparent recruitment policy;</li> <li>- Inform the population on the available job opportunities;</li> <li>- Paste job opportunities in places where the populations can easily see like chief palaces, market places and churches.</li> </ul>

## Negative impacts and mitigation measures

Impacts	Mitigation measures
Risk of scarcity of wildlife and important flora species	<ul style="list-style-type: none"> <li>- Sensitise the logging personnel on the ills of poaching;</li> <li>- Encourage the populations to carry out animal husbandry activities.</li> </ul>
Decrease in the availability of useful NTFPs to the populations	<ul style="list-style-type: none"> <li>- Sensitise the populations on the domestication of endangered species and encourage (financially and technically) the creation of nurseries;</li> <li>- respect the user's rights of the populations as stipulated in the convention;</li> <li>- Identify and protect seed producing plants.</li> </ul>
Destruction of crops	<ul style="list-style-type: none"> <li>- Carve out agroforestry zones with the collaboration of the direct impact populations;</li> <li>- Inform farmers on when logging activities are about to begin in a particular area;</li> <li>- Compensate the farmers whose crops have been destroyed around the FMU n°11 005</li> </ul>
Limitation of access to land	<ul style="list-style-type: none"> <li>- CAFECO/WIJMA should ensure that the demarcation of the limits of the FMU is done in collaboration with the populations and other stakeholders;</li> <li>- Routine sensitisation campaigns should be carried out at the level of the villages on the sustainable use of land;</li> <li>- Continuous trainings on intensive and sustainable cropping techniques are to be perpetuated in the zone.</li> </ul>
Conflicts	<ul style="list-style-type: none"> <li>- Sensitise workers on the importance of respecting the customs of the populations;</li> <li>- Demarcate the FMU jointly with the local populations and the administration;</li> <li>- Sensitise the local populations on the calculation and distribution mechanisms of the forest royalties;</li> <li>- Ensure transparency during the recruitment of labour and give priority to the direct impact populations;</li> <li>- Ensure that the GFMC members are from the direct impact villages;</li> <li>- Sensitise the populations on the rights and obligations of CAFECO/WIJMA;</li> <li>- Encourage dialogue between the council and the direct impact populations.</li> </ul>
Moral decadence and crimewave	<ul style="list-style-type: none"> <li>- Sensitise the workers on the respect of local beliefs and customs.</li> </ul>
Deforestation	<ul style="list-style-type: none"> <li>- Assist the local populations in creating and managing nurseries</li> </ul>
Increase in illnesses like respiratory diseases, STIs/HIV/AIDS and unwanted pregnancies, divorce	<ul style="list-style-type: none"> <li>- Sensitise the local populations and the logging personnel on the fight against STIs/HIV/AIDS and the problems caused by unwanted pregnancies;</li> <li>- Create health services and facilitate access to drugs at low costs and also employ a nurse for first aid services;</li> <li>- Limit driving speed in dry periods, so as to reduce dust raising;</li> <li>- Water the road at the entry and exit zone of villages;</li> </ul>
Destruction of sacred sites.	<ul style="list-style-type: none"> <li>- Map out sacred sites as non logging zones ;</li> <li>- Compensate for the transfer of displaceable sacred sites.</li> </ul>

## • Expectations

During the consultation meetings, the populations listed some issues that they were expecting from the project promoter. Below are their main expectations:

- construction of inter village roads
- construction of health centres;
- construction/rehabilitation and equipment of schools;
- provision of scholarships for children;
- raising of potable water points ;
- subvention of agro-silvo-pastoral micro projects ;
- construction of permanent bridges;
- construction of a community hall;
- assistance with farm tools;
- rural electrification;
- assistance with insecticides for crops.

The populations however understood that their expectations are not obligatory, but that they can be negotiated within the framework of charity works carried out by CAFECO/WIJMA.

## • Concerns

Though the populations were anxious about the project, they still expressed some concerns on the following issues:

- the new forest royalty distribution mechanism among the 25 villages;
- the relationship between the logging personnel and the population;
- the implantation of the sawmill at Ossing and not at Eyumojock;
- the loss of wood and animal resources;
- the management of the 10% of the annual forest tax;
- the access to arable land and the destruction of the crops.

### 5.2.2. Semi-structural interviews

The semi structural interviews were carried out with the local resources persons intervening in the project zone. The main objective for these interviews was to obtain existing literature and information on the project zone and specific information on the project. A face to face contact methodology was used during this process. The following stakeholders were interviewed:

- the Representative of the Regional Delegate for MINEP;
- the Representative of the Regional Delegate for MINFOF;
- the Divisional Delegate for MINFOF Manyu;
- the Divisional Delegate for MINEP Manyu;
- the Sub-Divisional Officer for the Eyumojock sub division ;
- the Sub-Divisional Delegate of MINADER Eyumojock ;
- the Chief of forestry post Eyumojock ;
- the Chief of Forestry post Ekok;
- the First Assistant Mayor Eyumojock
- the local GTZ representative;
- the Site Manager of CAFECO/WIJMA.

On the next page, pictures of semi structural interviews exhibit meetings with different stakeholders.



**Picture 15:** Interview with the Divisional Delegate MINFOF for Manyu



**Picture 16:** Interview with the Sub-Divisional Officer for Eyumojock



**Picture 17:** Interview with the Site Manager of CAFECO/ WIJMA

### 5.2.3. The restitution meeting

At the close of all the consultation process, a restitution meeting was held at the Sub-divisional office in Eyumojock. Were present the Sub-Divisional Officer, other local Administrative service heads, the Mayor and NGOs. .

The pictures below show the highlights of the restitution meeting that took place on the 29th of April 2009.



**Picture18:** Restitution meeting at the Sub-divisional Office Eyumojock



**Picture19:** Restitution meeting at the Sub-divisional Office Eyumojock

With the description of the public consultations process with the results got, it is now possible to identify, characterise and evaluate the impacts o the projects. This is done in the next chapter.



## CHAPTER 6: ANALYSIS OF ENVIRONNEMENTAL IMPACTS OF THE PROJECT

In this chapter the different impacts resulting from the project activities are analysed. The methodology used to analyse the impacts is illustrated. Then the impacts are identified, characterised and evaluated using matrices. Finally the impacts are described and environmental measures are proposed.

### 6.1. METHODOLOGY OF IMPACT ANALYSIS

To analyze the impacts, they are first identified before being characterized and evaluated.

#### 6.1.1. Identification of impacts

The identification of impacts consisted firstly of determining all the components that are likely to be directly or indirectly affected by the project activities. Then, all the activities actually going on or projected by the project are inventoried. The third phase consisted of crossing all the elements of the milieu and the impact source activities in a Leopold's matrix which helped to identify interactions. This matrix served as a base for impact identification for the project.

It should be noted here that we have already existing impacts and potential impacts. These impacts were identified during public consultation meetings, meetings with resource persons, field observations and through expert judgement.

#### 6.1.2. Impact Characterisation

To characterize these impacts, a set of criteria are defined.

**a) The nature of the impact:** the impact can be negative or positive;

**b) Magnitude or intensity of the impact:** it defines the degree of change of the milieu, in function of the degree of sensitivity or vulnerability of the component in question. This parameter is divided into three classes:

- *High*: the activity significantly alters or ameliorates one or many environmental elements, hence considerably reducing, the use, characteristics or the quality of this or these elements;
- *Average*: the activity sensitively affects the integrity of the component or its uses without compromising its perenity;
- *Low*: the activity alters or ameliorates in a less perceptible manner one or many environmental elements without significantly modifying the use, the characteristics or quality.

**c) Extension of impact:** it gives an idea on the spatial dimension of the impact. The considered factor is the area covered by the impact. The extension can be specific, partial or regional. The extension is regional when the change of the studied component is observed beyond the South-West Region; meanwhile an extension is partial when the change is limited in the direct zone of impact. The extension is specific when the change is localized in the immediate work perimeter.

**d) Causal relationship (interaction):** it characterizes the relation between the project and the identified impact. The impact can be direct or indirect. It is direct when it is directly caused by the works of the project and indirect when it is indirectly caused by the project works.

**e) Occurrence:** it expresses the possibility for an impact to occur. The impact can be certain or probable.

**f) Duration:** it indicates the manifestation of an impact with time. Three classes are distinguished:

- short term (St) : exists only when the impact source activity is being carried out and ceases to exist immediately the activity is stopped;
- average term (At) : during the project activity period and one year after closure at most;
- Permanent (P) : throughout the project activity period and more than one year after closure;

**g) Value:** it is the importance or value given to the affected component. It can be legal, scientific, economical, and socio-cultural or linked to the availability of the studied component.

**h) Reversibility:** it is the possibility of an affected environmental component or element to regain its initial state with time. Two classes exist:

- Reversible : to indicate that the environmental element affected is likely to regain its initial state ;
- Irreversible: to indicate that the affected environmental element is not likely to regain its initial state.

**i) Cumulative impacts:** Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project.

### 6.1.3. Evaluation of impacts

A Martin Fecteau checklist (see appendix 11) was used as a standard for the evaluation of the absolute importance of the impact. This method combines three criteria, namely the duration, extension, and magnitude of the impact. To evaluate the relative importance of the impact, other criteria called weightage criteria, notably the reversibility, probability of occurrence, the legal and social values and its cumulative character were associated. The environmental measures are envisaged with respect to the relative importance of the impact. Finally, the importance of the residual impact was evaluated.

## 6.2. MATRICES FOR INTERRELATIONS, IDENTIFICATION, CHARACTERISATION AND EVALUATION OF IMPACTS

Tables 4 and 5 in the pages below show the interrelation and identification, characterisation and evaluation matrices of the impacts.



Table 4: Interrelation matrix

Valorised Environmental components	Physical milieu				Biological milieu			Human milieu														
	Air quality	Acoustic environment	Soil	Hydrology	Vegetation and forest	wildlife	NTFPs	Biodiversity	Agriculture and livestock	Emploment	Economic activities and	Road infrastructures	Transport and communication	Cultural heritage	Land tenure	Health	STI/HIV/AIDS and unwanted pregnancies	Security	Poaching	Animal proteins	Conflicts and crime	Living standards
Impact source activities																						
Wildlife and forest inventory								X														
Construction of logging roads	X	X	X	X	X	X		X	X		X	X	X	X				X	X		X	
Construction of landings	X	X	X	X	X	X		X						X								
Construction of a base camp	X	X	X	X	X	X		X						X							X	
Tree felling		X		X		X	X	X	X									X			X	
Skidding			X	X														X				
Chemical treament of logs			X	X		X		X								X						
Log transport and circulation of machines	X	X				X						X	X					X	X			
Use of fuel and lubricants			X	X														X				
Recruitment of labour										X											X	X
Maintenance of roads	X	X	X								X	X	X			X		X	X			X
Payment of Annual Forest Taxes																					X	X
Training of the Global Forest Management Committee																					X	X
Functionning of generators	X	X																				
Maintenance of vehicles and machines		X	X	X																		X
Anti poaching activities								X												X	X	
Presence of imported labour								X									X				X	
Realisation of charity work																	X					X
Presence of the Forest Management Unit															X						X	
Write up of project documents																					X	
Presence of personnel at the end of the project																			X		X	

Table 5 : Matrix of the evaluation of the impacts

MILIEU COMPONENTS		IMPACT SOURCE ACTIVITIES	IMPACT	N°	CHARACTERISATION PARAMETERS										EVALUATION		
					Nature	Interaction	Magnitude	Extension	Duration	Occurrence	Reversibility	Cumulativity	Value	Absolute importance	Relative importance	Importance of residual impact	
PHYSICAL MILIEU	Air quality	Maintenance of used roads	Air pollution	1	—	D	Lo	P	St	Cer	Rev	No	Yes	Mi	Mi	Li	
		Transport of logs and circulation of vehicles and machines															
		Creation of landings															
		Construction of logging roads															
		Functionning of generators															
	Acoustic environment	Construction of logging roads	Noise pollution	2	—	D	Av	S	St	Cer	Rev	No	Yes	Mi	Mi	Li	
		Construction of landings															
		Tree felling															
		Transport of logs and circulation of vehicles and machines															
		Maintenance of vehicles, machines and chainsaws															
	Soil	Functionning of generators	Soil pollution and disturbance by solid waste	3	—	D	Lo	S	Per	Pro	Rev	No	No	Mi	Mi	Li	
		Use of petrol and lubricants															
		Chemical treatment of logs															
		Maintenance of vehicles, machines and chainsaws															
		Construction of landings															
		Construction of logging roads															
	Hydrology	Maintenance of used roads	Soil erosion	4	—	I	Av	S	Per	Cer	Ir	No	No	Me	Me	Li	
		Construction of logging roads															
		Chemical treatment of logs	Pollution of hydrology	5	—	D/I	Lo	S	St	Pro	Rev	Yes	Yes	Mi	Mi	Li	
		Use of fuel and lubricants															
		Maintenance of vehicles, machines and chainsaws															
		Construction of logging roads															
Skidding																	
Construction of landings																	
Tree felling																	
Wildlife	Construction of logging roads	Threats to wildlife biodiversity	7	—	D	Lo	P	At	Cer	Rev	Yes	Yes	Me	Ma	Li		
	Tree felling																
	Transport of logs and circulation of machines																
	Opening of landings																
	Non Timber Forest Products	Forest inventory and wood marking	Decrease in the availability of useful NTFPs to the populations	8	—	D	Lo	P	At	Cer	Rev	No	Yes	Me	Me	Li	
		Tree felling															
		Creation of landings															
Construction of logging roads																	

MILIEU COMPONENTS		IMPACT SOURCE ACTIVITIES	IMPACT	N°	CHARACTERISATION PARAMETERS										EVALUATION	
					Nature	Interaction	Magnitude	Extension	Duration	Occurrence	Reversibility	Cumulativity	Value	Absolute importance	Relative importance	Importance of residual impact
BIOLOGICAL MILIEU	Vegetation and flora	Maintenance of used roads	Deforestation	9	—	D/I	Lo	P	Per	Cer	Rev	No	Yes	Me	Me	Mi
		Construction of base camp														
		Construction of landings														
		Tree felling														
		Construction of logging roads														
		Tree felling	Threats to flora biodiversity	10	—	D	Av	P	Per	Cer	Rev	No	Yes	Me	Me	Mi
HUMAN MILIEU	Agriculture and animal husbandry	Presence of imported labour	Development of agricultural and livestock activities	11	+	I	Lo	P	At	Pro	Rev	No	Yes	Me	Me	Me
		Construction of logging roads	Destruction of crops	12	—	D	Lo	P	St	Cer	Ir	No	Yes	Mi	Me	Mi
		Tree felling and skidding														
	Economic activities and revenue	Construction of logging roads	Development of economic activities and increase in revenue	13	+	I	Av	P	At	Cer	Rev	No	Yes	Me	Me	Me
		Maintenance of used roads														
		Presence of imported labour														
	Road infrastructure	Transport of logs and circulation of machines	Risk of degradation of road infrastructures	14	—	D	Lo	R	At	Pro	Rev	Yes	Yes	Me	Me	Li
	Transport and communication	Construction of logging roads	Facilitation of movement of persons and goods	15	+	I	Lo	R	At	Pro	Rev	Yes	Yes	Me	Me	Me
		Maintenance of used roads														
	Employment	Recruitment of labour	Creation of jobs	16	+	D	Lo	R	Per	Cer	Rev	No	Yes	Ma	Ma	Ma
	Cultural heritage	Construction of logging roads	Threats to cultural heritage	17	—	D	Lo	S	Per	Pro	Ir	No	Yes	Mi	Mi	Li
		Construction of landings														
		Maintenance of used roads														
	Health	Chemical treatment of logs	Risk degrading the health status of workers and of the populations	18	—	D	Lo	S	Per	Cer	Rev	No	Yes	Mi	Mi	Li
		Transport of logs and circulation of machines														
		Maintenance of used roads														
	STI/HIV/AIDS and unwanted pregnancies	Presence of imported labour	Risk in increase in the prevalence of STIs/HIV/AIDS and unwanted pregnancies	19	—	I	Av	R	Per	Pro	Ir	Yes	Yes	Ma	Ma	Me

MILIEU COMPONENTS		IMPACT SOURCE ACTIVITIES	IMPACT	N°	CHARACTERISATION PARAMETERS									EVALUATION		
					Nature	Interaction	Magnitude	Extension	Duration	Occurrence	Reversibility	Cumulativity	Value	Absolute importance	Relative importance	Importance of residual impact
HUMAN MILIEU	Security	Construction of logging roads	Increase in road and job side accidents	20	—	D	Lo	R	Per	Pro	Rev	Yes	Yes	Ma	Ma	Mi
		Tree felling														
		Skidding														
		Transport of logs and circulation of machines														
		Use of fuel and lubricants														
		Maintenance of used roads														
		Chemical treatment of logs														
	Poaching	Transport of logs and circulation of machines	Increase in poaching	21	—	I	Av	P	Per	Cer	Rev	Yes	Yes	Me	Ma	Mi
		Maintenance of used roads														
		Construction of logging roads														
		Presence of imported labour														
		Presence of personnel at the end of the project														
	Animal proteins	Anti poaching activities	Scarcity of wildlife products	22	—	D	Lo	P	At	Pro	Rev	Yes	Yes	Me	Me	Li
	Land tenure	Presence of the FMU	Limitation of access to land for the direct impact populations	23	—	D	Av	S	Per	Cer	Rev	Yes	Yes	Me	Ma	Mi
	Conflicts and crime	Presence of imported labour	Risk of conflicts	24	—	I	Lo	P	Per	Pro	Rev	Yes	Yes	Me	Me	Li
		Demarcation of the FMU														
		Payment of Annual Forest Taxes														
		Recruitment of labour														
		Creation of a GFMC														
		Transport of personnel														
		Presence of imported labour	Moral decadence and increase in crime	25	—	I	Lo	P	Per	Pro	Rev	Yes	Yes	Me	Me	Mi

MILIEU COMPONENTS	IMPACT SOURCE ACTIVITIES	IMPACT	N°	CHARACTERISATION PARAMETERS								EVALUATION			
				Nature	Interaction	Magnitude	Extension	Duration	Occurrence	Reversibility	Cumulativity	Value	Absolute importance	Relative importance	Importance of residual impact
Living standards	Recruitment of labour	Amelioration of living standards of the populations	26	+	I	Lo	P	Per	Pro	Rev	Yes	Yes	Me	Me	Me
	Maintenance of used roads														
	Payment of Annual Forest Taxes														
	Realisation of charity works														
	Construction of logging roads														
	Maintenance of roads														

**Legend**

Nature	Interaction	Duration	Extension	Magnitude	Occurrence	Reversibility	Absolute importance
— (negative)	<b>D</b> (direct)	<b>St</b> (short term)	<b>S</b> (specific)	<b>H</b> (high)	<b>Pro</b> (probable)	<b>Rev.</b> (Reversible)	<b>Ma</b> (major)
<b>+</b> (positive)	<b>I</b> (indirect)	<b>At</b> (average term) < 1yr	<b>P</b> (partial)	<b>Av</b> (average)	<b>Cer</b> (certain)	<b>Irr.</b> (Irreversible)	<b>Me</b> (medium)
		<b>Per</b> (permanent) > 1 yr	<b>R</b> (regional)	<b>Lo</b> (low)			<b>Mi</b> (minor)

### 6.3. DESCRIPTION OF PROJET IMPACTS AND ENVIRONNEMENTAL MEASURES

#### 6.3.1. Impacts on the physical milieu

##### 6.3.1.1. Air pollution (impact 1)

- Description of impact causes and manifestations

It is anticipated that air quality will eventually decline as a result of additional growth and development in the project area communities. This will be a result of activities such as the construction of logging roads, the construction of landings, log transport and circulation of vehicles and machines. Some of these activities will produce dust and other smoke which all contribute in polluting the air. This air pollution is likely to cause harm on the workers and direct impact populations close to the emission sources. This impact was mentioned during the consultation meeting at Babong. As far as the smoke is concerned, it is not though in important quantity, but will also contribute to climate change.

- Existing mitigation measures

To mitigate this impact, CAFECO/WIJMA is already engaged in carrying out some measures. These are:

- the frequent checks carried out on the vehicles and machines, to ensure good operation systems;
- the provision of safety gears like masks to workers in sites with high dust.

- Characterisation and evaluation

This reversible impact, which will certainly occur, is negative. The impact is of a low magnitude since the quantity of smoke and dust that can be produced is insignificant since the atmosphere is still very pure. After examining the extension and the time for expansion of dust, the impact is considered to be partial and of short term. The value given to air is seen in national and international regulations (law n°96/12 of 05 August 1996 and the Kyoto Protocol). Given the different criteria examined, the absolute and relative importance of the impact was scaled at minor.

- Proposed mitigation measures

Other environmental measures to further mitigate this impact are as follows:

- limit the speed of vehicles, especially within settlement zones ;
  - build speed brakes at the entrance and exit points of settlement zones;
  - systematically switch off vehicles and machines when they are not operational.
  - respect the environmental guidelines of the Ministry of Public Works during road maintenance;
- Evaluation of the importance of the residual impact

Following the environmental measures already put in place and the mitigation measures proposed, the importance of the residual impact was evaluated as limited.

##### 6.3.1.2. Noise pollution (impact 2)

- Description of impact causes and manifestations

Residences and animal habitats are the most noise sensitive land use in the project area. Noise impacts will come from felling operations, construction activities, vehicle and machine circulation and functioning of generators. A considerable amount of noise affecting the direct impact populations will also come from tractor-trailer traffic and chainsaw operations. Since the perception of noise is subjective, the setting in which the sound is generated is a critical factor. Sound from man-made sources is considered as intrusive noise because much of the project area is sparsely populated.

The noise produced will be particularly harmful to workers near the emission sources such as chainsaw operators.

- Existing mitigation measures

The management of CAFECO/WIJMA is already implementing the following measures to limit the incidence of this impact:

- the provision of safety gears like ear muffers to chainsaw operators;
- the switching off of vehicles and machines engines when they are not operational.

- Characterisation and evaluation

This negative impact is reversible since the noise ceases immediately the activity stops. The extension is specific because the noise is felt within a small radius due in some cases of the barrier created by the closeness of some trees. Its occurrence in a logging site is certain. The magnitude is average considering the different sources of the noise.

According to the criteria considered in the Fecteau's checklist, the absolute importance of the impact is minor. The weightage criteria do not affect the value of the absolute importance that is why the importance of the relative impact has also been evaluated as minor.

- Proposed mitigation measures

Since this impact is very obvious and inevitable, it will be preferable to preserve the health and quietness of their personnel and the direct impact populations, by:

- building speed brakes at the entrance and exit points of settlement zones;
- avoiding chainsaw maintenance activities in the night;
- sensitizing the workers on the need to wear the safety gears for their protection.

- Evaluation of the importance of the residual impact

With the measures already taken by the company and the implementation of the proposed mitigation ones, the importance of the residual impact was evaluated as limited.

#### 6.3.1.3. Soil pollution and disturbance by solid wastes (impact 3)

- Description of impact causes and manifestations

The use of fuel and lubricants, the treatment of logs with chemical products (Sarpa grume), the maintenance of vehicles, machines and chainsaws are potential causes of soil pollution.

Yarding cables, engine chains, used tires, oil filters; metal wastes and household wastes are the origin of soil disturbance.

- Existing mitigation measures

Some environmental measures have already been put in place by the logging company to reduce the incidence of this impact on the soil. These measures include:

- the presence of a waste recuperation centre for used oils, metal waste and batteries;
- the presence of labelled dust bins;
- the biannual recovering of used oils for recycling by BOCOM company;
- the conservation and transportation of fuel and lubricants in leak proof containers;
- the training of personnel on the manipulation of hazardous chemicals.

- Characterisation and evaluation

Soil pollution and disturbance constitutes a negative impact. It will be of low magnitude considering the volume of polluting and disturbing materials. This impact will manifest throughout the life span of the project, hence a permanent impact. The extension is specific, since it will remain confined to the polluted or disturbed perimeter.

These criteria permit us to conclude that the absolute and relative importances of the impact are minor.

- Proposed mitigation measures

Other measures recommended to mitigate this impact are:

- the construction of a concrete surface at waste recuperation centre;
- the construction of vehicles and machines washing point with oil recuperation pit.

- Evaluation of the importance of the residual impact

In addition to the existing measures, the proposed measures if properly implemented will considerably reduce the impact; that is why the importance of the residual impact will become limited.

#### 6.3.1.4. Soil erosion (impact 4)

- Description of impact causes and manifestations

Many activities of the project are likely to cause soil erosion. These are the construction of logging roads and landings and the maintenance of used roads, especially during the exploitation of borrow pits. Skidding can also cause erosion. Soil erosion risks depend on soil type, but in all cases, it will increase with the steepness of the terrain.

- Existing mitigation measures

For the moment, no specific measure has been envisaged to mitigate the impact of the project on soil erosion.

- Characterisation and evaluation

Soil erosion is a negative impact of average intensity. It is irreversible as the arable land on a surface left out by the exploitation of a borrowing pit for example will be difficult to reconstitute. The impact will certainly occur in definite areas of the concession that is why the extension has been estimated specific. It is a permanent impact since it shall be present throughout the project life.

Close evaluation of this impact shows that the absolute importance is medium. The relative impact importance is also medium since the other characterisation criteria do not modify the value of the absolute importance.

- Proposed mitigation measures

Efficient mitigation measures proposed are:

- the reconstitution of used sites after the closure of an annual logging unit;
- the respect the intervention norms in the forest milieu ;
- the respect the environmental guidelines on road maintenance of the Ministry of Public Works.

- Evaluation of the importance of the residual impact

The effective implementation of the proposed measures will considerably mitigate the impact. For this reason, the importance of the residual impact has been estimated limited.

#### 6.3.1.5. Pollution of hydrology (impact 5)

- Description of impact causes and manifestations

Fuel and lubricants from vehicles and machines during maintenance and washing as well as chemicals used to treat logs can accidentally spill, and possibly flow into watercourses through run-offs causing surface water pollution. Equally, the construction works at logging site can lead to erosion and deposition of fine soil particles in watercourses increasing turbidity, hence polluting the watercourse. Vehicles crossing watercourses can also cause surface water pollution. The spilled hydrocarbons can likely infiltrate the soil and contaminate underground water aquifers.



- Existing mitigation measures

The company has established a few mitigation measures to limit this effect such as:

- the creation of a waste management facility;
- the biannual recovering of used oils for recycling by BOCOM company.

- Characterisation and evaluation

This impact is negative. It is direct for surface water pollution and indirect for underground water aquifers pollution since the spill products have to infiltrate after the rains. The impact is of a specific extension and reversible. The impact is of low magnitude considering the amount of pollutants concerned. It shall manifest all through the lifespan of the project, hence it is permanent. Water is a valued component especially by the direct impact populations since most of them drink water from streams. The impact is cumulative due to the activities of other forest management units in the area.

The various characterisation criteria help to draw a conclusion after the evaluation that, the absolute and relative importances of the impact are minor.

- Proposed mitigation measures

To mitigate this impact, the same mitigation measures used to combat soil pollution can be applied.

- Evaluation of the importance of the residual impact

The implementation of these mitigation measures will render the residual impact to be limited.

#### 6.3.1.6. Disturbance of surface water flow (impact 6)

- Description of impact causes and manifestations

The disturbance of surface water flow is not only caused by road construction activities and the deposition of spoil earth in watercourses, but also by tree felling and skidding. Construction activities cause the diversion of watercourse direction; meanwhile abandoned branches from fell trees block water flow and create dams at the source. The use of log clusters and corduroy with earth fills also cause diversion. This disturbance at times causes stagnation of water, leading to clogging and loss of biodiversity.

- Existing mitigation measures

For the moment, no specific measure has been envisaged to mitigate the impact of the project on disturbance of surface water flow.

- Characterisation and evaluation

This is a negative, irreversible and direct impact which will manifest throughout the project life in the area. The magnitude has been judged as average. The extension is specific since it will occur only on definite portions of the water courses. This impact can be amplified if neglected and it is probable to occur.

The absolute importance of the impact is evaluated as medium. The importance of the relative impact is also evaluated as medium, though the element affected is accorded much value as stipulated in the Ramsar convention on the management of humid zones ratified by Cameroon in 2006.

- Proposed mitigation measures

To mitigate this impact, the logging company should scrupulously follow the intervention norms in the forest milieu.

- Evaluation of the importance of the residual impact

The mitigation measures proposed will render the residual impact to be limited, if they are efficiently implemented.

### 6.3.2. Impacts on the biological milieu

#### 6.3.2.1. Threats to wildlife biodiversity (impact 7)

- Description of impact causes and manifestations

The major logging operations (like felling, skidding, and construction of logging roads...) produce much noise that scares away and disturbs wildlife. Elsewhere, the loss of the forest cover will lead to the destruction of animal habitats, which definitely constitute a threat to wildlife biodiversity.

- Existing mitigation measures

To mitigate this impact, CAFECO/WIJMA is carving out integral conservation zones within the forest management unit.

- Characterisation and evaluation

This impact is negative, direct and will certainly occur. Meanwhile, it will be of average term, since the noise will considerably drop once logging ceases in an annual logging unit. The animals will then regain their habitat as it reconstitutes gradually and also fresh grass can grow on the landings and constitute pasture for grazers. The impact is obviously reversible and partial. The magnitude has been considered as low. Wildlife is of great value for conservation and to the local populations, it is protected by law n° 94/01 laying down forestry, wildlife and fisheries regulations. The impact is cumulative due to the activities of other forest management units in the project zone.

According to Fecteau's checklist, the absolute importance has been evaluated as medium. The weighing criteria confer a major value to the relative impact since it is certain, cumulative and the component affected valued.

- Proposed mitigation measures

The following mitigation measures are recommended to reduce the effects of this impact:

- follow the logging rules that encourage progressive felling in logging units, as stipulated in the logging convention.
- close skidding paths that are no longer operational after the closure of a logging unit.
- follow the intervention norms in the forest milieu.

- Evaluation of the importance of the residual impact

The proposed measures coupled with the existing measure will considerably reduce the impact that is why the importance of the residual impact has been estimated as limited.

#### 6.3.2.2. Decrease in useful NTFPs to the population (impact 8)

- Description of impact causes and manifestations

Among the forest species that provide NTFPs to the direct impact populations, some might possibly be harvested by the logging company. There are for example, Moabi (*Baillonella toxisperma*), *Irvingia gabonensis*, and djangsang (*Ricinodendron heudelottii*). These species are a source of food, medicine and revenue to these people.

- Existing mitigation measures

For the moment, no specific measure has been envisaged to mitigate the impact of the project on NTFPs.

- Characterisation and evaluation

This impact is negative, certain and direct. It has a low magnitude because of the spatial distribution of these species within the FMU. The extension is partial since the populations will only feel the impact of trees that are found close to the habitation zones. The impact is of average term, since the young plants in the forest will grow to replace the felled trees and will supply these NTFPs to the populations.

The different characterisation criteria permit the evaluation of the absolute importance of the impact to be medium. NTFPs are a highly valued component. NTFPs are valorised on a legal aspect, since the law permits the populations to enjoy user's rights by extracting NTFPs from the FMU. Then the NTFPs are valorised from an economic perspective, since it constitutes a source of income generation. The weighing criteria cannot influence the value of the importance of the relative impact which is also medium.

- Proposed mitigation measures :

To limit disagreements or conflicts that result from the exploitation of these species, it is advised to:

- identify and mark for reserve the trees bearing NTFPs around settlement zones;
- inform the population of logging activities before felling starts in areas harbouring the NTFPs species;
- assist the populations through the services of the GFMC in the creation of NTFPs species tree nurseries;
- respect the user's rights of the populations as stipulated in the convention.

- Evaluation of the importance of the residual impact

The execution of these proposed measures will permit the importance of the residual impact to reduce and become limited.

#### 6.3.2.3. Deforestation (impact 9)

- Description of impact causes and manifestations

The execution of some logging activities will cause the destruction of plant cover. These activities are principally the construction of logging roads, landings and the base camp, the maintenance of used roads and tree felling. With the opening up of the forest through the creation of logging roads, adjacent populations can easily create farmlands within the forest, hence propagating the clear cutting and the slash and burn farming technique which is known to be very destructive.

- Existing mitigation measures

-To mitigate this impact CAFECO/WIJMA is implementing the following measures:

- the creation of a security team that patrols the FMU;
- the training of staff on reduce impact logging.

- Characterisation and evaluation

This impact is direct when considering the activities of the project. It is also indirect while considering that the logging roads may also facilitate the access into the forest. The impact is negative and is certain to occur, since its causes are inevitable. Meanwhile, it is of low magnitude. The impact is partial and permanent, since it will certainly occur in the entire surface area of the FMU and through out the life time of the project respectively. It is equally a reversible impact. The component affected is valued by the law.

The evaluation criteria rate the absolute importance of the impact as medium. The importance of the relative impact is also medium.

- Proposed mitigation measures

To mitigate this impact, the following measures are to be taken into consideration:

- assist the populations to raise trees to rehabilitate the affected zones and demarcate the annual logging units;
- the sensitisation of the direct impact populations on their rights and obligations towards the FMU ;
- assist the direct impact populations in agropastoral projects in order to increase their productivity.

Mise en forme : Puces et numéros

- Evaluation of the importance of the residual impact

The proposed measures will considerably reduce the impact, but will not cancel it, that is why the importance of the residual impact has been estimated as minor.

#### 6.3.2.4. Threats to flora biodiversity (impact 10)

- Description of impact causes and manifestations

Forest logging in the region is mostly selective (few high value species are logged), which can lead to the scarcity and even disappearance of some tree species in the forest. This can also lead to the modification of the plant composition of the harvested zone. The presence of logging road networks in the area also favours the entry of farmers in quest for new farmlands that can also have an impact on flora.

- Existing mitigation measures

To mitigate this impact, the company has already embarked on certain environmental measures such as:

- the creation of a security team that patrols the FMU;
- the sensitisation of direct impact populations on illegal logging.

- Characterisation of the impact

The impact is direct and negative. Its occurrence is certain, since the species exploited are selective due to the market demand. The magnitude has been judged as average. The extension is partial because the impact will happen in all the FMU. The duration is permanent as it will happen all through the lifespan of the project. Flora biodiversity is a valued component, notably by the Convention on Biodiversity of which Cameroon is a signatory.

According to the evaluation criteria, the absolute importance of the impact is medium. The relative importance is also medium.

- Proposed mitigation measures

Other measures recommended to ensure the protection of flora biodiversity are:

- assisting the population in the creation of nurseries for the most exploited species;
- identify and conserve grain carriers of the most exploited tree species as recommended in the intervention norms in the forest milieu ;
- respect the Minimum Exploitable Diameter (MED) as prescribed in the Provisional Convention;
- continuous sensitisation on illegal logging.

- Evaluation of the importance of the residual impact

The proposed measures coupled with the existing one will considerably reduce the impact, but will not cancel it, that is why the importance of the residual impact has been estimated as minor.

#### 6.3.3. Impacts on the human milieu

##### 6.3.3.1. Development of agriculture and animal husbandry (impact 11)

- Description of impact causes and manifestations

The presence of workers and their families around the project zone will increase the demand for food stuff and meat. This sudden increase can cause an improvement in agricultural and livestock activities (since bush meat is prohibited to company staff).

- Characterisation and evaluation

Given the limited number of workers, the magnitude of the impact was evaluated to be low. The impact is reversible, because when the workers decamp from a given locality, there is reduction if not cancellation in the demand of food stuff and meat. With this consideration, the duration has been estimated average term. The extension has been estimated partial

considering the different villages affected. Agriculture is a highly valued element, since it constitutes the main activity of the direct impact populations.

Considering Fecteau's evaluation criteria, the absolute importance of the impact is medium. The relative importance is also evaluated medium given the fact that the other characterisation criteria are not to influence the value of the absolute importance.

- Proposed strengthening measures

To better benefit from the opportunities of increase in demand, it will be good to:

- strengthen the capacities of direct impact populations in the elaboration and management of agriculture and livestock projects ;
- organise the populations into groups to help them market their products ;
- purchase local products from populations;
- ensure the maintainance of local road networks to facilitate transportation of agricultural products.

- Evaluation of the importance of the residual impact

The implementation of these measures will contribute to strengthen this impact, but since it is reversible, the residual impact was evaluated at best to remain medium.

#### 6.3.3.2. Destruction of crops (impact 12)

- Description of impact causes and manifestations

The construction of roads, tree felling and skidding are the activities likely to cause the destruction of farmlands and crops on farms found around the outskirts of the FMU 11005. It is an impact which is already happening. It was mentioned during many consultation meetings.

- Existing mitigation measures

To mitigate the destruction of crops, CAFECO/WIJMA is implementing the following measures:

- compensation of destroyed crops;
- practice of directional felling.

- Characterisation and evaluation

This impact is negative and of short term, since it will manifest only when the logging activities are close to the farms. The impact is of partial extension and of low magnitude looking at the number of farms that can be destroyed. It is a certain and irreversible impact. Agriculture is a highly valued element, since it constitutes the main activity of the direct impact populations.

Considering the evaluation criteria, the absolute importance of the impact has been found minor. Since the impact is certain, irreversible and the element affected valued, the relative importance of the impact has been evaluated as medium.

- Proposed strengthening measures

To mitigate this impact, the following should be done;

- limit the road bed and landings to the recommended norms;
- inform farmers on when logging activities are about to begin in a particular area for them to harvest some of their crops if possible.

- Evaluation of the importance of the residual impact

With the implementation of the different mitigation measures proposed, the importance of the residual impact will be minor.

#### 6.3.3.3. Development of economic activities and increase in revenue (impact 13)

- Description of impact causes and manifestations

The presence of CAFACO/WIJMA workers in the area will increase the demand for local products. Hence, small businesses will prop up in different domains like, restaurants, bars, provision stores, mostly in the zones around the base camps. The construction and maintenance of roads will facilitate the movement of goods from suburbs or enclave zones to the Sub-divisional headquarter.

- Characterisation and evaluation

This is a positive impact which is very much awaited by the direct impact population. This impact has been estimated of average term since as soon as logging stops in one site the workers decamp and activities in the zone returns to normal. This situation was observed in Babong. The magnitude has been estimated as average since all will depend on the dynamism of the populations. The impact will have a partial extension, since it will scarcely go beyond the villages harbouring the base camps.

- Proposed strengthening measures

The environmental measures recommended for this impact are as follows:

- sensitise the local populations on the possibilities offered by the logging activities in the zones;
- inform the population of when the workers are to leave one camp to the other;
- organise the populations into groups to help them market their products.

- Evaluation of the importance of the residual impact

The implementation of the above proposed measures will considerably strengthen the impact, but since it is reversible, the importance of the residual impact has been estimated at best medium.

#### 6.3.3.4. Risk of degrading road infrastructures (impact 14)

- Description of impact causes and manifestations

The different vehicles and machines circulating in the logging zone can easily degrade the existing roads in the area if road maintenance does not follow. This will make the passage of small vehicles difficult.

- Existing mitigation measures

For the moment, no specific measure has been envisaged to mitigate the impact of the project on road infrastructures.

- Characterisation and evaluation

This is a negative impact that will certainly occur in an average term. The impact is of low magnitude and of a regional extension since it will surely occur on all the roads used for the transport of logs. The magnitude is low since road maintenance is one of the activities of the company. The risk of degradation by the company's heavy vehicles on many roads will cease when logging activities stop in a given area.

Considering all these criteria, the absolute importance of the impact was evaluated medium as well as the relative impact.

- Proposed mitigation measures

To mitigate this impact, the following measures should be instituted:

- respect the terms of the exploitation convention;
- ensure that drivers respect rain gates.

- Evaluation of the importance of the residual impact

If the recommended mitigation measures are rightly implemented, the residual impact will become limited.

#### 6.3.3.5. Facilitation of movement of persons and goods (impact 15)

- Description of impact causes and manifestations

Primary and secondary logging roads constructed in the zone are already serving the direct impact populations and other travellers in the Division and the country as a whole to travel. The frequent road maintenance activities in the area by the logging company facilitate the movement of vehicles in the area which can carry persons and their goods.

- Characterisation and evaluation

This impact is positive and indirect since the construction and maintenance of used roads will improve traffic, hence easing the displacement of people and goods. The magnitude of the impact is judged as low, considering the number of roads to be constructed and maintained. This situation was observed between Babong and Ndebaya. The extension of this impact is regional. This probable and reversible impact is of average duration since we know that as soon as logging stops in an area the company stops maintaining the roads. The government is also concerned about the disenclavement of villages of the project zone, giving this impact a cumulative aspect. Since roads are infrastructures that permit the movement of people from one point to another easily, it is of much value to the direct impact populations.

According to the evaluation criteria, the absolute importance of the impact is medium. From the weightage criteria, no change was observed on the absolute importance; hence the relative importance of the impact is also medium.

- Proposed strengthening measures

To strengthen this impact, CAFECO/WIJMA should implement the following measures:

- ensure the maintenance of local road networks to facilitate transportation of agricultural products;
- sensitize the populations on the creation of rural road maintenance committees to continue maintenance after the company would have left;
- sensitize the villagers on marketing channels found in other areas within the region.

- Evaluation of the importance of the impact

Viewing these analyses made, the importance of the residual impact is scaled as medium.

#### 6.3.3.6. Creation of jobs (impact 16)

- Description of impact causes and manifestations

The recruitment of labour for the different activities of the project will give an opportunity for the creation of jobs both for local people and strangers. Some of these jobs shall be temporal whereas others are permanent and will also involve skilled and unskilled labour.

- Existing strengthening measures

In order to strengthen this impact, CAFECO/WIJMA is implementing the following measures:

- training of local populations in order to give them a permanent position in the company;
- recruitment of workers on a contract basis;
- registration of workers at the National Social Insurance Fund.

- Characterisation and evaluation

This impact is positive and direct. It is of low magnitude since the number of people involved is of a small percentage as compared to the population of the direct impact villages (a maximum of 130 people). Moreso, the direct impact villages are likely not to have the required skilled labour. The extension of the impact is regional, since some of the workers shall be recruited beyond the South West Region. This impact is certain and reversible particularly for the labourers as most of them will lose their jobs as the company moves from one logging unit to another. It is a permanent impact since the company will employ

workers all through the lifespan of the project. The existence of many texts (Cameroonian labour code legislation (definite and indefinite contract duration) indicates the value attached to this jobs. Equally having a job gives a sense of respect within the community and independence.

From the above described criteria, the absolute importance was evaluated as medium. Though jobs are valued in the area, the absolute importance do not change, hence the relative importance is equally evaluated as medium.

- Proposed strengthening measures

To strengthen this impact, the following measures should be instituted:

- priority should be given during recruitment to the local labour;
- the populations should be sensitised to send their children in forestry training institutions;
- sub-contracting some of the project activities like the raising of seedlings to the locals.

- Evaluation of the importance of the residual impact

The implementation of the above proposed strengthening measures will give an added advantage to the impact, hence a major value to the importance of the residual impact.

#### 6.3.3.7. Threats to cultural heritage (impact 17)

- Description of impact causes and manifestations

The project area has been inhabited by people for hundreds of years. Additionally, local tribes have designated sacred sites that are not widely known. The activities of the project especially those that involved earth works like the construction of logging roads, the construction of landings and the maintenance of used roads can destroy these cultural resources. These resources provide a means of reconstructing the human history on a given site or region, particularly where there is no written history of that area or period.

- Existing mitigation measures

For the moment, no specific measure has been envisaged to mitigate the impact of the project on cultural heritage.

- Characterisation and evaluation

This is a negative and direct impact. The magnitude of the impact is low. It is a probable impact since it is not likely that earth works shall affect the cultural resources within the project zones. The extension of the impact is specific because only a small portion of the FMU has these cultural resources. It is also permanent since it will manifest through out the project lifespan. The impact is irreversible since an affected site cannot be reconstituted anymore. The component affected is of great cultural value to the population and the State.

After evaluation using the Fecteau's checklist, the absolute importance of the impact is minor. The weightage criteria do not change the absolute importance of the impact, hence, the same value to the relative importance.

- Proposed mitigation measures

To mitigate this impact, the following measures should be put in place:

- identify the sacred sites in a participatory manner with the local populations;
- demarcate the sacred sites;
- compensate the traditional authorities to let them displace moveable sites;
- send the Social Technician on training on how to recognise archeological heritage;
- carry out archeological monitoring during earthworks;
- sensitise workers on the beliefs and customs of the direct impact populations.

- Evaluation of the importance of the residual impact

If the proposed measures are efficiently implemented, the importance of the residual impact will become limited.



#### 6.3.3.8. Risk of degrading the health status of employees and of the populations (impact 18)

- Description of impact causes and manifestations

Forest logging activities like road maintenance, log treatment and transportation can constitute a danger to the health of the workers and the populations. Direct health hazards can result from the manipulation of dangerous chemicals, exposure to polluted air and high noise intensity. The likely drop in air quality as a result of dust, chemicals and emissions from these different activities are a potential cause of respiratory and even cancerous diseases. These chemicals have a cumulative potential and can have negative effects even after long periods of contact. Health hazards caused by some chemicals can only be observed after long exposure periods to them.

- Existing mitigation measures

To mitigate this impact, CAFECO/WIJMA is carrying out the following:

- a continuous sensitisation of logging staff, on the importance of putting on protection gears;
- notices are pasted at strategic points at the logging site to remind workers to put on their protection gears;
- authorisation of only well trained staff to manipulate the chemicals used;
- a medical check up before employment;
- a signatory of a convention with the Mamfe District Hospital;
- a provision of first aid kits to logging staff.

- Characterisation and evaluation

This impact endangering the lives of the workers and of the populations is negative and direct. It is of a low magnitude, considering the measures already put in place by the company. The extension of the impact is specific. The impact is permanent, since it will manifest through out the lifespan of the project. This impact is certain and reversible since precautionary measures will minimize its effects. Health is an undeniable development factor, since it permits man to carry out his daily tasks. For this reason, it is of great value.

After the evaluation, the absolute importance of the impact was rated minor. The weightage criteria scale the relative importance of the impact as minor.

- Proposed mitigation measures

Other measures such as the following should be implemented:

- sign a convention with a company doctor for jobsite diseases;
- create a health service at the logging site and employ a nurse for first aid services;
- respect the environmental guidelines of the Ministry of Public Works during roads maintenance;
- construct speed brakes at settlement zones;
- replace the protection gears given to the workers at prescribed intervals.

- Evaluation of the importance of the residual impact

The residual impact importance will be limited if the proposed measures are implemented.

#### 6.3.3.9. Risk of increase in the prevalence of STIs/HIV/AIDS and unwanted pregnancies (impact 19)

- Description of impact causes and manifestations

The exploitation of the FMU will bring imported labour made up mostly of youths. Most of the workers are single and some of the married ones are without their wives. These labourers will create love relationships with the women of the project area which can easily lead to STIs/HIV/AIDS and unwanted pregnancies.

- Existing mitigation measures

CAFECO/WIJMA management in partnership with the Mamfe District Hospital has been carrying out sensitisation campaigns on responsible sexual habits and AIDS control in the project zone.

- Characterisation and evaluation

This impact is negative and indirect since the STIs/HIV/AIDS and unwanted pregnancies are secondary effects of the presence of imported labour. The magnitude of the impact is average considering the existing mitigation measure. The extension of the impact is regional since the workers can transmit these diseases to people out of the project zone. It can be reversible for some STIs, but irreversible for HIV/AIDS since it is not yet a curable disease. It is a cumulative impact due to the presence of other FMUs in the zone and to the fact that it is a transit zone with cosmopolitan population. AIDS is highly valued by international and national structures such as the UNOIDS, the “Synergie Africaine” and the Local AIDS Control Committees to combat AIDS.

The absolute importance of the impact was evaluated as major. The weightage criteria will amplify the value of the absolute importance that is why the relative importance has also been evaluated as major.

- Proposed mitigation measures

To mitigate this measure, CAFECO/WIJMA should:

- reinforce sensitisation campaigns on the fight against STIs/HIV/AIDS by revamping the Local AIDS Control Committees;
- encourage workers to carry out AIDS screening tests;
- take care in all secrecy of the workers declared seropositive.

- Evaluation of the importance of the residual impact

The implementation of the proposed measures will minimize the impact, but considering that some of the sensitised workers will still have irresponsible sexual habits, the importance of the residual impact has been evaluated as medium.

#### 6.3.3.10. Increase in roads and job side accidents (impact 20)

- Description of impact causes and manifestations

The circulation of vehicles coupled with the small size of the carriage way, the state of the roads and logging activities greatly increase the risk of accidents in the area. The logging activities susceptible to cause accidents are as follows:

- tree felling;
- log transportation and circulation of machines;
- skidding;
- construction of logging roads;
- use of fuel and lubricants;
- chemical treatment of logs.

People likely to be involved are workers (mostly for job side accidents), the populations and animals (for roads accidents).

- Existing mitigation measures

CAFECO/WIJMA has put in place measures to limit road accidents and accidents at job side such as:

- workers are obliged to put on adequate attires and protective gears to reduce the risk of work accidents;
- sensitization posters on the imperative wearing of protective gear are posted at strategic points;
- the company is equally sensitizing its drivers on speed limits and the highway code;

- the company personnel vehicles crossing the river Munaya are completely unloaded before they embark on the ferry;
  - chainsaw operators always have assistants;
  - training of chainsaw operators on directional felling;
  - some vertical road signs have been erected along the logging roads;
  - provision of fire extinguishers inside the vehicles and the fuel storage site;
  - prohibition of smoking near inflammable products.
- Characterisation and evaluation

This is a negative and direct impact. The impact is of low magnitude considering the mitigation measures already taken by the company. Its extension is regional since the trailers-truck and other vehicles can cause accidents out of the South-West Region. The impact is permanent and will probably occur. The impact is reversible. It is cumulative for especially for road accidents due to the existence of other transport businesses within the zones (public transportation and transportation of logs from other neighbouring FMUs). The existence of road safety campaign in the Ministry of Transport and the Ministry of Labour and Social Security testify the value the State gives to the affected component.

The evaluation criteria considered in the Fecteau's checklist give a major value to the absolute importance of the impact. The relative importance of the impact is also major.

- Proposed mitigation measures

Given the importance of this impact owing to its influence on human life, much precaution is required so as to limit its incidence. The following measures are recommended to reduce the importance of this impact:

- severely sanction workers who do not put on protection gears given them;
- carry out road safety campaigns;
- construct speed brakes at the entries and exits of settlement zones;
- carry out refresher courses on directional felling/manipulation of chemicals;
- unplug and store electric apparatus after usage;
- install traffic signs in areas where circulation is dangerous (bends, schools, bridges, junctions...);
- give daily security instructions;
- elaborate an internal risk management manual;
- sensitise drivers on dangers of over-speeding.

- Evaluation of the importance of the residual impact

The proposed mitigation measures coupled with the existing ones will considerably decrease roads and jobsite accidents, but will not cancel the risk, that is why the importance of the residual impact will be minor.

#### 6.3.3.11. Increase in poaching (impact 21)

- Description of impact causes and manifestations

The presence of CAFECO/WIJMA personnel on the logging site during and at the end of the project is likely to cause an increase in poaching activities. Since there are no butcheries and the practice of animal husbandry is very limited, the workers in order to satisfy their needs in animal proteins may indulge directly or indirectly in poaching. The construction of logging roads and the maintenance of used roads facilitate the way in of poachers.

- Existing mitigation measures

The company has established some rules to mitigate this impact as follows:

- the creation of a security team that covers the entire logging unit to combat poaching;
- the collaboration with the local MINFOP authorities and the national gendarmerie to arrest poachers in the region;
- the prohibition of the transportation of bushmeat in company vehicles.

- Characterisation and evaluation

This impact is negative and indirect. The magnitude of the impact is average considering the relative efficiency of the existing mitigation measures. The extension of the impact is judged as partial. This impact is judged to be permanent since it will occur through out the lifespan of the project. It is certainly going to occur since there are no butcheries in the project zone. It is a reversible impact. The staff and the population as well attach much importance to bush meat; meanwhile the local legislation defining the terms of wildlife management, strictly prohibits poaching. The impact is cumulative due to the presence of other FMUs in the project zone.

The Fecteau's checklist evaluation criteria rate the absolute importance of the impact as medium. The weightage criteria evaluate the relative importance as major since the impact is certain, cumulative and the component affected valued.

- Proposed mitigation measures

To mitigate this impact, the following should be done:

- install a staff store where meat and fish are stocked;
- encourage animal husbandry and pisciculture;
- sensitize population and workers on poaching;
- reinforce the capacity of security group on anti poaching techniques.

- Evaluation of the importance of the residual impact

If these measures are implemented, the importance of the residual impact shall be minor.

#### 6.3.3.12. Scarcity of wildlife products (impact 22)

- Description of impact causes and manifestations

The anti poaching activities in the project zone are a likely factor that will limit the possibilities of the direct impact populations of hunting animals for consumption. Other logging activities like logging road construction and the construction of landings will scare off wildlife to more enclaved areas, hence creating a scarcity in the available wildlife for local bush meat consumption. This impact is mentioned in the minutes of Ekoneman Awa and Ekok, insisting on the importance of bushmeat consumption in the area.

- Characterisation and evaluation

The impact is negative, direct and of low magnitude. It will probably occur and of average term, because after the logging activities would have ended in one area, the animals will come back. The impact is judged to be of partial extension since it will affect only the areas that are close to where logging is going on. Bushmeat is the main source of animal proteins in the area, hence indicating the high value attached to the element affected. The absolute importance of the impact was evaluated as minor. The other characterisation criteria are not in such a way to influence the value of the relative impact that is why it has also been evaluated as minor.

- Proposed mitigation measures

The following measures have been proposed as potential solutions to minimize the effects of this impact:

- brief the direct impact populations on their user's rights during anti poaching sensitization meetings;
- carry out capacity building of the direct impact populations in the domain of animal husbandry.

- Evaluation of the importance of the residual impact

If the proposed measures are effectively implemented, the importance of the residual impact will be rendered limited.

6.3.3.13. *Limitation of access to land for the direct impact populations (impact 23)*

- Description of impact causes and manifestations

The presence of the FMU n° 11 005 as a permanent forest estate certainly disrupts the land use plan and distribution. The villagers within and around the FMU have farmlands that are sited inside the demarcated zone. During the consultation meetings (Ekok, Eyumojock and Ekoneman Awa), the direct impact populations complained of losing substantial surface area of their agroforestry zones after the delimitation of the FMU. Most of their cocoa and palm farms are located within the forest massive. This situation is already causing uproar among the villagers who have been seeking that CAFECO/WIJMA should carry out the demarcation process in collaboration with the population and the local administration.

- Existing mitigation measures

CAFEKO/WIJMA elaborated a strategy to minimize the effects of this impact. The measure consisted of carving out agroforestry zones. The areas where farmlands and other cultural heritage are sitting are to be identified, mapped and indicated on logging maps to help the personnel avoid these zones.

- Characterisation and evaluation

This impact is negative and direct. The magnitude is average given that the surface area covered by the farmlands found within the FMU is relatively small. This impact is specific since the portion considered to be affected is within a small radius. It is equally permanent since it will be felt throughout the existence of the project lifespan. This impact is certain and reversible. The impact is cumulative due to the existence of other FMUs. Considering that agriculture is the main stay of the populations, the component affected is highly valued.

The populations are worried that the future generation may not have enough land for their activities (construction of houses and agriculture).

According to the Fecteau checklist criteria used, the absolute importance of the impact is medium. The weightage criteria, evaluate the relative importance of the impact as major since the impact is certain, cumulative and the affected component is valued.

- Proposed mitigation measures

The following measures have been proposed as potential solutions for the mitigation of this impact:

- ensure that the demarcation of the limits of their logging units is done in collaboration with the direct impact populations and the local administration;
- support the direct impact populations in sustainable agricultural projects.

- Evaluation of the importance of the residual impact

If the proposed measures are effectively implemented, the importance of the residual impact will be rendered minor.

6.3.3.14. *Risk of conflicts (impact 24)*

- Description of impact causes and manifestations

**a) Risk of conflict between the workers of CAFECO/WIJMA and the direct impact populations**

The presence of imported labour in the area can be a possible source of conflict if there is no respect of beliefs and customs of the direct impact populations. The non payment of debts by the imported labour to the local populations can equally create conflicts.

**b) Risk of conflict between the Management of CAFECO/WIJMA and the direct impact population**

The existence of the FMU in the area is a potential source of conflicts between the management of CAFECO/WIJMA and the populations, since it will limit the access to land.

This will certainly occur since the demarcation of the FMU cuts through the farmlands of some villagers. If the demarcation exercise is not carried out in the presence of the populations and the local administration so as to strike a fair deal, there will be high possibilities of conflicts. Another source of conflicts can be the lack of transparency during the recruitment of workers. Conflicts can also result between the Management of CAFECO/WIJMA and the populations if the creation of the GFMC is not transparent. If the members of this GFMC are not of the project area, this can also be a source of conflicts.

The transportation of personnel is limited only to the company's employees. In a situation when villagers are refused this service, it could be a potential source of conflict between the management of the company and the populations.

The decision by CAFECO/WIJMA to install a sawmill at Ossing which is not a village that is part of the 25 villages concerned by the FMU logging project, is causing tension. This situation can eventually lead to serious conflicts in the area if the villagers are not sensitized on this aspect.

The write up of project documents in French only is also another source of conflict.

**c) *Risk of conflict between the local Council and the direct impact populations***

The calculation of forest royalties and its distribution among the concerned villages is a source of conflict in the area between the Council authorities and the populations, if there's no transparency.

- Existing mitigation measure

CAFECO/WIJMA has established a conflict resolution procedure for the FMU 11005. See appendix 11.

- Characterisation and evaluation

This impact is negative and indirect. The magnitude of the impact is low considering the degree of awareness of the GFMC on the management of the FMU due to the establishment of the conflict management procedure. The extension of this impact is partial, since it will be concentrated only at the level of the villages concerned. Yet, it is permanent since it exists through out the lifespan of the project. This probable impact is reversible since the relationship between the stakeholders will return to normal as soon as their differences are sorted out. The impact is cumulative due to the existence of FMUs. The component is grossly valued in the area since it touches their dignity.

The different characterisation criteria for this impact permit the evaluation of the absolute importance to be medium. It is also medium for the relative importance.

- Proposed mitigation measures

**a) *Mitigation measures for risk of conflict between the workers of CAFECO/WIJMA and the direct impact populations***

To mitigate this impact, the following should be done:

- sensitization of workers on the importance of respecting the beliefs and customs of the populations;
- information of the populations far ahead before decamping from a given area.

**b) *Mitigation measures for risk of conflict between the Management of CAFECO/WIJMA and the direct impact populations***

To mitigate this impact, the following should be done:

- the FMU demarcation activities should be carried out jointly with the local populations and the administration;
- the recruitment of labour should be transparent and priority should be given to the direct impact populations;

- the sensitization of the direct impact populations on rules of implantation of sawmills;
- the sensitization of the direct impact populations on the rights and obligations of the promoter of the project;
- the translation of all documents concerning the project into English.

**c) *Mitigation measures for risk of conflict between the local Council and the direct impact populations***

To mitigate this impact, the following should be done:

- the encouragement of dialogue between the council and the direct impact populations;
- the sensitisation of the local populations on the calculation and distribution mechanisms of the forest royalties.
- Evaluation of the importance of the residual impact

The importance of the residual impact will become limited if the proposed measures are correctly implemented.

**6.3.3.15. *Moral decadence and increase in crime (impact 25)***

- Description of the causes and manifestations of the impact :

The presence of imported labour in the project area can lead to foreign or poor behaviour, non respect of the societal norms of the populations in the project area. This situation can lead to a judgement of their attitude as a sign of disrespect and hence moral decadence. Owing to the fact that the workers have better living conditions than the villagers, they can be carrying out immoral acts like adultery (causing divorce) and other crimes. All the villages that would harbour a base camp will certainly have this impact.

- Existing mitigation measure

CAFECO/WIJMA has established a conflict resolution procedure for the FMU 11005. See appendix 11.

- Characterisation and evaluation

This is a negative and indirect impact. The magnitude of this impact is low since the populations concerned are used to foreigners as the area is a transit zone between Cameroon and Nigeria. The impact will be permanent and partial. It is equally a probable and reversible impact. The affected component is highly valued and the impact is cumulative, since it is a cosmopolitan population and the area is a transit zone.

The characterisation criteria used evaluate the absolute importance of the impact as medium. The relative impact is also evaluated to be medium, since the weightage criteria do not change the absolute importance.

- Proposed mitigation measures

To mitigate this impact, CAFECO/WIJMA should sensitise workers on the respect of local beliefs and customs of the direct impact populations.

- Evaluation of the importance of the residual impact :

An effective implementation of the prescribed measure will render the importance of the residual impact to be minor.

**6.3.3.16. *Amelioration of the living standards of the populations (impact 26)***

- Description des causes et manifestation de l'impact:

The recruitment of labour will provide the direct impact population with additional revenue, hence increasing their purchasing power and a corresponding amelioration of their living standard. The payment of Annual Forest Taxes, maintenance of used roads and the

realisation of charity works will equally improve the living standards of the direct impact population.

- Characterisation and evaluation

It is a positive and indirect impact. The magnitude of the impact is low. The extension is partial since the people concerned are mostly those of the direct impact villages. The impact is permanent, since it will manifest throughout the duration of the project. This impact is probable and reversible because these impact source activities will stop as soon as the project comes to an end. The impact is cumulative due to the presence of other FMUs.

The Fecteau checklist criteria evaluate the absolute importance of the impact as medium. Since the weightage criteria do not change the absolute importance, the relative importance of the impact is also medium.

- Proposed strengthening measures

To strengthen this impact, the following measures should be put in place:

- ensure the collaboration between the villages in sorting out priority projects to be financed by the Annual Forest Taxes;
- assist the populations through the GFMC in elaboration and management of their projects.

- Evaluation of the importance of the residual impact

The importance of the residual impact was evaluated as medium if the proposed strengthening measures are correctly implemented.

After having given a detail analysis of the different potential and existing impacts of the FMU logging project on the immediate environment, it is of absolute necessity to propose a suitable environmental management plan, which consists of prescribed mitigation and strengthening measures, a monitoring plan, a follow-up plan and the cost of measures. The next chapter treats the different components of the environmental management plan.



## CHAPTER 7: ENVIRONMENTAL MANAGEMENT PLAN

This chapter treats the Environmental Management Plan (EMP). It presents the environmental impacts of the project; the environmental measures and their costs; the monitoring/follow-up plan; and the public participation plan. This chapter ends up with a synthesis table of the EMP which recapitulates the environmental measures, the objectives the tasks, the implementing actors, the follow-up actors /indicators and the cost of the measures.

### 7.1. RESUME OF THE ENVIRONMENTAL IMPACTS OF THE PROJECT

The following tables (7 and 8) below summarize the positive and negative impacts of the project activities in the area. Each table is composed of the milieu concerned, the designation of the impact, the impact number, the nature of the impact, the relative importance and the importance of the residual impact. The relative importance is obtained after weighing the absolute importance; meanwhile the importance of the residual impact is obtained after envisaging the adoption of the proposed environmental measures.

It is on the basis of the residual impact that the feasibility of the project is evaluated. The project is very feasible when the environmental management plan is having residual positive impacts with a major value.

**Table 5: Positive impacts of the project**

Milieu concerned	Impact	N° Impact	Nature of impact	Relative Importance	Importance of residual impact
HUMAN MILIEU	Development of agricultural and livestock activities	N° 11	Positive	Me	Me
	Development of economic activities and increase in revenue	N° 13	Positive	Me	Me
	Facilitation of the movement of persons and goods	N° 15	Positive	Me	Me
	Creation of jobs	N° 16	Positive	Ma	Ma
	Amelioration of living standards of the populations	N° 26	Positive	Me	Me

**Legend:** Mi = minor, Me = Medium, Ma = Major

**Table 6: Negative impacts of the project activities**

Milieu concerned	Désignation of the impact	N° Impact	Nature of the impact	Relative importance	Residual Importance of the impact
<b>PHYSICAL MILIEU</b>	Air pollution	N° 1	Negative	Mi	Li
	Noise pollution	N° 2	Negative	Mi	Li
	Soil pollution and disturbance by solid waste	N° 3	Negative	Mi	Li
	Soil erosion	N° 4	Negative	Me	Li
	Pollution of hydrology	N° 5	Negative	Mi	Li
	Disturbance of surface water flow	N° 6	Negative	Me	Li
<b>BIOLOGICAL MILIEU</b>	Threats to wildlife biodiversity	N° 7	Negative	Ma	Li
	Decrease in the availability of useful NTFPs to the populations	N° 8	Negative	Me	Li
	Deforestation	N° 9	Negative	Me	Mi
	Threats to flora biodiversity	N° 10	Negative	Me	Mi
<b>HUMAN MILIEU</b>	Destruction of crops	N° 12	Negative	Me	Mi
	Risk of degrading road infrastructures	N° 14	Negative	Me	Li
	Threats to cultural heritage	N° 17	Negative	Mi	Li
	Risk of degrading the health status of workers and of the populations	N° 18	Negative	Mi	Li
	Risk in the increase of STIs/HIV/AIDS prevalence and unwanted pregnancies	N° 19	Negative	Ma	Me
	Increase in road and job side accidents	N° 20	Negative	Ma	Mi
	Increase in poaching	N° 21	Negative	Ma	Mi
	Scarcity of wildlife products	N° 22	Negative	Me	Li
	Limitation of access to land for the direct impact populations	N° 23	Negative	Ma	Mi
	Risk of conflicts	N° 24	Negative	Me	Li
	Moral decadence and increase in crime	N° 25	Negative	Me	Mi

**Legend:** Mi = Minor; Me = Medium; Ma = Major; Li = limited

## 7.2. MAIN ENVIRONNEMENTAL MEASURES AND THEIR COSTS

The environmental measures proposed during the assessment are regrouped below in function of interest groups into environmental memos.

### 7.2.1. Memo N°1: Training of the Site Manager on environmental management

<b>Designation of the Measure</b>	Training of the Site Manager on environmental management
<b>Objective</b>	Strengthen the capacity of the Site Manager in order for him to play the role of the environmental manager
<b>Impacts concerned</b>	All impacts of the logging activities
<b>Tasks</b>	<ul style="list-style-type: none"> <li>– Identify a consultant to carry out the environmental monitoring training;</li> <li>– Train the Site Manager on environmental monitoring.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>– Consultant to be recruited.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>– Director General of CAFECO/WIJMA;</li> <li>– MINEP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>– Contrat of the consultant;</li> <li>– Training report;</li> <li>– Training testimonial.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>– Consultation of the CAFECO/ WIJMA's documentation;</li> <li>– Inquiry from the Site Manager.</li> </ul>
<b>Execution calendar</b>	Three months after the approval of the environmental assessment report
<b>Cost of the measure (CFAF)</b>	1 500 000

### 7.2.2. Memo N°2: Development of the environmental component of the internal regulations

<b>Designation of the measure</b>	Development of the environmental component of the internal regulations
<b>Objective</b>	Reinforce the integration of environmental issues in the practices of the company and the behavior of its workers
<b>Impacts concerned</b>	All impacts of the logging activities
<b>Tasks</b>	<ul style="list-style-type: none"> <li>– Make an inventory of the environmental stakes of the project and propose effective and applicable internal environmental regulations for the company;</li> <li>– The environmental preoccupations should be integrated stipulating penalties related to the violation of environmental principles. This regulation has to take into account the annulation of contracts in cases of transportation or consumption of protected animal species, non respect of maximum speed imposed on roads, non respect regarding the wearing of protective gears in order to avoid or reduce exposure to noise, dust or manipulation of dangerous products.</li> <li>– Present the text to an inspector of labour for validation;</li> <li>– Read and explain the revised regulations to the workers and obtain their engagement.</li> </ul>
<b>Implementing actors</b>	Site Manager of the FMU
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>– Chief of the Forest Management Unit of WIJMA;</li> <li>– MINEP;</li> <li>– MINTSS.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>– Presence of the revised internal regulations stipulating environmental measures;</li> <li>– Penalties related to the violation of environmental prescriptions;</li> <li>– Minutes of the informative meeting of the workers on the revised internal regulations.</li> </ul>
<b>Means and sources of verification</b>	Reading of the internal regulations
<b>Execution calendar</b>	Six months after the approval of the environmental assessment report and particularly after the training of the Site Manager on environmental monitoring
<b>Cost of the measure (CFAF)</b>	The cost of elaborating and implementing the environmental regulations is included in the salary of the Site Manager.

**7.2.3. Memo N°3: Sensitisation to be carried out by CAFECO/WIJMA at the level of the personnel and direct impact populations**

<b>Designation of the measure</b>	Sensitisation on: <ul style="list-style-type: none"> <li>- STIs/HIV/AIDS;</li> <li>- Poaching;</li> <li>- Job side safety;</li> <li>- Conflicts;</li> <li>- Beliefs and customs of the direct impact populations.</li> </ul>
<b>Objective</b>	To raise-up environmental awareness at the level of the personnel and the local population, with the aim of mitigating negative environmental impacts and strengthening the positive impacts.
<b>Impacts concerned</b>	Impact 2, impact 17, impact19, impact 21, impact 22, impact 24, impact 25
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Continue the existing actions of sensitisation;</li> <li>- Take into account the new themes of sensitisation.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- Social Technician.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP,</li> <li>- MINFOF,</li> <li>- MINSANTE,</li> <li>- MINTSS.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Presence of posters and prospectus on sensitisation;</li> <li>- Reports of meetings or workshops.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Visual observations;</li> <li>- Inquiry from the workers and the direct impact populations.</li> </ul>
<b>Execution calendar</b>	Immediately after the approval of the environmental assessment report.
<b>Cost of the measure (CFAF)</b>	Cost of the measure to be included in the project's budget.

#### 7.2.4. Memo N°4: Sensitisation to be carried out by a consultant

<b>Designation of the measure</b>	<p>Sensitisation by a consultant on<sup>1</sup>:</p> <ul style="list-style-type: none"> <li>- Job orientation training in the forestry sector;</li> <li>- Road safety;</li> <li>- Illegal logging;</li> <li>- Conflicts;</li> <li>- Rural road maintenance committees;</li> <li>- Mechanism of calculating the Annual Forest Taxes;</li> <li>- Rights and obligations of CAFECO/WIJMA;</li> <li>- Rights and obligations of the direct impact populations;</li> <li>- Possibilities offered by the logging activities;</li> <li>- Rules of implantation of sawmill.</li> </ul>
<b>Objective</b>	Minimise conflicts between CAFECO/WIJMA and direct impact populations and also make the latter to benefit from project activities.
<b>Impacts concerned</b>	Impact 9, impact 10, impact 13, impact 15, impact 16, impact 20, impact 24.
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Establish a work contract with a consultant;</li> <li>- Carry out the sensitisation;</li> <li>- Monitor the consultant activities.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Director General of CAFECO/WIJMA;</li> <li>- Consultant preferably an NGO specialized on sensitisation;</li> <li>- Site Manager of the FMU.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP,</li> <li>- MINFOF,</li> <li>- MINEFOP;</li> <li>- MINADER,</li> <li>- MINT,</li> <li>- MINTP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Presence of posters and prospectus on sensitisation;</li> <li>- Reports of meetings or workshops;</li> <li>- The contract of the consultant.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Visual observations;</li> <li>- Inquiry of the stakeholders.</li> </ul>
<b>Execution calendar</b>	Three months after the approval of the environmental impact assessment report and for a period of one year.
<b>Cost of the measure (CFAF)</b>	<b>7 350 000</b>

<sup>1</sup> The sensitisation to be carried out by the consultant has been envisaged considering the sensitivity of the zone.

#### 7.2.5. Memo N°5: Conservation of cultural heritage

<b>Designation of the measure</b>	Conservation of cultural heritage
<b>Objective</b>	Avoid the destruction of cultural heritage
<b>Impacts concerned</b>	Impact 17
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Identify the sacred site in a participatory manner with the local populations;</li> <li>- Demarcate the sacred sites;</li> <li>- Compensate the traditional authorities to let them displace moveable sites;</li> <li>- Train the Social Technician on how to recognise archeological heritage;</li> <li>- Carry out archeological monitoring during earthworks.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager for the FMU;</li> <li>- Social Technician;</li> <li>- Direct impact populations;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- Consultant (archaeologist) to be recruited.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP ;</li> <li>- MINFOF;</li> <li>- MINCULT.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Document showing the sacred sites of the FMU;</li> <li>- Presence of demarcated sacred sites on the field;</li> <li>- Training report;</li> <li>- Training testimonial;</li> <li>- Report of the Social Technician.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Consultation of the company's documentation;</li> <li>- Visual observations;</li> <li>- Inquiries at the level of the Social Technician.</li> </ul>
<b>Execution calendar</b>	Six months after the approval of the environmental impact assessment report for the training of the Social Technician.
<b>Cost of the measure (CFAF)</b>	<b>1 500 000</b> for the training of the Social Technician. The cost of other activities is included in the budget of CAFECO/WIJMA.

#### 7.2.6. Memo N°6: Capacity building of workers

<b>Designation of the measure</b>	Capacity building of workers
<b>Objective</b>	<ul style="list-style-type: none"> <li>- Reduce the risk of conflicts between the workers and management of CAFECO/WIJMA</li> <li>- Improve the efficiency of workers.</li> </ul>
<b>Impacts concerned</b>	Impact 20, Impact 21.
<b>Tasks</b>	<ul style="list-style-type: none"> <li>— Elaboration of a training program on the following : <ul style="list-style-type: none"> <li>o The labor code and a collective contract (for personnel);</li> <li>o Directional felling techniques (for personnel);</li> <li>o Manipulation of chemicals;</li> <li>o Security measures;</li> <li>o Anti-poaching technics (for the security group);</li> </ul> </li> <li>— Execution of trainings on the different themes;</li> <li>— Evaluate the different training sessions.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Chief of service of human resources;</li> <li>- Consultants;</li> <li>- Site Manager.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP;</li> <li>- MINFOF;</li> <li>- MINTSS.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Training program;</li> <li>- Contracts with consultants;</li> <li>- Support documents of training sessions;</li> <li>- Training reports;</li> <li>- Training testimonials.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Consultation of CAFECO/WIJMA documentation;</li> <li>- Inquiries at the level of personnel.</li> </ul>
<b>Execution calendar</b>	Immediately after the approval of the environmental impact assessment report and through out the project lifespan.
<b>Cost of the measure (CFAF)</b>	Cost of the measure to be included in the project's budget.

Mise en forme : Puces et numéros

Mise en forme : Puces et numéros



### 7.2.7. Memo N°7: Protection of workers

<b>Designation of the measure</b>	Protection of workers
<b>Objective</b>	Protect the workers against health threats and minimise jobsite risks.
<b>Impacts concerned</b>	Impact 18, impact 20.
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Sign a convention with a company doctor for jobsite diseases;</li> <li>- Create a health service at the logging site and employ a nurse for first aid services;</li> <li>- Replace the protection gears given to the workers at prescribed intervals;</li> <li>- Severely sanction workers who do not put on protection gears given them.</li> </ul>
<b>Implementing actors</b>	Director General of CAFECO/WIJMA
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Site Manager for the FMU;</li> <li>- MINTSS,</li> <li>- MINSANTE;</li> <li>- MINEP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- The wearing of protection gears by the workers;</li> <li>- Presence of the convention with a company doctor for job side diseases;</li> <li>- Presence of the health unit at the logging site;</li> <li>- The presence of the withdrawal register of working equipment;</li> <li>- List of workers sanctioned due to the non wearing of protection gears.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Visual observations;</li> <li>- Consultation of the documentation of CAFECO/WIJMA;</li> <li>- Inquiries from the workers.</li> </ul>
<b>Execution calendar</b>	-Immediately at the approval o the environmental impact assessment report and through out the project lifespan.
<b>Cost of the measure (CFAF)</b>	Cost of the measure to be included in the project's budget. -

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### 7.2.8. Memo N°8: Security and prevention of accidents

<b>Designation of the measure</b>	-Security and prevention of accidents
<b>Objective</b>	-Limit risks of accidents
<b>Impacts concerned</b>	-Impact 1, impact 2, impact 18, impact 20
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Limit the speed of vehicles, especially within settlement zones ;</li> <li>- Build speed brakes at the entrance and exit points of settlement zones;</li> <li>- Elaborate an internal risk management manual.</li> <li>- Install traffic signs in areas where circulation is dangerous (bends, schools, bridges, junctions...);</li> <li>- Give daily security instructions.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Director General of CAFECO/WIJMA;</li> <li>- Sub-contractors of CAFECO/WIJMA;</li> <li>- Site Manager for the FMU.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINTSS;</li> <li>- MINTP;</li> <li>- MINEP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Presence of service notes limiting the speed;</li> <li>- Presence of traffic signs;</li> <li>- Presence of the risk management manual;</li> <li>- Report of daily security activities.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Visual observations;</li> <li>- Consultation of the documentation of CAFECO/WIJMA.</li> </ul>
<b>Execution calendar</b>	After the validation of the environmental impact assessment report and through out the lifespan of the project.
<b>Cost of the measure (CFAF)</b>	To be incorporated in the project's budget.

Mise en forme : Pucés et numéros

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Mise en forme : Pucés et numéros

### 7.2.9. Memo N°9: Compensation of destroyed crops

<b>Designation of the measure</b>	Compensation of destroyed crops
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- Avoid conflicts with the local populations</li> <li>- Repair damages caused</li> </ul>
<b>Impacts concerned</b>	Impact 12
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Evaluate damages caused on crops with the concerned individuals and a MINADER representative;</li> <li>- Compensate for destroyed crops.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- Social Technician;</li> <li>- Farmers concerned;</li> <li>- Representative of MINADER;</li> <li>- Director General of CAFECO/WIJMA.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP;</li> <li>- GFMC;</li> <li>- MINADER.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Presence of the destroyed crop evaluation report;</li> <li>- Presence of documents confirming compensation of damaged crops.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Inquiries from the farmers concerned and the GFMC;</li> <li>- Consultation of the documentation of CAFECO/WIJMA.</li> </ul>
<b>Execution calendar</b>	At the beginning of the execution of the project and through all its lifespan.
<b>Cost of the measure (CFAF)</b>	Cost of the measure to be included in the project's budget.

#### 7.2.10. Memo N°10: Solid and liquid waste management

<b>Definition of measure</b>	Solid and liquid waste management.
<b>Objective</b>	<ul style="list-style-type: none"> <li>- To prevent pollution of the air, soil, and hydrology;</li> <li>- To reduce soil congestion by solid wastes.</li> </ul>
<b>Impacts concerned</b>	Impact 1, impact 3 and impact 5
<b>Task</b>	<ul style="list-style-type: none"> <li>- Construct a concrete surface at waste recuperation centre;</li> <li>- Construct a vehicle and machine washing point with oil recuperation pit;</li> <li>- Signal any transportation of waste to local MINEP authorities.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- Chief of garage.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Presence of the concrete surface at the waste recuperation centre;</li> <li>- Presence of the vehicles and machines washing point.</li> <li>- Way bills for waste transportation.</li> </ul>
<b>Means/source of verification</b>	<ul style="list-style-type: none"> <li>- Visual observations;</li> <li>- Consultation of CAFECO/WIJMA's documentation.</li> </ul>
<b>Execution calendar</b>	As soon as the EMP is implemented and throughout the project lifespan.
<b>Cost of measure (CFAF)</b>	<b>1 800 000</b> for the construction of the concrete surface and the washing point with oil recuperation pits. The other part of the cost of the measure is included in the budget of the project.

### 7.2.11. Memo N°11: Installation of a staff store where meat and fish are stocked

<b>Definition of measure</b>	Installation of a staff store where meat and fish are stocked
<b>Objective</b>	<ul style="list-style-type: none"> <li>- To reduce pressure on the wildlife and to ensure the supply of a balanced diet to the project personnel.</li> <li>- To provide the workers with basic necessities such as meat, fish, oil, soap, etc.</li> <li>-</li> </ul>
<b>Impacts concerned</b>	Impact 21
<b>Task</b>	<ul style="list-style-type: none"> <li>- Install a staff store where meat and fish are stocked;</li> <li>- Buy two fridges (one for meat and one for fish);</li> <li>- Recruit a sale manager;</li> <li>- Elaborate the procedure of managing the staff store;</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- Store keeper;</li> <li>- Suppliers.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- MINEPIA;</li> <li>- MINEP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Presence of a staff store with beef and fish;</li> <li>- Presence of store keeper;</li> <li>- Presence of daily sales sheets.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Visual observation;</li> <li>- Consultation of the documentation of CAFECO/WIJMA</li> <li>- Inquiries from the workers</li> </ul>
<b>Execution calendar</b>	After the approval of the environmental impact report and throughout the project lifespan.
<b>Cost of measure (CFAF)</b>	<b>3 920 000</b>

### 7.2.12. Memo N°12: Assistance of the populations in the creation of tree nurseries

<b>Designation of the measure</b>	Assistance of the populations in the creation of tree nurseries
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- To enable the populations to have maximum fallouts of the project;</li> <li>- Ensure the regeneration of the forest.</li> </ul>
<b>Impacts concerned</b>	Impact 9, impact 10, impact 16
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Train local populations through GFMC on tree nurseries technics;</li> <li>- Sub-contract the activity of raising seedlings to the locals;</li> <li>- Raise NTFPs species;</li> <li>- Raise the most exploited species to rehabilitate the affected zones and demarcate the annual logging units;</li> <li>- Finance pilot nurseries.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- GFMC.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP,</li> <li>- MINFOF.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Training reports;</li> <li>- Training testimonials;</li> <li>- Sub contracts;</li> <li>- Existence of tree nurseries.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Inquiry from the populations;</li> <li>- Consultation of the documentation of CAFECO/WIJMA;</li> <li>- Visual observations.</li> </ul>
<b>Execution calendar</b>	One year after the approval of the environmental impact assessment report.
<b>Cost of the measure (CFAF)</b>	1 500 000

### 7.2.13. Memo N°13: Assistance of the populations in agropastoral and piscicultural projects

<b>Designation of the measure</b>	<b>Assistance in agropastoral and piscicultural projects</b>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- Mitigate the effect of the limitation of access to land due to the presence of the FMU;</li> <li>- Combat poaching ;</li> <li>- Limit deforestation;</li> <li>- Enable the populations to have maximum fallouts of the project;</li> <li>- Improve the living standards of the direct impact populations.</li> </ul>
<b>Impacts concerned</b>	Impact 9, impact 11, impact 13, impact 21, impact 22, impact 23, impact 26.
<b>Tasks</b>	<ul style="list-style-type: none"> <li>- Recruit a consultant whose activities shall be the following: <ul style="list-style-type: none"> <li>o organise the populations into groups (CIGs, cooperatives) to help them market their products ;</li> <li>o reinforce the capacities of direct impact populations in the elaboration and management of agropastoral and piscicultural projects ;</li> <li>o follow up the financed projects.</li> </ul> </li> <li>- Finance pilot projects;</li> <li>- Purchase local products from the populations for sale in the staff store.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- GFMC;</li> <li>- Organised groups (CIGs, cooperatives);</li> <li>- Consultant.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- MINEP,</li> <li>- MINEPIA ;</li> <li>- MINADER.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Contract of consultant ;</li> <li>- Number of people trained ;</li> <li>- Number of organised groups created ;</li> <li>- Number of microprojects financed ;</li> <li>- Training reports of the consultant ;</li> <li>- Follow up reports of the consultant.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Training testimonials ;</li> <li>- Visual observations;</li> <li>- Consultation of the documentation of CAFECO/WIJMA;</li> <li>- Inquiries from direct impact populations.</li> </ul>
<b>Execution calendar</b>	One year after the approval of the environmental impact assessment report and for a period of two years.
<b>Cost of the measure (CFAF)</b>	<b>23 100 000.</b>

#### 7.2.14. Memo N°14: Prevention of increase crime wave and conflicts

<b>Designation of the measure</b>	Prevention of conflicts and reduction of crime wave
<b>Objectives</b>	<ul style="list-style-type: none"> <li>– Avoid misunderstandings between CAFECO/WIJMA, the workers, the local populations, the administrative and municipal authorities;</li> <li>– Avoid risks of increase in crime wave.</li> </ul>
<b>Impacts concerned</b>	Impact 23, impact 24, impact 25.
<b>Tasks</b>	<ul style="list-style-type: none"> <li>– Demarcate the FMU jointly with the local populations and the administration;</li> <li>– Ensure transparency in the recruitment of labour should and give priority to the direct impact populations;</li> <li>– Encourage dialogue between the council and the direct impact populations;</li> <li>– Translate all documents concerning the project into English;</li> <li>– Acknowledge and respect the ways and customs of the local population;</li> <li>– Through the GFMC, continuously inform the population on the evolution of the activities in the workplace;</li> <li>– Encourage jobless youths to create income generating activities in relation to the project;</li> <li>– Promote the re-dynamism of local committees engaged in vigilance of villages that could host workers;</li> <li>– Render the policy of recruitment transparent;</li> <li>– Inform the population on the job opportunities available through pasting in public places, information through media or through the GFMC;</li> <li>– Include those who worked through out the project duration in the database of the company.</li> </ul>
<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager for the FMU;</li> <li>- Social Technician;</li> <li>- Logging foreman;</li> <li>- Direct impact populations (GFMC).</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- MINAS;</li> <li>- MINFOF;</li> <li>- MINEP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Existence of the translated documents of the project;</li> <li>- Conflicts resolution meetings minutes;</li> <li>- Information meetings minutes;</li> <li>- Existence of posted jobs opportunities on the project.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Visual observations;</li> <li>- Inquiries from thr direct impact populations;</li> </ul>
<b>Execution calendar</b>	At the beginning of the implementation of the Environmental Management Plan and through out the lifespan of the project.
<b>Cost of the measure (CFAF)</b>	Cost of the measure to be included in the project's budget (PB).



## 7.2.15. Memo N°15: Precautions to be taken

<b>Designation of the measure</b>	Precautions to be taken
<b>Objective</b>	To avoid damages which do not necessitate particular investment
<b>Impacts concerned</b>	Impact 1, impact 2, impact 4, impact 5, impact 6, impact 7, impact 8, impact 10, impact 13, impact 14, impact 16, impact 18, impact 19, impact 20, impact 23, impact 24.
<b>Tasks</b>	<ul style="list-style-type: none"> <li>– Reconstitute used sites after the closure of an annual logging unit;</li> <li>– Respect the intervention norms in the forest milieu ;</li> <li>– Respect the environmental guidelines on road maintenance of the Ministry of Public Works;</li> <li>– Follow the logging rules that encourage progressive felling in logging units, as stipulated in the logging convention;</li> <li>– Close skidding paths that are no longer operational after the closure of a logging unit;</li> <li>– Identify and mark for reserve the trees bearing NTFPs around settlement zones;</li> <li>– Inform the population of logging activities before felling starts in areas harbouring the NTFPs species;</li> <li>– Respect the user's rights of the populations as stipulated in the convention;</li> <li>– Identify and conserve grain carriers of the most exploited tree species as recommended in the intervention norms in the forest milieu ;</li> <li>– Respect the Minimum Exploitable Diameter (MED) as prescribed in the Provisional Convention;</li> <li>– Inform the population of when the workers are to leave one camp to the other;</li> <li>– Respect the terms of the convention;</li> <li>– Ensure that drivers respect rain gates;</li> <li>– Give priority during recruitment to the local labour;</li> <li>– Encourage workers to carry out AIDS screening tests;</li> <li>– Take care in all secrecy of the workers declared seropositive;</li> <li>– Ensure that the demarcation of the limits of their logging units is done in collaboration with the direct impact populations and the local administration;</li> <li>– Inform the populations far ahead before decamping from a given area;</li> <li>– Ensure the collaboration between the villages in sorting out priority projects to be financed within the framework of charity work;</li> <li>– Unplug and store electric apparatus after usage;</li> <li>– Limit the road bed and landings to the recommended norms;</li> <li>– Make sure sub-contractors respect the environmental policy of CAFECO/WIJMA;</li> <li>– Avoid maintenance operations of chainsaws in the night;</li> <li>– Officially handover the base camps that are temporarily abandoned and materials to the populations.</li> </ul>

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<b>Implementing actors</b>	<ul style="list-style-type: none"> <li>- Site Manager for the FMU;</li> <li>- Chief of garage;</li> <li>- Office staff;</li> <li>- Director of personnel;</li> <li>- Logging foreman;</li> <li>- Sub-contractors.</li> </ul>
<b>Follow-up actors</b>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- MINFOF;</li> <li>- MINEP.</li> </ul>
<b>Follow-up indicators</b>	<ul style="list-style-type: none"> <li>- Presence of reconstituted sites in the FMU;</li> <li>- Presence of closed skidding paths;</li> <li>- Presence of marked trees bearing NTFPs;</li> <li>- Number of workers who have carried out AIDS screening tests;</li> <li>- Technical reports of maintenance of vehicles and machines;</li> <li>- Reports of information meetings with the local population on when logging is to begin in a particular area;</li> <li>- Minutes of the handing over.</li> </ul>
<b>Means and sources of verification</b>	<ul style="list-style-type: none"> <li>- Visual observations;</li> <li>- Consultation of the documentation of CAFECO/WIJMA;</li> <li>- Inquiries from stakeholders of the projects.</li> </ul>
<b>Execution calendar</b>	At the beginning of the implementation of the EMP and through out the project lifespan.
<b>Cost of the measure (CFAF)</b>	Cost of the measure to be included in the project's budget (PB).

### 7.3. IMPLEMENTATION PLAN FOR THE ENVIRONMENTAL MEASURES

#### 7.3.1 Implementing actors

From the different memos, it is shown that the different implementation actors of the environmental measures for the FMU N° 11005 include: consultants, CAFECO/WIJMA personnel, sub-contractors and the direct impact population through GFMC or organised groups (such as CIGs and cooperatives).

For the consultants, the expertise is required in the following fields:

- environmental management;
- sensitisation on different themes;
- training on reduced impact logging, risk management, labour and social security, agropastoral and piscicultural projects.

← Mise en forme : Puces et numéros

The CAFECO/WIJMA personnel to be engaged in the implementation of the EMP will comprise:

- the Director General of CAFECO/WIJMA;
- the Director of personnel;
- the Chief of the Forest Management Unit of WIJMA;
  
- the Site Manager of the FMU;
- the Chief of garage;
- the Social Technician;
- the Office staff;
- the Store Keeper ;
- the logging foreman;

#### 7.3.2 Execution schedule

The proposed environmental measures will progressively be implemented throughout the project lifespan. The implementation period has been sub-divided into three phases as follows:

- **Phase P<sub>0</sub>**: is the six months period which corresponds to the installation of the EMP execution team;
- **Phase P<sub>1</sub>**: is the two years period after the installation of EMP personnel, which corresponds to the period when all the proposed measures will be operational;
- **Phase P<sub>2</sub>**: this period begins at the end of period P<sub>1</sub> and goes right through to the end of the project.

Table 7: Implementation schedule


PHASES	P <sub>0</sub>				P <sub>1</sub>												P <sub>2</sub>											
Designation of measure	A <sub>1</sub>				A <sub>2</sub>												A <sub>3</sub> ..... A <sub>n</sub>											
GENERAL MEASURES																												
1. Training of the Site Manager on environmental management techniques																												
2. Development of the environmental component of the internal regulations																												
SPECIFIC MEASURES FOR IDENTIFIED IMPACTS																												
3. .Sensitisation to be carried out by CAFECO/WIJMA at the level of the personnel and direct impact populations on STIs/HIV/AIDS, Poaching, Job side safety, Conflicts, Beliefs and customs of the direct impact populations.																												
4. Sensitisation to be carried out by a consultant on job orientation training in the forestry sector, road safety, Illegal logging, conflicts, rural road maintenance committees, mechanism of calculating the Annual Forest Taxes, rights and obligations of CAFECO/WIJMA, rights and obligations of the direct impact populations, possibilities offered by the logging activities, rules of implantation of sawmills																												

PERIODS	P <sub>0</sub>					P <sub>1</sub>										P <sub>2</sub>														
Designation of measure	A <sub>1</sub>					A <sub>2</sub>					A <sub>3</sub> .....					A <sub>n</sub>														
SPECIFIC MEASURES TO IDENTIFIEDIMPACTS (CONTINUES)																														
5 Conservation of cultural heritage																														
6 Capacity building of the workers																														
7 Protection of workers																														
8 Security and prevention of accidents																														
9 Compensation of destroyed crops																														
10 . Solid and liquid waste management																														
11 Installation of a staff store where meat and fish are stocked																														
12 Assistance of the populations in the creation tree nurseries																														
13 Assistance in agropastoral and piscicultural projects																														
14 Prevention of conflicts and reduction of crime wave																														
15 Precaution to be taken																														

# **LEGEND :**

A = Year; P = Period

 Measures to be carried out by jointly CAFECO/WIJMA and consultants

 Measures to be carried out by CAFECO/WIJMA

 Measures to be carried out by consultants

## 7.4. ENVIRONMENTAL MONITORING PLAN

### 7.4.1. Objectives and steps of the environmental monitoring

The main objectives of an environmental monitoring operation are to:

- respond to government directives concerning the orientations of an environmental impact assessment;
- ensure the implementation of mitigation and strengthening measures;
- respect the laws, the strategies and the regulation in force of the ministries concerned;
- present an environmental evaluation in case of the appearance of an unidentified impact and to propose solutions.

Given that the project has already started, before the putting in place of an environmental management plan, the steps to be followed in an environmental monitoring consist of:

- preparing the monitoring programme;
- defining the operations to be monitored;
- locating the sites to be monitored ;
- making an inventory and understanding the proposed environmental measures in the environmental impact assessment (EIA) report.

During the life of the project the monitoring will consist of:

- ensuring the effective implementation of proposed measures;
- orientating the actions of the Global Forest management Committee (GFMC);
- revising the internal regulation to include environmental aspects;
- establishing a sensitisation programme in collaboration with the GFMC and all the stakeholders involved;
- preparing and presiding over Information Education Communication (IEC) sessions;
- putting up a monitoring report.

### 7.4.2. Monitoring actors and their role

- *Site Manager for the FMU*

The role of the Site Manager for the FMU is to make sure that all those who are intervening in the activities of CAFECO/WIJMA should have a responsible behavior towards the environment in view of assuring its protection.

Being the first stakeholder in the monitoring, he is supposed to:

- ensure all through the lifespan of the project, the strict respect of the laws, the decrees, and the ministerial directives in force;
  - engage in the same line with the sub-contractors to respect and to ensure the respect of all the directives and the regulatory texts in relation to the protection /amelioration of the environment as well as the special clauses found in the impact assessment documents;
  - ensure that workers should master the environmental directives.
- *Direct impact population*

The direct impact populations have the rights to know all the environmental directives to be respected and the obligations to safeguard their immediate environment through the GFMC. They are supposed to make sure that the activities they carry out around the exploitation zone should not have any negative effect on their immediate surroundings.

### 7.4.3. List of elements requiring environmental monitoring

Environmental monitoring will take into consideration the impact sources and nuisance receptors such as:

- the machines and vehicles used (the state, the level of emission, etc.);
- the staff (protection gear, sanitary state of the jobsite);
- the security and emergency devices (existence, state, functioning accessibility)
- the wastes (organic waste, used oil, etc.).

### 7.4.4. Environmental monitoring tools

Here we consider tools used to control services of environmental management. These tools which shall be prepared by the Site Manager for the FMU of CAFECO/WIJMA will include:

- Environment Identification Forms (EIF);
- Indicator forms;
- Environment dash-board;
- Non-conformity observation form;
- Preventive action form;
- Minutes of the sensitisation meetings;
- Correspondences.

#### **7.4.5. Monitoring report**

The Site Manager shall submit a semestrial report of the environmental monitoring activities to the administration. The report in four (4) copies should be deposited in the MINEP Divisional Delegation for exploitation. From here the report is then ventilated to other needy services.

#### **7.4.6. Cost of monitoring**

The cost of monitoring is included in the salary of Site Manager.

### **7.5. ENVIRONMENTAL FOLLOW UP PLAN**

Environmental follow-up is an operation with an analytical/scientific character. It helps in measuring the real impacts of project execution and the evaluation of the performance of the mitigation of environmental measures proposed, hence, continuous or periodic examination and observations.

The follow-up of the implementation of the environmental measures aims particularly at:

- verifying the prediction of impacts;
- verifying the efficient implementation of the proposed measures ;
- ensuring the strengthening of the positive fall outs;
- realising new studies in cases of unsuspected impacts;
- ameliorating the knowledge for the procedures for further environmental evaluations.

#### **7.5.1. Follow-up actors**

There shall be an internal follow up by the Chief of the Forest Management Unit of WIJMA and the Director General of CAFECO/WIJMA;

The external follow-up will be carried out jointly by MINEP and MINFOF following the provisions of chapter 4 of decree N° 2005/057/PM of the 23rd February 2005 laying down the modalities of realizing environmental impact studies. Other technical ministerial departments will also be included depending on the measure being followed up. These include:

- MINADER;
- MINSANTE;
- MINTP;
- MINT;
- MINAS;
- MINTSS;
- MINEFOP;
- MINEPIA;
- MINCULT.

#### **7.5.2. Follow-up cost**

The follow-up cost will be shouldered by the government technical services involved.

#### **7.5.3. Follow-up report modalities**

After every follow-up mission, MINEP, MINFOF and the promoter shall produce a joint report as prescribed in article 18, section 1 of decree N° 2005/057/PM of the 23<sup>rd</sup> of February 2005 laying down modalities for environmental impact studies, which should include among others:

- the list of activities that have been put under an environmental control;

- the methodology used to carry out the control;
- the obtained results;
- the corrective actions of the company;
- the recommendations for the future projects of same nature.

#### **7.6. PUBLIC PARTICIPATION PLAN**

Public participation is a very important aspect in the realisation of the project; this is stipulated by the framework law n° 96/12 of 5<sup>th</sup> of August 1996, defining terms for environmental management. Article 9(e) stipulates that:

- each citizen shall have access to information on the environment, including information on dangerous substances and activities;
- each citizen shall have the obligation to safeguard the environment, and contribute to its protection.

Elsewhere, article 72 of the law encourages the participation of the populations in environmental management.

The participation of the public during the implementation of the environmental measures is a logical continuity to the phase of realisation of the environmental impact study carried out at the beginning of the project.

In the case of this study, the participation was in conformity to the decree N° 2005/0577/PM of 23/02/2005 defining the modalities for the realisation of Environmental Impact Studies in Cameroon. That is why the provisions of articles 11 to 14, defining the modalities of public consultations and audiences were taken into account.

The aim of the public participation plan is to ensure that the demands of the populations were taken into account by the project.

##### **7.6.1. Participation of direct impact populations**

The participation of the direct impact populations shall be felt through the Global Forest Management Committee. This shall consist of:

- participating in AIDS, poaching, conflicts, road code and income generation possibilities sensitisation meetings ;
- spreading the information on job opportunities (through the chiefs of the villages and pasted notices in public places);
- assuring the respect the limits of the FMU;
- not selling bush meat to the company's personnel;
- denouncing any environmental non conformity observed during the operational phase of the project;
- ensuring the reception of local administrative agents in charge of environmental follow up.

Equally the participation of the public facilitates the collection of some pertinent information necessary for the description of the initial state of the environment and for the evaluation of impacts and environmental measures.

##### **7.6.2. Participation of the civil society (associations and NGOs)**

The part to be played by the civil society shall consist of:

- contributing to the sensitisation of the direct impact populations on STIs/AIDS preventive measures, on opportunities available for income and job generation and on anti poaching;
- providing technical support on agropastoral and piscicultural projects;
- acting as an intermediary between the populations and the logging company;
- providing technical support to logging staff on the management of social issues such as strikes, work security, etc;
- sensitising the populations on the content of the EMP.



### 7.6.3. Participation of administrative authorities

The local administration shall have to ensure:

- the coordination of meetings between the logging company and the populations;
- the resolution of conflicts between the logging firm and the populations.

### 7.7. TOTAL COST OF THE IMPLEMENTATION OF THE EMP

The table below gives a recapitulation of the costs of environmental measures and follow-up. The details of the cost of measures are found in appendix 13.

**Table 8:** total cost of the implementation of the EMP

DESIGNATION OF MEASURE	COST
<b>ENVIRONNEMENTAL MEASURES</b>	
Training of the site manager on environmental management	1 500 000
Development of the environmental component of the internal regulations	PB
Sensitisation to be carried out by CAFECO/WIJMA at the level of the personnel and direct impact populations	PB
Sensitisation to be carried out by a consultant	7 350 000
Conservation of cultural heritage	1 500 000.
Capacity building of workers	PB
Protection of workers	PB
Security and prevention of accidents	PB
Compensation of destroyed crops	PB
Solid and liquid waste management	1 800 000.
Install a staff store where meat and fish are stocked	3 920 000
Precaution to be taken	PB
Prevention of conflicts and reduction of crime wave	PB
Assistance of the populations in the creation tree nurseries	1 500 000
Assistance in agropastoral and piscicultural projects	23 100 000
<b>TOTAL COST</b>	<b>40 670 000</b>

From this table we see that the cost of implementing this EMP is **40 670 000** CFAF. It is worth mentioning that the cost of some of these measures have been integrated in the execution budget of the company.

### 7.8. SYNTHESIS TABLE OF THE EMP

Table 10 presents a synthesis of the EMP with the different measures to implement the concerned impacts, the objective of the measures, the tasks, the implementing actors, the follow-up indicators, the follow-up actors and the cost of the measures

Table 9: synthesis table of EMP

Environmental measure to be executed	Impact N°	Objective of the measure	Tasks	Implementing actors	Execution Calendar	Follow-up indicators	Follow-up actors	Cost of measure (FCFA)
1. Training of the Site Manager on environmental management	All the impacts	Build the capacity of the site manager in order to play the role of the environmental manager	<ul style="list-style-type: none"> <li>- Identify a consultant to carry out the environmental monitoring training;</li> <li>- Train the site manager on environmental monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>- Director General of CAFECO/WIJMA;</li> <li>- Consultant to be recruited</li> </ul>	Three months after the approval of the environmental assessment report	<ul style="list-style-type: none"> <li>- Contrat of the consultant;</li> <li>- Training report;</li> <li>- Training testimonial.</li> </ul>	<ul style="list-style-type: none"> <li>- Contrat of the consultant;</li> <li>- Training report;</li> <li>- Training testimonial.</li> </ul>	1 500 000
2. Development of the environmental component of the internal regulations	All impacts	Reinforce the integration of environmental issues in the practices of the company and the behavior of its workers	<ul style="list-style-type: none"> <li>- Make an inventory of the environmental stakes of the project and propose effective and applicable internal environmental regulations for the company;</li> <li>- The environmental preoccupations should be integrated stipulating penalties related to the violation of environmental principles. This regulation has to take into account the annulation of contract in cases of transportation or consumption of protected animal species, non respect of maximum speed imposed on roads, non respect regarding the protective equipment to wear in order to avoid or reduce exposure to noise, dust or manipulation of dangerous products.</li> <li>- Present the text to an inspector of labour for validation;</li> <li>- Read and explain the revised regulations to the workers and obtain their engagement.</li> </ul>	Site Manager of the FMU	Six months after the approval of the environmental assessment report and particularly after the training of the Site Manager on environmental monitoring	<ul style="list-style-type: none"> <li>- Presence of the revised internal regulations stipulating environmental measures;</li> <li>- Penalties related to the violation of environmental prescriptions;</li> <li>- Minutes of the informative meeting of the workers on the revised internal regulations.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP;</li> <li>- MINTSS</li> </ul>	PB
3. Sensitisation to be carried out by CAFECO/WIJMA at the level of the personnel and direct impact populations	2, 17, 19, 21, 22, 24, 25	To raise-up environmental awareness at the level of the personnel and the local population, with the aim of mitigating negative environmental impacts and strengthening the positive impacts.	<ul style="list-style-type: none"> <li>- Continue the existing actions of sensitisation;</li> <li>- Take into account the new themes of sensitisation.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- Social Technician</li> </ul>	Immediately after the approval of the environmental assessment report.	<ul style="list-style-type: none"> <li>- Presence of posters and prospectus on sensitisation;</li> <li>- Reports of meetings or workshops</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP,</li> <li>- MINFOF,</li> <li>- MINSANTE,</li> <li>- MINTSS</li> </ul>	PB
4. Sensitisation to be carried out by a consultant	9, 10, 13, 15, 16, 20, 24	Minimise conflicts between CAFECO/WIJMA and direct impact populations and also make the latter to benefit from project activities.	<ul style="list-style-type: none"> <li>- Establish a work contract with a consultant;</li> <li>- Carry out the sensitisation;</li> <li>- Monitor the consultant activities.</li> </ul>	<ul style="list-style-type: none"> <li>- Director General of CAFECO/WIJMA;</li> <li>- Consultant preferably an NGO specialized on sensitisation;</li> <li>- Site Manager of the FMU.</li> </ul>	Three months after the approval of the environmental impact assessment report and for a period of one year.	<ul style="list-style-type: none"> <li>- Presence of posters and prospectus on sensitisation;</li> <li>- Reports of meetings or workshops;</li> <li>- The contract of the consultant.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP,</li> <li>- MINFOF,</li> <li>- MINEFOP;</li> <li>- MINADER,</li> <li>- MINT,</li> <li>- MINTP.</li> </ul>	7 350 000

Synthesis table of EMP (continues)

Environmental measure to be executed	Impact N°	Objective of the measure	Tasks	Implementing actors	Execution Calender	Follow-up indicators	Follow-up actors	Cost of measure( FCFA)
5.Conservation of cultural heritage	17	Avoid the destruction of cultural heritage	<ul style="list-style-type: none"> <li>- Identify the sacred site in a participatory manner with the local populations;</li> <li>- Demarcate the sacred sites;</li> <li>- Compensate the traditional authorities to let them displace moveable sites;</li> <li>- Train the Social Technician on how to recognise archeological heritage;</li> <li>- Carry out archeological monitoring during earthworks.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager for the FMU;</li> <li>- Social Technician;</li> <li>- Direct impact populations;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- Consultant (archaeologist) to be recruited.</li> </ul>	Six months after the approval of the environmental impact assessment report for the training of the Social Technician.	<ul style="list-style-type: none"> <li>- Document showing the sacred sites of the FMU;</li> <li>- Presence of demarcated sacred sites on the field;</li> <li>- Training report;</li> <li>- Training testimonial;</li> <li>- Report of the Social Technician.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP ;</li> <li>- MINFOF;</li> <li>- MINCULT.</li> </ul>	1 500 000.
6.Capacity building of workers	20, 21	<ul style="list-style-type: none"> <li>- Reduce the risk of conflicts between the workers and management of CAFECO/WIJMA</li> <li>- Improve the efficiency of workers.</li> </ul>	<ul style="list-style-type: none"> <li>- Elaborate a training program on the following :               <ul style="list-style-type: none"> <li>o The labor code and a collective contract (for personnel);</li> <li>o Directional felling techniques (for personnel);</li> <li>o Manipulation of chemicals;</li> <li>o Security measures;</li> <li>o Anti-poaching technics (for the security group);</li> </ul> </li> <li>- Execution of trainings on the different themes;</li> <li>- Evaluate the different training sessions.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of service of human resources;</li> <li>- Consultants;</li> <li>- Site Manager.</li> </ul>	Immediately after the approval of the environmental impact assessment report and through out the project lifespan.	<ul style="list-style-type: none"> <li>- Training program;</li> <li>- Contracts with consultants;</li> <li>- supports documents of training sessions;</li> <li>- Training reports;</li> <li>- Training testimonials.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP;</li> <li>- MINFOF;</li> <li>- MINTSS.</li> </ul>	PB
7. Protection of workers	18, 20	<ul style="list-style-type: none"> <li>- Protect the workers against health threats and minimise jobside risks</li> </ul>	<ul style="list-style-type: none"> <li>- Sign a convention with a company doctor for jobside diseases;</li> <li>- Create a health service at the logging site and employ a nurse for first aid services;</li> <li>- Replace the protection gears given to the workers at prescribed intervals;</li> <li>- Severely sanction workers who do not put on protection gears given them.</li> </ul>	<ul style="list-style-type: none"> <li>- Director General of CAFECO/WIJMA</li> </ul>	Immediately at the approval o the environmental impact assessment report and through out the project lifespan.	<ul style="list-style-type: none"> <li>- The wearing of protection gears by the workers;</li> <li>- Presence of the convention with a company doctor for job side diseases;</li> <li>- Presence of the health unit at the logging site;</li> <li>- The presence of the withdrawal register of working equipment;</li> <li>- List of workers sanctioned due to the non wearing of protection gears.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Site Manager for the FMU;</li> <li>- MINTSS,</li> <li>- MINSANTE;</li> <li>- MINEP.</li> </ul>	PB
8.Security and prevention of accidents	1, 2, 18, 20	Limit risks of accidents	<ul style="list-style-type: none"> <li>- Limit the speed of vehicles, especially within settlement zones ;</li> <li>- Build speed brakes at the entrance and exit points of settlement zones;</li> <li>- Elaborate an internal risk management manual.</li> <li>- Install traffic signs in areas where circulation is dangerous (bends, schools, bridges, junctions...);</li> <li>- Give daily security instructions.</li> </ul>	<ul style="list-style-type: none"> <li>- Management of CAFECO/WIJMA;</li> <li>- Sub-contractors of CAFECO/WIJMA;</li> <li>- Site Manager for the FMU.</li> </ul>	After the validation of the environmental impact assessment report and through out the lifespan of the project	<ul style="list-style-type: none"> <li>- Presence of service notes limiting the speed;</li> <li>- Presence of traffic signs;</li> <li>- Presence of the risk management manual;</li> <li>- Report of daily security activities.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINTSS;</li> <li>- MINTP;</li> <li>- MINEP</li> </ul>	PB

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Mise en forme : Pucés et numéros

Synthesis table of EMP (continues)

Environmental measure to be executed	Impact N°	Objective of the measure	Tasks	Implementing actors	Execution Calendar	Follow-up indicators	Follow-up actors	Cost of measure(F CFA)
9. Compensation of destroyed crops	12	<ul style="list-style-type: none"> <li>- Avoid conflicts with the local populations</li> <li>- Repair damages caused</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate damages caused on crops with the concerned individuals and a MINADER representative;</li> <li>- Compensate for destroyed crops</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- Social Technician;</li> <li>- Farmers concerned;</li> <li>- Representative of MINADER;</li> <li>- Director General of CAFECO/WIJMA.</li> </ul>	At the beginning of the execution of the project and through all its lifespan.	<ul style="list-style-type: none"> <li>- Presence of the destroyed crop evaluation report;</li> <li>- Presence of documents confirming compensation of damaged crops;</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP;</li> <li>- GFMC;</li> <li>- MINADER.</li> </ul>	P.B.
10. Solid and liquid waste management.	1, 3, 5	<ul style="list-style-type: none"> <li>- To prevent pollution of the air, soil, and hydrology;</li> <li>- To reduce soil congestion by solid wastes.</li> </ul>	<ul style="list-style-type: none"> <li>- Construct a concrete surface at waste recuperation centre;</li> <li>- Construct a vehicle and machine washing point with oil recuperation pit;</li> <li>- Signal any transportation of waste to local MINEP authorities.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- Chief of garage.</li> </ul>	As soon as the EMP is implemented and throughout the project lifespan.	<ul style="list-style-type: none"> <li>- Presence of the concrete surface at the waste recuperation centre;</li> <li>- Presence of the vehicles and machines washing point.</li> <li>- Way bills for waste transportation.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP.</li> </ul>	1 800 000
11. Installation of a staff store where meat and fish are stocked	21	<ul style="list-style-type: none"> <li>- To reduce pressure on the wildlife and to ensure the supply of a balanced diet to the project personnel.</li> <li>- To provide the workers with basic necessities such as meat, fish, oil, soap, etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Install a staff store where meat and fish are stocked;</li> <li>- Buy two fridges (one for meat and one for fish);</li> <li>- Recruit a sale manager;</li> <li>- Elaborate the procedure of managing the staff store.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager for FMU;</li> <li>- Store keeper;</li> <li>- Suppliers.</li> </ul>	After the approval of the environmental impact report and through out the project lifespan.	<ul style="list-style-type: none"> <li>- Presence of a staff store with beef and fish;</li> <li>- Presence of store keeper;</li> <li>- Presence of daily sales sheets.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- MINEPIA;</li> <li>- MINEP..</li> </ul>	3 920 000
12. Assistance of the populations in the creation tree nurseries	9, 10, 16	<ul style="list-style-type: none"> <li>- To enable the populations to have maximum fallouts of the project;</li> <li>- Ensure the regeneration of the forest.</li> </ul>	<ul style="list-style-type: none"> <li>- Train local populations through GFMC on tree nurseries technics</li> <li>- Sub-contract the activity of raising seedlings to the locals;</li> <li>- Raise NTFPs species;</li> <li>- Raise the most exploited species to rehabilitate the affected zones and demarcate the annual logging units;</li> <li>- Finance pilot nurseries.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- GFMC.</li> </ul>	One year after the approval of the environmental impact assessment report.	<ul style="list-style-type: none"> <li>- Training reports;</li> <li>- Training testimonials;</li> <li>- Sub contracts;</li> <li>- Existence of tree nurseries.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- MINEP,</li> <li>- MINFOF.</li> </ul>	1 500 000

## Synthesis table of EMP (continues)

Environmental measure to be executed	Impact N°	Objective of the measure	Tasks	Implementing actors	Execution Calendar	Follow-up indicators	Follow-up actors	Cost of measure(F CFA)
13. Assistance in agropastoral and piscicultural projects	9,11, 13, 21, 22, 23	<ul style="list-style-type: none"> <li>- Mitigate the effect of the limitation of access to land due to the presence of the FMU;</li> <li>- Combat poaching ;</li> <li>- Limit deforestation;</li> <li>- Enable the populations to have maximum fallouts of the project</li> <li>- Improve the living standards of the direct impact populations.</li> </ul>	<ul style="list-style-type: none"> <li>- Recruit a consultant whose activities shall be the following: <ul style="list-style-type: none"> <li>o organise the populations into groups (CIGs, cooperatives) to help them market their products ;</li> <li>o reinforce the capacities of direct impact populations in the elaboration and management of agropastoral and piscicultural projects ;</li> <li>o follow up the financed projects.</li> </ul> </li> <li>- Finance pilot projects;</li> <li>- Purchase local products from the populations for sale in the staff store.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager of the FMU;</li> <li>- GFMC;</li> <li>- Organised groups (CIGs, cooperatives);</li> <li>- Consultant.</li> </ul>	One year after the approval of the environmental impact assessment report and for a period of two years.	<ul style="list-style-type: none"> <li>- Contract of consultant ;</li> <li>- Number of people trained ;</li> <li>- Number of organised groups created ;</li> <li>- Number of microprojects financed ;</li> <li>- Training reports of the consultant ;</li> <li>- Follow up reports of the consultant.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- MINEP,</li> <li>- MINEPIA ;</li> <li>- MINADER.</li> </ul>	23 100 000
14. Prevention of conflicts and reduction of crime wave	23 24, 25	Avoid misunderstandings between CAFECO/WIJMA, the workers, the local populations, the administrative and municipal authorities; Avoid risks of increase in crime wave.	<ul style="list-style-type: none"> <li>- Demarcate the FMU jointly with the local populations and the administration;</li> <li>- Ensure transparency in the recruitment of labour should and give priority to the direct impact populations;</li> <li>- Encourage dialogue between the council and the direct impact populations;</li> <li>- Translate all documents concerning the project into English;</li> <li>- Acknowledge and respect the ways and customs of the local population;</li> <li>- Through the GFMC, continuously inform the population on the evolution of the activities in the workplace;</li> <li>- Encourage jobless youths to create income generating activities in relation to the project;</li> <li>- Promote the re-dynamism of local committees engaged in vigilance of villages that could host workers;</li> <li>- Render the policy of recruitment transparent;</li> <li>- Inform the population on the job opportunities available through pasting in public places, information through media or through the GFMC;</li> <li>- Include those who worked through out the project duration in the database of the company.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager for the FMU;</li> <li>- Social Technician;</li> <li>- Logging foreman;</li> <li>- Direct impact populations (GFMC).</li> </ul>	At the beginning of the implementation of the Environmental Management Plan and through out the lifespan of the project.	<ul style="list-style-type: none"> <li>- Existence of the translated documents of the project;</li> <li>- Conflicts resolution meetings minutes;</li> <li>- Information meetings minutes;</li> <li>- Existence of posted jobs opportunities on the project.</li> </ul>	<ul style="list-style-type: none"> <li>- Chief of the Forest Management Unit of WIJMA;</li> <li>- Director General of CAFECO/WIJMA;</li> <li>- MINAS;</li> <li>- MINFOF;</li> <li>- MINEP..</li> </ul>	PB

Synthesis table of EMP (end)

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE FMU N° 11 005 LOGGING PROJECT

Environment al measure to be executed	Impact N°	Objective of the measure	Tasks	Implementing actors	Execution Calendar	Follow-up indicators	Follow-up actors	Cost of measure(F CFA)
15. Precaution to be taken	1, 2, 4, 5, 6, 7, 8, 10, 13, 14, 16, 18, 19, 20, 23, 24	To avoid damages which do not necessitate particular investment	<ul style="list-style-type: none"> <li>Reconstitute used sites after the closure of an annual logging unit;</li> <li>Respect the intervention norms in the forest milieu ;</li> <li>Respect the environmental guidelines on road maintenance of the Ministry of Public Works.</li> <li>Follow the logging rules that encourage progressive felling in logging units, as stipulated in the logging convention.</li> <li>Close skidding paths that are no longer operational after the closure of a logging unit.</li> <li>Identify and mark for reserve the trees bearing NTFPs around settlement zones;</li> <li>Inform the population of logging activities before felling starts in areas harbouring the NTFPs species;</li> <li>Respect the user's rights of the populations as stipulated in the convention.</li> <li>Identify and conserve grain carriers of the most exploited tree species as recommended in the intervention norms in the forest milieu ;</li> <li>Respect the Minimum Exploitable Diameter (MED) as prescribed in the Provisional Convention.</li> <li>Inform the population of when the workers are to leave one camp to the other;</li> <li>Respect the terms of the convention;</li> <li>Ensure that drivers respect rain gates;</li> <li>Give priority during recruitment to the local labour;</li> <li>Encourage workers to carry out AIDS screening tests;</li> <li>Take care in all secrecy of the workers declared seropositive;</li> <li>Ensure that the demarcation of the limits of their logging units is done in collaboration with the direct impact populations and the local administration;</li> <li>Inform the populations far ahead before decamping from a given area.</li> <li>Ensure the collaboration between the villages in sorting out priority projects to be financed within the framework of charity work;</li> <li>Unplug and store electric apparatus after usage;</li> <li>Limit the road bed and landings to the recommended norms;</li> <li>Make sure sub-contractors respect the environmental policy of CAFECO/WIJMA;</li> <li>Avoid maintenance operations of chainsaws in the night;</li> <li>Officially handover the base camps and materials that are temporarily abandoned to the populations.</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager for the FMU;</li> <li>Chief of garage;</li> <li>Office staff;</li> <li>Director of personnel;</li> <li>Logging foreman;</li> <li>Sub-contractors.</li> </ul>	At the beginning of the implementation of the EMP and through out the project lifespan.	<ul style="list-style-type: none"> <li>Presence of reconstituted sites in the FMU;</li> <li>Presence of closed skidding paths;</li> <li>Presence of marked trees bearing NTFPs;</li> <li>Number of workers who have carried out AIDS screening tests;</li> <li>Technical reports of maintenance of vehicles and machines;</li> <li>Reports of information meetings with the local population on when logging is to begin in a particular area.</li> <li>Minutes of the handing over</li> </ul>	<ul style="list-style-type: none"> <li>Chief of the Forest Management Unit of WIJMA;</li> <li>Director General of CAFECO/WIJMA;</li> <li>MINFOF;</li> <li>MINEP.</li> </ul>	PB

## CHAPTER 8: CONCLUSION AND RECOMMENDATIONS

The exploitation of the Forestry Management Unit n° 11 005 has positive as well as negative impacts on physical, biological and human milieus.

As positive impacts, the following have been identified:

- development of agricultural and livestock activities;
- development of economic activities and increase in revenue;
- facilitation of the movement of persons and goods;
- creation of jobs;
- amelioration of the living standards of the populations.

After evaluation, it was found that the relative importance of these impacts were minor, medium or major. Strengthening measures were proposed and they go from the sensitisation of the direct impact population on the opportunities offered by the project to their assistance on the creation of tree nurseries and elaboration and support in the execution of agropastoral and livestock projects. These strengthening measures made the positive impacts to have a medium or major value for the residual impacts.

The study has shown that the negative impacts with major relative importance are:

- threats to wildlife biodiversity
- risk in the increase of STIs/HIV/AIDS prevalence and unwanted pregnancies;
- increase in road and job side accidents;
- increase in poaching;
- risk of conflicts.

The negative impacts with medium or minor relative importance are:

- air pollution;
- noise pollution
- soil pollution and disturbance by solid waste;
- soil erosion;
- pollution of hydrology;
- disturbance of surface water flow;
- decrease in the availability of useful NTFPs to the populations;
- deforestation;
- threats on flora biodiversity;
- destruction of crops;
- risk of degrading road infrastructures;
- threats to cultural heritage;
- risk degrading the health status of workers and local populations;
- increase in poaching;
- scarcity of wildlife products;
- moral decadence and increase in crime.

Mitigation measures have been proposed for the negative impacts which made the importance of their residual impacts to be either limited or minor except for the risk in the increase of STIs/HIV/AIDS prevalence and unwanted pregnancies which is medium. The mitigation measures for negative impacts include:

- the sensitisation of personnel and populations on many aspects among which, STIs/HIV/AIDS, unwanted pregnancies, divorce, poaching, security;
- the conservation of cultural heritage;

- the construction of concrete surface and a vehicle and machine washing point;
- the installation of a staff store where meat and fish are stocked.

All the measures :strengthening measures for positive impacts and mitigation measures for negative impacts have been carved out in the Environmental Management Plan which for each measure, defines the objectives, the different tasks, the implementing actors, the follow up indicators and actors.

The total cost of the measures is estimated at **40 670 000** CFAF, but it is worth mentioning that the costs of some environmental measures are to be considered in the project budget.

For an effective and smooth integration of the project into its environment, it is recommended that:

- CAFECO/WIJMA should ensure the training of the Site Manager for the FMU in environmental management;
- CAFECO/WIJMA should sensitise the populations on the rights and obligations of the company;
- the management of CAFECO/WIJMA should encourage dialogue between the company and the populations to avoid misunderstandings;
- NGOs, CAFECO/WIJMA workers and the direct impact populations should be informed and involved in the execution of these measures;
- subcontracts should only be renewed on condition of compliance with environmental measures;
- the proposed measures should be included into the project programme.

After the analysis of the presented data, it was observed that the positive impacts outweigh the negative impacts. Consequently, the logging of FMU 11 005, from the environmental perspective is acceptable on condition that the proposed measures are respected and efficiently executed.



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### LAWS

- Law N°94/01 of the 20<sup>th</sup> of January 1994,** laying down Forestry, Wildlife and Fishery regulations.
- Law N°96/12 of the 5<sup>th</sup> of August 1996,** laying down the framework law on environmental management in Cameroon.
- Law N°96/67 of the 08<sup>th</sup> of April 1996,** on the protection of the national road patrimony.
- Law N°98/005 of the 14<sup>th</sup> of April 1998,** laying down the regulations of water management.
- Law N°2003/003 of the 21<sup>st</sup> of April 2003,** laying down phytosanitary protection measures.
- Law N°92/007 of the 14<sup>th</sup> of August 1992,** on the labour code.

### DECREES

- Decree N°95/678/PM of the 18<sup>th</sup> of December 1995,** instituting the indicative framework for coastal land use.
- Decree N°95/466/PM of the 2<sup>nd</sup> of July 1995,** laying down modalities on wildlife management.

**Decree N° 95/531/PM of the 23<sup>rd</sup> of August 1995**, laying down the application modalities of the forestry law.

**Decree N° 2005/0577/PM of the 23/02/2005**, laying down the modalities carrying environmental impact assessments.

**Decree N° 2006/1577/PM of the 11<sup>th</sup> of September 2006** to modify and complete certain dispositions of decree N° 2001/718/PM of the 3<sup>rd</sup> of September 2001 laying down the modalities for the organisation and functioning of the inter-ministerial committee on the environment.

#### **DECISIONS**

**Decision N° 1354/D/MINEF/CAB of the 26<sup>th</sup> of November 1999** laying down the procedures of classifying forests of the permanent forest domain in Cameroon.

**Decision N° 0108/D/MINEF/CAB of the 9<sup>th</sup> of February 1998** laying down the forestry intervention norms in Cameroon.

**Order N° 0070/MINEP of the 22<sup>nd</sup> of April 2005**. Laying down the different category of operations that require environmental impact studies.

## GLOSSARY OF TERMS

### ACTIVITY:

- Is the basic element of a project or plan that has potential to affect any aspect of the environment. Projects are composed of activities. Activities are often called actions.

### AGROFORESTRY ZONES

- Land with soil, slope and climate components where the production of cultivated crops is economical and practical.

### ANTHROPOGENIC:

- Change induced by human intervention.

### BIODIVERSITY:

- The variety of plant and animal life found in an ecosystem and the variation in their genetic makeup. Biodiversity is a measure of the health of an ecosystem, with healthy ecosystems having greater variety and variation in plant and animal life than unhealthy ones.

### COMPENSATION:

- Set of measures aimed at restoring irreversible environmental effects generated by an action or group of actions in a given area, through the creation of an environment similar to the deteriorated one, in the same place or elsewhere.
- It produces a positive alternative impact which is the counterpart of the adverse impact identified.
- It is carried out only in areas where significant adverse impacts are present.

### COMPONENT CHARACTERISTIC:

- Is a qualitative description or a quantitative measurement of a component.

### ECOLOGY:

- The study of the inter relationships between organisms and their environments.
- A complex science concerned with mutual relations of living organisms and with the relations of these to their habitat.

### ECOSYSTEM:

- Living organisms together with the environment of their existence which, while the linkage between causation and interaction exists, form a complete whole.

### ENDANGERED SPECIES:

- A taxon is endangered when it is facing a high risk of extinction in the wild, in the immediate future.

### ENVIRONMENT:

- All physical, chemical and biological factors and conditions that influence an object and / or organism

**ENVIRONMENTAL CHANGE:** Is the measurable change in physical and biological systems and environmental quality resulting from a development activity.

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**ENVIRONMENTAL COMPONENT:**

- Is a basic element of the physical, biological, social, or economic environment. Environmental components receive environmental impacts from activities. Environmental components can be aggregated into super-components or desegregated into sub-components. Most methods define a hierarchy of components (e.g., physical may be split into atmosphere, water, soils, etc. and atmosphere might be split into air quality, meteorology, climate, etc.).

**ENVIRONMENTAL FOLLOW-UP:**

- All observation activities and measures aimed at determining the real impacts of a project or an activity.
- The main of task follow-up is to verify that the environmental management plan for the post-project implementation period is being duly executed. It is determined whether the actions taken conform to the environmental protection criteria governing the EIA process, as well as to the recognized area of influence and current environmental legislation.

**ENVIRONMENTAL IMPACT:**

- Is an estimate or judgement of the significance and value of environmental effects on physical, biological, social or economic environment.

**ENVIRONMENTAL IMPACT ASSESSMENT:**

- It is an early warning process that verifies the enforcement of environmental policies.

**ENVIRONMENTAL MANAGEMENT PLAN:**

- A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.
- It is a preventive tool used to evaluate the negative and positive environmental impacts of policies, plans, programs, and projects; the EIA proposes measures to adjust impacts to acceptable levels. .

**ENVIRONMENTAL MONITORING:**

- Systematic observation, measurement and calculation of the condition of the environment, emission of pollutants, or populations and species, which are necessary for the assessment of the condition of the environment, the development of environment policies, and the planning of environmental protection measures, as well as the control of the effectiveness thereof.

**EXTREME IMPACT:**

- It is identified in a large part of the land area.

**FACTOR:**

- Is the basic element of analysis used in any method. In most methods, factors relate to some form of environmental impact.

**FOREIGN SPECIES:**

- A plant or animal species introduced from elsewhere: neither endemic nor indigenous.

**INVASIVE SPECIES:**

Any species that has been introduced to an environment where it is not native, and that has since become a nuisance through rapid spread.

**LANDING:**

- Any place where logs are laid after being yarded and before transport to the worksite.

**LOCAL RELIEF:**

- The difference between the highest and lowest points in a landscape.

**LOG:**

- A segment sawed or split from a felled tree, such as, but not limited to, a section, bolt, or tree length.

**LOGGING OPERATIONS:**

- Operations associated with felling and moving trees and logs from the stump to the point of delivery, such as, but not limited to, marking danger trees and trees/logs to be cut to length, felling, limbing, bucking, debarking, chipping, yarding, loading, unloading, storing, and transporting machines, equipment and personnel to, from and between logging sites.

**MATRIX:**

- Matrix is the identification of interactions between various project actions and environmental parameters and components.
- It incorporates a list of project activities with a checklist of environmental components that might be affected by these activities. A matrix of potential interactions is produced by combining these two lists.

**MITIGATION MEASURES:**

- Means methods to reduce, eliminate or compensate for adverse environmental effects.
- Specific design commitments made during the environmental evaluation and study process which serve to moderate or lessen impacts.
- These are measures requested/ carried out in order to limit the damage by a particular development/ activity.

**NATURAL RESOURCE MANAGEMENT:**

- Rational utilization, renewal and conservation of natural resources; it consolidates all sectors of the economy of the respective territory and allows a balanced resource utilization with environmental protection requirements.

**NEGATIVE IMPACT:**

- It causes harm or deterioration to a component or global environment.

**PARTIAL IMPACT:**

- It implies an appreciable incidence in the area under study.

**POLLUTANT:**

- Waste matter that contaminates the water or air or soil.

**POLLUTION:**

- The introduction of contaminants into an environment that causes instability, disorder, harm or discomfort to the physical systems or living organisms they are in. Pollution can take the form of chemical substances, or energy, such as noise, heat, or light energy.

**POSITIVE IMPACT:**

- It represents environmental benefits; e.g. sanitation or recovery of degraded areas.

**PUBLIC CONSULTATION:**

- The effective involvement of the public in decision making in any activity to be carried out in an environment.

**PUBLIC PARTICIPATION:**

- In the EIA context, public participation is defined as a two-way communication between the project EIA team and the targeted and/or affected peoples.
- The goals of public participation are to promote public understanding and acceptance by minimizing perceived impacts of the project through education and open discussion.
- In return, public feedback can be used as constructive input into improving the project design.
- Definition stresses the importance of communication to both the community and the project itself.

**STAKEHOLDERS:**

- Persons, groups or organisations indirectly impacted by a planned or actual action.
- Persons and organisations actively involved in the project and who are positively or negatively affected by the project activities.

**SKIDDER:**

- A machine or animal used to move logs or trees to landing.

**SKIDDING:**

- The yarding of trees or logs by pulling or towing them across the ground.

**SPECIFIC IMPACT:**

- It produces a localized alteration.

**SOLID WASTE:**

- Discarded materials that are solid

**STRENGTHENING MEASURES:**

- Means methods to ameliorate or better off beneficial environmental effects.

**STUDY AREA, PROJECT AREA/ZONE:**

- Refers to the entire study area encompassing the total area as indicated on the study area map.

**MITIGATION MEASURES:**

- Means methods to reduce or to suppress the negative/adverse environmental impacts

**EVALUATION OF IMPACT:**

- Expert judgment on the value of the importance of the influence of an activity or the whole project on the components of the environment.

## APPENDICES

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## TERMS OF REFERENCE



# **CAMEROON AGRICULTURE AND FOREST EXPLOITATION COMPANY LIMITED (CAFECO)**

**Incorporated in the Republic of Cameroon – Registered Office Kumba near Catholic Mission  
Fiango (Meme Division, South West Region)**

**AGRIC AND FOREST EXPLOITERS**

**Exporters of Timber, Agric Produce, Importers of Forest and Agricultural Equipment**

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## **TERMES DE REFERENCE**

**ETUDE D'IMPACT SUR L'ENVIRONNEMENT DU  
PROJET D'EXPLOITATION DE L'UNITE FORESTIERE D'AMENAGEMENT N° 11 005**

**Arrondissement d'Eyumojock, Département de la Manyu, Province du Sud-Ouest**

**Septembre 2007**

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## 1. JUSTIFICATION DE L'ETUDE

La société *Cameroon Agriculture and Forest Exploitation Company Limited* (CAFECO) a été adjudicataire de l'unité forestière d'aménagement (UFA) 11 005 située dans l'arrondissement d'Eyumojock. Pour se conformer à la réglementation en vigueur, CAFECO s'est engagée dans la réalisation de la présente étude d'impact sur l'environnement. Cette étude intervient donc avant tout comme une exigence réglementaire. En effet, la loi N° 96/012 du 5 août 1996 portant loi cadre relative à la gestion de l'environnement stipule en son article 17 que *"Le promoteur ou le maître d'ouvrage de tout projet d'aménagement, d'ouvrage, d'équipement ou d'installation qui risque, en raison de sa dimension, de sa nature ou incidences des activités qui y sont exercées sur le milieu naturel, de porter atteinte à l'environnement, est tenu de réaliser, selon les prescriptions du cahier des charges, une étude d'impact permettant d'évaluer des incidences directes ou indirectes dudit projet sur l'équilibre écologique de la zone d'implantation ou de toute autre région, le cadre et la qualité de vie des populations et des incidences sur l'environnement en général"*. L'exploitation de l'UFA 11 005 fait partie de cette classe de projet.

Par ailleurs, l'étude d'impact sur l'environnement est un des éléments du dossier du plan d'aménagement de cette UFA. C'est ainsi que la loi N° 94/01 du 20 janvier 1994 portant régime des forêts, de la faune et de la pêche requiert aussi l'étude d'impact environnemental pour la mise en exploitation de l'UFA.

Dans un second temps, cette étude est aussi comme une exigence interne, car CAFECO a signé un contrat de partenariat industriel avec la société WIJMA DOUALA dans le cadre de la transformation du bois provenant de l'UFA 11005. Ce contrat lui confère l'exclusivité de la vente du bois provenant de cette UFA. Or, WIJMA DOUALA étant fortement engagée dans le processus de certification, doit s'assurer que tous les bois transformés dans ses unités de transformation proviennent des forêts aménagées de façon durable, c'est-à-dire respectant les prescriptions environnementales. A cet effet, WIJMA Douala s'est dotée d'une politique environnementale.

## 2 CONTEXTE DE L'ETUDE

### Contexte juridique et institutionnel

Sur le plan juridique, un certain nombre de textes ont été mis en place pour régir le cadre de la gestion de l'environnement en général et de la gestion durable des forêts en particulier au Cameroun. Le Consultant s'y réfère pour la réalisation de la présente étude. A titre indicatif, ces différents textes sont :

- La loi N° 96/012 du 5 août 1996 portant loi cadre relative à la gestion de l'environnement ;
- La loi N° 94/01 du 20 janvier 1994 portant régime des forêts, de la faune et de la pêche ;
- La loi N° 98/005 du 14 avril 1998 portant régime de l'eau ;
- Le décret N° 2005/0577/PM du 23 février 2005 fixant les modalités de réalisation des études d'impact sur l'environnement. Celui-ci exige le dépôt des termes de référence pour la réalisation de l'étude d'impact sur l'environnement au niveau de l'administration compétente qu'est le Ministère des Forêts et de la Faune (MINFOF) dans ce cas et au niveau du Ministère de l'Environnement et de la Protection de la Nature (MINEP) ;
- Le décret N° 95/466/PM du 2 juillet 1995 fixant les modalités du régime de la faune ;
- Le décret N° 95/531/PM du 23 août 1995 fixant les modalités d'application du régime des forêts ;
- L'Arrêté N° 0070/MINEP du 22 avril 2005 fixant les différentes catégories des opérations dont la réalisation est sujette à une étude d'impact sur l'environnement ;

- L'arrêté N°0222/A/MINEF du 25 mai 2001 fixant les procédures d'élaboration, d'approbation, de suivi et de contrôle de la mise en œuvre des plans d'aménagement des forêts de production du domaine forestier permanent ;
- La décision N°0108/D/MINEF/CAB du 9 février 1998 portant application des normes d'intervention en milieu forestier.

Sur le plan institutionnel, le Ministère de l'Environnement et de la Protection de la Nature (MINEP) est l'organisme de tutelle en charge de gestion de l'environnement. Il lui incombe la responsabilité d'élaborer et de mettre en œuvre les politiques nationales en matière de gestion de l'environnement. Ce département ministériel possède tant au niveau central qu'au niveau extérieur des services traitant des questions sur les études d'impact sur l'environnement. Il s'agit de la Sous-Direction des Evaluations Environnementales et le Service des Etudes d'Impact sur l'Environnement. Il faut signaler que le Ministre de l'environnement et de la protection de la Nature est éclairé dans sa prise de décision par l'avis du Comité Interministériel de l'Environnement (CIE) depuis les termes de référence jusqu'au rapport d'étude.

En ce qui concerne la réalisation de la présente étude d'impact environnemental, les services extérieurs du MINEP concernés sont la Délégation Provinciale de l'Environnement et de la Protection de la Nature du Sud Ouest et la Délégation Départementale de l'Environnement et de la Protection de la Nature de la Manyu.

Le Ministère des Forêts et de la Faune est l'administration de compétence dans le cadre de cette étude. Ce département ministériel est représenté au niveau de la zone d'étude par la Délégation Provinciale des Forêts et de la Faune du Sud Ouest, la Délégation Départementale des Forêts et de la Faune de la Manyu et le Poste Forestier d'Eyumojoek.

D'autres administrations plus ou moins concernées par cette étude sont entre autres:

- le Ministère de l'Agriculture et du Développement Rural ;
- le Ministère du Travail et de la Sécurité Social ;
- le Ministère de l'Education de Base ;
- le Ministère des Enseignements Secondaires ;
- le Ministère de la Santé Publique.

Le Consultant tiendra compte de cette donnée dans la planification de ses consultations du public.

### **Contexte écologique**

Le projet d'exploitation de l'UFA 11 005 appartient à la zone de la forêt dense humide toujours verte caractérisée par une très grande biodiversité. A cet effet, le Consultant examinera les impacts cumulatifs résultant des activités des composantes de cette UFA en particulier sur la biodiversité.

L'UFA dont l'exploitation est envisagée couvre en partie la réserve forestière communale d'Ejagham qui a été déclassée.

Par ailleurs, la zone du projet n'est pas très éloignée du Parc National de Korup. De ce fait, le Consultant analysera les interactions possibles de l'exploitation de l'UFA avec cette aire protégée.

### **Contexte géographique**

Sur le plan administratif, l'UFA 11 005 est située dans l'arrondissement d'Eyumojoek, département de la Manyu de la province du Sud Ouest.

L'UFA 11 005 est limitée à l'Est par la rivière Munaya, à l'Ouest par la République Fédérale du Nigeria, au Nord par la route Manfe - Ekok. Cette limite avec un pays étranger constitue une sensibilité que le Consultant devra intégrer dans l'analyse des impacts.

### Contexte socio-économique

Tout autour de l'UFA 11 005 se trouve une vingtaine de villages qui ont pour activité principale la pratique de l'agriculture et dont les populations dépendent étroitement de la forêt où elles tirent une partie non négligeable des ressources pour leur subsistance. Il s'agit des produits forestiers non ligneux et du gibier.

Le Consultant devra mettre un accent particulier sur l'impact de l'exploitation de l'UFA sur les activités socio-économiques des populations de la zone concernée et en proposera des mesures environnementales appropriées visant à éviter que l'exploitation de la forêt entrave le droit d'usage des populations riveraines tel que le prescrivent les clauses particulières de la convention provisoire d'exploitation.

### 3 OBJECTIFS DE L'ETUDE

La présente étude d'impact sur l'environnement a pour objectifs d'analyser et de formuler des recommandations relatives aux risques environnementaux et socio-économiques liés aux activités du projet d'exploitation de l'UFA 11 005. De ce fait, elle devra proposer des mesures environnementales appropriées. Il s'agit notamment des mesures d'optimisation pour les impacts positifs, des mesures d'atténuation pour les impacts négatifs et des mesures de compensation et d'accompagnement le cas échéant afin que le projet s'insère harmonieusement dans son environnement.

### 4 PRESENTATION DU PROJET

#### Localisation et description des activités

Par convention provisoire N°592/CPE/MINFOF/SG/SDAFF du 22 novembre 2006, l'UFA 11 005 a été attribuée à la société CAFECO. Cette convention définit les conditions d'obtention d'une convention définitive.

Cette UFA constitue la concession forestière N°1087 et couvre une superficie de 80 800 hectares dans l'arrondissement d'Eyumojock, département de la Manyu, province du Sud Ouest.

Les activités à mener dans le cadre de l'exploitation de cette UFA comprennent :

- La matérialisation des limites de la concession et des assiettes de coupe annuelles ;
- Les inventaires floristiques et fauniques ;
- L'ouverture des pistes forestières ;
- La construction des ponts forestiers ;
- L'entretien des routes utilisées par la société CAFECO ;
- Le traitement chimique des grumes avant le transport ;
- L'abattage, le débardage et le transport des grumes sur une distance moyenne de 100 km de la forêt jusqu'à la scierie de WIJMA à Nguti ;
- La construction d'une unité de transformation de bois dans le département de la Manyu en partenariat avec la société WIJMA DOUALA ;
- Le recrutement et le logement du personnel ;
- Le transport du personnel ;
- Le transport, le stockage et l'utilisation des carburants et lubrifiants ;
- Le stockage de produits ;
- L'entretien des véhicules, tronçonneuses et engins ;
- L'assistance des communautés après entente, à la réalisation de certaines œuvres socio-économiques ;
- Le paiement de toutes les taxes afférentes à son activité.

Dans la description du projet, le Consultant s'appesantira sur les activités sources d'impacts sur l'environnement.

## Présentation du promoteur

La société *Cameroun Agriculture and Forest Exploitation Company Limited* (CAFECO) est le promoteur du projet d'exploitation de l'UFA 11 005. Spécialisée dans l'exploitation forestière, CAFECO est une société à responsabilité limitée de droit camerounais au capital de 7 000 000 de FCFA dont le siège est à Kumba. Elle répond à l'adresse B.P. 81 Kumba. Elle a été agréée à la profession forestière par arrêté N° 174/CAB/PR du 23 mars 1990.

CAFECO a signé le 26 juin 2006 un contrat de partenariat industriel dans le cadre de transformation du bois provenant de l'UFA 11 005 avec la société WIJMA DOUALA qui est une société à responsabilité limitée de droit camerounais au capital de 243 590 000 FCFA dont le siège est à Douala. Elle est propriétaire de deux usines de transformation de bois situées respectivement à Kribi et à Nguti où se fait le sciage et la confection des produits finis. L'usine de Nguti où sera transformé le bois issu de l'UFA 11 005 se trouve à une centaine de kilomètres de celle-ci.

## Type de projet et niveau d'étude

Le projet d'exploitation de l'UFA 11005 fait partie du sous-secteur foresterie, du secteur de production selon la classification décrite par l'arrêté N°0070/MINEP du 22 avril 2005, lequel fixe les différentes catégories de projets, dont la réalisation est soumise à une étude d'impact environnemental. Ainsi, il doit faire l'objet d'une étude d'impact environnemental détaillée.

## 5 CONTENU DES PRESTATIONS

### Analyse des aspects juridiques et institutionnels

Le consultant devra présenter le contexte juridique et institutionnel dans lequel l'étude se réalise. Il sera question de faire l'état des lieux des différents textes nationaux et internationaux régulant l'exécution du projet, leurs implications sur sa mise en œuvre.

De même, Il devra faire une analyse institutionnelle visant à présenter les structures et leurs capacités pouvant participer à la mise en œuvre du plan de gestion de l'environnement.

### Description du projet

Le Consultant présentera entre autres :

- Les principales technologies possibles et les critères qui ont conduit au choix de la technologie privilégiée ;
- L'emplacement des infrastructures à mettre en place ;
- Les caractéristiques techniques du projet ;
- Les rejets et nuisances susceptibles d'être produits par le projet ;
- Une description détaillée des phases du projet ;
- Les échéanciers de chaque activité ;
- Le nombre, les types et la provenance de la main d'œuvre requise ainsi que les procédures de recrutement ;
- Les types et les quantités de tous les matériaux qui feront partie du projet, leur provenance et le mode d'obtention.

Le Consultant devra noter que le bois exploité de cette UFA alimentera l'unité de transformation du bois de la WIJMA basée à Nguti dont l'étude environnementale ne fait pas partie de cette prestation. Il en est de même de la future unité de transformation de bois qui sera mise en place dans le département de la Manyu.

### Description de l'état initial

Dans un premier temps, le Consultant définira la zone d'influence du projet. Ainsi, il distinguera la zone d'impacts directs de la zone d'impacts indirects. Ensuite, il procédera à la description des composantes pertinentes du milieu d'insertion du projet.

### *Délimitation de la zone d'étude*

La délimitation de la zone d'étude visera à limiter la quantité d'information à réunir et à analyser à un niveau maniable. Elle permettra par conséquent de se centrer sur les questions les plus pertinentes et de faire des propositions concrètes et réalistes. Les limites à définir devront se fonder sur la partie éventuelle d'interaction maximale entre le projet et l'environnement.

### *Description des composantes pertinentes de l'environnement*

Le Consultant analysera les données sur :

- Le milieu naturel (climat, topographie, hydrologie, géologie, qualité de l'air, des eaux et des sols, faune, flore, écosystèmes, risques naturels, espèces rares, habitats sensibles, sites naturels d'un intérêt particulier) ;
- Le milieu humain (démographie, groupes ethniques, minorités locales, biens culturels, langues, santé, occupation des sols, habitat, utilisation des ressources naturelles. Il devra également identifier en termes d'activités, revenus et conditions d'existence, les populations concernées par le projet à un titre ou à un autre : populations des villages riverains de l'UFA et personnel du chantier en particulier.

La description des composantes pertinentes de l'environnement devra faire ressortir :

- L'état de l'environnement au moment de la conduite de l'étude ;
- Les informations pertinentes sur les modifications susceptibles de se produire pendant toute la durée de vie du projet ;
- Les informations pertinentes sur l'évolution de l'environnement en l'absence du projet.

### **Analyse des impacts sur l'environnement**

Pour analyser les impacts du projet sur l'environnement, le Consultant devra procéder par plusieurs étapes, notamment, l'identification, la caractérisation et l'évaluation.

#### *a) Identification*

Il est recommandé à ce stade de recourir à une matrice d'identification d'impacts et à des listes de contrôles. Ces impacts concernent :

- La dégradation du cadre et des conditions de vie des populations riveraines de l'UFA et des zones de transport des produits;
- La dégradation de la végétation et la pression croissante sur les ressources naturelles, les infrastructures sociales et l'environnement biophysique et socioéconomique ;
- La réduction de la biodiversité terrestre et aquatique, la dégradation de l'écosystème et la modification de l'hydrodynamisme du milieu ;
- l'amélioration de la qualité de vie des populations locales.

#### *b) Caractérisation*

A titre indicatif, les critères de caractérisation suivants pourront être utilisés :

- La nature de l'impact ;
- L'intensité ou ampleur de l'impact (degré de perturbation du milieu qui est fonction de la sensibilité ou de la vulnérabilité de la composante étudiée) ;
- L'interaction ;
- La portée de l'impact;
- La durée de l'impact ;
- La fréquence de l'impact ;
- L'occurrence de l'impact;
- La réversibilité ;

- La cumulativité (lien entre le projet et les autres projets ayant des impacts similaires ou synergiques).

*c) Evaluation de l'importance des impacts*

Après avoir identifié et caractérisé les impacts, le Consultant devra ensuite les évaluer. Il est entendu que l'évaluation devra permettre de distinguer les impacts significatifs des impacts non significatifs et de proposer des mesures de façon conséquente. Le Consultant devra utiliser une méthode appropriée et se concentrer uniquement sur les impacts significatifs.

**Mesures d'atténuation, de compensation et d'optimisation et leurs coûts**

L'étude précisera les actions, les correctifs et les ajouts prévus aux différentes phases de réalisation incluant la clôture du projet, pour éliminer ou réduire les impacts négatifs du projet d'une part, et proposera les mesures envisagées pour favoriser ou optimiser les impacts positifs d'autre part.

Elle présentera aussi une évaluation de l'efficacité des mesures d'atténuation, de compensation et d'optimisation proposées et fournira une estimation de leurs coûts.

L'étude évaluera les impacts résiduels en projetant l'application des mesures d'atténuation. Dans le cas d'impacts résiduels inévitables et irréductibles, l'étude proposera des mesures de compensation pour le milieu biotique ou pour les communautés touchées.

**Plan de gestion de l'environnement (PGE)**

A l'issue de l'étude, le Consultant élaborera un plan de gestion de l'environnement qui devra comprendre :

**- Le plan de mise en œuvre des mesures :**

Il devra définir la façon concrète dont les mesures seront mises en œuvre, identifier et caractériser les acteurs et les institutions capables de mettre en œuvre les actions proposées. Les phases nécessaires pour le renforcement des capacités des acteurs ou des institutions appelées à intervenir dans la mise en œuvre des mesures seront définies au besoin.

Afin d'envisager une mise en œuvre progressive des mesures, un ordre de priorité sera donné.

**- Le plan de surveillance et de suivi**

Ce plan devra définir les éléments devant faire l'objet de la surveillance et/ou du suivi. Les acteurs et les indicateurs objectivement vérifiables devront être identifiés dans chaque cas. Les coûts liés à ces opérations devront également être spécifiés. Le Consultant devra déterminer le nombre des différents rapports à produire et leur distribution.

**5.1 - Plan de participation du public**

La participation du public amorcée dès la phase d'étude d'impact environnementale devra être poursuivie lors de sa mise en œuvre du projet. Ainsi, le plan de participation du public devra prévoir le mode de circulation de l'information et des voies de recours au cas où une partie s'estimait lésée.

Le Consultant examinera les mandats et les institutions au niveau local, provincial et national et prescrira les étapes requises pour renforcer ou étendre leurs capacités pour permettre la mise en œuvre le plan de gestion de l'environnement.

**6 OBLIGATIONS DU PROMOTEUR**

En vue d'assurer une réalisation harmonieuse de l'étude, le Promoteur envisage mettre gratuitement à la disposition du Consultant les plans et toutes études et informations disponibles relatifs au projet. Il s'agira entre autres, de la convention provisoire d'exploitation et les résultats des sondages forestiers.



## **7 OBLIGATIONS DU CONSULTANT**

### **Documents**

Le Consultant fera un inventaire de tous les documents mis à sa disposition par le Promoteur ou produits au cours de la mission pour les besoins de l'étude. Ces documents dont il aura la garde devront être restitués à la fin de la mission. Le Consultant analysera et interprétera les données fournies qui doivent être considérées comme confidentielles.

### **Composition de l'équipe d'étude**

Le consultant a le libre choix dans la composition de l'équipe chargée de réaliser cette étude, mais pour s'assurer de la couverture de toutes les préoccupations, cette équipe devra comprendre au minimum les compétences suivantes :

- Un Chef de mission, expert en gestion de l'environnement, justifiant des compétences et d'une bonne expérience dans l'aménagement forestier. Il devra impérativement avoir mené au moins (05) cinq études d'impact sur l'environnement d'importance comparable au Cameroun dont au moins (02) deux dans le secteur forestier. Il devra justifier d'au moins (05) cinq ans d'expérience en études d'impacts sur l'environnement ;
- Un socio-économique chargé des enquêtes et de la collecte des données sur le milieu humain. Il devra avoir une expérience générale de (03) trois ans et justifier d'une bonne expérience dans les études d'impact environnemental ;
- Un Ingénieur des Eaux, forêts et Chasses qui se chargera de collecter les données sur le milieu biophysique, notamment l'analyse de la végétation et de la faune. Il devra avoir de bonnes connaissances en aménagement forestier et ayant participé à au moins (02) deux études d'impact sur l'environnement.
- Un cartographe justifiant d'au moins trois ans d'expérience dans l'utilisation des systèmes d'information géographique.

L'équipe du Consultant devra maîtriser parfaitement la langue anglaise étant donné que les consultations et les audiences publiques seront conduites en anglais et les différents rapports rédigés en cette langue.

### **Bureau et logement**

Le Consultant sera en charge des frais de bureaux et de logement des membres de son équipe.

### **Secret professionnel**

Le Consultant sera tenu au respect du secret professionnel pendant et après sa mission.

### **Enquête et sensibilisation**

L'étude devra être la plus participative possible. A cet effet dans le but de recueillir la perception des populations du projet, le Consultant séjournera dans les villages riverains de l'UFA et susceptibles d'être affectés par le projet. Il organisera des séances de travail avec les paysans en vue d'identifier de façon participative les impacts des travaux, d'évaluer leurs besoins en matière de développement et leur savoir – faire. Il devra également consulter les autres parties prenantes impliquées dans l'étude, notamment les ministères techniques, les autorités administratives et traditionnelles.

De toute manière, l'enquête à faire auprès des populations devra suivre la procédure des consultations et des audiences publiques telle que prescrite par la section III du décret N°2005/0577/PM du 23 février 2005 fixant les modalités de réalisation des études d'impact environnemental. Ainsi, il veillera à ce que les populations soient informées du programme de consultations publiques au moins trente (30) jours avant la date de la première réunion.

A titre indicatif, les parties prenantes à prendre en compte devront inclure :

- Les populations riveraines de l'UFA;
- Les organismes de conservation intervenant dans la région ;
- Les organisations non gouvernementales ;
- Le personnel du chantier d'exploitation forestière ;
- Les services locaux des ministères techniques (Ministère de l'Environnement et de la Protection de la Nature, Ministère des Forêts et de la Faune et Ministère de l'Agriculture et du Développement Rural, Ministère de l'élevage des pêches et des industries animales ...);
- Les autorités administratives et traditionnelles de la localité.

Le Consultant conseillera le promoteur dans l'organisation de l'audience publique requise par la réglementation en vigueur.

## 8 ECHEANCIER DE L'ETUDE

Le Consultant devra mettre trois (03) mois au maximum pour la rédaction du rapport provisoire qui sera déposé auprès des services compétents.

## 9 RAPPORTS D'ETUDE

Les rapports seront rédigés en langue anglaise. Quatre semaines après les consultations publiques, le Consultant remettra au Promoteur un (01) exemplaire du rapport sur format papier et une version électronique. Après les observations de ce dernier, le Consultant les intégrera pour produire le rapport final qui sera soumis pour approbation.

Le rapport sera présenté de manière concise et se limitera aux problèmes environnementaux les plus significatifs. Le texte principal devra se concentrer sur les résultats obtenus, les conclusions et les actions recommandées de l'étude ainsi que le plan de gestion de l'environnement. Le Promoteur se chargera de multiplier le rapport en nombre requis et de le faire parvenir aux autorités compétentes.

## 10 STRUCTURE DU RAPPORT FINAL

La structure requise du rapport est celle préconisée par l'article 2 de l'arrêté N°0070/MINEP du 22 avril 2005 fixant les différentes catégories d'opérations dont la réalisation est soumise à une étude d'impact environnemental. Ainsi, le rapport devra comprendre les éléments suivants :

- Résumé de l'étude en langage simple, en français et en anglais ;
- Introduction et justification de l'étude ;
- Cadre légal et réglementaire ;
- Description du projet ;
- Présentation et analyse des alternatives ;
- Raisons du choix du projet parmi les autres solutions possibles ;
- Description et analyse de l'état initial du site et de son environnement physique, biologique, socio-économique et humain ;
- Description et analyse de tous les éléments socioculturels et ressources naturels susceptibles d'être affectés par le projet ;
- Raisons du choix du site ;
- Identification et évaluation des effets possibles de la mise en œuvre du projet sur l'environnement naturel et humain ;
- Identification des mesures prévues pour éviter, réduire ou éliminer les effets dommageables du projet sur l'environnement ;
- Plan de gestion environnementale et sociale comportant les mécanismes de surveillance du projet et de son suivi environnemental ;
- La méthodologie et les analyses ainsi que les conclusions et les recommandations ;
- Les références bibliographiques ;

- Les annexes :
  - Programme de sensibilisation et d'information ainsi que les procès-verbaux des réunions tenues avec les populations, les organisations non gouvernementales, les syndicats, les leaders d'opinions et autres groupes organisés concernés par le projet ;
  - Listes des personnes consultées ;
  - Noms des personnes ayant réalisé l'étude.

Il est bien entendu que tout autre élément tel que les tableaux de synthèse sur les données récoltées et les références appropriées, permettant de faciliter la compréhension ou l'interprétation des données devra également être présentée en annexe.

APPENDIX 2

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**LETTER OF APPROBATION OF THE TERMS OF REFERENCE**

**APPENDIX 3**

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**ENVIRONMENTAL POLICY OF WIJMA**

### **POLITIQUE ENVIRONNEMENTALE DE WIJMA**

La société WIJMA DOUALA reconnaît sa responsabilité vis-à-vis de ses clients, ses fournisseurs et ses employés et base ses activités commerciales sur des ressources forestières correctement aménagées.

Ainsi WIJMA DOUALA s'est engagée à appliquer le plus possible de pratiques respectant l'environnement à travers ses activités (<< environmental best practice >>).

La croissance économique, en maintenant un environnement écologiquement durable, est une responsabilité qui doit être partagée par tous les acteurs: populations locales, gouvernements, communautés, etc.

Le société WIJMA DOUALA s'engage à l'application de cette politique environnementale sur l'ensemble des opérations effectuées par la société. Un responsable a été chargé de l'exécution de cette politique pour la formation du personnel au sein de l'encadrement, pour la diffusion d'informations à l'ensemble des salariés.

WIJMA DOUALA maintiendra une politique d'amélioration environnementale continue. Ses activités environnementales seront vérifiées sur l'accomplissement de ses objectifs et un compte-rendu annuel sera produit sur demande. Aussi WIJMA DOUALA s'engage à augmenter la compréhension des communautés locales pour les pratiques forestières durables dans les régions où elle travaille.

WIJMA DOUALA s'engage à acheter le bois provenant de sources légales et exigera de ses fournisseurs des preuves qu'ils sont en accord avec cette politique. De plus en plus de ressources de bois certifié seront disponibles et WIJMA DOUALA donnera autant que possible la préférence au bois certifié. La société s'abstiendra d'acheter du bois dont l'origine est connue d'être illégale et n'achètera aucun espèce de bois interdit dans l'Appendice 1 de la Convention Internationale sur la Trafiqne d'Espèces Menacées (CITES). WIJMA DOUALA emploie tous moyens afin d'éviter la suspicion en ce qui concerne l'origine de ses bois. La société s'attend de ses fournisseurs un niveau environnemental élevé sur les marchandises et services ainsi qu'une collaboration étroite vers l'achèvement de ses objectifs environnementaux.

WIJMA DOUALA s'engage à respecter toutes législations forestières pertinentes. Des plans d'aménagement détaillés seront complétés pour concessions forestières après consultations des autorités et des communautés locales dans les trois ans à partir de l'allocation des concessions. La société a obtenu le certificat du Forest Stewardship Council (FSC) pour une partie de ces surfaces forestières ainsi que pour son unité de transformation de Bidou. Elle s'engage à continuer cette action pour ces autres concessions et à pratiquer une gestion forestière responsable compatible avec les principes et critères du FSC.

WIJMA DOUALA s'engage à fournir un support financier et technique pour l'amélioration en aménagement forestier dans le pays où elle travaille. Elle appuie des projets socio - forestiers, de recherche et de formation en techniques d'exploitation à faible impact.

WIJMA DOUALA fera tout son possible de fournir des bois certifié conformément aux exigences de ses clients.

Fait à Douala

Le 10 décembre 2005

**APPENDIX 4**

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**TOOLS USED FOR DATA COLLECTION**

---

## SEMI STRUCTURAL INTERVIEWS AND DIRECT OBSERVATIONS GUIDES

1. What are the major historical events of the village?
2. Are there lesser persons in the village now?
3. Are there more or lesser births in the area now? What is the population doing to ameliorate birth rate?
4. Is mortality high or low in the area now?
5. Where does the population migrate to, and for how long? Do they change residence? What periods do they migrate?
6. How many schools are there in the village?
7. How many classes does each school have?
8. How many teachers are there in each establishment?
9. What are the religious groups found in the area?
10. Are there structures for the different churches in the area?
11. Does each of the churches have pastors and priests?
12. What are the principal traditional, customs and traditional values?
13. What is the land tenure policy of the area? Who approves ownership of land?
14. What are the land acquisition modalities?
15. How are parental links, marriage and residential permit acquired?
16. What are the different transport modes?
17. From where do you acquire drinking water?
18. What do you use for lighting? What do you use for heating?
19. How do you pass through information?
20. Do you have health services specialised in the prevention of certain illnesses in the zone? Which ones?
21. How does a sick person treat himself when ill?
22. What are the most frequent illnesses in the zone?
23. What are the architectural and archaeological heritages of the zone?
24. How will the zone look like after the project?
25. What do you think of the project?
26. What are the different economic activities of the zone?
27. Where do you sell the products produced in the zone?
28. How do you organise sales?
29. What are the fishing methods used?
30. What kind of water do you drink?
31. What products do existing companies use?
32. Where do they dispose of their waste?
33. What are the structures managing you at the moment? In the past?
34. Why did they stop their activities?



## QUESTIONS TO BE ASKED AT THE PROJECT SITE

- \* When did logging begin?
- \* What kind of activities is being carried out in the site?
  - Already carried out
  - Still being carried out
  - To be carried out
- \* What are the materials and equipment used?
  - For road construction and maintenance
  - For tree felling
  - Skidding
  - For communication
  - For loading and transportation
  - For circulation
  - Electrification and water supply
- \* Are there any specific maintenance equipment?
- \* How are fuel and lubricants stored?
- \* How is generated waste treated?
- \* Have you any measures been taken to compensate the declassification of the reserve?
- \* How many base camps exist?
- \* Does the firm transport and transform all the harvested wood?
- \* What kinds of chemicals are being used to treat logs?
- \* Are there any particular environmental measures on site?
- \* What are the dispositions against poaching?
- \* What are the health and risk management measures?
  - What are your recruitment procedures?
  - Can you tell us more on the sawmill to be constructed at Ossing and why?

---

APPENDIX 5

**DESCRIPTIVE AND EXPLICATIVE MEMOIR OF THE PROJECT  
AND PUBLIC CONSULTATIONS PROGRAMME**

# Cameroon Agriculture and Forest Exploitation Company Limited (CAFECO) CAFECO

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## ENVIRONMENTAL IMPACT ASSESSMENT FOR THE FOREST MANAGEMENT UNIT N° 11 005

Eyumojock Sub-Division, Manyu Division, South West Region

### PROPOSED PUBLIC CONSULTATION PROGRAM, DESCRIPTIVE AND EXPLANATORY SUMMARY OF THE PROJECT

February 2009



### CENTRE AFRICAIN DE RECHERCHES FORESTIERES APPLIQUEES ET DE DEVELOPPEMENT

**Siège :** 2ème étage Immeuble Boulangerie le Col sis au Marché Mélen-  
Yaoundé à côté de la cathédrale Saint-Paul,  
B.P. 885 Yaoundé-CAMEROUN,  
Tél : (237) 22 31 08 92/22 05 94 96 ; Fax : (237)22 31 08 94 ;  
E-mail : [carfadcameroun@yahoo.fr](mailto:carfadcameroun@yahoo.fr)  
Site web : [www.carfad.net](http://www.carfad.net)

**Antenne d'Amvom:**  
Périphérie Ouest du Sanctuaire à  
Gorilles de Mengamé  
1.1.1 B.P. 12 Mvangan,  
Province du Sud.

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*Environmental Impact Assessment for the exploitation of Forest Management Unit  
(FMU) N° 11 005 by the CAFECO/WIJMA Companies*  
**Proposed public consultation program, descriptive and explanatory summary of the project**

---

**LIST OF ABBREVIATIONS**

CAFECO	Cameroon Agriculture and Forest Exploitation Company
FMU	Forest Management Unit
CARFAD	African Centre for Applied Forestry Research and Development
NGO	Non Governmental Organisation
MINEP	Ministry of Environment and Nature Protection
MINADER	Ministry of Agriculture and Rural Development
MINFOF	Ministry of Forestry and Wildlife

## **1. INTRODUCTION**

This document is a descriptive and explanatory summary of the project for the exploitation of the Forest Management Unit (FMU) N° 11 005 by Cameroon Agricultural and Forests Exploitation Company (CAFECO) which has signed a collaboration agreement with WIJMA DOUALA. It provides the various stakeholders (Forest adjacent populations, NGOs, Administrative and Council authorities, etc.) with explanations on the range of activities planned under this project on one hand, and proposes a detailed program related to the public consultation meetings concerning the Environmental Impact Assessment of the FMU on the other hand.

CAFECO entrusted the responsibility to the African Centre for Applied Forestry Research and Development (CARFAD) to carry out this Environmental Impact Assessment. CARFAD is approved by the Ministry of Environment and Nature Protection to carry out such studies.

To plan the consultation meetings, CARFAD established a technical team composed as shown in appendix 1.

This document comprises the following:

- A proposed program of public consultation meetings;
- A descriptive and explanatory summary of the project and ;
- The objectives of both the Environmental Impact Assessment and public consultation meetings.

### **1. PROPOSED PROGRAM OF PUBLIC CONSULTATION MEETINGS**

---

The following timetable of the proposed consultation meetings with the public was drawn up in a participatory manner during a field mission undertaken from 12<sup>th</sup> to 16<sup>th</sup> February 2009. The various stakeholders involved with the management and exploitation of FMU N° 11 005 were equally consulted (see appendix 2).

**PROPOSED PROGRAM FOR THE PUBLIC CONSULTATION MEETINGS**

DATE	HOUR	PLACE OF THE MEETING	VILLAGES INVOLVED
2009, 24 <sup>th</sup> APRIL	<b>TRIP YAOUNDE –BUEA-MAMFE</b> Meeting with Administrative and Council authorities: <ul style="list-style-type: none"><li>Regional Delegates of MINFOF, MINEP at BUEA;</li><li>Divisional Delegates at MAMFE (MINEP, MINFOF, MINADER)</li></ul>		
	<b>STAY AT MAMFE</b>		
2009, 25 <sup>th</sup> APRIL	<b>TRIP MAMFE-EYUMOJOCK</b>		
	8-11am	Eyumojock	Eyumojock, Ndebaya, Mbenyan, Otu, Ayaoke, Ekoneman-Awa
	12-14pm	Ekok	Ekok, Nsanakang, Nsangaraghati I et II
	15-18pm	Inokun	Inokun, Onaku, Eyangemanghe, Okurikang
	<b>STAY AT INOKUN</b>		
2009, 26 <sup>th</sup> APRIL	8 -12am	Babong	Mbiofong, Mbobui, Akwa, Abakpa, Ekoneman-Ojong-Arrey, Ajaman
	14-18pm	Babong	Babong, Araru, Ogurang, Babi, Ekugate
	<b>STAY AT BABONG</b>		
DATE	HEURE	LIEU DE REUNION	VILLAGES CONCERNES
2009, 27 <sup>th</sup> APRIL	8-11am	Mbinda	Mbinda, Okuri
	<b>TRIP TO EYUMOJOCK AND STAY AT EYUMOJOCK</b>		
2009, 28 <sup>th</sup> APRIL	8-11am	Meeting with administrative and council authorities: <ul style="list-style-type: none"><li>Sub-Divisional Officer Of Eyumojock;</li><li>Sub-Delegates of MINFOF, MINEP, MINADER at Eyumojock;</li></ul> Representatives of NGOs are involved in that area.	
2009, 29 <sup>th</sup> , 30 <sup>th</sup> APRIL	<b>COLLECTION OF DATA ON THE EXPLOITATION FIELD</b>		
2009, 1 <sup>st</sup> MAY	<b>TRIP TO YAOUNDE</b>		

## **2. DESCRIPTIVE AND EXPLANATORY SUMMARY OF THE PROJECT**

---

### **2.1. Background and justification of the project**

To achieve the socioeconomic development of present and future generations, Cameroon has signed and/or ratified national, regional and international legislative measures, gearing at guaranteeing the sustainable management of its natural resources.

In this light, policies relating to the exploitation of the various forest resources that have been adopted are based on:

- The participatory management of the resources (which is supposed to give rise to the development of the areas around the site under exploitation);
- The orientation of objectives related to the exploitation based on the potentials of forestry sites (Hence the creation of FMU's, National Parks, council forests, community forest, etc.);
- The granting upon call for tenders, of logging titles.

Therefore, based on these grounds, CAFECO has been awarded the forest concession N° 1087 consisting of two blocks FMU N° 11005 A and FMU N° 11 005 B forming the FMU N° 11 005 situated in the Eyumojock Sub Division, in the Manyu Division, South-West Region.

### **2.2. The presentation of the promoter**

The promoter of the project is Cameroon Agriculture and Forest Exploitation Company Limited (CAFECO). It is a limited liability company based in Kumba which has been affiliated to forestry profession by arrete N° 174/CAB/PR of 23 March 1990.

CAFECO has signed an industrial partnership contract with WIJMA DOUALA in order to exploit and transform wood from its FMU.

WIJMA DOUALA is a private enterprise, with a social capital of 243 590 000 CFAF. All its capital comes from the Netherlands. WIJMA has been operating in Cameroon since 1968 and has a staff of about 400 persons. It disburses annually a sum of 980 million CFAF.

WIJMA is involved both in forest logging and transformation. It now carries out tertiary wood transformation, hence supplying semi finished and finished goods « Made in Cameroon »



and ready for consumption. The tertiary transformation increases productivity so as to reduce wastes as well as create more jobs and value in the region.

In addition to the activity of forest logging and transformation, WIJMA has extensive experience in other domains like, agroforestry and afforestation.

### **2.2.1. Objectives of the promoter**

Objectives pursued by CAFECO and its industrial partner WIJMA aim at:

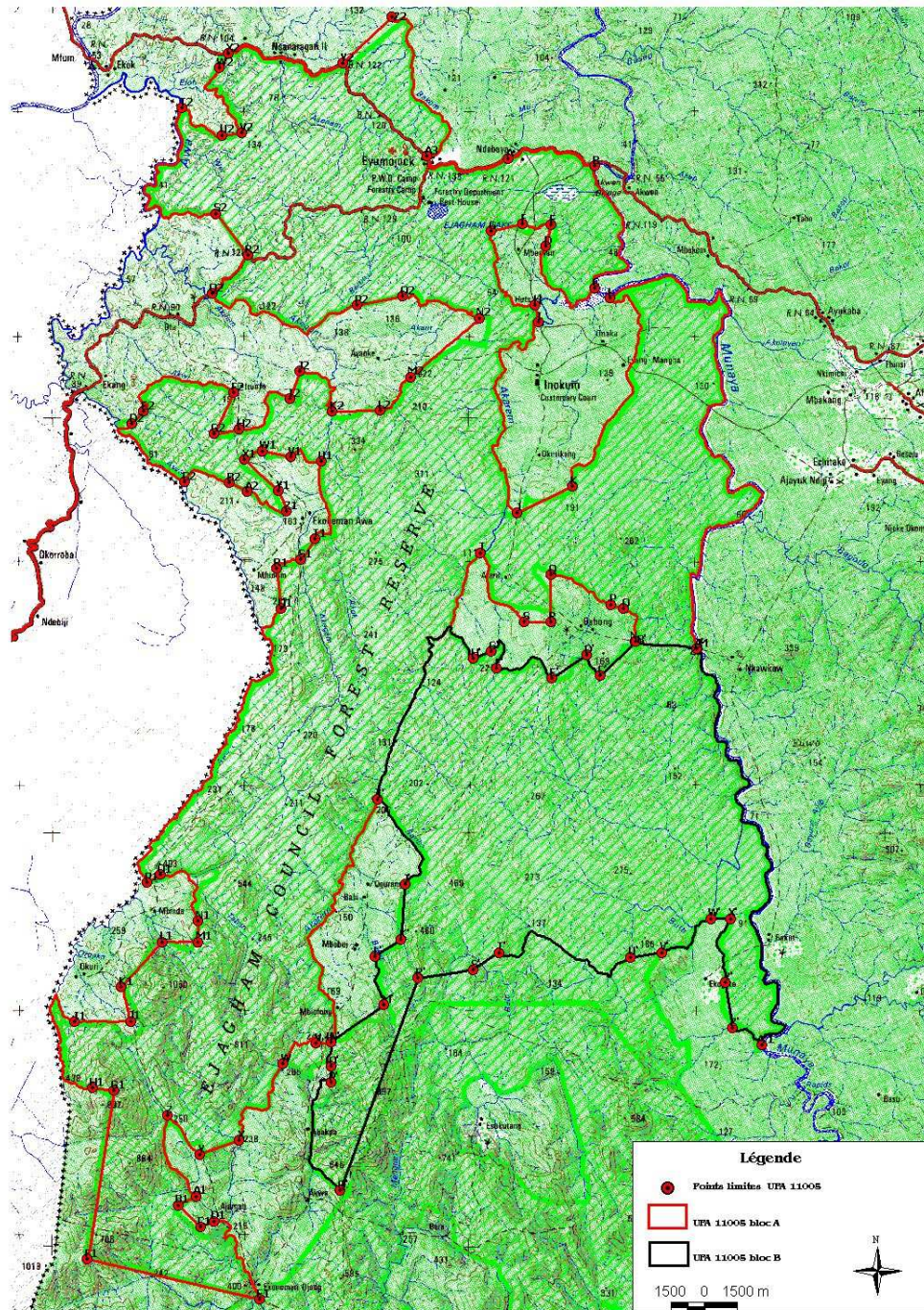
- Harvesting timber to supply the transformation unit in Nguti;
- Contributing towards the improvement of the living conditions of the populations around the forest concession;
- Working in close collaboration with Forest Farmer Committees and all the actors committed to the development of the area under exploitation.
- Educating representatives on some issues about forestry in Cameroon
- Establishing a platform for dialogue, development and conflict management through Global Forest Monitoring Committee (GFMC).
- Combating poaching within the FMU N° 11 005;
- Mitigating impacts on the environment and biodiversity as much as possible so as to maintain a stable ecological milieu.

### **2.2.2 Activities of the project**

CAFECO/WIJMA has carried out or is carrying out the following activities on the field:

- Recruitment of workers (preferably forest adjacent populations) for logging operations ;
- Carrying out wildlife surveys and forest inventories ;
- Carving out FMU into annual felling plots (see map overleaf);
- Opening skidding roads ;

Map 1 : Limits of the Forest Management Unit 11 005



- Construction of engineering structures (culverts, wooden bridges, etc.);
- Planning landings in function of felling plots ;
- Felling and marking of authorized trees ;
- Loading and transportation of logs (sub-contracted);
- Maintenance of vehicles and engines ;
- Sensitization of staff and forest adjacent populations on the incidence of STIs/HIV/AIDS through a health committee;
- Maintenance of local roads network ;
- Aforestation of landings and closure of logging roads ;
- Elaboration of the Management Plan;
- Putting in place of management plan control committee (CSPA) ;
- Payment of annual forestry taxes;
- Carrying out socioeconomic works.

It should be noted that only the three provisional annual felling plots are being exploited in the FMU.

### **2.2.3. Equipment used and personnel**

For the exploitation of the FMU N° 11 005, CAFECO/W IJMA uses the equipment made up:

- Bulldozers and graders for the opening and maintenance of roads;
- Chainsaws (of mark STIHL 088) for the felling of trees;
- Skidders for skidding of wood;
- Thurara telephone and telephone radios for communication;
- Front head loader with a fork carrier for the loading of logs.

CAFECO/WIJMA employs 56 persons for the exploitation of FMU N° 11 005.

## **3. OBJECTIVE OF IMPACT STUDIES AND PUBLIC CONSULTATION MEETINGS**

### **3.1. Object of impact analyses**

The objectives focused at during the impact assessment for the FMU N° 11 005 logging project will be to:

- Identify the positive and negative environmental impacts caused by the project activities on the socioeconomic, ecological and on the biophysical environment ;
- Propose mitigation measures for the negative impacts and optimization measures for the positive impacts;
- Propose an Environmental Management Plan for the project.

### **3.2. Objectives of the public consultation meetings**

The public consultation to be carried out by CARFAD is aimed at:

- Informing and sensitizing the local populations on the exploitation project of the FMU N° 11 005;
- Identifying in a participative manner the negative and positive impacts and proposing either mitigation or optimization measures;
- Collecting information on the fears and preoccupations of the various parties involved in the project and develop feasible solutions;
- Collecting the necessary data required to elaborate the environmental impact assessment report.

### **3.3. Proposed agenda of the public consultation meetings**

The proposed agenda for the public consultation meetings discussed during the planning meetings is as follow:

- Introduction and presentation of the experts;
- Presentation of the Project (activities already carried out, current and future activities);
- Brief explanation of Environmental Impact Assessment concepts and procedures;
- Identification of Project impacts (positive and negative) and proposition of environmental management measures (optimization and mitigation);
- Expectations of the local people ;
- Others.

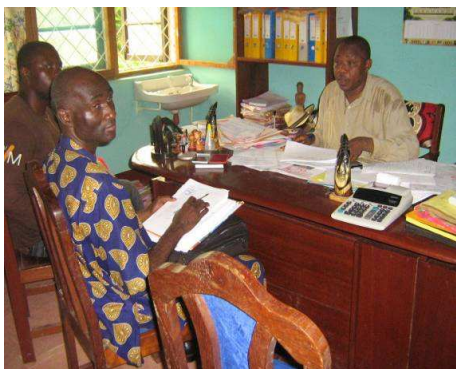
### **3.4. Methodology used by CARFAD**

To plan these consultation meetings, CARFAD carried a mission from 12<sup>th</sup> to 16<sup>th</sup> February 2009. During this mission, a participative approach was used to establish the proposed public consultation meetings program. The different villages concerned were contacted along side other stakeholders among which NGOs and local Administration. CARFAD obtained an



introductory letter to the villages from the Sub Divisional Officer of Eyumojock (see appendix 4).

The following pictures illustrates the strong moments of the public consultation planning mission.



**Photo 1: Talk with the Divisional Delegate of Forestry and Wildlife for Manyu division, Mamfe**



**Photo 2: Talk with the Sub-Prefect of Eyumojock Subdivision**



**Photo 3 and 4: Meetings with some population for public consultation planification at Babong and Mbenyang villages from left to right**

## CONCLUSION

The main aim of the Environmental Impact Assessment is to ensure the smooth insertion of the project into its environment. It is in this light that the public consultation meetings have been planned in order to give the possibility to adjacent populations of the FMU N° 11 005 to give their views on the project and propose measures on the impacts that they shall witness.

The consultant on his part observed that the following important issues should be taken into consideration:

- As in the whole national territory, unemployment is a major preoccupation in the region;
- The presence of farm lands and previous habitation zones in the interior of FMU;
- Many other projects cover the project zone: Takamanda National Park, Korup National Park, Ejagham council forest reserve, many FMUs etc.

All these important aspect will be studied in detail during the public consultation.

*APPENDIXES*

## APPENDIX 1:

### TEAM OF EXPERTS

The public meetings planning team is composed as follows:

- **Benjamin TCHOFFO: Environmental Manager, Team Supervisor;**
- **MABOUL EBANGA Eustache Marie Aimé : Team leader, Social Psychologist, Economist;** Expert in social and economic studies,
- **Charles NDIFON NCHAMCHAM: Forestry Engineer/Environmentalist,** in charged of the description of initial state of the exploitation zone, analyzing the environmental impacts on bio-ecological milieu and proposition of an Environmental Management plan;
- **NUNGU Abraham NERRY NKENYEH: Civil Engineer,** Expert in charged of the studying and characterizing of the physical milieu and analyzing the environmental impacts on biophysical milieu.



**APPENDIX 2:**  
**LIST OF PERSONS CONTACTED**

N°	NAME AND SURNAME	QUALITY	ADDRESS
01	Maurine ENOMBE	Secretary of the Regional Delegate for Forestry and Wildlife, South-West Region, Buea	75 16 38 13 <a href="mailto:maurinenash@yahoo.com">maurinenash@yahoo.com</a>
02	NGAMENI Godefroy	CSPCPM/MINEP/SW/BU EA	77 18 32 46 <a href="mailto:ngamgo2@yahoo.com">ngamgo2@yahoo.com</a>
03	ETCHU Richard	Public Relations Officer (P.R.O)of CAFECO	75 42 66 04
04	TENDE Augustine ASHU	Divisional Delegate for Forestry and Wildlife Manyu-Division, Mamfe	75 03 55 99 74 41 91 85
05	BATE-EPEY Lydia	Divisional Delegate for Environment and nature Protection, Manyu- Division, Mamfe	74 81 67 75
06	Arno LEFFERS	Deutscher Entwicklungsdienst (DED) German Development Service	74 68 35 43 75 84 54 44 <a href="mailto:Arno.leffers@gmx.net">Arno.leffers@gmx.net</a>
07	NDIP Nelson	Second Deputy Mayor, Eyumojock Council	79 96 37 51
08	KAMARA Divine KAMARA	Sub-Prefect for Eyumojock Subdivision	77 89 99 95
09	Chief DJANG ENO	Traditional Chief of Ekok village	77 78 38 20
10	NANG Samuel MEH	Staff of Forestry Post of Ekok	75 00 80 73

**APPENDIX 3:**  
ATTENDANCE SHEET OF PARTICIPANTS FOR THE PUBLIC CONSULTATION  
PLANNING MEETINGS

**APPENDIX 4:**

INTRODUCTORY LETTER FROM THE SUB DIVISIONAL OFFICER OF EYUMOJOCK

Forest Management Unit N°11 005 Logging Project by CAFECO/WJMA in the South-West Region. Manyu Division ENVIRONMENTAL  
IMPACT ASSESSMENT

## PLANIFICATION OF PUBLIC CONSULTATION

ATTENDANCE SHEET *NJ EBA 7A*

Nº	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
1	CHIEF CHARLES ORU	CHIEF	<i>and</i> 75757421	15/02/09
2	DORITA MARIN ETA	SECRETARY	75757421	✓
3	Slyvester ASUNDUP	Member	SPK 77828724	✓
4	FIDELIS ETA	Antenew	74302209	
5	William ATADE	Antenew		
6	Ayuk SEN MEI	Chairman Village Forest Management	770606642	
7	ANTONY MonJADE	ELDER	Ulu	
8	CHRSTIANUS BGO	ELDER	CHB 90	
9	FRANKLIN ASUNDUP	Chairman N.C.	75757421	
10	PASTOR ETA YAWAF	Pastor	28/9	15/02/09



February 2009



Forest Management Unit N°11 005 Logging Project by CAFECO/WIJMA in the South-West Region, Manyu Division ENVIRONMENTAL  
IMPACT ASSESSMENT

## PLANIFICATION OF PUBLIC CONSULTATION ATTENDANCE SHEET

N <sup>o</sup>	Name (s) and Surname (s)	Village or service/Function	Signature and telephone	Date
1.	Pa Ntuijack Ashu			
2.	mad Ntuijack Ashu		Elizabeth	
3.	mad Cecilia Nkem		Cecilia	
4.	Ndip Jacqueline Ekun	<del>Ata</del> Village	<del>Ndip</del>	15/02/09
5.	Orang Clifford Eta	<del>Ata</del>	<del>Ata</del>	15/02/09
6.	Ojong Hilary Ita	<del>Ata</del>	<del>Ata</del>	15/02/09
7.	Nelison Comfort	<del>Ata</del>	<del>Ata</del>	
8.	Obi George	<del>Ata</del>	<del>Ata</del>	15/02/09
9.	Adum Philip	<del>Ata</del>	<del>Ata</del>	15/02/09
10.	Mad Regina Arrey	<del>Ata</del>	Regina	15/02/09
11.	Nelum Rachel Ntep	<del>Ata</del>	Nel.	
12.	Amah Peter	<del>Ata</del>	<del>Ata</del>	
13.	Chairman Nelum Patrick	<del>Ata</del>	<del>Ata</del>	



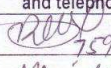
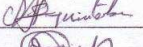

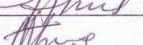
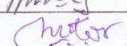
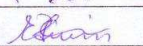
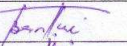

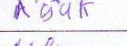
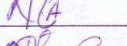



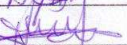
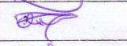

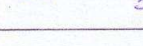
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**ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE FMU N° 11 005  
LOGGING PROJECT**

Forest Management Unit N°11 005 Logging Project by CAFECO/WIJMA in the South-West Region, Manyu Division ENVIRONMENTAL  
IMPACT ASSESSMENT

**PLANIFICATION OF PUBLIC CONSULTATION  
ATTENDANCE SHEET**

N°	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
01	Obach Clement D	Inokun	 75955693	15/02/09
02	Ayuntake Franklin H	Inokun		15/2/09
03	Obi Roland D	Inokun		" "
04	Egbe Clotus Njock	Inokun		" "
05	Asong Arnold Awich	Inokun		" "
06	Chief Stephen Olu Ntui	Inokun		15/02/2009
07	Aya Edwin Aduk	Inokun		15/02/2009
08	Benard Ambang Ntui	"		15/2/009
09	Ayuk Simon Ayung	"		15/2/009
10	Aduk Samson	"		"
11	Ntui Clotus Aya	"	N/A	15-2-2009
12	Ntui Sylvester D	"		15/2/2009
13	Asong Roland	"		
14	WONS FINEY	"		15/2/2009
15	Aya Maurice Ayung	"		
16	Asong Keanoff Ayamba	"		
17	Asong Kabanj	"		
18	Asong Obi BEN	"	 15-02-09	



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## PLANIFICATION OF PUBLIC CONSULTATION ATTENDANCE SHEET

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## PLANIFICATION OF PUBLIC CONSULTATION ATTENDANCE SHEET

[illegible]

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[illegible]

CAFECO/WIJMA Cameroon

ATTENDANCE SHEET *ND EBA7A*

CAFECON/WIJMA Cameroon



Forest Management Unit N°11 005 Logging Project by CAFECO/WIJMA in the South-West Region, Manyu Division ENVIRONMENTAL  
IMPACT ASSESSMENT

## PLANIFICATION OF PUBLIC CONSULTATION ATTENDANCE SHEET

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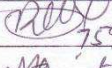
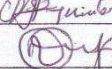
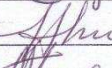
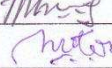
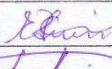

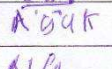
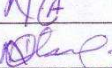

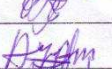


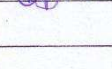
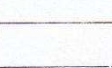
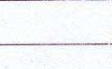
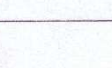
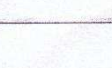
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ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE FMU N° 11 005  
LOGGING PROJECT

Forest Management Unit N°11 005 Logging Project by CAFECO/WIJMA in the South-West Region. Manyu Division ENVIRONMENTAL  
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ATTENDANCE SHEET

N°	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
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02	Ayuntake Franklin A	Inokun		15/2/09
03	Obi Roland O	Inokun		" "
04	Egbe Cletus Njok	Inokun		" "
05	Asong Arnold Asok	Inokun		" "
06	Chief Stephen Oluken	Inokun		15/2/2009
07	Aya Edwin Ayuk	Inokun		15/02/2009
08	Bernard Ambang Ntue	"		15/2/2009
09	Ayuk Simon Ayung	"		15/2/2009
10	Ayuk Samson	"		" "
11	Ntue Cletus Aya	"	N/A	15-2-2009
12	Ntue Sylvester O	"		15/2/2009
13	Asong Roland	"		
14	Asong Ayung	"		15/2/2009
15	Aya Maurice Ayung	"		
16	Asong Kenneth Ayung	"		
17	Oyong Robert	"		
18	Asong Obi BEN	"	 15-2-2009	



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**ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE FMU N° 11 005  
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## PLANIFICATION OF PUBLIC CONSULTATION ATTENDANCE SHEET

[illegible]

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## PLANIFICATION OF PUBLIC CONSULTATION ATTENDANCE SHEET

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## PLANIFICATION OF PUBLIC CONSULTATION ATTENDANCE SHEET

[illegible]

February 2009

**APPENDIX 6**

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**APPROVAL LETTER OF THE PUBLIC CONSULTATIONS PROGRAMME**



REPUBLIQUE DU CAMEROUN  
Paix - Travail - Patrie  
MINISTRE DE L'ENVIRONNEMENT ET  
DE LA PROTECTION DE LA NATURE  
INSPECTION GENERALE

REPUBLIC OF CAMEROON  
Peace - Work - Fatherland  
MINISTRY OF ENVIRONMENT  
AND PROTECTION OF NATURE  
GENERAL INSPECTORATE

Yaoundé, le 03 MARS 2009

CIE/00000033  
N° /L/MINEP/IG/11

## LE MINISTRE

Réf: V/L

A Monsieur le Directeur Général de la  
Cameroon Agriculture & Forest Exploitation  
Company Ltd (CAFECO)  
BP : 81  
Tél. : 77 75 90 53 – 33 35 46 63 – 33 35 46 64  
KUMBA - Fiango

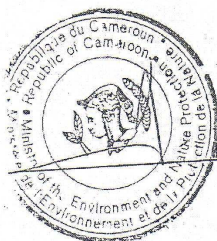
Objet : Votre demande d'approbation du  
programme des consultations publiques  
relative à l'UFA 11 005.

Monsieur le Directeur Général,

J'accuse réception de votre correspondance du 21 février 2009 me transmettant le programme des consultations publiques et le mémoire descriptif et explicatif du projet d'exploitation de l'UFA 11 005..

Y faisant suite, j'ai l'honneur de vous faire connaître que l'examen dudit programme ne suscite aucune observation particulière. Aussi, ledit programme est approuvé en l'état.

Veillez agréer, Monsieur le Directeur Général, l'assurance de ma parfaite considération.




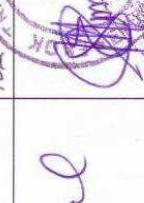

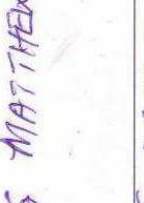
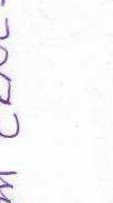
Le Ministre Délégué

*Dr. Nana Abubakar Djallé*

## **PUBLIC CONSULTATIONS PROGRAMME NOTIFICATION SHEET**

Forest Management Unit N°11 005 Logging Project by CAFECO/WIJMA in the South-West Region. Manyu Division  
ENVIRONMENTAL IMPACT ASSESSMENT

## WITHDRAWAL FORM FOR PUBLIC CONSULTATION PROGRAM





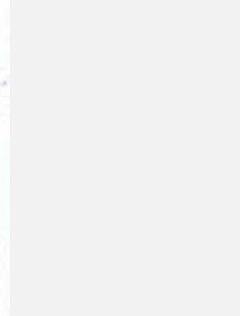
N°	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
1	BAYEMI ALAIN BERNARD	Resp. d'EXPLOITATION FORÊT SUD-OUEST	 Région Sud-Ouest Bamenda Tel: 342 0022 Fax: 342 0022 Tél: 342 0022	16/03/2009
2	OJANG ENO Cyprian	Traditional Ruler	 COUNCIL CAMEROON LIFE MINISTRY 7/3/09	16/03/09
3	MBONGI Barnabas MEME	Chief of Pastoralism and Wildlife work	 COUNCIL CAMEROON LIFE MINISTRY 7/3/09	16/03/09
4	ETTA ETANG MATTHEW	TRADITIONAL RULER	 COUNCIL CAMEROON LIFE MINISTRY 7/3/09	17/03/2009
5	EMEN TRVESTI AGBOR	Village delegate	 COUNCIL CAMEROON LIFE MINISTRY 7/3/09	17/03/009.



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N°	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
6	CHIEF DJONG MOSES DJONG N'GUI	TRADITIONAL RULER OF BTU	 7533 1111	17/03/2009
7	Reg chief Ndyon James Oth	Vice chairman Ayakoke Tradition at Council	 74 60 33 34	17/03/2009
8	Nkong Juliette	Private Secretary Egungok Council	 74 60 33 34	17/03/2009
9	Ai Maita	Eyungok Council Ruler	 74 60 33 34	17/03/09
10	Regent chief Agor Affa Henry	Eyungok Village	 76 01 89 10	17/03/09



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N°	Name (s) and Surname (s)	Village or service/Function	Signature and telephone	Date
11	Yene Ngambe	chef de poste forestier Eyumbo Jack	75352000  Technicien des Eaux et Forêts	17/03/2009
12	ASHA JOHN E			17/03/2009
13	A-YUK BEN MB	Chairman Ndebaya V.F.M.C	 77064642	17/03/2009
14	Obi JOHN AKPOEBAN	Chairman V.F.M.C Mbaya	 77034793	17/03/2009
15	OTANG BITE STEPHEN	 H.R.H. Chief OTANG BITI STEPHEN	7468 15 42	



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Forest Management Unit N°11 005 Logging Project by CAFECO/WIJMA in the South-West Region. Manyu Division  
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N°	Name (s) and Surname (s)	Village or service/Function	Signature and telephone	Date
16	Reg. Chief: Heum Asiche Williams	Reg. Chief	 103727040	20/3/2009
17	Chief Iyong Olang	Traditional Ruler	Chief 103727040	20/3/2009
18	Oru Denis Ntini	Vice Chairman Bakoi Traditional Council	 106134434	20/3/2009
19	Oru Oletus Osoog	Quater head Mbobui Village.	 106136528	20/3/2009
20	Effiong Michael Njor K	Chair Man Abakpa VMC	 106136921	21/3/2009



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Forest Management Unit N°11 005 Logging Project by CAFECOMIUMA in the South-West Region, Manyu Division  
ENVIRONMENTAL IMPACT ASSESSMENT

N°	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
21	Chief Olong Ignatius Olong	Chief of Aboblong MANYU DIVISION	 07031693847	21 <sup>st</sup> March 2009
22	Afangha Ayuk Sambo	Secretary Afangha V.F.M.C.		22 <sup>nd</sup> March 2009
23	Ayuk Dantass Olong	Chairman Ekouman O.A. V.F.M.C.		22-3-2009 22/209
24	Chief David Afangha	Akwa Chief		22/03/09
25	PREM Gidoen.E.	COUNCILOR OKUOLi		23/03/09



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Forest Management Unit N°11 005 Logging Project by CAFECOMIUMA in the South-West Region. Manyu Division  
ENVIRONMENTAL IMPACT ASSESSMENT

N°	Name (s) and Surname (s)	Village or service/Function	Signature and telephone	Date
26	Chief Htuo Touye Moss	Barban g Ind. Ruler	 MINISTRE DE L'AGRICULTURE ET DE LA PÊCHE DIVISION DE L'AGRICULTURE ET DE LA PÊCHE MANYU DIVISION MINISTRE DE L'AGRICULTURE ET DE LA PÊCHE	24/03/09
27	Regent Effim Djong	Regent of Ejangemanghe	Effim	24/03/09
28	Pa Immanuel Ndifon Akpebban	Village elder of Dnaku	Adidifon	24-03-09
29	Chief Stephen Olu Ntun	Procurator Ruler	Ntun 103727062	24/03/2009
30	Councillor Wchup Nelson	Councillor of Ekugate	Ntun	26/03/2009



March 2009





N°	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
31	WCHA MELVIN ASHU NABO	MINER MANYU	7616725  7616725	18/03/09
32	JENIBE AUGUSTINE ASHAY	DURBONAL Delegata BAPF Manyu	7503554  7503554	18/03/09
33	EBOWEZE Daniel	DR MINER Sv.	77259257  77259257	19/03/09
34	ENOW LINDA	RDFOF	33322577  33322577	19/03/09
35				



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Forest Management Unit N°11 005 Logging Project by CAFECO/WIJMA in the South-West Region, Manyu Division  
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N°	Name (s) and Surname (s)	Village or service/function	Signature and telephone	Date
31	Da Thadeus Nturi Nja	Elder of the Village		23/03/09
32	Gyrik Emmanuel Isarom	Councillor MBINDA		24-03-2009
33				
34				
35				



March 2009

**APPENDIX 8**

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**APPENDIX 8: LIST OF CONTACTED PERSONS**

**APPENDIX 8: LIST OF CONTACTED PERSONS**

N°	NAME AND SURNAME	QUALITY	ADDRESS
01	Maurine ENOMBE	Secretary of the Regional Delegate for Forestry and Wildlife, South-West Region, Buea	75 16 38 13 <a href="mailto:maurinenash@yahoo.com">maurinenash@yahoo.com</a>
02	NGAMENI Godefroy	CSPCPM/MINEP/SW/BUEA	77 18 32 46 <a href="mailto:ngamgo2@yahoo.com">ngamgo2@yahoo.com</a>
03	ETCHU Richard	Public Relations Officer (P.R.O)of CAFECO	75 42 66 04
04	TENDE Augustine ASHU	Divisional Delegate for Forestry and Wildlife Manyu-Division, Mamfe	75 03 55 99 74 41 91 85
05	BATE-EPEY Lydia	Divisional Delegate for Environment and nature Protection, Manyu-Division, Mamfe	74 81 67 75
06	Arno LEFFERS	Deutscher Entwicklungsdienst (DED) German Development Service	74 68 35 43 75 84 54 44 <a href="mailto:Arno.leffers@gmx.net">Arno.leffers@gmx.net</a>
07	NDIP Nelson	Second Deputy Mayor, Eyumojock Council	79 96 37 51
08	KAMARA Divine KAMARA	Sub-Prefect for Eyumojock Subdivision	77 89 99 95
09	Chief DJANG ENO	Traditional Chief of Ekok village	77 78 38 20
10	NANG Samuel MEH	Staff of Forestry Post of Ekok	75 00 80 73

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APPENDIX 9

## **MINUTES AND ATTENDANCE SHEETS OF THE PUBLIC CONSULTATIONS MEETINGS**

(PARTS OF SOME MINUTES AND ATTENDANCE SHEETS COULD NOT BE FOUND AMONG DR  
MABOUL EBANGA, CHIEF OF MISSION WHO DEPARTED FROM THIS WORLD DURING THIS MISSION )



① Minute for the Public Consultation Meetings 26/04/09.

The meeting was held at Inokun on the 26/04/09 which involves the grouping of up to four villages namely Inokun, Onaku, Eyangemanghet and Okurikang.

During the meeting, the mission head ~~passed~~ started up by greeting the people of the congregation and he later asked the pastor to lead us in prayers.

Further, the mission head presented the promoters, CAFECO, the CARFAD team and the mission of CARFED. He did also presented the team of experts and ~~when~~ <sup>went</sup> further to give a brief explanation of what is meant the environmental impact assessment and how it relates to the FMU N° 11005.

After all the explanation, the mission head then ask the population to give the merits and demerits FMU can bring to them.

* Impact (negative)	mitigation measures
• felling of special species of trees (deforestation)	- Afforestation of some species.
• perturbation of wildlife by noise	- Encourage and sponsoring of rearing groups and on poultry creating opening of cold stores and beef shop.
• draught due to deforestation.	- protection of felling of trees near the streams on a corridor of about 100m.

②

Impact	Mitigation measures
Loss of Agroforestry lands.	Compensation from CAFECO.
Violation of user right	encouragement of a variety of farm product.
STIs and AIDS	distribution of preservatives and sensitisation of the population.

positive impacts:

Impact	Optimisation measures.
→ Roads & transportation	creation of roads and bridges.
→ Increase in the economy	creation of employment. creation of CAFECO base (transformation unit very near to the FMU.)
→ Education	construction of infrastructure.

Expectation

- \* Building of Hospitals (and or health centres)
- \* Building of the transformation zone in Inokun.
- \* Creation of pipe born water.
- \* ~~Propose~~ Building of a secondary school class rooms.
- \* Electricity.
- \* Creation of fish pond.
- \* Roads and bridge at the ferry point at river monaya.

secretary of CAFEM.  
Nungu Abraham-Nerry



chief of  
Inokun  
Mare

Chief S.O.  
Mare

chief of  
mission

  
MABoul  
EBANGA



① Minutes for the public consultation meeting on the  
27/04/2009.

- \* The villages involved includes Okuri, Mbinday and Ekoneman-awa.
- \* The place of the meeting was at the chief palace of Ekoneman-awa at 8:00 am on Monday morning.
- \* The head of the team started with a general greetings and the asking of apology for what happen the last time and our present lateness.
- \* Further he presented the promoters, the role of CARPAD as well as a vivid explanation on what is meant environmental impact assessment and how it is related to the FMU N° 11005 in this area.
- \* Next, he presented the agenda of the meeting from the start to the end.
- \* Another agenda was prepare by the village head and it includes:
  - prayer
  - National anthem
  - Introduction of the various team (delegation).
  - well come address by the host chief.
  - Respond by the technical team.
  - Questionnaire
  - closing remarks.
- \* The speech of the chief of Ekoneman-awa.
- \* He started by greetings and then went further to describe the nature of the roads and the failure they had last time.



- ② \* he also did apologise for the questionnaire not answer as was ought to be done.
- \* he also said the forest is still very virgin and that some Nigenions are the once exploiting from his zone and that his people just use some for local building
- After his speech, he gave the power to speak to our mission
- Mbinda population said that their zone is an environmental risk zone due to the negative impact of active eruptive activities.

Impact.	mitigation measures.
- Risk of destruction of our archaeological sites or sacred side; shrines.	- Carve out the archaeological zones and permit the villagers to have access to it. - Compensation if need be.
- destruction of medicinal trees or scarcity of resources (deforestation).	- Afforestation, by providing means for tree nursery. - encouragement of domestication of animals
- surface water pollution during logging.	- sponsoring the creation of fish pond. - creation of <del>the</del> Pipe born water. - to avoid logging along the streams.
- climate change due to deforestation.	- health facilities.
- Destruction of the ecosystems.	
- STI and AIDS due to strangers in the zone.	- sensitisation of the population.
- farm Land destruction.	- compensation of the Agroforestry zone. - personal compensation of properties.

- loss of agroforestry zone.	- ③
loss of users right.	- creation of beehives - encouragement of domestication of animals poultry .etc.
- <del>an impact</del>	positive impact:
Impact.	optimization measures.
creation of employment.	- employing natives of the zone. - opening of touristic sites in the zone
businesses and increase in the economic activities.	
amelioration of living standard.	

#### expectation

- \* Creation of Roads, concrete culvert and <sup>permanent</sup> bridges.  
(of length 10m).
- \* Building of hospital and health centres.
- \* Offering of scholarship for young generation.
- \* Transformation unit to be installed Eyumojock.
- \* Building of classrooms.

CARFAD Representative  
Nungu Abraham-Nerry

*[Signature]*

Chief of ekoneman-awa

Chief. Olong Biti





Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West  
Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING

Place : Ekouman Awa  
Villages concerned : Ekouman Awa, Mbinda, Okuri  
Date : 27<sup>th</sup> April 2009

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
1	Chief Otang Stephen Bili	Ekouman Awa	Farmer	Stal 7468 15 42
2	Chief Akagason Oti	Okuri	Farmer	- Prof.
3	Chief Nde P. Kim	Mbinda	Farmer	Sen.
4	Edun Dan's E.	Ekouman	Farmer	Stal
5	Tom A. Gha	"	"	"
6	Orock Linus S.	Okuri	Student	Emben
7	Ekpon Gideon	"	Trader	Stal
8	Iabot Victor	"	"	Onif
9	Etta Berne Mbura	"	Student	Emben
10	Etta Scholar A.	"	H/wife	S. S. A.
11	Okimaya Florence	"	"	Prof.
12	Orock Anthony	"	Farmer	Emben
13	Ajuku Kingsley	"	"	Knob
14	Okom Paul	"	"	Onif
15	Nde P. Peter Bisen	Mbinda	Farmer	Nde
16	Ayang Clement Jong	Mbinda	Farmer	A. S. O.
17	Iserom Julius Ayuk	"	Farmer	Stal
18	Otu Steven Npaka	"	Farmer	Emben



P.O.Box 885 Yaounde, Tel. 22 31 08 92 / 22 05 94 96  
www.carfad.net, carfadcameroun@yahoo.fr

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE FMU N° 11 005  
LOGGING PROJECT

Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West  
Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

Place: .....

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
119	Etta Julius Niyon	Ekonemanta	farmer	
120	TANGBE KISIRI	" "	farmer	
121	Tangbe Clement	" "	" "	
122	Tangbe Garba	" "	" "	
123	Yon Louis Manga	" "	Applicant	
124	Asile Felix Egan	" "	" "	
125	Ntui Samuel	" "	Ch man	
126	Lvis yauwe	" "	" "	
127	Otong Benedita	" "	" "	
128	Alonze Peter	✓	Applicant	
29	Gambe Rotand Asick	✓	Applicant	
30	Obi Iyo Oke	✓	Applicant	
31	Chukou Donatus	✓	Farmer	
32	Etta Humphrey	✓	Applicant	
33	EKUN Philip	✓	" "	
34	Effim Elias	✓	" "	
35	Nep Roger	" "	" "	
36	Tabanche Samaki	✓	✓	
37	Etta LEO	✓	" "	
38	Elvis Loh	✓	" "	
39	Etta Emmanuel	✓	Applicant	
40	Stephen	" "	farmer	



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Forest Management Unit N° 11 005 Logging Project by CAFECOMIJMA in the South West Region, Manyu Division

## ENVIRONMENTAL IMPACT ASSESSMENT

Place: \_\_\_\_\_

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① The Public Consultation meeting at Oyumajock.

25/04/09

- The meeting started with a general greetings and follows with an opening prayer led by an ~~member~~ elder of the congregation.
- Next the mission head ask for apology for the last planification program we passed round and never respected.
- the reason he gave was due to some administrative reasons at MINEP.
- He went further to explain the circumstances surrounding his journey from Yaounde to Oyumajock.
- Further, he gave a brief description of the N60 CARFAD and the various projects which they have been carried out.
- More to this, he presented the consultants made up of five members including the driver.
- At the end of the speech, the local chief pick up the talk.
- He complain of what happened last time and said he was estimating CARFAD to give them a turken. He also said as a farmer it means alot for them to spend a day like that with programmes not respected. He claim money for food, living expenses and other things.



Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West  
Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING

Place: EYUMUJOCK  
Villages concerned: OTU, AYABOKE, NDEBAYA, EYUMUJOCK, MBEJOM  
Date: 25 APRIL, 2009

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
1	Ndipon James Otta	Aya-oke	Farming	
2	Chief Ayamba Charles	Ndebaya	Chief	
3	Chief Arey Franklin	Mbenyan	Farmer	
4	Chief Djong Moses	OTU	NTUAFM OTU	
5	L. Chief Agbor Ata	Eyumujoek	L. Chief	
6	L. Chief Sylvester	Eyumujoek	member	
7	Erem Dolphine	GIZ-Pro BFE	Technical Assistant	
8	Agbor Alti Vincent	Otu	Applicant	
9	Anthony Atom Alti	Otu	Farming	
10	Etta Felix	Ndebaya	Farmer	
11	Ntui Ndipon Simon	Otu	Retired GIZ-PRO BFE Lecturer	
12	Agbor Sylvester	Ndebaya	Farmer	
13	Agbor Raphael Otu	Ayaboke	Farmer	
14	Agbor Ben Mbi	Ndebaya	Farming	
15	OBIATA MARTIN EIA	NDEBAYA	FARMING	
16	Ok Nchu John	Ayaboke	Farming	
17	Agbor Mathias Ntui	Aya-oke	Farming	
18	Bitty John Ndele	Aya-oke	Farming	



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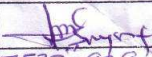

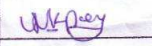
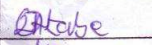
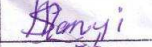




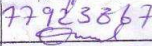
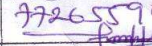
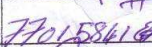



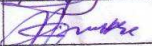




Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West  
Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING

Place: EYUMJOCK  
Villages concerned: OTU, AYAKKE, IVEBAYA, EYUMJOCK, MBENYAN,  
Date: 25TH APRIL, 2009

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
19	Enyong Joseph	Eyumjock	Farming	 75732929
20	Obi John Ekun	Eyumjock	Farming	 75732929
21	nd Akpey Veronica	Eyumjock	Farming	 75732929
22	Ojong Lucy Atabe	Eyumjock	Farming	 75732929
23	Atabe Scolar Marion	Eyumjock	Farming	 75732929
24	Ashu Henry	Ivebaya	Farming	 75732929
25	Cesilia Nkem	Mbenyan	Farming	 75732929
26	Obi Prodercia	Mbenyan	Farming	 75732929
27	Cariga Kenneth Hnaku	Eyumjock	Store Accountant	 75732929
28	Nkem Etta Julius	Eyumjock	Farming	 75732929
29	Mr. Nja Raymond Epa	Ayakke	Farming	 75732929
30	MR MBI Edwina Adam	Mbenyan	Business	 75732929
31	Akhu Mirabel Ay.	Otu	Business	 75732929
32	Atabe marion	Otu	Farming	 75732929
33	Ntui Celestine	Otu	Applicant	 75732929
34	Ntui Augustine	Otu	Farmer	 75732929
35	Ntui Joseph	Mbenyan	Farmer	 75732929
36	Obi Julius	Mbenyan	Farming	 75732929



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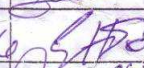






Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West  
Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING

Place: EYUMOTOK  
Villages concerned: OTU, AYAKKE, NDEBAYA, EYUMOTOK, MBENYAN  
Date: 25<sup>TH</sup> APRIL 2009

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
37	Nelson Peter	Mbenyan	Farmer	
38	Ong Hilary	Mbenyan	Farming	 75441247
39	Ayak Denis	Otu	Farming	
40	Ntui George	Ndebaya	Farming	
41	Ndum Michael Etta	Ayake	Farming	
42	Etta Simon Ong	Ayake	Farming	 9613354 34931958
43	Nkam Jeneth	?	Farming	
44	Oji Elvis Nkam	✓	✓	
45	Etche Richard A.	INOUUN	Journalist	
46	Felix Etta Nkam	Otu	Farming	



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①

Public Consultation meeting for EKOK,  
Nsanakang, Nsanganaghati 25/04/09

\* place of Meeting: EKOK.

\* Villages Involve: EKOK, Nsanakang, ~~Nsanganaghati~~ <sup>NSAMAGARATI</sup>

On the 25/04/09, a Public Consultation meeting was held at the Eyumojock sub-division Cat EKOK Village

The participant of the meeting were, the population of the three villages, the experts of CARFAD.

\* The meeting started with the presentation of CARFAD, CAFECO and the consultants of CARFAD.

\* Next we had the brief description of the project.

During the meeting, the power of speech was given to the population to give us their initiative of the negative and positive impact <sup>about</sup> this exploitation of FMU 11005 can bring.

Impact. Negative impact:

- Loss of Agroforestry zone	mitigation and measures. carving out of Agroforestry zone for farmers to till.
- scarcity of wildlife	mobilisation of NGO to set-up rearing farm of some other animals.
- Water problems as the sun will dry up completely the rivers	no logging near the rivers, and selective logging as well.



② *last of user right.	*the company must permit the farmers to cultivate in this zone. *Compensate the farmers in case of any destruction subtain.
*surface water pollution	- encourage directional felling. - keep riparian zone.
*destruction of public properties / course by wind.	creation of public NGO with funds to ready to compensate the victims.
Impact.	positive impact mitigation and Measures.
*creation of roads to link villages, thus ease communication and transportation.	* constant maintenance of the roads and building of bridges.
*Educational amelioration.	- construction of infrastructure.
*Reduction in the rural exodus (immigration of young people)	by creating of more employment in the zone.
Increase in employment.	sensitization.
Installation of the transformation unit at Eyumajock.	sensitization of the population.

### \* Expectations

- \* Building of Hospital.
- \* Building of permanent bridges.
- \* Construction of good community houses.
- \* CAFECO to help make sure that the 10% is paid to the population.

CARFAD.  
secretary  
Nangu Abraham.

*Nangu Abraham*

EKOK chief. Mission head.  
OJANG END Cyprian

*Ojangu*

Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West  
Region, Manyu Division  
ENVIRONMENTAL IMPACT ASSESSMENT

### ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING

Place : INOKUN Village (Primary school) OKURIKANG  
Villages concerned : ONAKU, EYANGEMANGHE, OKURIKANG, INOKUN  
Date : 26/04/2012

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
19	NDITON ANTHONY	OKURIKANG	Farmer	
20	Peter Onu	Okurikang	✓	
21	OSON	Okurikang	Farmer	
22	Eta Peter Onu	Okurikang	Farmer	
23	Achamang Jankor	Inokun	Farmer	
24	Obi Roland	Inokun	"	
25	Nkuk Fidelis	Inokun	"	
26	Elv. of Thomas	Inokun	Farmer	
27	Effim Oben Gilbert Nke	Eyangemanghe	Farming	
28	Reg. Chief, Akum A. Akilla	Okurikang	Farmer	



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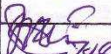
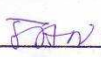



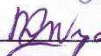
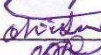

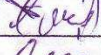

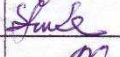




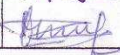


Forest Management Unit N° 11 005 Logging Project by CAFECOMIJMA in the South West Region, Manyu Division

## ENVIRONMENTAL IMPACT ASSESSMENT

## ATTENDANCE SHEET FOR PUBLIC CONSULTATION MEETING

Place : Babong  
Villages concerned :  
Date : 26<sup>th</sup> April 2009

No	Name (s) and Surname (s)	Village	Profession	Signature and telephone
1	Kheri Tanyi Moses	Babany	chief	 7454 40 64
2	Chief John Afanga Ajiman		Farming	
3	Nkechi Ikediora	Arara	farmer	 74 78609
4	Chief Eper Phr	Ekoaga	Farming	 74 44 3336
5	Chief Rep. Ayuk Costa	Abakpa	Teaching	
6	Chief Kp	Abakpa	Market	
7	Chief Imyang Olay	Ogungu	Farming	
8	Chief Olang Izodo	Abakpa	farming	
9	Ayuk Joseph C. O. Azong		farming	
10	Chief Representative	Babai	Farming	
11	Chief Rep Oron Okoro	Medu	farmer	
12	Kheri Fidelis	Arara	Farming	
13	Tabelataal Akpaka	Babong	farming	
14	Ayuk Janet	Ekemangan	House wife	A J
15	Queen Anne	Abakpa	Farming	O S A
16	Etta Gregory	Babong	Retire Warde	
17	Ayuk Roseline	Abakpa	business	
18	Offiong John	Ajoman	Farming	



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ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE FMU N° 11 005  
LOGGING PROJECT

Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West  
Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

Place: .....

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
19	Ete Peter N.	Babong	Applicant	<i>[Signature]</i>
20	Affangha Francis	Aransu	farming	<i>[Signature]</i>
21	Tabe Augustin B.	Babong	decoration	<i>[Signature]</i>
22	Oyong Denis A.	AKWA	F.	<i>[Signature]</i>
23	Fidels Ndep	Ogung	farming	<i>[Signature]</i>
24	Olong Mathew	Aransu	farming	<i>[Signature]</i>
25	Omon Paul	Aransu	farming	<i>[Signature]</i>
26	Mack Hans	Babong	Applicant	<i>[Signature]</i>
27	Agbor Valentine B.	Abolopa	Student	<i>[Signature]</i>
28	Olong Cosmas M.	Mbofong	Nursing	<i>[Signature]</i>
29	Agbor Donatus	Ekonamano	F.	<i>[Signature]</i>
30	Tom Oyong	Aransu	Farming	<i>[Signature]</i>
31	Ete Andrew	Babi	Farming	<i>[Signature]</i>
32	Tom Ete	Babi	farming	<i>[Signature]</i>
33	Mue Clement	Babi	farmer	<i>[Signature]</i>
34	Agbor John	Mbofong	farmer	<i>[Signature]</i>
35	Agbor Ete	Mbofong	Clergy	<i>[Signature]</i>
36	Ete Cosmas	Alawa	Scholar	<i>[Signature]</i>
37	Ndijon Denis	Ndijon	farmer	<i>[Signature]</i>
38	Ndep Raphael		Grammar	<i>[Signature]</i>
39	Agbor Pauline A.	Ogung	Farming	<i>[Signature]</i>
40	ORA Josephine	<del>Mbofong</del> Mbofong	Farming	<i>[Signature]</i>



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Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

Place: .....

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
40	Beti Hendritta D.	Babi	Farming	B.S.
42	Etta Nicholas	Babong	Farming	Etta
43	Nkom N. Ndifon	Babong	Farming	Nkom
44	Oru Etim	Babi	Farming	Oru
45	Ndep Christopher	Babong	Chief capture	Ndep
46	Bi Soing Celine	Babong	Chief capture	Ndep
47	Oben Beneliter	Babong	Chief capture	Oben
48	Effim Rose	Babong	Farming	Effim
49	Nelson Mykye	Mbutor	Farming	Nelson
50	OLang winifred	Akwa	Farming	OLang
51	OUTH Passline	Ajamen	Farming	OUTH
52	Anna Ben	Ajamen	Farming	Anna
53	Ayuk Beatrice	Mbobui	Farming	Ayuk
54	Michael Nkw	Anouba	F	Michael
55	Ayuk Beatrice	Arraru	F	Ayuk
56	Alban Zouky	Ozouva	F	Alban
57	Prince Orl Denis	Mbobui	Farming	Prince
58	He	ERU	ong	He
59	Oru Gilbert	mbobui	Farming	Oru
60	Min felix	Dorki	Farming	Min
61	Mkongho Comon	Ogoung	Student	Mkongho
62	Oyong	Piquito		Oyong



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Forest Management Unit N° 11 005 Logging Project by CAFECOMIUMA in the South West  
Region, Manyu Division

ENVIRONMENTAL IMPACT ASSESSMENT

Place: .....

N°	Name (s) and Surname (s)	Village	Profession	Signature and telephone
63	AGBOR John	Ogong	Farming	[Signature]
64	Okang Ntu	Babong	Farming	[Signature]
65	Etta Johnson	Babz	Farming	[Signature]
66	Obuzery Michael	Ajaman	Farming	[Signature]
67	Delus Achoman	Ajaman	Farming	[Signature]
68	Ozu Paul	Babong	Farming	[Signature]
69	Otang cyril	Akwa	Farming	[Signature]
70	ASICK Grace	Bakut	Tailoring	[Signature]
71	AGUK Kendy	Ekogate	Farming	[Signature]
72	Anne Wmeh	Arreah	Farming	[Signature]
73	Ogem Florence	Akwa	Farming	[Signature]
74	Ayuk Magdelaine	Mbotony	Farming	[Signature]
75	Loueline Efr.	Arareh	Farming	[Signature]
76	Abeh Richard	Babong	Farming	[Signature]
77	Obasi Joseph	Babz	Farming	[Signature]
78	Tobot Robert B.	Babong	Educatorist	[Signature]
79	Obi Ndip Dion	Ekogate	Student	[Signature]
80	Okon Rose	Ekogate	Farming	[Signature]
81	Assunjo Sophia	Ekogate	Farming	[Signature]
82	Obi Ernest Ndip	Ekogate	Educatorist	[Signature]
83	Ayuk Petro	Akwa	Farming	[Signature]
84	Oin Christantus	Mbobui	Business	[Signature]



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Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West Region, Manyu Division

## ENVIRONMENTAL IMPACT ASSESSMENT

Place: \_\_\_\_\_

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⑦

the meeting with the administrative officers of the Eyumojock subdivision on the 28/04/09.

Place of the meeting: Eyumojock conference hall.

The meeting involves the administrative and Council authorities namely:

- Sub-divisional officer of Eyumojock.
- ~~Forestry~~ ~~chief~~ ~~of post~~ ~~EKOK~~ ~~EYUMOJOCK~~.
- ~~Sub-delegate of MINFOR~~ ~~MINADER~~ <sup>and</sup> ~~MINADER~~.
- sub-divisional delegate of MINADER.
- And the representatives of NGOs in this area.

The agenda of the meeting held is as below.

- Prayer.
- Word from the Divisional officer.
- presentation of the team of experts.
- The summary of environmental impact assessment.
- Presentation of the activities of the promoters (CAFECO).
- Summary of the field report as to what concerns the population's initiatives towards the negative and positive impact as well as their main expectations.
- Reaction from the audience.
- Closing remarks.

\*

The meeting started with the mission head greetings and allocation of the various activities as the meetings will be going on to each of the members involved. (presentation of the agenda).



②

The mission head appointed the sub-divisional officer to lead us in prayer.

He later gave him the floor to have a word with the ~~congre~~ people.

In his speech, he gave a brief explanation of what the meeting will be all about. He also went further to reveal the agenda of the day and he appealed to the general congregation to be attentive and be braver enough to ask the team ~~was~~ many questions as they could. Further he thanked the mission team again and gave him the floor.

The mission head stood up again and did the introduction of the team of experts and went further to give the activities or domain of intervention of CARFAD in the society as a whole. He also said CARFAD is licensed by MINEP to carry out this activities. At the end of his speech, he gave the floor to the second speaker of the team of experts.

When he started, he gave a summary of what environmental impact assessment is all about. He ~~also~~ gave the procedure taken to be able to carry out the assessment in any area. During his speech, he clearly make known to the audience how important it is to carry out this assessment in the area.

③

Further more, he explain the functions and duties of CAFECO so far as the FMU 21005 project is concern.

The third speaker of the team of experts stand up after the second speaker has finished ~~speech~~ and explain the major impact both negative and positive as well as the expectations he were generally identify by the villagers. Some of this negative impact he named were:

- deforestation.
- destruction of archeological sites.
- loss of agroforestry zones.
- loss of biodiversity.
- surface water contamination.

He also went further to explain the solution ~~the~~ on the mitigation measures proposed by the villagers. By this, they said:

- CAFECO should ~~say~~ sensitise their employees to respect their tradition.
- CAFECO should open provision stores for beef, fish at low prices.
- the propose compensation in some cases of crop destruction and other social and or individual proprieties.

He also said the villagers acknowledge the fact that the activities of CAFECO will



(14)

create employment, reduction of royal exodus, good roads systems and others.

As for what concern the expectations of the villagers, he said, the villagers propose that, CAFECO should:

- creation of scholarships for the young people;
- Provide good bridges;
- Building of hospitals;
- Building of schools;
- Creating of the transformation unit at Eyangjak.

At the end of his speech, the mission head pick up the ~~speech~~ floor again and ask the congregation to give their concern towards the negative impact and the positive impact as well.

A floor member stand up to propose that CAFECO should use petrole rather than using gas oil for their cars and a lot of afforestation to be able to reduce the air pollution in the zone.

The DDO propose for a periodic medical team sponsor by CAFECO to visit the hospitals every six month in the health centres which they will create.

Another floor member also proposed that the medical team should come along with drugs at a very low rate affordable by the villagers.

As to what concern the pollution of surface water, the DDO said CAFECO should be able to group villages and provide a pipe born water to them and also the creation of water point.

(5)

A member from the audience propose that all the trees which is going to create more of negative impact to the community <sup>when felling,</sup> CAFECO should avoid such trees.

For what concern the impact of ~~defore~~ deforestation, a floor member proposed that, CAFECO should train people how to carry out <sup>activities</sup> nursery them selves, before the process of reforestation.

The floor members also propose the conservation of the biodiversity hot spots, in areas where very special species are located.

The IDO said the CAFECO workers are doing alot of poaching than expected so the CAFECO workers should stop the poaching and this can be done by sensitization of the workers.

Further a floor the chief of post of forestry per in Ekoh proposed that a map showing the FMU 11005 should be provided to the main offices in the Eguemojack sub-division. But another person said of this is not done is due to the fact that the whole reserve have been given to CAFECO; and there are no limits clearly drawn. They should also do every thing to avoid the secret shrimers not possible to be compensated. When the IDO pick up the premier to speak again, he said the cahier de charge of CAFECO <sup>are</sup> with the local administration and so he propose that CAFECO should try to do every thing to be in good terms with the population and with the



⑥ the SDO collaborators. He finally concluded that, CAFECO has made him to have very bad memories about them due to so many reasons, thus they should do their best to keep in good terms with the population.

As to what concern the archeological zones, the SDO propose that the villages which have a common sacred zone, and accept compensation, they should call all the villages together and the compensation be done as a whole.

For STIs and AIDS, the congregation proposes, proposed for a sensitization with more serious personnel of the team. He also said CAFECO can form a team with him (SDO) as a member who will be able to talk to these people in the language they will understand best. They also proposed a follow up team to see if the sensitization carried out was or well done.

For the risk of accident, the SDO said some control mechanism should be put in place to see that no driver drinks before driving. Also, they should increase the ~~area~~ widthness of the road and the drivers should be aware that there are other users of the road.

The SDO said CAFECO should respect their <sup>provisional</sup> compensation period for three years should be respected.

⑦

As to what concerns the damages to the farms, a floor member proposed that the farm lands should be ~~not~~ carved out and work in other areas without destruction of the crop. Thus the map of the limitation should be done with the community so that the farm lands can be well located.

The SDO added that the CAFECO should help do the maintenance of all other roads and not only the ones they use.

A floor member propose that CAFECO should change the way of their social interaction.

As far the methodology of employment, the members proposed that, CAFECO should ask the villages to provide the workers. They also said the local recruitment of unskilled labour should be in the ratio 3:1 and at least 70% should be coming from the zone directly concern. Also, they said, CAFECO should buy their young trees to be planted from the villagers themselves from their nursery.

After all of the analysis of the impact, the third speaker of CAREAD read down the general expectations of the villages as they demanded. They include some very important points like training of the villagers themselves.

CAREAD secretary.

Nungu Abraham



The sub-divisional officer.



KAMARA JIVINE KAMARA

mission head.



MABOUL EBANGA



Егуможок. 28/04/2009.

Forest Management Unit N° 11 005 Logging Project by CAFECO/WIJMA in the South West Region, Manyu Division

## ENVIRONMENTAL IMPACT ASSESSMENT

Place: \_\_\_\_\_

[illegible]

P.O.Box 885 Yaounde, Tel. 22 31 08 92 / 22 05 94 96  
www.carfad.net, carfadcameroun@yahoo.fr

## LIST OF LOCAL STRUCTURED GROUPS



**Appendix 10: List of local groups**

<b>Locality</b>	<b>Type of Organisation</b>	<b>Denomination</b>	<b>Goals of organisation</b>
Babong	CIG	ETEM YAH File and Cutlass Sarl	Mutual Help
	CIG	NCHEMABOH	Mutual Help
	CIG	BABONG YOUNG Farmers	Mutual Help
	CIG	OROKEP MBENGI	Mutual Help
	CIG	NOCX EJAIT find your own	Djangi
Araru	CIG	OKOT OBASSI	Palm and Cassava Farming
	CIG	UMTY LADIES	Cassava Farming
Nkhogo	Association	NKOGHO STIKERS POWER	Clearing
	Association	EKONG YANGSA	Clearing
	Association	Presbyterian Church Group	Cocoa farming
	Association	OKA Odieucy	Cocoa farming
Bakut	Association	EGOUWA ROGO	Mutual help Savings
	Association	AGBO AGNYA the children of ATAGYIA	Mutual help Savings
	Association	One hand	Mutual help Loans Savings
Ekogate	Association	EKPE Society	Tradipractitioners
	Association	EKOGATE youths	Mutual Help Management of the village
	Association	Forest management committee	Management of the annual forest taxes and control NTFP traffic
Ogurang	Association	YANKA OBOR	Mutual Help
	Association	Youth Association	Mutual Help Cocoa farming Vigilante committee, Saving
	Association	ABONESI	Mutual Help
	Association	BEFONC	Mutual Help

Locality	Type of Organisation	Denomination	Goals of organisation
Babi	Association	OMENE Jekonne	Mutual Help
	Association	ONO BEJI	Agriculture Mutual Help
	Association	NSI	Agriculture Djangis
	Association	BIFUN	Agriculture
Mbobui	Association	PMENEJEKOUME	Mutual Help
	Association	ONOBELI	Agriculture
	Association	NSI	Djangis
	Association	BIFUN	Agriculture
Mbofong	Association	PILA	Mutual Help Cocoa transport
	Association	MBOUSSA MBOFONG STUDENT Association	Mutual Help
	Association	VANKAGA AGBOR	Mutual Help Savings Loans
Akwa	Association	Young Farmers	Mutual Help
	Association	KPRENE ACHAK	Mutual Help Saving
Ekoneman Ojong	Association	Youth Association	Saving, Village hygiene
	Association	Ekpe Association	Mutual Help
Ndebaya	Association	ENOK ENOK	Mutual Help
	Association	OBOCANSI	Mutual Help
	Association	NDEMASINGANA	Mutual Help
	Association	Youth Association	Transportation of goods to Nigeria Digging of latrines
Okurikang	Association	Okurikang womens group	Njangi, Community works
	Association	Okurikang challenges club	Village development
	Association	Okurikang farmers group	Agricultural development
	CIG	EGAIPKWAI	Agricultural development

Locality	Type of Organisation	Denomination	Goals of organisation
Inokun	Association	EKUMI FERIADO	Community works
	Association	AYE NWA AJAGEM	Community works
	Association	Let them say	Community works
	Association	AKAREM Women	Community works
	Association	ONE INOKUN ONE Youth	Community works
Mbenyan	Association	EJEN KPE EYEN	Mutual Help
	Association	EJUM EYIM YAH	Community Saving
NSANARAGATI	Association	ECHEMABIGI	Village development
	Association	OSENGHE	Village development, Women emancipation
	Association	CARGO CARRIA Association	Village development, Transport
	CIG	Let try and see	Community works
	CIG	Forest fighter	Community works
Ekoneman Awa	Association	ATOCKA ACHANG	Njangi, Community works
	Association	Lets try and see	Community works
	Association	Men of good will	Community works
	CIG	ERORENFA	Community works, Ensure peace
Otu	CIG	Otu Palm oil group	Community works
	CIG	Young Cassava farmers	Community works
	CIG	Banana Young farmers	Community works
	Association	Otu youths development Association	Community works
	Association	Catholic Women Association	Promotion of women unity, Community works
Okuri	Association	Okuri Men Association	Mutual help, Community works
	Association	Okuri Youths Association	Mutual help, Community works
Mbinda	Association	Mbinda Women Association	Community works
	Association	Men for Development	Community works
	Association	Mbinda youth development	Community works
	CIG	ESEH NEM OSEH	Community works, Cocoa transport
	CIG	Young stars	Community works Cocoa transport

Locality	Type of Organisation	Denomination	Goals of organisation
Ayaoke	Association	Lets try and see	Njangis Mutual help
	Association	Christain fellowship	Loans savings
	Association	Catholic women association	Labour
	CIG	Young farmers club	Community works
	CIG	Mbattu young farmers	Mutual help Community works
Onaku	Association	NNE ARE ARU EJA OKOT	Community works
	Association	Young Gamers association	Community works
	Association	Onaku Youth association	Village development
	CIG	Onaku women cassava group	Community works
	CIG	Onaku cassava group	Community works
Eyang Mangha	Association	Akwaya General meeting	Mutual help
	Association	Eyang women's group	Community works
	Association	Eyang youth association	Village development Community works
	CIG	NE-ATING	Community works
	CIG	OKI YEBA ABO	Savings Community works

**MARTIN FECTEAU'S CHECK LIST**

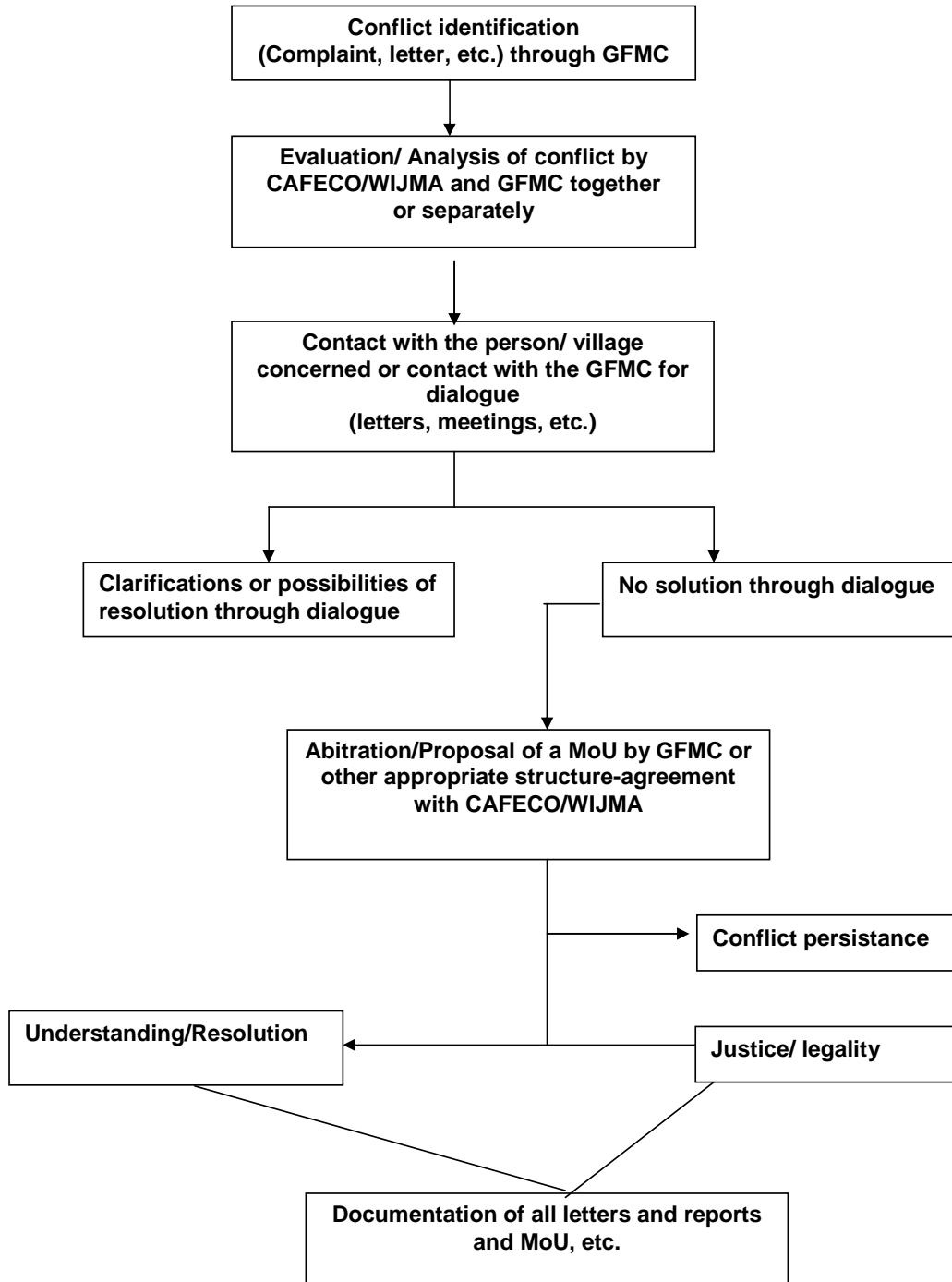
**APPENDIX 11: MARTIN FECTEAU'S CHECKLIST**

Magnitude	Extension	Duration	Absolute Importance
High	Regional	Permanent	Major
		Average	Major
		Short term	Major
	Partial	Permanent	Major
		Average	Medium
		Short term	Medium
	Specific	Permanent	Major
		Average	Medium
		Short term	Minor
Medium	Regional	Permanent	Major
		Average	Medium
		Short term	Medium
	Partial	Permanent	Medium
		Average	Medium
		Short term	Medium
	Specific	Permanent	Medium
		Average	Medium
		Short term	Minor
Low	Regional	Permanent	<i>Major</i>
		Average	<i>Medium</i>
		Short term	Minor
	Partial	Permanent	Medium
		Average	Medium
		Short term	Minor
	Specific	Permanent	Minor
		Average	Minor
		Short term	Minor



**CAFECO/WIJMA CONFLICT RESOLUTION PROCEDURE FOR FMU11005**

**Appendix 12: CAFECO/WIJMA conflict resolution procedure for the FMU 11005**



## DETAILS OF THE COST OF MEASURES

### Appendix 13: Details of the cost of measures

#### Estimate cost of sensitisation

Designation of task	unit	Quantity	Unit cost (CFAF)	Total cost (CFAF)
Honorarium of consultants	Month	12	300 000	3 600 000
Displacement of consultants	Lump sum/month	12	150 000	1 800 000
Brochures	U	2 500	500	1 250 000
Meeting fees	Lump sum	1	500 000	500 000
Communication	Lump sum	1	200 000	200 000
<b>TOTAL</b>				<b>7 350 000</b>

#### Estimate of cost of cultural heritage

Task	Unit	Quantity	Unit cost (CFAF)	Total cost
Training of the Social Technician	Lump sum	1	1 500 000	1 500 000
<b>TOTAL</b>				<b>1 500 000</b>

#### Estimate of cost of staff store

Task	Unit	Quantity	Unit cost (CFAF)	Total cost
Container with shelves and roof	Lump sum	1	2 000 000	2 000 000
Fridges	U	2	600 000	1 200 000
Salary of the sale agent	Month	12	60 000	720 000
<b>TOTAL</b>				<b>3 920 000</b>

#### Estimate of cost of waste management

Task	Unit	Quantity	Unit cost (CFAF)	Total cost
Construction of a concrete surface at the waste recuperation centre (10mx5mx0,05)	m <sup>3</sup>	2.5	120 000	300 000
Construction of the vehicle and machines washing point (20mx10mx0.05)	m <sup>3</sup>	10	120 000	1 200 000
Construction of the oil recuperation pit at the washing point	Lump su	1	300 000	300 000
<b>TOTAL</b>				<b>1 800 000</b>

#### Estimate of the cost of the assistance in agropastoral and piscicultural projects

Task	Unit	Quantity	Unit cost (CFAF)	Total cost
Trainings (one session in each of the three zones of the project)	Lump sum/session	3	2 000 000	6 000 000
Provision of the acquisition of inputs for the pilot projects (one pilot project in each of the three zones of the project)	Lump sum/pilot project	3	2 500 000	7 500 000
Elaboration and follow up of projects	Lump sum/month	24	400 000	9 600 000
<b>TOTAL</b>				<b>23 100 000</b>

#### Estimate of the cost of the assistance in the creation of tree nurseries

Task	Unit	Quantity	Unit cost (CFAF)	Total cost
Provision of the acquisition nursery equipment and seeds (one nursery in each of the three zones of the project)	Lump sum/nurser	3	500 000	1 500 000
<b>TOTAL</b>				<b>1 500 000</b>