CWCS

Cameron Wildlife
Conservation Society

Biodiversity Conservation and Management Project
Douala-Edea Wildlife Reserve

Projet de Conservation et d'Aménagement de la Biodiversité
Réserve de Faune de Douala-Edéa

Report of Activities: 2002
Rapport d'Activités: 2002

CWCS Project
Douala - Edea Wildlife Réserve
BP 54 Mouanko, Littoral Province
Cameroon

January/Janvier, 2003

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PREFACE

The development of long-term strategies for the management and conservation of her enormous rich biodiversity and renewable natural resources has been one of the priorities of the Cameroon government. Douala- Edea Wildlife Reserve (DEWR) is one of the reserves gazetted to achieve this goal. The Douala-Edea reserve, gazetted as a wildlife reserve in 1932 with a total surface area of 160.000 ha, is located in the coastal plains of the Sanaga valley within the Kribi- Douala basin in the Littoral province of Cameroon (see map). As a major wetland area encompassing two basic ecosystems (marine and humid forest), the reserve has a high biodiversity value. The reserve has diverse vegetation types: primary lowland Congolian rainforest, secondary forests, open farmlands and the mangroves; interspersed with large swamps and dense network of rivers and lakes supporting high densities of forest mammalian species notably river hogs, bush pigs, sitatunga and various primate species of conservation importance such as black columbus monkey, and chimpanzees including forest elephants. The reserve is also home to many water and terrestrial bird species. The marine ecosystem and Atlantic coastal system of the area is biologically rich in various aquatic resources notably in species such as sea turtles, dolphins, crocodiles and the highly threatened West African manatee, which are of international conservation importance.

In general, very little biological information exists on the reserve. There was need to under take targeted studies aimed at gaining knowledge on ecological diversity, resource richness and conservation potentials of the reserve since effective management and sustainable exploitation of resources in the area could only be ensured through a better understanding of its ecological diversity. The Government on its part set up structures to ensure conservation of the resources and the reserve remained largely neglected, law enforcement virtually absent as this was left to be ensured by an ill-equipped conservator and a single game guard. Therefore the rich ecological diversity reported for the reserve remained increasingly under pressure from unsustainable exploitation and illegal encroachments stemming from a multitude of factors principally orchestrated by mankind's persistent quest for survival especially: the rather expanding demand of natural resources as a result of the growing rural population in view of large number of villages (more than 60) with population over 10000 situated within and on the periphery of the reserve coupled with proximity of the reserve to highly populated urban centres of Douala, Edea, Kribi and Yaounde; timber exploitation and petroleum exploration activities; poaching; large scale agricultural activities including extensive industrial palms and rubber plantations; urbanisation; and over exploitation of the mangrove vegetation by local fishermen who use the fuel wood for fish smoking.

In the light of the above situation, there was the urgent need to conserve this rich biodiversity while improving on the living standards and economic conditions of the local population who despite the richness of the region in natural resources, remained impoverish, since no management system existed to ensure more rational, sustainable and organised methods of resource exploitation.

Cameroon Wildlife Conservation Society (CWCS), a national non-governmental conservation organisation, has been working in collaboration with the Ministry of Environment and Forests (MINEF) towards the development of a long-term conservation strategy for the Douala-Edea reserve aimed at putting in place a management system that:

- Seeks to protect the rich ecological diversity of the reserve;
- Promotes sustainable exploitation of the resources by the local population ; and
- Fosters socio-economic development of the surrounding population.

A draft management plan aimed at balancing the needs of the local people while also trying to safeguard the ecological integrity of the reserve would be developed at the end of ongoing programme. The management plan would also help both management authorities and the local population in defining roles of each partner in the resource management process in order to safeguard long -term utilisation of the resources in the area.

The Project has undergone two successful funding phases:

- Between April 1997 and March 1999, funding from Netherlands Committee of IUCN enabled the Project to undertake baseline biological and socio-economic inventories to address various resource use issues; work with local communities, MINEF authorities and related Government services (education, agriculture and health) to promote rational exploitation of resources and ensure sustained livelihoods; and to promote training of young Cameroonians in ecological research, biodiversity conservation and protected area management.

- The second phase from January 1999 till December 2000 with a bridge period in 2001 has been funded by Dutch Development Organisation (NOVIB) with three components developed with a strong tilt towards collaborative and participatory management of resources with local population as key players to embrace conservation and developmental issues linked to poverty alleviation, gender equity, society building, policy influence and economic development of the region. The following programmes and aims were implemented:

- Project Management and Institutional Building focuses on putting in place infrastructure and building collaborative ties with local communities and administration to ensure successful execution of the programme;

- Management and Participative Rural Development that comprises socio-economic work in villages (i.e. building of village based resource management committees, establishment and support to nature clubs for environmental protection in schools, sensitisation campaigns, boundary demarcation, etc);

- Research and Monitoring component that involves conducting baseline / management oriented research, needed to consolidate and extend existing knowledge on the flora and fauna of the region aspects of resource exploitation, threat analysis, etc.

The Project is currently in its third funding phase that started in January 2002 with overall objective of contributing to a viable economic and ecological development of the DER by improving on the present systems of resource exploitation in order to achieve its long-term objective of biodiversity conservation and socio-economic development of the local populations. The main activities developed under four components of the present three year phase building on the experiences of the previous years on biodiversity values, threats and multiple use of natural resources include: building community organisations, enlarging the area of agroforestry and riverine vegetable cultivation, construction of energy-saving fish smoking ovens in the mangrove zone, reinforcing government anti-poaching missions as well as capacity building for the NGO and enhancing the role of women's groups in the overall management of natural resources. A management plan for the reserve would be finalised in co-operation with relevant government services, private sector and other partners.

The long-term goal of this endeavour is invariably to help MINEF in redefining the reserve boundaries, development of a management plan, providing a sound scientific data base for its management and putting in place a collaborative management system that will guarantee the interest and participation of the local people.

The programme has been managed by a core full time field team of 12 with an office based in Mouanko, the reserve headquarters. The entire field team is Cameroonian extremely motivated and dedicated to work towards effective protection and management of the nation's rich and diverse natural resources. This arduous challenging responsibility is invariably non but that of Cameroonians to define and shape the common future of our enviable natural heritage.

This report is a progress report covering the period January to December 2002. It focuses on the status of accomplished activities highlighting the main problems associated with implementation of planned activities and some emerging issues. It also highlights some useful recommendations from lessons learned.

We remain greatly indebted to MINEF for not only granting us the authorisation to carry out our activities in the Douala-Edea Reserve but also their ready co-operation at all times and at all levels; Our donors, NC-IUCN and NOVIB for providing the necessary financial support for ensuring the smooth implementation of the programme. We also appreciate the enriching partnership with the local communities, relevant local and provincial government services especially Agriculture, Livestock, Fisheries & Animal Industries, Education and the local administration; as well as international NGOs especially WWF-CPO, Birdlife International -CPO, Wetlands International, SNV and Mangrove Action Project for involving the Project in their various capacity building programmes.

Gordon N. Ajonina
Project Co-ordinator
CWCS Douala-Edea Programme

AVANT- PROPOS

La mise sur pied des stratégies de gestion et de conservation durables de l'énorme potentiel de sa biodiversité et de ses ressources naturelles est l'une des priorités du gouvernement camerounais depuis quelques décennies. La réserve de Faune de Douala-Edéa est l'une des aires protégées créées dans cette perspective. Cette réserve de 160 000 ha date de 1932 et est située dans les plaines côtières de la vallée de la Sanaga, à l'intérieur du bassin de Kribi-Douala (voir la carte). Constituée de mangroves et de forêts humides, la réserve de Faune de Douala-Edéa renferme de nombreuses ressources naturelles qui lui confèrent une grande importance dans la conservation en général. Sa végétation diversifiée est composée de forêts congolaises humides de basse altitude, de mangroves, des forêts secondaires et contient de vastes espaces cultivables. Elle est parsemée de marécages et de plusieurs lacs et cours d'eau qui abritent plusieurs espèces de mammifères tels que le Potamochère, le Sanglier, le Sitatunga. On y trouve aussi une grande variété d'espèces de première importance dans la conservation telles que la Colombe de satan noir, le Chimpanzé et l'Eléphant de forêt, plusieurs espèces d'oiseaux aquatiques et terrestres et de nombreuses ressources aquatiques comme les Tortues marines, les Dauphins, les Crocodiles et le très recherché Lamantin d'Afrique Occidentale.

De manière générale, il existe très peu d'informations biologiques sur la réserve de Faune de Douala-Edéa. C'est de cette situation qu'est apparue la nécessité d'entreprendre des études scientifiques qui, à terme, doivent enrichir la connaissance sur la diversité écologique et les disponibilités en ressources naturelles de cette aire protégée qui doivent conduire à la mise sur pied d'un plan d'aménagement et de gestion durable des ressources de ce milieu. Le gouvernement camerounais a créé une structure de conservation de la réserve de Douala-Edéa, mais celle-ci est restée négligée, caractérisée par un faible statut juridique et disposant d'un personnel sous-équipé réduit à un conservateur seul. Par conséquent, la riche biodiversité écologique de la Réserve reste sous une pression croissante due à l'exploitation incontrôlée et l'envahissement illégal découlant de nombreux facteurs principalement liés à la permanente quête humaine des moyens de survie. Il s'agit en l'occurrence de l'expansive demande des ressources naturelles consécutive à la croissance de la population rurale qui est actuellement estimée à plus de 10 000 âmes réparties dans de nombreux villages (plus de 60) à l'intérieur et autour de la réserve ; de la proximité des grands centres urbains de Douala, Edéa, Kribi et Yaoundé ; des activités d'exploitation de bois et d'exploration pétrolière ; du braconnage ; la création de nombreuses plantations industrielles de palmier à huile et d'hévéa tant à l'intérieur qu'à la périphérie, l'urbanisation et la surexploitation commerciale de la végétation de la mangrove par les pêcheurs pour le fumage du poisson, comme étant les activités qui fragilisent cette aire protégée.

C'est au vu de ce qui précède qu'il s'est avéré urgent de mettre sur pied un système qui garantisse une gestion rationnelle et durable de la riche biodiversité de ce milieu et permette l'amélioration du niveau de vie et des conditions économiques des populations locales qui, en dépit d'importantes ressources de leur environnement, restent pauvres.

La Cameroon Wildlife Conservation Society (CWCS), une ONG nationale créée en 1994, collabore depuis 1997 avec le Ministère de l'Environnement et des Forêts au développement d'une stratégie de gestion durable de la réserve de Douala-Edéa. Cette collaboration a pour finalités de:

- Protéger les multiples ressources naturelles de la réserve;
- Promouvoir une exploitation durable de ces potentialités par les populations locales; et
- Oeuvrer pour le développement socioéconomique des communautés résidant dans la réserve.

A l'issue des nombreuses études qui ont été entreprises, un plan d'aménagement protégeant les intérêts des populations et sauvegardant l'intégrité écologique de la réserve devra être publié. Celui-ci permettra aux pouvoirs publics et aux communautés locales de définir le rôle de chaque partenaire du processus de gestion et d'utilisation à long terme des ressources de cette aire protégée.

Le projet a traversé avec réussite deux phases:

- Entre avril 1997 et mars 1999, un financement du Comité Néerlandais de l'Union Mondiale pour la Conservation (NC-IUCN) lui a permis de :

- Produire les données biologiques et socioéconomiques nécessaires pour l'élaboration du processus d'exploitation des différentes ressources de la réserve;
- Travailler avec les populations locales, les autorités du MINEF et les services publics compétents pour la promotion d'une exploitation rationnelle des ressources de cette aire;
- Promouvoir la formation des Camerounais dans le domaine des recherches en écologie, dans la conservation de la biodiversité et dans la gestion des aires protégées.

- La seconde phase de janvier 1999 à décembre 2000 avec une période de transition en 2001, financée par l'Organisation Néerlandaise pour le Développement International (NOVIB), avec une forte orientation vers la promotion d'une gestion participative des ressources, avec les populations locales comme principaux acteurs. Dans ce sens, les populations locales doivent être prises en compte dans la définition de la politique du gouvernement en matière de gestion des ressources naturelles de ce milieu. A terme, celle-ci doit contribuer à réduire la pauvreté au sein des communautés de la réserve et renforcer l'équité entre les individus de tous les sexes en vue de l'établissement d'une société forte et prospère. C'est au vu de l'importance de ce processus qu'il est apparu nécessaire de redéfinir les stratégies et approches du projet. Celles-ci ont désormais pour finalités de :

- Renforcer les capacités infrastructurelles et institutionnelles du projet à travers l'acquisition des locaux et l'établissement des relations avec les administrations et les communautés riveraines de la réserve pour une réalisation efficiente de ses programmes;
- Initier un processus de développement participatif basé sur des travaux socioéconomiques dans les villages (établissement des comités villageois de gestion des ressources naturelles, établissement et appui aux clubs de protection de la nature des écoles, campagnes de sensibilisation, processus d'établissement des limites de la réserve, etc);
- Réaliser de multiples études et suivis concernant la collecte des données de base et la mise sur pied des stratégies de gestion nécessaires pour successivement enrichir les connaissances sur la faune et la flore de la réserve et surmonter les obstacles à une exploitation rationnelle et durable des ressources de la réserve.

Le projet est actuellement à sa troisième phase qui a commencé en janvier 2002 avec l'objectif global de contribuer à un développement durable de la réserve de Douala-Edéa à travers l'amélioration des systèmes actuels d'exploitation des ressources en vue d'assurer la conservation de la biodiversité et le développement socioéconomique des populations locales. Les principales activités développées au sein de quatre composantes au cours de cette phase de trois ans, découlent des expériences des phases précédentes sur les valeurs de la biodiversité, des obstacles et de nombreuses utilisations des ressources naturelles. Il s'agit du soutien à l'organisation communautaire, l'augmentation des espaces d'agroforesterie et d'agriculture sur les bancs de sable, la construction des fumoirs améliorés dans la zone des mangroves, le renforcement des missions gouvernementales de lutte anti-braconnage, le renforcement des capacités de l'organisation (CWCS)

et le renforcement du rôle des groupes de femmes dans le processus global de gestion des ressources naturelles.

L'objectif à long terme de cette démarche est d'aider le MINEF à redéfinir les limites de la réserve, établir un plan d'aménagement de cette aire, et disposer d'informations scientifiques nécessaires pour la mise sur pied d'un système de gestion participative qui protège les intérêts et garantisse la participation des populations locales.

Le programme sur le terrain est développé par une équipe technique constituée de 12 personnes installées à Mouanko, siège de la réserve. Cette équipe est entièrement camerounaise et est hautement motivée à œuvrer pour une conservation effective et une gestion durable des ressources naturelles de notre pays. La responsabilité de cette tâche d'envergure incombe particulièrement aux Camerounais qui doivent définir et gérer le destin de leur patrimoine naturel.

Le présent rapport, qui couvre les activités du projet pendant la période de janvier à décembre 2002, est un récapitulatif des réalisations effectuées, des difficultés auxquelles le projet a été confronté et des recommandations qu'a suggérées l'application des programmes suivis au cours de cette période.

La CWCS est reconnaissante envers le MINEF pour le développement de ses différents programmes. Non seulement il lui a accordé les autorisations nécessaires pour qu'elle mène convenablement ses activités sur le terrain, mais il n'a ménagé aucun effort pour lui garantir sa collaboration à tout temps. Elle est aussi reconnaissante envers les bailleurs de fonds NC-IUCN et NOVIB pour leur incommensurable appui financier pour un développement harmonieux des stratégies adoptées par l'organisation. On ne saurait taire le partenariat que le projet a établi et entretenu avec les communautés, les services publics locaux (l'agriculture, l'éducation, les pêches et l'industrie animale, les autorités préfectorales) et la collaboration scientifique des organisations internationales comme WWF-CPO, Birdlife International - CPO, Wetlands International, SNV et Mangrove Action Project qui ont accepté d'inclure le projet dans leurs differentes programmes de renforcement des capacités institutionnelles et techniques.

Gordon N. Ajonina
Coordinateur du Projet
Programme CWCS Douala-Edéa

ABBREVIATIONS/ACRONYMS

BDCPC	Biodiversity Development and Conservation Programme Cameroon
BL-CPO	Birdlife International - Cameroon Programme Office
CAN	Club des Amis de la Nature
CBP	Capacity Building Programme (SNV)
CEBEC	Congrégation des Eglises Baptistes et Evangéliques du Cameroun
CEW	Cameroon Environmental Watch
CIG	Common Initiative Group
CWCS	Cameroon Wildlife Conservation Society
COC	Cameroon Ornithological Club
DEWR	Douala -Edea Wildlife Reserve
DFAP	Direction de la Faune et des Aires Protégées
DFID	Department For International Development
DPAL	Delegation Provincial d'Agriculture du Littoral
EE	Environmental Education
EIA	Environmental Impact Assessment
FESP	Forest – Environment Sectorial Programme (MINEF)
GIC	Groupe d'Intiative Commune
GIE	Groupe d'Intérêt Economique
GIS	Geographic Information Systems
GPS	Geographic Positioning Systems
IRAD	Institut de Recherches Agricoles pour le Développement
INADES	Institut National Africain pour le Développement Economique et Social
IUCN	International Union for the Conservation of Nature
JCI- DL	Jeune Chambre Economique – Douala Leader
LYMO	Lycée de Mouanko
MAP	Mangrove Action Project
MINAGRI	Ministry of Agriculture
MINEDUC	Ministry of National Education
MINEF	Ministry of the Environment and Forests
MINEPIA	Ministry of Livestock, Fisheries and Animal Industries
NC	Netherlands Committee
NGO	Non-Governmental Organisation
NOVIB	Dustch Organisation for International Development Co-operation
NTFPs	Non-Timber Forest Products
ONG	Organisation Non-gouvernmentale
PA	Protected Area
PFNL	Produit Forestier Non-Ligneux
PSFE	Progrogramme Sectoriel Forêts – Environnement (MINEF)
PSP	Permanent Sample Plot
SNV	Netherland Development Organisation
TSP	Temporary Sample Plot
VRMC	Village Resource Management Committee
WI	Wetlands International
WWF	World Wide Fund for Nature
WWF-CPO	World Wide Fund for Nature-Cameroon Programme Office

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General community education and sensitisation campaigns

I. INTRODUCTION

CWCS Douala – Edea Forest Project

Cameroon Wildlife Conservation Society (CWCS), a national non-governmental conservation organisation, has been working in collaboration with the Ministry of Environment and Forests (MINEF) towards the development of a long-term conservation strategy for the Douala-Edea reserve aimed at putting in place a management system that:

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A draft management plan aimed at balancing the needs of the local people while also trying to safeguard the ecological integrity of the reserve would be developed at the end of ongoing programme. The management plan would also help both management authorities and the local population in defining roles of each partner in the resource management process in order to safeguard long-term utilisation of the resources in the area.

The Project has undergone two successful funding phases:

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Project Personnel

The Project is run by four major components namely: ecological monitoring and research; forestry; socio-economic and community liaison; finance and administration.

- The Site Coordinator (Project Coordinator, PC) is responsible for the day-to- day management of the Project. The Principal Executants of the field components are: the Community Development Officer (CDO), responsible for the socio-economic programme, Project Forest Officer (PFO) for the botanical and forestry programme, the Project Biologist (PB) responsible for the zoological programme and a Gender Officer (PGO) for gender issues. There are also two Project Assistants and graduate volunteers whose principal role is to provide field support.

- The Support unit, which comprises a Project Administrator/Accountant (PA), a Secretary and an office Assistant, handle all finances, purchases, maintenance and the day- to- day running of the Project office in Mouanko. The Project also employs a boat pilot, a female receptionist/day guard , night-watch man and other support staff in the villages (see **Table 1** for key Project Personnel).

Equipment and Logistics

CWCS rents a 5-room project office located at main field base in Mouanko that provides facilities for both technical and administrative staff. The office has been equipped with computers and accessories, photocopier, etc. The Project office housing various Project staff has been furnished with tables, bookshelves and other working materials. A resource centre has also been developed and currently contains more than 1000 books. The project has two 4WD vehicles, 03 desktops and accessories, wooden boat with two outboard engines (25Hp, 40Hp), tents (05), scientific equipment - GPS (02), other forest inventory equipment, etc.

Scope of the Report

This report is a progress report of activities covering the period January to December 2002. It focuses on status of accomplished activities highlighting main problems associated with implementation of planned activities and useful recommendations from lessons learnt

Logical Framework Work plan

The National Project Co-ordinator and senior Project field staff developed a logical framework for the project during several meetings in December 2001. The previous zonation plan as per activities for effective coverage and for the purpose of logistics to cut down on expenses was maintained (see **Tables 2 and 3**).

Table 1: Personnel of CWCS Project

No	Designation	Name	Qualification	Period From
1	National Programme Co-ordinator	Dr. Leonard Usongo	B.Sc, M.Sc, Ph.D (Wildlife Ecology & Management)	1997
2	Project Co-ordinator	Gordon N. Ajonina	B.Sc.F, M.Sc.F (Forest Resources Management)	Sept 1999
3	Community Development Officer	Mekongo Fidèle	Maitrise, DESS (Sciences Sociales, Gestion des Projets)	Aug 2000
4	Forest/Agroforestry Officer	Gordon N. Ajonina	B.Sc.F, M.Sc.F (Forest Resources Management)	May, 1998
5	Biologist	Isidore Ayissi	Maitrise, DESS (Sciences Environnementales)	April 2000
6	Administrative/ Finance Officer	Victor Etah	HND (Accountancy)	May 2000
7	Community Development Assistant	DIYOUKE Eugene	2eme Année Universitaires en Science Economiques	May 2001
8	Research Assistant	Robert Mbakwa	Technical Certificate	1997
9	Secretary	Mme NKAN Gilbertine	Probatoire G	February 2002
10	Boat Driver	Timba Martin	B.E.P.C.	February 2002
11	Secretariat/Office Assistant	Mlle ESSOPI Fidèle	Professional training for Office Personnel	February 2002
12	Night Watch/Gardener	Samuel Kitmo	C.E.P.E	1998
13	Receptionist	Mme EKANGA Frieda	CAP	February 2002

Table 2: CWCS zonation of Douala-Edea Reserve

Zone	Villages	Focal Points
1	Manoka, Youmé I & II, Moukouké I & II, Suelaba, Mbenadikumé	a) Manoka b) Youmé II c) Mbenadikumé
2	Yoyo I & II, Mbiako, Malimba villages including Nsah area	a) Yoyo II b) Moulongo c) Nsah area
3	The Kwakwa region, Mouanko, Yatou, Yavi	a) Elogotot b) Mouanko c) Yatou
4	Pongo Songo, Tissongo, Olombé villages	a) Pongo Songo b) Tissongo c) Olombé
5	The Yassoukou area and River Nyong area	a) Ekoth b) Abée c) Embouchure de Nyong
6	The Badangué and Atlantic coastal area	a) Stand

Table 3: Work plan for 2002*

Component/Activity	Month												Respon sibility
	J	F	M	A	M	J	J	A	S	O	N	D	
1.0 Institutional and capacity building													
1.1 Logistic assisstance to conservator	x	x	x	x	x	x	x	x	x	x	x	x	
1.11 Provide technical assistance to government services	x	x	x	x	x	x	x	x	x	x	x	x	PC/PA
1.2 Site visits and workshops	x	x	x	x	x	x	x	x	x	x	x	x	PC/PA
1.3 Project participation and net working activities	x	x	x	x	x	x	x	x	x	x	x	x	PC/PA/ CDO/PB
1.4 Support to national student and volunteers work	x	x	x	x	x	x	x	x	x	x	x	x	
2.0 Socio-economic and Community Development component													
Develop and strengthen gender activities within local fishing industry													
2.1 Assist in the establishment & functioning of women groups/CIGs	x			x			x			x			CDO
2.2 Assist in the legalisation of VRMC/CIGs	x	x	x	x	x	x	x	x	x	x	x	x	CDO
2.3 Technical gender training sessions		x				x				x			CDO
2.4 Material support to gender groups, CIGs	x	x	x	x	x	x	x	x	x	x	x	x	CDO
2.5 Support CIGs exhange visit programmes		x		x		x		x		x		x	CDO
2.6. Credit facilities to VRMCs/CIGs	x	x	x	x	x	x	x	x	x	x	x	x	
Capacity building of small scale project initiatives													
2.9. Training to farmers in modern agro-forestry techniques	x	x	x										PFO
2.10 Technical training of school teachers in environmental education etc	x			x						x			PFO/CD O
2.11 Training of local fishing groups in modern fish smoking techniques	x									x	x		CDO
2.12 Training seminars for CIGs on micro-project dev't and mgt		x		x							x		CDO
Technical an material support to micro-projects													
2.14 Supply of high disease resistant food crops to CIGs	x	x	x	x	x	x	x	x	x	x	x	x	PFO/CD O
2.15 Identification of pilot sites for construction of fish smoke houses	x	x	x										

2.16 Construction of energy efficient smoking houses							x	x					PC/PA/ CDO
2.17 Pilot surveys for assessment of potentials of bee farming	x	x											PFO
2.18 Establishment of demonstration farms in schools	x	x	x	x	x	x				x	x	x	PFO/CD O
General comm education and sensitisation campaigns													
2.20 Development of comm education and sensitisation materials	x	x	x	x	x	x	x	x	x	x	x	x	PFO/CD O
2.21 Mobilisation meetings with community leaders		x	x	x	x	x	x	x	x	x	x		PC/CDO
2.22 Material support to comm environ group	x	x	x	x	x	x	x	x	x	x	x	x	PC
3.0 Research and Monitoring component													
3.1 Study on hunting/pop distribution of manatees													PB
3.2 Elephant surveys	x		x			x		x		x			PB
3.3 Studies on sea turtles and monitoring	x	x	x	x	x					x	x	x	PB
3.4 Water bird censuses & monitoring	x	x	x	x	x	x	x	x	x	x	x	x	PB/PFO
3.5 Mangrove human impact studies	x	x	x	x	x	x	x	x	x	x	x	x	PFO
3.6 Establishment of ecological monitoring system						x							PFO/CD O/ PB
Basic socio-economic studies conducted													
3.7 Studies on conflict areas in resource use													PB
3.8 NTFPs surveys & target species for marketing	x	x	x	x	x	x	x	x	x	x	x	x	PFO
3.9 Agro-forestry research		x							x				PFO
3.10 Riverine vegetable cultivation research	x	x	x	x	x	x					x	x	PFO
4.0 Management component													
Gazettement of Douala-Edea Reserve													
4.1 Organisation of stakeholder meetings for est. of platforms*			x				x				x		
4.2 Mapping of multiple use zones and impt resource use areas*													
4.3. Development of data base maps using GPS data points collected*													
4.4. Boundary demarcation with defined multiple use zones*													
4.5 Studies for strategic planning of gazettement process*													
4.6 Organisation of local and national workshops*	x	x		x		x					x		
4.7 Writing submission of gazettement document*		x	x	x	x	x					x		
4.8 Hiring a consultant as facilitator in validation process of mgt plan*													
Capacity of project staff													
4.10 Field Project Co-ordinator													
a- Management & project development course (South/east Africa)*													
b- Strategic planning, project monitoring/evaluation etc (in-country)*							x						
4.11 Biologist													
a- Inventory work, statistical data analyses, GIS etc (in-country)*						x							
b- Ecological monitoring training session (Central Africa)*								x					
4.12 Community Development Officers (2)													
a- PRA, GI training (in-country)*								x					
b- Collaborative management approaches (South/east Africa)*													
4.13 Project Financial/Administrative Officer													
a- Budget planing, personnel mgt, auditing skills etc*		x											

* Activities not yet started

II. MAIN ACTIVITY REPORT SUMMARY/ RAPPORT GENERAL DES ACTIVITES

1.0 Institutional and capacity building component

1.1 Technical and logistical assistance provided to the conservator

The Conservator of the DER has been regularly benefiting from office materials. The project has also assisted him in the participation in workshops. He has been actively involved in the implementation of project activities. Several missions have been organised to MINEF, Douala & Yaounde especially in the organisation of strategic planning workshop as well as the development of mangrove conservation action programme for the Douala-Edéa Reserve (see **Appendix 2.3)**. To curb the numerous uncontrolled exploitation of the resources of the Douala-Edea Reserve, a comprehensive law enforcement programme involving sensibilization and control of resource use had been co-developed with the conservation, forestry and allied services and is currently being implemented.

*1.11 Technical assistance provided to government serv*ices

Various government services have been benefiting from secretarial services of the project. Over 5km road at Mouanko municipality has been planted the Green Road Project had been developed and implemented in collaboration with the local council and the Sub divisional Delegation of Agriculture that has equally provided technical backstopping to the Sandbank Cultivation Programme.

1.2 Site visits and project staff capacity building workshops

The project has received many partners and personalities including various Consultants, visiting Provincial and Departmental Government MINEF staffs. To facilitate the establishment of an ecological monitoring programme, two seminars were organised to trained technical project staff on database management, analysing faunal inventories using LOPES software and ARCVIEW software for GIS (see **Appendix 2.3**).

1.3 Project participation and networking activities

The project has participated in local, national and international networking activities especially:

- Development and final accomplishment of the Mouanko 5km green road project with the local council,
- Co-development of mangrove conservation programme including the forthcoming strategic planning workshop for the reserve with the provincial service of MINEF
- National sea turtle development programme, participation in the Littoral anti-poaching committee
- Signing of a collaborative agreement with a national NGO working towards protection of manatees
- Participation in workshops organised by SNV on gender and development in January and on capacity building of local NGOs.
- Signing of a 6-months protocol agreement with Cameroon Environment Watch (CEW) on promoting anti-poaching sensitisation campaigns of local in Sanaga/Maritime Division.
- On an international front, the project will host a regional workshop, grouping participants from West and Central Africa and Asia to share experiences notably on mangrove forest

management and community participation. The Mangrove Action Project (MAP) based in Los Angeles USA is providing funding for the workshop.

- Signing of a collaborative agreement with DFID (British overseas Development Cooperation) funded Capacity Building Project, CBP to support construction of 2 fish smoking houses as part of community support to fight unsustainable exploitation of mangroves and also in line with poverty alleviation strategy (also see **Appendix 2.2**).

1.4 Support to national students and volunteer work.

One female student from the Agricultural University of Dschang was supported for end of course project on mangrove.

2.0 Socio-economic and Community Development component

Develop and strengthen gender activities within the local fishing industry

2.1. Assist in the establishment of women groups/CIGs

The project works with 32 Common Initiative Groups (CIGs) including Village Resource Management Committees (VRMCs) comprising of 374 members: 204 men (55.5%) and 170 women (45.5%). The women constitute an important and active section of the community. The project also hired a female gender Consultant to work on gender strategies to ensure their integration in resource management (see **Appendix 2.1** for more information).

2.2.Assist in the legalisation of VRMCs/CIGs

Eight VRMCs/CIGs were legalised. Legal recognition was ensured both at the provincial Department of Community Development and Rural Engineering and MINEF for permanence of these local institutions. The legalisation process will strongly enhance and empower these groups in management of natural resources in the region.

Local women groups in exchange visit on use of smoking ovens

2.3. Technical gender training workshops in management and conservation activities

Planned start date: May 2002

Status: *Ongoing*

A strategic planning workshop was organised with key members of 6 VRMC/CIGs with technical assistance of the staff of the provincial service of Community Development in line with the collaborative agreement for co-promotion of rural development activities within the reserve area. Participants were drilled on group problem identification, organisation, project development, monitoring & evaluation and networking.

2.4. Material support to gender groups/CIGs

Planned start date: June 2002
Status: Ongoing.

Three groups: VRMC Pongo Songo, Pongo Songo women group and GIC PPC-Manoka were assisted in maintenance of farm/NTFPs processing mill established by the project and office material assistance. The processing mills are destined to help communities in quick procession and marketing of non-timber products.

2.5 Support CIGs exchange visit programme

An exchange visit was successfully done by representatives of 3 fishing groups to Idenau, a coastal village with good experience in the use of less energy consuming ovens for fish smoking. The visit permitted some groups in Douala-Edea to acquaint themselves with more efficient methods of fish procession and likewise share experience with their peers in the domain.

2.6. Credit facilities to VRMCs/CIGs

Planned start date: May 2002
Status: *Ongoing*

Following suggestions from more experienced NGOs as SNV in small loan scheme to local groups notably in form of conflicts CWCS credit policy has been subsequently re-oriented as strategic form of support to hardworking groups. Over 20 hoes, machetes, files were distributed to 12 hardworking sandbank farmers during the celebration of World Earth Day on 22 April. Two other CIGs have been earmarked for this kind of support.

Capacity building for small- scale Project initiatives

2.9 Training to farmers in modern agro-forestry techniques

Planned start date: January 2002
Status: *Ongoing*

Four CIGs and VRMCs in Mouanko and Manoka have been undergoing routine training on management of over 10ha agroforestry plots established with the assistance of the project. Technical assistance is both provided by the project and the Sub divisional delegation of agriculture-Mouanko. Practices include selective natural felling systems (at Pongo Songo), Alley cropping live fencing and agro-silvo-pastoral systems at Mouanko and Manoka.

2.10 Technical training of teachers in environmental education etc

Planned start date: January 2002
Status: *Not yet started.*
Though not effectively started, the Co-ordinator of the nature club of Government High School Mouanko has been trained in nature club management through routine field missions and seminars organised by the project.

2.11 Training of local fishing groups in modern fish smoking techniques

Two fishing groups in Manoka are currently being trained by a Consultant from the Limbe based Institute of Fisheries and Oceanographic research also actively involved in the design and consultant of the smoked houses at Manoka.

2.12 Training seminars for CIGs on micro-project development management

Planned start date: May 2002
Status: *Ongoing*

Two seminars were organised focusing on sustainable exploitation of palm wine without felling the tree talking advantage of local practitioners from the centre province resident in the area. Hitherto the palm wine tapping a large income-generating source for men has been exploited using very unsustainable techniques. Over 98 % of the trees are felled before wine extraction. The new method was appreciated and most likely to be widely adopted. A strategic plan workshop was organised with the members of 6 common initiative groups (CIGs) and village resources management communities with resource persons drawn from the provincial service community development under the framework of partnership agreement earlier signed on the 31st May 2001. Members were drilled on various conservation issues and micro-project development.

Technical and material support to micro projects

2.14 Supply of high disease resistant food crops to CIGs

Planned start date: February 2002
Status: *Ongoing*

More than 5 CIGs and other hardworking individual farmers have benefited from improved cassava stems and maize seeds during this planting season.

2.15 Identification of pilot sites for construction of fish smoked houses

Three sites were identified for the construction of energy saving smoked houses apart from the one constructed at Manoka. The Yoyo I, Yoyo II, and Mbiako villages with intense fish smoking activities and impact on the surrounding vegetation were retained. There are prospects of funding from SNV for the construction of two smoked houses at Yoyo I and Mbiako next year.

2.16 Construction of energy efficient smoking houses

Planned start date: April 2002
Status: *Ongoing*

Construction work on a 10m by 12m smoked house with 3 ovens, a conference room and office has been completed in Manoka with an assistance of post harvest processing expert from the Institute for Fisheries and Oceanographic Research in Limbe. The Manoka community and 3 common initiative groups constituting members of the management community as well as the local council are being sensitised and schooled on participatory management for the benefit of the community prior to its inauguration early next year.

2.17 Pilot surveys for assessment of potentials of bee farming

Planned start date: January 2003
Status: *Not started*

Although not fully started, an NGO named NOWEBA (North west bee Association) with successful works in the west province and Mount Oku Birdlife Project has been contacted for preliminary surveys work in the Mouanko area early next year.

2.18 Establishment of demonstration farms in Schools

Planned start date: January 2002
Status: *Partially accomplished.*

The project has assisted in the maintenance of school gardens in 3 schools in the Mouanko and Manoka areas. These gardens contain pineapples, arable crops, fruit trees, medicinal, and other soil improving plants. The projects are managed by Nature Clubs of students who are also building around the schools.

General community education and sensitisation campaigns

2.20 Development of Community education and sensitisation materials

Planned start date: January 2002
Status: *Ongoing*

Over 2000 materials in form of pamphlets, calendars and T-shirts carefully designed to build up support and consciousness with regard environmental protection and rational exploitation of natural resources of the reserve have been widely distributed in the reserve area. General colour charts developed in collaboration with MINEF highlighting endangered species were also widely distributed and pasted at strategic points.

2.21 Mobilisation meetings with community leaders

Planned start date: January 2002
Status: *Ongoing*

Several meetings were organised with community leaders especially in Mouanko, Pongo, Malimba and Yoyo areas to sensitise them on various aspects of environmental protection especially in collaboration with health service during the recent cholera epidemic in January - February that wiped up more than 20 people especially in the riverine areas. Lectures were organised to create environmental awareness and sympathy during Earth Day (22 April) celebration proceeded by tree planting campaigns from the project tree nursery, lunching of the 5km green road project developed

with local council, visit to important sites by local administrative authorities as well as lectures from speakers drawn from Government services especially Agricultural delegation, Government High School Mouanko and Conservation of Douala-Edea Mouanko. CWCS has been carrying out media campaigns of its activities including the Douala-Edea Reserve Forest Project activities to sensitise the Cameroonian public using the Cameroon Radio and Television (CRTV) station. Project staffs have also been participating in the CRTV weekly programme "Step by Step" produced on Environment and Sustainable Development issues in collaboration with the Communication Department of the Ministry of Environment and Forests, MINEF as well as important daily newspaper coverage.

2.22 Material support to community environmental groups

Planned start date: January 2002
Status: *Ongoing*

Nature clubs especially in Government High School Mouanko were assisted in the development of T-shirts to its members. They also benefited from organisational materials in form of stationeries. Support was also given to the Biodiversity Conservation Football Club (BCFC) with jerseys bearing plant and animal endangered species in the region of considerable conservation importance such as mangrove, moabi; chimpanzees, manatee, parrots; etc as part of sensitisation campaigns.

3.0 Research and monitoring component

3.1 Study of hunting/population distribution of manatees

Though this activity was not slated for this year, preliminary surveys on population distribution and hunting in the reserve area were carried out to concretise the partnership agreement with Junior Chamber International-Douala Chapter on "Saving the Manatees" project signed in April. From surveys carried out along River Sanaga, Kwakwa Creek and Atlantic Coast, over 40 manatees are killed yearly in the reserve area. Ngalaberi, Mbenadikumé, Kombo Epaka, Tissongo and R. Dipombé are areas of high abundance of this species. Urgent conservation actions need to be taken to save these last remaining populations of West African manatees in Douala-Edea region.

3.2 Elephant surveys/human conflicts

Planned start date: January 2002
Status: *Ongoing*

Elephant surveys including conflict analysis were carried out in Yavi, Yankonzok and Yatou areas of the left flank of R. Sanaga of the reserve. Meetings were organized in villages to discuss and seek ways of resolving the conflicts. Results of 5km walk in the Yavi area recorded 2.6/km, 4/km, 1.6/km and 4/km elephant footprints, tracts, dung piles and feeding signs respectively. Three farms of 1-3ha of cassava and plantains were destroyed.

3.3 Studies on sea turtles and monitoring

Planned start date: January 2002
Status: *Ongoing*

Several sea turtle surveys carried out in the coastal region of the reserve indicate that 4 species frequent the zone: *Lepidochelys olivacea, Dermochelys coriacea, Chelonia mydas and Eretmochelys imbricata. Lepidochelys olivacea and Dermochelys coriacea* nest along the sandy beeches along the Atlantic Coast of the Réserve where 19 nests were identified during the period between May 2001 and November 2002 monitoring season. Ndog-kohi, Doumé and Mombo are high nesting sites. Eleven shells also identified during the period (4 greenish and 7 olive-greenish). A permanent transect of 2km was established at Mombo – Mouanko for regular monitoring.

3.4. Water bird censuses and monitoring

Planned start date: January 2002
Status: *Ongoing*

Regular monthly water bird censuses and monitoring of the 20km of River Sanaga delta and associated rivers and lakes have been carried out. Over 66 water bird species including more than 30 other bird species and animals especially crocodiles, manatees, monkeys using the resources of the site have been identified in 2002. Five more visitors were identified this year: Lesser Jacana (*Micropar capensis*)-Jacanidae, Black Crake (*Limocrax flavirostra*)- Rallidae, White rumped sand piper (*Calidris fuscubues*)-Charadreidae, Hammerkop (*Scopus umbretta*)-Scopidae and Forest Buzzart (*Butcotachardus sp*)- Accipitridae (see **Appendix 3.2** for more information).

3.5. *Mangrove human impact studies*

Planned start date: January 2002
Status: *Ongoing*

Prior to the establishment of permanent mangrove forest census plots in Yoyo area, wide sensitisation campaigns on the importance of mangrove and the need to protect these plots and surrounding tracts of the forest from wanton fuel wood harvests were carried out. Two 3-100m permanent transects located in different exploitation regimes were established in Yoyo and Mbiako areas with the participation of a consultant from the Smithsonian Institute network of forest census plots. Over 3800 trees were identified, mapped, enumerated, measured and tagged to monitor mangrove regeneration and the estimation of sustainable exploitation regime for the mangroves.

3.6 Establishment of ecological monitoring system

Planned start date: January 2002
Status: *Ongoing*

The technical team received training in data base management for ecological monitoring programme through the installation of relevant software packages. The team was trained on LOPES software for analysis of faunal inventory data based on distance sampling and GIS ARCVIEW software package. These trainings have greatly facilitated the updating of bio monitoring database.

3.8 NTFPs surveys and target species for marketing

Planned start date: January 2002
Status: *Ongoing*

(a) Use of plants

Over 20 plant species in 17 families are marketed in the area with uses ranging from wrapping leaves, fruits, condiments, vegetables, and beverages to medicinal products. This data was obtained from regular market surveys by trained data collection assistants. A total annual revenue of more than 32.37 million CFA (US$46250) was generated from the regional markets of Epollo, Yoyo and selected roadsides within the reserve. The profit margins were generally ranging between 26.6 and 133.3% of cost price for traded species. Women also play a very greater role as more than 60% were involved in the harvesting /collection, processing and marketing of the NTFPs followed by their children (5%). The project will continue to develop efficient methods of improving upon exploitation, processing and marketing techniques in order to enhance the value - added and consequently income levels (see **Appendix** for more information).

Bush mangoes: Widely harvested and commercialised NTFP

Palm wine exploiters exclusively men were drilled on sustainable exploitation of palm wine without tree felling taking advantage of 2 local practitioners from the centre province resident in the area. Palm wine is very important income source for men with weekly revenues of at least 20 000CFA ($26.7) but over 98% of the trees are felled before wine extraction.

(b) Bush meat / Etude sur le braconnage

Le braconnage demeure un obstacle pour les efforts de conservation, les mesures de contrôle sont en cours en collaboration avec le Comité Provincial pour la lutte contre le Braconnage, où le Coordinateur du Projet est toujours participant.

Des données collectées sur quatre localités au cours de l'année 2002, il a été noté un total de 1093 gibiers capturés. Soit une répartition spécifique de 264 crocodiles (24,15 %) ; 232 singes (21,22 %) ; 67 antilope (6,12 %) ; 65 sangliers (5,94 %) ; 57 varans (5,21 %) ; 26 tortues (2,31 %) ; 21 pythons (1,92 %) ; 11 lamantins ; un éléphant et 343 autres espèces de moindre importance (**Appendix 3.1**).

Quant à la répartition zonale, Mouanko est la zone de forte capture avec 650 cas (59,46 %) ; Les autres localités suivent avec Nkangazok 176 (16,10 %) ; Yoyo 136 (12,44 %) et Elogotot 131

(11,98 %). Ces méthodes de capture de ces différents gibiers illustrent que le fusil constitue la principale méthode de capture de la Faune dans ces différents sites avec 405 cas (37,05 %), l'hameçon 299 captures (27,35 %), le piège 264 (24,15 %), le chien 75 (6,86 %), le filet 24 cas (2,19 %), les autres méthodes telles que lance, machette…. représentent 26 cas soit (2,37 %). Ces différentes espèces capturées sont reparties en espèce tel qu'il suit : 460 mâles (42,08 %), 365 femelles (33,39 %) et 268 cas dont le sexe n'a pas pu être déterminé 24,51 %).

3.9 Agro-forestry research

Planned start date: January 2002
Status: *Ongoing*

Over 1.5ha alley cropping plots of *Leucaena* trees with maize and cassava including live fencing species established by the project with 5 CIGs in Mouanko and Manoka areas have been monitored. Experimental agro-silvo-pastoral systems with 20 pigs under fruit trees with CIG "GIC Mon Jardin" in Bedale Mouanko have been technically assisted. Preliminary results of maize yields were as follows: 0.042 ha *Leucaena* alleys (3.2t/ha), 0.042 non-*leucaena* fertilised (2.9t/ha), 0.042 ha non-*Leucaena* non fertilised (1.0t/ha), 0.62 orange/tangerine fruit trees (3.0t/ha) and 0.120ha non fruit trees (1.8t/ha). Members of Pongo Songo VRMC selective natural felling systems developed with the project have started harvesting plantains at monthly rates of 15 bunches with a value of over 30000 FCFA (US$40.0).

3.10 Riverine vegetable cultivation research

Planned start date: January 2002
Status: *Ongoing*

Over 12 (less than 1%) ha of fertile sandbanks have been cultivated with 8 men and 29 women (10% of sand bank population) from Mouanko, Malimba to Yankozok along a 20km length of R. Sanaga with regular technical backstopping of Sub divisional Delegate of Agriculture for Mouanko and Littoral Provincial service of Community Development and Rural Engineering. The section has a potential of 300ha of fertile sandbanks available before river flood that hitherto has been neglected by many farmers. If fully cultivated, it has huge potentials of curbing destructive shifting cultivation of the surrounding forests and associated wildlife/farmer conflicts especially with numerous populations of elephants in the area. The farmers were provided as incentive improved short-cycled high yielding strains of maize, cassava and okro (local vegetable) planting materials that mature is less than 4months. Over 20 hoes, cutlasses and files were distributed to 15 hardworking farmers. The following results were obtained: cassava (3.49t/ha), maize (1.45t/ha), cocoyams (4.08t/ha), melon (0.9t/ha) and sweet potatoes (2.6t/ha).

Sandbank cultivation of maize in pilot community farms

4.0 Management component

Activities under this component were re-oriented during the strategic planning workshop and some re-scheduled to start in July 2003.

Capacity building of project staff

Project staffs were actively involved during the year in various training programmes. For example, Project Community Development Officer attended an SNV organised workshop on Gender and Development on participatory management approaches. The Project Co-ordinator also received training on strategic environmental analysis organised by AID Environment and SNV. Field Biologists were trained in faunal data analysis using the LOPES package and GIS ARCVIEW package for GIS system for implementation of a monitoring programme. Other training workshops and seminars included eco-tourism development, development of hunting regulations on subsistent hunting, protected areas assessment programme etc.

5.0 Financial report

Income and expenditure statement for the period is presented in **Appendix 4**

III. GENERAL PROBLEMS AND CONSTRAINTS

The major problems affecting the smooth execution of field activities could be categorised as follows:

Personnel

With the very vast nature of the programme, more technical staffs are required for implementation of activities notably other budding aspects related to rural development. It is hoped that on going work on development of gender strategy will lead to more focus and integration of gender in all aspects of natural resource management. A full time Gender Officer will be required for implementation of these strategies geared towards women involvement at even grass root levels of community development. University student, graduate volunteers will also be hired as has been the

case in the past for execution of specific activities. This falls in line with project's vision on national capacity building.

Site accessibility and communication

Given relatively enclave nature of most of the project area, there is necessity to reinforce current logistics of the project with purchase of motorcycles, 4WD (that has been ordered) to ensure good implementation of activities. The project also plans installing a VHF radio especially to link local government protected area services (MINEF) with the network.

Equipment

More field equipment such as tents and laptop computers will be purchased to improve upon present capacity.

IV CONCLUSION

The almost 3 years of co-management experience gained will help of NOVIB funding has brought some positive developments in the region both in terms of biodiversity conservation and improved management of resource management geared towards poverty alleviation. Gender aspects in natural resource management strongly supported by NOVIB has helped boost the women groups and also created another dynamism in government services in charge of protected areas. There is still much to be done in this regard especially given the socio-cultural perception and traditional role of the women.
Experience has proved that targeted activities in the communities quite often go beyond the initial scope of its conception by the project. Efforts to reconcile this have been expensive and accounts largely for the variance experienced in the budget. It has also been a rich and learning process working with the local communities and identifying some of the salient problems that affect conservation in the area. Issues related to collaborative management were discovered to be more complex than originally perceived. Solutions and strategies to be developed in order to address some of these issues will require more mobilisations of both human and financial resources. The high degree of awareness on conservation and related aspects of resource management existing within the communities and local Administration as a result of CWCS activities provide solid grounds for execution of planned activities.

The orientation of the CWCS Douala-Edea project in the advent of NOVIB funding to lay emphasis on community development and improved livelihood is quite innovative and a good experience for the NGO. Much has been learnt in implementation of socio-economic programme especially with regards community relationships, welfare, resource exploitation and building of local institutions in the management of the resources. The process is long and complex but on-going activities definitely portray much could be achieved given the participation and support of all partners involved including the donors. The success of the programme and especially the NGO's activities has drawn much attention from partners far and wide willing to work with the NGO especially the government where the NGO has actively contributed to the drawing of national conservation action plans.

Furthermore plans are underway for a protocol agreement with the government to co-manage the gazettement process in the Douala-Edea region as a national park. In the same vein, the conservation efforts in the mangrove zone has attracted the Mangrove Action Project, an international NGO based in Los Angeles USA to organise a West and Central Africa regional

mangrove workshops in May. This regional workshop will involve representatives of local communities from over 10 African countries coming together to share experiences in management of mangroves and fishing that remains one of the most important economic sources of riverine communities. Innovative approaches such as construction of efficient smoking houses, backstopping of GICs, gender support combined with basic applied monitoring and research work in Douala-Edea have provided very useful experiences in linking natural resource management and improve livelihood of local communities.

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Appendices/Annexes

Appendix 1: Logical Framework and Progress on Indicators

Overall Objective	Specific Objectives	Expected Results	Activities	Indicators	2002 Target	Output	Sources of verification	Comments
To contribute to a viable economic and ecological development of the Douala-Edea Forest Réserve by improving on the present systems of resource exploitation	1. Institutional strengthening and capacity building of MINEF in relation to biodiversity conservation and management.	1. Strong institutional links established with gov't services and conservtion partners 2. Strong networks developed with related NGOs & partners	1.1 Provide technical and logistic support to the Conservator 1.11 Provide technical assistance to gov't services 1.12 Law enforcement 1.2 Site visits and Project Staff capacity building workshops 1.3 Project participation and net working activities 1.4 Support to national student and volunteer work	Amt of materials supplied no of trainings/wkshps supported Amt of materials supplied No of missions supported No of wkshps organized No of networks established No of students/volunteers supported	Office materials national wkshps Office materials 5 students	12ram papers,stationery, 3 50rams paper, stationery, 13 52 external visitors; 2 staff CB wkshps 22 visits to MINEF, 30 others 2 students-1M and 1F	Conservator's reports Conservator's reports Office registers Conservator's reports Visitors register, tr reprts Mission reports Students' report	Mission organized especially on gazettement process for the Réserve
	2. Encourage local participation in natural resource managmt through environmentally sustainable approaches aimed at increased alternative income generation and improved livelihood	3. Well established functional community structures for natural resouce mgt (CIGs, VRMCs, etc) 4. Gender related activities supported 5. Some functional common initiative groups(CIGs) for local women supported	Develop and strengthen gender activities within local fishing industry 2.1 Assist in the establishment & functioning of women groups/CIGs 2.2 Assist in the legalisation of VRMCs/CIGs 2.3 Technical gender training workshops in mgt & conservation activities 2.4 Material support to women groups/CIGs 2.5 Support CIGs exchange visit programmes 2.6 Credit facilities to VRMCs/CIGs *Capacity building for small scale project initiatives* 2.9 Training to farmers in modern agro-forestry techniques 2.10 Technical training of school teachers in environmental education etc 2.11 Training of local fishing groups in modern fish smoking techniques 2.12 Training seminars for CIGs on micro-project dev'pt & mgt *Technical and material support to micro-projects* 2.14 Supply of high disease resistant food crops to CIGs 2.15 Identification of pilot sites for the construction of fish smoke houses 2.16 Construction of energy efficient fish smoking houses in selected villages 2.17 Pilot surveys for assessment of potentials of bee farming 2.18 Establishment of demonstration farms in schools *General community education & sensitisation campaigns* 2.20 Dev'pt of comm education & sensitisation materials 2.21 Mobilisation meetings with community leaders 2.22 Material support to community environmental groups	 No of groups established No of groups legalised No of wkshps/trainings organised No of groups/indiv. Trained No of groups/indiv. Supported No of visits/No of groups/indiv. No of groups/indiv. Beneficiaries No of groups/indiv. Trained No of teachers trained No of groups/indiv. Trained No of groups/indiv. Trained Amt of planting materials supplied/ No of groups/indiv. No of sites indentified No of smoked houses constructed Survey data No of farms established list/Quantity of materials developed No of meetings/communities visited Amt of materials/No of groups supported	 10 3 5grps(4pers/grp) 4grps 4grps(5pers/grp) 2 visits 5grps 4grps(5pers/grp) 5 5 3 3 3 5 1000pamphlets, etc, 10 papers, stnery, etc/10grps	32 working groups (55,5%M, 45,5%F) 8 3 training sessions in 3 villages 6 grps (20 trained 12men 8 women) 50kg planting materials to 6 grps 1 visit with 3 fishing groups at Idenau 20hoes, machets, files to 12 sand cultivators and 2grps 2 grps with 23 trained - 20men, 3 women 1 teacher trained from Lycée de Mouanko 2 fishing grps trained at Manoka 1 seminar organized with 6 grps 50 kg of planting materials to 6grps with 30 beneficiaries -10men 20 women 3 sites identified- Manoka, Yoyo & Mbiako 1 smoked house constructed at Manoka Contacts with expert NGO made at Bamenda 3 farms monitored in 3 schools 2000 materials-pamphlets, calenders, and T.shirts 33 meetings organized Stationery, didactic materials & sport equip to 2 grps	Reports/Field inspection Reports/Field inspection Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports	Lack of funds to support more Lack of funds to support more Lack of funds to support more High costs due to difficult site Slated for 2003 Benefited from other field activities
	3. Carry out targeted research aimed at providing baseline data for managmt and establishment of longterm trends in natural resources and the socioeconomic position of the local Population	6. Relevant mgt oriented research undertaken for the establishment of a monitoring programme	*Target Biological Research* 3.1 Study on hunting/pop distribution of manatees 3.2 Elephant surveys 3.3 Studies on sea turtles & monitoring 3.4 Water bird censuses & monitoring *Basic Socio-economic Research* 3.5 Mangrove human impact studies 3.6 Establishment of ecological monitoring system 3.7 Studies on conflict areas in natural resource use 3.8 NTFPs surveys & target species for marketing 3.9 Agro-forestry research 3.10 Riverine Vegetable cultivation research	 Research data available Research data available Research data available Research data available Research data available Research data available Research data available Research data available Research data available Research data available	 offtakes, distribution Numbers & distribution Species, nesting zones Species, migraory status 4 PSP/regeneration plots Est, of data base Elephant conflict studies Mkt surveys and income studies Alley cropping, silvopastoral trials short rotation crop trials	 Data available on hunting rate and distribution Not previewed Data available on species and nesting zones Data available on species and migratory status 2 PSP established, data on woodofftakes vailable Biomonitoring Data base established Conflict studies realised at Yavi local Market/trade data available 2Alley cropping and 1 silvopastoral trials realised	 Reports Reports Reports Reports Reports Reports Reports Reports Reports Reports	
	4.Establish consultative platforms with various stakeholders as basis for putting in place a mgt system addressing res. use with a zoning plan	7.Sound conservation approach developed including functional platforms with major stakeholders	*Gazetement of Douala-Edea Heserve* 4.1 Organisation of stakeholder meetings for establishment of platforms 4.2 Mapping of multiple use zones and important resource use areas 4.3 Development of data base maps using GPS data points collected 4.4 Boundary demacation with defined multiple use zones 4.5 Studies for strategic planning of gazettement process 4.6 Organisation of local and national workshops 4.7 Writing and submission of gazettement document 4.8 Hiring of consultant as facilitator in validation process of mgt plan 4.9 Local validation meetings with all stakeholders of mgt plan	 No of consultative platforms established Data available GIS system operational Data available Data available No of meetings organized Gazettement document written&submitted No of meetings organized	 Not previewed Not previewed Not previewed Not previewed 1 Not previewed Not previewed Not previewed	Severals meetings to MINEF to this effect		Severals meetings to MINEF to this effect Whole gazettement process will be defined and oriented at the forthcoming Strategic planning workshop for the Douala-Edea Reerve,
	5. Build capacity of Project Staffin the domain of biodiversity conservation and participatory mgt		*Capacity building of project staff* 4.10 Field Project Co-ordinator: a-Management and project development course (South/east Africa) b-Strategic planning, project monitoring/evaluation etc (in-country) 4.11 Biologist: a-Inventory work, statistical data analyses, GIS etc (in-country) b-Ecological monitoring training session (Central Africa) 4.12 Community Development Officers (2): a-PRA, GI training (in-country) b-Collaborative management approaches (South/east Africa) 4.13 Project Finance/Administrative Officer: a- Budget planning, personnel mgt, auditing skills etc	 Training report Training report Training report Training report Training report Training report Training report	 Not previewed Not previewed 	 SNV-AIDEnvt wkshp on strategic envtal analysis at Garoua Site GIS training by Consultant on ArcView GIS software SNV seminar on Gender & Devt and participatory approaches at Mbalmayo Site training on auditing skills, personnel mgt, etc		

Appendix 1.2. Zonal distribution of CWCS intervention (micro-projets) in the Douala-Edea Reserve

Zone	Localités et point focal	Activités principales développées par les populations	Niveau d'intervention de CWCS	Perspectives
1	Manoka	- Pêche du poisson - Fumage semi-industriel du poisson - Petite agriculture vivrière	-Projet d'agroforesterie -1jardin scolaire à l' EP -1 fumoir amélioré	Faire de cette localité un point focal d'expérimentation des fumoirs améliorés.
	Youmé I Youmé II **Mbenadikumé** Moukouke Souelaba	- Pêche du poisson - Fumage semi industriel du poisson	Début	Faire de cette localité un point focal d'expérimentation des fumoirs améliorés. La mise en place des Parcelles permanentes de suivi de la dynamique de la mangrove
2	Yoyo I Yoyo II	- Pêche du poisson - Fumage semi- industriel du poisson	- Parcelles permanentes de suivi de la dynamique de la mangrove	Faire de cette localité un point focal d'expérimentation des fumoirs améliorés.
	Moulongo Nsah area	- Pêche du poisson - Pêche du poisson et des huîtres -Fumage artisanal du poisson et des huîtres -Agriculture sur le banc de sable	- Projet d'agriculture sur le banc de sable.	Poursuivre les investigations, prospections et les consultations afin d'identifier les actions futures à développer dans ces localités difficiles d'accès. Etendre la vulgarisation de la pratique des fumoirs améliorés.
3	Elog otot	- Pêche du poisson - Petite agriculture - Fumage artisanal du poisson	- Projet d'agroforesterie	Poursuivre la collaboration déjà amorcée avec les communautés. Etendre la vulgarisation des fumoirs améliorés.
	Mouanko	- Pêche du poisson - Petite agriculture - Agriculture sur le banc de sable - Fumage artisanal du poisson	-Projets d'agroforesterie -Projet d'ombrage avec la Mairie -2 jardins scolaires	Assurer une participation plus effective des populations à la protection de la réserve. Projet d'agriculture sur le banc de sable.
	Yatou Yavi	- Pêche du poisson - Petite agriculture - Agriculture sur le banc de sable - Fumage artisanal du poisson	- Projet d'agriculture sur le banc de sable. - projets d'agroforesterie	Poursuivre la collaboration déjà amorcée avec les communautés. Etendre la vulgarisation des fumoirs améliorés et d'agroforesterie. Projet d'agriculture sur le banc de sable.
4	Pongo Songo	- Pêche du poisson - Petite agriculture - Fumage artisanal du poisson	-Projet d'agroforesterie -Projet de transformation de produits forestiers et agriculture -Gestion du moulin -Lutte antibraconnage et exploitation clandestine du bois	Assurer une participation plus effective des populations à la protection de la réserve.
	Tissongo	- Pêche du poisson - Fumage artisanal du poisson - Chasse artisanale	Début	Poursuivre la collaboration déjà amorcée avec les communautés; Lutte antibraconnage et exploitation clandestine du bois. Etendre la vulgarisation des fumoirs améliorés et d'agroforesterie.
	Olombé	- Pêche du poisson - Petite agriculture - Fumage artisanal du poisson - Chasse artisanale	Début	
5	Ekoth Abée	- Pêche du poisson - Petite agriculture - Fumage artisanal du poisson - Chasse artisanale	Début	Poursuivre les investigations, prospections et les consultations afin d'identifier les actions futures à développer dans ces localités difficiles d'accès. Etendre la vulgarisation de la pratique des fumoirs améliorés et d'agroforesterie
6	Stand	- Pêche du poisson - Fumage artisanal du poisson	Début	Poursuivre la collaboration déjà amorcée avec les communautés Etendre la vulgarisation des fumoirs améliorés La mise en place des Parcelles permanentes de suivi de la dynamique de la mangrove
	Embouchure de Nyong	- Pêche du poisson - Petite agriculture - Fumage artisanal du poisson - Chasse artisanale	Début	

Appendix 2: Institutional Development, Capacity Building and Networking Activities

2.1: List of working groups and associations in the Douala-Edea Reserve and activities

Zone	Groupe ou Association	Siège	Activités	Adhérents				
				Total	M	%	F	%
1	Groupe de Planteurs - Pêche et Commerce (GIC-PPC)	Manoka	Développement de l'agriculture, la pêche et le commerce	36	25	69.4	11	30.6
2	Malimba Océan	Yoyo II	Culture du manioc, l'élévage des poulets,des porc, la pêche, et fumage de poisson	11	8	72.7	3	27.3
2	Promoteurs de Pêche	Mbiako	Pêche, fumage de poisson, commercialisation des produits halieutiques	10	7	70	4	40
3	Comité de Développement des Femmes et Filles de Mouanko (CODEFESM)	Mouanko	Promotion de l'auto-suffisance alimentaire, vulgarisation des techniques agricoles	29	0	0.0	29	100
3	Dynamique de Lobethal	Mouanko	Promotion des activités agricoles	7	5	71.4	2	18.6
3	Famille-Poisson	Mouanko	Pêche et vente du poisson	10	10	100	0	0
3	Jeunes Débrouillards de Mouanko (JEUDEMO)	Mouanko	Transform. des coquilles, création des champs agricoles et promo. de la pêche et du commerce	7	6	85.7	1	14.3
3	Jeunesse Vivante pour le Christ (JEVIC)	Mouanko	Evangélisation et développement de l'agriculture	7	3	42.9	4	47.1
3	La Couronne d'Or	Mouanko	Développement de l'agriculture	8	7	87.5	1	12.5
3	La Patience de Mouanko (LA PAMO)	Mouanko	Promotion des cultures vivrières et commerciales	13	10	76.9	3	23.1
3	Lumière de Yadibo	Mouanko	Promotion d'activités agricoles	6	5	83.3	1	16.7
3	Mon Jardin	Mouanko	Elevage, pisciculture et culture des arbres fruitiers	13	10	76.9	3	23.1
3	Mouanko - Fisch	Mouanko	Promotion de la pêche	10	7	70.0	3	30.0
3	RJEUDDAM	Mouanko	Création de champs et vulgarisation des nouvelles méthodes agricoles	7	5	71.4	2	28.6
3	Renaissance Agricole et Piscicole de Bédalé	Mouanko	Diversification des cultures vivrières et maraîchères	7	6	85.7	1	14.3
3	Standard Service Etalon	Mouanko	Protection de l'environ., promo. et diversification de la production des denrées agricoles	8	2	25.0	6	75.0
3	Jeunes Actifs de Mouanko pour le Devt Durable (JAMOD)	Mouanko	Protection de l'environ., promo. et diversification de la production des denrées agricoles	16	13	81.3	3	18.7
3	Espoir de Ndogmongo (ESMON)	Mouanko	Elévage de poulet, culture de manioc, autres activités agropastoral	6	3	50.0	5	50.0
3	Etoile Polaire Association de Ndogmongo (EPAN)	Mouanko	Agropastoral	10	7	70.0	3	30.0

3	Esperance de Mouanko pour l'Agriculture et l'Elévage (ESMOAE)	Mouanko	Agriculture et l'élévage	7	7	100	0	0
3	Club de Jeunes Agriculteurs 'ELOG-OTOT' de Mouanko (CLUJEAG)	Mouanko	Culture de manioc, du mais, du plantain et commercialisation de ces produits	7	5	71.4	2	28.6
4	Comité de Gestion des Ressources Naturelles de Pongo Songo	Pongo Songo	Développement de la pêche, l'agriculture et gestion des ressources naturelles	7	7	100	0	0
4	Quartier -Dynamique	P. Songo	Promotion de l'agriculture et entraide à travers des tontines	32	7	21.9	25	78.1
4	Soppi na Kalassine	P. Songo	Promotion de l'agriculture et entraide à travers des tontines	25	0	0.0	25	100
4	Comité de Gestion du Moulin de Pongo Songo	P. Songo	Transformation et commercialisation des produits agricoles	10	5	50	5	50
5	ADEVINC	Ndogt. - Crique	Développement d'activités économiques, sociales et culturelles	6	4	66.7	2	33.3
5	Comité ETOHO	Ndog Mbiang	Création d'unités de petit élevage	12	9	75	3	25
5	Association des Femmes d'Elog Enanga	Abée - Yasskou	Promotion d'activités économiques et sociales	15	0	0	15	100
5	Comité de Développement du Village Eloglom	Eloglom	Développement de l'agriculture	10	5	50	5	50
5	ELOGKAM	Yassoukou	Promotion d'activités agropastorales	7	5	71.4	2	28.6
5	LIBENDE	Badangué	Modernisation et promotion de la pêche	10	6	60.0	4	40.0
5	Réveil du Pêcheur de Yassoukou	Gabon - Badangué	Promotion de la pêche	5	5	100	0	0
Nombre total de groupes / Associations		**32**		**374**	**204**	**55.5**	**170**	**45.5**

Appendix 2.3: Trainings, Meeting, Workshops and Site Visits

2.3.1: Trainings and Workshops in 2002

Participant	Organisation/Address	Designation	Programme/Workshop	Place	Organisers	Date (s)
(a) Project Staff Gordon N. Ajonina	CWCS Project Mouanko	Project Co-ordinator	Capacity building workshop	Edea	SNV/CBP	13 - 14 March
			Forest Environment Sectorial Programme regional validation workshop	Douala	MINEF/FESP	08 - 11 May
			Réunion de Comité Provincial de Lutte contre le braconnage	Douala	MINEF	13 Mai
			Strategic Environmental Analysis workshop	Garoua	SNV/CBP, AIDEnvironment	30 June - 06 July
			Assessment of Protected Areas Management in Cameroon	Yaounde	MINEF, WWF	01 - 04 October
Isidore Ayissi		Project Biologist	Projet d'Arrêté de la Chasse Artisanale au Cameroun	Bamenda	MINEF, DFID	10 - 11 Avril
Fidèle Mekongo		Project Community Development Officer	Gender and Development	Mbalmayo	SNV	14 - 16 January
			Participative Approaches	Mbalmayo	SNV	17- 18 January
All Project Executants		All technical staff	Faunal inventory data analysis using LOPES software	Mouanko	CWCS &MINEF consultant	12 - 18 August
			Map production using GIS ARCVIEW software	Mouanko	CWCS & WWF consultant	30 Oct- 06 Nov
(b) Conservation of Douala-Edea Réserve Mr Kuete Fidèle	Conservation of Douala-Edea Reserve	Conservator	Proje d'Arrêté de la Chasse Artisanale au Cameroun	Bamenda	MINEF, DFID	10 - 11 Avril
			Forest Environment Sectorial Programme regional validation workshop	Douala	MINEF/FESP	08 - 11 May
			Réunion de Comité Provincial de Lutte contre le braconnage	Douala	MINEF	13 Mai
			Assessment of Protected Areas Management in Cameroon	Yaounde	MINEF, WWF	01 - 04 October
			Travaux composante N° 3 du PSFE	Mfou	MINEF, WWF	25 - 26 Juillet
			Examen du draft du manuel des Procédures d'Attribution et des Normes de Gestion des Zones de Chasse Communautaire	Yaounde	MINEF/DFID	30 Décembre
			Faunal inventory data analysis using LOPES software	Mouanko	CWCS &MINEF consultant	12 - 18 August
			Map production using GIS ARCVIEW software	Mouanko	CWCS & WWF consultant	30 Oct- 06 Nov

Participant	Organisation/Address	Designation	Programme/Workshop	Place	Organisers	Date (s)
(c) Individuals						
Eteki George	Mouanko village	Farmer	Séance de formation sur l'exploitation durable de vin de palme	Mouanko	CWCS en collaboration avec la conservation de la RFDE et la Delegation d' Agriculture de Mouanko	02 -03 Avril
Ockollo Michel	Mouanko village	Farmer				
Ebelle Jonathan	Mouanko village	Farmer				
Kwedi Nicolas	Mouanko village	Farmer				
Dipoko Martin	Mouanko village	Farmer				
Massouka B.	Mouanko village	Photographer				
Ewaga Albert	Mouanko village	Farmer				
Komba Emannuel	Mouanko village	Farmer				
	Mouanko village	Farmer				
(d) Groups	GICs VRMCs Associations	Various capacities	Training Workshop on Group Mgt & Microproject Financing and Mgt, strategic planning	Mouanko	CWCS in collaboration with MINAGRI /DPAL	28 - 29 May

2.3.2: Site Visits in 2002

Name of Visitor	Organisation/ Address	Purpose of Visit	Period	Report
Tekom Emmanuel	Cameroon Environmental Watch (CEW)	Bilvalve prospection for poultry industry	15 - 17 January	
Eyabi George	IRAD Limbe BP 77 Limbe	Efficient Smoke house Project	05 - 07 March	Mission report 3pp
Préfet Sanaga/Maritime Division	Préfecture de S/M Edea	Official visit to Mouanko	20 – 21 March	
Keloute Alain Molongwe Ranfielda Kwa K. Evarice Y. Pondi Emmanuel	Jeune Chambre Economique (JCI), Douala Leader BP 12704 Douala Tel: 340 81 02	Séance de travail avec CWCS dans le cadre du Projet <<Sauver le Lamintin>>	23 - 24 March	Document de partenariat CWCS/JCI
Taisne Bernard	Development officer BP 217 Douala Tel: 781 23 94	Community Forestry Project	12 April	
Tafre Guy Leon Y. Pondi Emmanual Gustave Yomtche	Jean Chambre Economique (JCI), Douala Leader BP 12704 Douala Tel: 340 81 02	Signature de la Convention de Patenariat CWCS/JCI	18 April	Document de partenariat CWCS/JCI
Motalindja Moampea Hortense	Université de Dschang	Student Project	01 May - 02 September	Analyse floristique et structurelle de la végétation de la mangrove sous diffférents régimes d'exploitation du bois: cas de la Réserve de Faune de Douala-Edea. 64 pp
Dr. George Chuyong	University of Buea BP 63 Buea SWP	Resource Person Mangrove Permenant Sample Project	03 - 07 June	
Etoga Gilles	MINEF/DFAP/UCLCB Yaounde	Staff training on LOPES Software	12 Aug - 02 Sept	Rapport de mission 3pp.
Makak Jean Sylvestre	CEW	Development d'un protocole de partenariat CEW/MINEF local/CWCS	19 - 20 Septembre	Document de partenariat CEW/MINEF local/ CWCS
Tchuanté Tité Valerie Owono Alain	SNV/CBP Yaoundé Tel: 953 74 06; 950 33 32	Projet de Fumoir Amelioré	02 - 03 Octobre	
Nzooh Dongmo Zacharie	WWF- SE Forest Project BP 6776 Yaounde	Staff training on GIS-ARCVIEW Software	30 Oct - 06 Nov.	
Mbondo Samuel	WWF- SE Forest Project BP 6776 Yaounde	Administrative/Financial evaluation	23 - 27 Nov.	Mission report

2.4. Rapport des Activités du Club des Amis de la Nature du Lycée de Mouanko (CAN DU LYMO) 2001-2002.

Comme les années précédentes, le Club des Amis de la Nature du Lycée avec un effectif de 46 élèves (24 garçons et 22 filles) a lancé ses activités en octobre 2001.Sous l'appui des membres du nouveau bureau exécutif, le Club s'est fixé des objectifs majeurs (2) assisté de l'Administration du Lycée (Coordinateur du Club et quelques professeurs), et de l'ONG dénommée CWCS (Cameroon Wildlife Conservation Society). Ces objectifs se résument de la manière suivante :

- Les réalisations,
- Les activités culturelles.

S'agissant des réalisations au cours de l'exercice 2001-2002, les membres du Club des Amis de la Nature du Lycée de Mouanko ont été solidaires sur l'unique point suivant :
L'agrandissement de la parcelle d'expérimentation du CANLYMO (Jardin Scolaire) mis sur pied au cours des années précédentes. Quant aux activités culturelles, elles ont concerné les domaines suivants :

- L'organisation des soirées culturelles et des kermesses ;
- Les séances d'investissement humain ;
- La célébration des journées mondiales (Eau, Zones humides, Arbre, Terre, Environnement, Couche d'ozone…).

Si on s'appesantit sur ces activités culturelles, elles ont été diligentées par une kermesse. La kermesse organisée par le CANLYMO en date du 10 février 2002 n'a pas eu le succès escompté pour des raisons multiples :

- Elle a eu lieu après l'investissement humain qui a pris presque la moitié du temps prévu,
- Des multiples répétitions du Club Culturel qui ont retenue beaucoup d'élèves.
-

Compte tenu de tous ces aléas, des résolutions ont été prises quant aux prochaines activités qui seront organisées par le CANLYMO. Toutefois des félicitations de la part du Coordinateur ont été adressées aux responsables en premier du CANLYMO quant à la bonne (organisation) de cette kermesse. Nous remercions particulièrement la CWCS qui ne cesse de nous parrainer dans nos diverses activités ; en plus nous tirons aussi un coup de chapeau à l'administration du Lycée de Mouanko quant à la bonne marche de cette kermesse.

D'autre part les activités culturelles ont aussi touché un point cumulant : les séances d'investissement humain au cours desquelles les membres du CANLYMO se sont investis dans la propreté des locaux administratifs et de l'environnement de Mouanko.

Il serait nécessaire que dans les jours à venir, le Président qui posera sa candidature soit automatiquement un ancien membre et doté d'un savoir permanent, d'un niveau intellectuel élevé.
En somme, le CANLYMO a connu nombre d'écueils et d'handicaps au cours de l'année scolaire 2001-2002. Nous souhaiterions dans l'avenir plus d'apport, d'appui et d'attention de la part de l'administration du Lycée de Mouanko et de notre parrain.

EBONGO MBOMA Samuel Benjamin
(Vice-président du Club des Amis de la Nature 2001-2002)

Appendix 3: Research and Monitoring Activities

3.1: NTFPs

3.1.1: Market Supply Estimates for Commercial NTFPs in the Douala-Edea Reserve (2002)

Market Type		NTFP		Part			No parts	Month(2002)												Total	Average	Value	Value
		common/	*Scientific*	sold			per														unit price	million	000
	Family	local name	*name*		Condition	Unit	unit	J	F	M	A	M	J	J	A	S	O	N	D		FCFA	FCFA	Us$
Epollo Mket	Annonaceae	Pébé	*Monodora myristiaca*	seeds	dry	kg	1126	300	600	300	450	400	500	500	350	600	400		300	4700	480	2.26	3.22
	Apocynaceae	Broom	*Picralima nitida*	branches/twigs	dry	kg	80		90				1600	3600		2500	1600	90		9480	100	0.95	1.35
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	seeds	dry	kg	1472	900	300	450	500	1000		600	550	800		500	250	5850	1087	6.36	9.08
	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	kg	3833		175					50			50	125		400	278	0.11	0.16
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh	kg	122													0	0	0.00	0.00
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	bark/seeds	dry	kg	307	200	350	300	300	300	300	800	300	300	300	300	300	4050	210	0.85	1.22
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	kg	6						100	900	1050	350				2400	100	0.24	0.34
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	kg	306						300							300	500	0.15	0.21
	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	kg	550	700	1000	700	550	850	650	650	750	950	750		900	8450	89	0.75	1.08
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*	fruits	dry	kg	8													0	0	0.00	0.00
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	kg	695								25	75		100		200	267	0.05	0.08
	Olacaceae	Noisette	*Coula edulis*	seeds/fruits	fresh	kg	42							50	50					100	645	0.06	0.09
	Palmae	Palm wine	*Raphia sp*	sap	fresh	L	na	375	1090	1025	650	700	825	1725	1435		8570	2700	1580	20675	100	2.07	2.95
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	m	na	600	480	540	825	825	405	264	240	645	624	429	1683	7560	17	0.13	0.18
	Palmae	Cane	*Calamus sp*	baskets	na	No	na													0	0	0.00	0.00
	Palmae	Cane	*Calamus sp*	bamboo	fresh	m	na	275		1150										1425	53	0.07	0.11
	Palmae	Cane	*Calamus sp*	chairs/tables		No	na		7											7	300	0.00	0.00
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	kg	2			2135	2700	2100	2600	2900	2700	1900	1900	4800	1700	25435	133	3.39	4.84
	Piperaceae	Black/bush peper	*Piper spp*	fruits	dry	kg	20140	100	100	100	125	100	100		100	100	100	100	100	1125	1564	1.76	2.51
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	dry	kg	48													0	0	0.00	0.00
	Zingiberaceae	Bongo	*Aframonum citratum*	fruits	dry	kg	171	300	600	300	450	400	500	500	350	600	400	400	300	5100	480	2.45	3.50
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	fruits	dry	kg	48	200	100	200	125	225	100		200	150	200	200	200	1900	320	0.61	0.87
	Total (average)																					**22.26**	**31.80**

Market Type		NTFP		Part			No parts				Month(2002)									Total	Average	Value	Value
		common/	*Scientific*	sold			per														unit price	million	000
	Family	local name	*name*		Condition	Unit	unit	J	F	M	A	M	J	J	A	S	O	N	D		FCFA	FCFA	Us$
Yoyo Mket	Annonaceae	Ngoula	*Xylopia aethiopica*	fruits	dry	kg	829		1	3	36	2								42	1335	0.06	0.08
	Annonaceae	Pébé	*Monodora myristiaca*	seeds	dry	kg	1126	50	11	20	22	16		25			20	18	50	232	100	0.02	0.03
	Apocynaceae	Broom	*Picralima nitida*	branches/twigs						50										50	520	0.03	0.04
	Burseraceae	Plums	*Dacroyodes edulis*	fruits	fresh	kg	16								200	50				250	1065	0.27	0.38
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	seeds	dry	kg	1472	155	47	125	75	125	50	50	18	50	96	86	125	1002	136	0.14	0.20
	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	kg	3833	600		40	250	40	200	50	50		100	100	50	1480	611	0.90	1.29
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh	kg	122			2	18					18	28	18		84	506	0.04	0.06
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	bark	dry	kg	307	30	2	7	24	7					110	100		280	175	0.05	0.07
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	kg	6						300		150					450	0	0.00	0.00
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	kg	306													0	136	0.00	0.00
	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	kg	550	70		150	49	15				100			50	434	640	0.28	0.40
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*	fruits	dry	kg	8	50		5	9					50			25	139	160	0.02	0.03
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	kg	695										61	50		111	627	0.07	0.10
	Olacaceae	Noisette	*Coula edulis*	seeds/fruits	fresh	kg	42							100	200	250				550	200	0.11	0.16
	Palmae	Palm wine	*Raphia sp*	sap	fresh	L	na	190			80		100				440	440		1250	0	0.00	0.00
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	m	na													0	183	0.00	0.00
	Palmae	Raphia/Nypa leaves	*Raphia sp/Nypa sp*	mats	fresh	kg	52	360	350	300										1010	1500	1.52	2.16
	Palmae	Cane	*Calamus sp*	baskets	fresh	No	na	131			3		20							154	35	0.01	0.01
	Palmae	Cane bamboos	*Calamus sp*	bamboo	fresh	m	na	600		1600		800	750	4550	2700	2550	1000	1600	1850	18000	50	0.90	1.29
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	kg	2				7800		1200							9000	0	0.00	0.00
	Pandaceae	Panda	*Panda oleosa*	seeds	fresh	kg														0	1120	0.00	0.00
	Piperaceae	Black/bush peper	*Piper spp*	fruits	dry	kg	20140						4	18	10	18			50	100	830	0.08	0.12
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	dry	kg	48			8	12	18								38	438	0.02	0.02
	Zingiberaceae	Bongo	*Aframonum citratum*	fruits	dry	kg	171	27	12	20	15	10	19		18	36	10	10	25	202	393	0.08	0.11
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	fruits	dry	kg	48	66			20		21							107	200	0.02	0.03
	Total (average)																					**4.60**	**6.58**

Market Type		NTFP		Part			No parts				Month(2002)									Total	Average	Value	Value
		common/	*Scientific*	sold			per														unit price	million	000
	Family	local name	*name*		Condition	Unit	unit	J	F	M	A	M	J	J	A	S	O	N	D		FCFA	FCFA	Us$
	Annonaceae	Ngoula	*Xylopia aethiopica*	fruits	dry	kg	829	50												50	93	0.00	0.01
Roadside	Apocynaceae	Broom	*Picralima nitida*	branches/twigs	dry	kg	669	30									40			70	626	0.04	0.06
Elogotot	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	kg	3833	100			200	200						300		800	79	0.06	0.09
	Guttiferae	Bitter cola	*Cola sp*	seeds	fresh	kg	122							25	10	10				45	550	0.02	0.04
Nkangazog	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	kg	6						70							70	87	0.01	0.01
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	kg	306						190	325			50			565	145	0.08	0.12
Yadibo	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	kg	550	303	205			300	65	70	130	105	250	300		1728	605	1.05	1.49
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	kg	695								90		30			120	100	0.01	0.02
	Olacaceae	Noisette	*Coula edulis*	seeds/fruits	fresh	kg	42						5	15	50		15			85	17	0.00	0.00
Mounako	Palmae	Palm wine	*Raphia sp*	sap	fresh	L	na	760	1156		130	300				1680	2600	480		7106	102	0.73	1.04
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	m	na	105	1800		570	120			60	300	1740	915		5610	99	0.56	0.79
	Palmae	Raphia leaves	*Raphia sp*	mats	fresh	kg	52		100		12	150	188			210	465			1125	0	0.00	0.00
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	kg	2				3600	20	58	75		600	200	350		4903	600	2.94	4.20
	Palmae	Cane	*Calamus sp*	bamboo	fresh	m	na												106	106	0	0.00	0.00
	Piperaceae	Black/bush peper	*Piper guineensis*	fruits	dry	kg	20140													0	0	0.00	0.00
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	fresh	kg	48	50												50	0	0.00	0.00
	Total (average)																					**5.51**	**7.87**
	Grand Total																					**32.37**	**46.25**
							na: not applicable														**1US$=700FCFA**		

3.1.2-Gender roles in the marketing of NTFPs in the Douala-Edea Reserve (2002)

Market Type		NTFP common/	*Scientific*	Part sold		Gender								
						Adult				Children				
	Family	local name	*name*		Condition	M	%	F	%	M	%	F	%	Tot
Epollo Mket	Annonaceae	Pébé	*Monodora myristiaca*	seeds	dry	81	57.9	59	42.1	0	0.0	0	0.0	140
	Apocynaceae	Broom	*Picralima nitida*	branches/twigs	dry	0	0.0	8	100.0	0	0.0	0	0.0	8
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	seeds	dry	85	51.5	80	48.5	0	0.0	0	0.0	165
	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	0	0.0	17	100.0	0	0.0	0	0.0	17
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh									
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	bark/seeds	dry	67	65.7	35	34.3	0	0.0	0	0.0	102
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	0	0.0	21	100.0	0	0.0	0	0.0	21
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	0	0.0	2	100.0	0	0.0	0	0.0	2
	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	3	5.3	54	94.7	0	0.0	0	0.0	57
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*	fruits	dry									
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	0	0.0	9	100.0	0	0.0	0	0.0	9
	Olacaceae	Noisette	*Coula edulis*	seeds/fruits	fresh	0	0.0	6	100.0	0	0.0	0	0.0	6
	Palmae	Palm wine	*Raphia sp*	sap	fresh	68	75.6	18	20.0	0	0.0	1	1.1	90
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	18	38.3	29	61.7	0	0.0	0	0.0	47
	Palmae	Cane	*Calamus sp*	baskets	na									
	Palmae	Cane	*Calamus sp*	bamboo	fresh	4	100.0	0	0.0	0	0.0	0	0.0	4
	Palmae	Cane	*Calamus sp*	chairs	na	2	100.0	0	0.0	0	0.0	0	0.0	2
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	35	61.4	20	35.1	0	0.0	0	0.0	57
	Piperaceae	Black/bush peper	*Piper spp*	fruits	dry	0	0.0	29	100.0	0	0.0	0	0.0	29
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	dry									
	Zingiberaceae	Bongo	*Aframonum citratum*	fruits	dry	93	59.6	63	40.4	0	0.0	0	0.0	156
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	fruits	dry	56	96.6	2	3.4	0	0.0	0	0.0	58
	Total (average)					**512**	**39.5**	**452**	**60.0**	**0**	**0.0**	**1**	**0.1**	**970**
Yoyo Mket	Annonaceae	Ngoula	*Xylopia aethiopica*	fruits	dry	4	44.4	5	55.6	0	0.0	0	0.0	9
	Annonaceae	Pébé	*Monodora myristiaca*	seeds	dry	9	52.9	8	47.1	0	0.0	0	0.0	17
	Apocynaceae	Broom	*Procralima nitida*	twigs	dry	0	0.0	1	100.0	0	0.0	0	0.0	1
	Burseraceae	Plums	*Dacroyodes edulis*	fruits	fresh	0	0.0	5	100.0	0	0.0	0	0.0	5
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	seeds	dry	11	61.1	7	38.9	0	0.0	0	0.0	18
	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	7	30.4	16	69.6	0	0.0	0	0.0	23
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh	4	36.4	7	63.6	0	0.0	0	0.0	11
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	bark	dry	7	46.7	8	53.3	0	0.0	0	0.0	15
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	0	0.0	8	100.0	0	0.0	0	0.0	8
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry									
	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	2	20.0	8	80.0	0	0.0	0	0.0	10
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*	fruits	dry	5	55.6	4	44.4	0	0.0	0	0.0	9
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	1	50.0	1	50.0	0	0.0	0	0.0	2
	Olacaceae	Noisette	*Coula edulis*	fruits/seeds	fresh	0	0.0	8	100.0	0	0.0	0	0.0	8
	Palmae	Palm wine	*Raphia sp*	sap	fresh	2	33.3	4	66.7	0	0.0	0	0.0	6
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh									
	Palmae	Raphia/Nypa leaves	*Raphia sp/Nypa sp*	mats	fresh	0	0.0	4	100.0	0	0.0	0	0.0	4
	Palmae	Cane	*Calamus sp*	baskets	fresh	7	41.2	10	58.8	0	0.0	0	0.0	17
	Palmae	Cane bamboos	*Calamus sp*	bamboo	fresh	5	22.7	17	77.3	0	0.0	0	0.0	22
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	0	0.0	2	66.7	0	0.0	0	0.0	3
	Pandaceae	Panda	*Panda oleosa*	seeds	fresh									
	Piperaceae	Black/bush peper	*Piper spp*	fruits	dry	9	75.0	3	25.0	0	0.0	0	0.0	12
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	dry	0	0.0	7	100.0	0	0.0	0	0.0	7
	Zingiberaceae	Bongo	*Aframonum citratum*	fruits	dry	9	23.1	30	76.9	0	0.0	0	0.0	39
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	fruits	dry	0	0.0	4	100.0	0	0.0	0	0.0	4
	Total (average)					**82**	**26.9**	**167**	**71.5**	**0**	**0.0**	**0**	**0.0**	**250**
	Annonaceae	**Ngoula**	***Xylopia aethiopica***	**fruits**	**dry**	0	0.0	2	100.0	0	0.0	0	0.0	2
Roadside	Apocynaceae	Broom	*Picralima nitida*	branches/twigs	dry	0	0.0	2	100.0	0	0.0	0	0.0	2
Elogotot	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	2	22.2	7	77.8	0	0.0	0	0.0	9
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh	1	33.3	2	66.7	0	0.0	0	0.0	3
Nkangazog	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	0	0.0	1	50.0	0	0.0	1	50.0	2
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	5	27.8	5	27.8	7	38.9	1	5.6	18
Yadibo	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	6	20.0	18	60.0	6	20.0	0	0.0	30
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	3	75.0	1	25.0	0	0.0	0	0.0	4
	Olacaceae	Noisette	*Coula edulis*	fruits/seeds	fresh	1	14.3	1	14.3	5	71.4	0	0.0	7
Mouanko	Palmae	Palm wine	*Raphia sp*	sap	fresh	107	92.2	8	6.9	1	0.9	0	0.0	116
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	9	69.2	4	30.8	0	0.0	0	0.0	13
	Palmae	Raphia leaves	*Raphia sp*	mats	fresh	8	100.0	0	0.0	0	0.0	0	0.0	8
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	15	62.5	6	25.0	3	12.5	0	0.0	24
	Palmae	Cane bamboos	*Calamus sp*	bamboo	fresh	3	100.0	0	0.0	0	0.0	0	0.0	3
	Piperaceae	Black/bush peper	*Piper guineensis*	fruits	dry									
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	fresh	1	100.0	0	0.0	0	0.0	0	0.0	1
	Total (average)					**161**	**47.8**	**57**	**38.9**	**22**	**9.6**	**2**	**3.7**	**242**
	Grand total (average)					**755**	**51.7**	**676**	**46.3**	**22**	**1.7**	**3**	**0.3**	**1462**

3.1.3: Market Pricing Pattern for Commercial NTFPs in the Douala-Edea Reserve (2002)

Market Type		NTFP common/ local name	Scientific name	Part sold	Condition	Unit	Month Price per unit FCFA(2002) J	F	M	A	M	J	J	A	S	O	N	D	Mean	Us$	SD	CV(%)
	Family																					
Epollo Mket	Annonaceae	Pébé	*Monodora myristiaca*	seeds	dry	kg	480	480	480	480	480	480	480	480	480	480		480	480	0.7	0.00	0.00
	Apocynaceae	Broom	*Picralima nitida*	branches/twigs	dry	kg		100				100	100		100	100	100		100	0.1	0.00	0.00
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	seeds	dry	kg	967	955	955	1140	1150		1150	1150	1150		1100	1150	1087	1.6	89.49	8.23
	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	kg		310					240			240	320		278	0.4	43.49	15.67
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh	kg																
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	bark/seeds	dry	kg	210	210	210	210	210	210	210	210	210	210	210	210	210	0.3	0.00	0.00
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	kg						100	100	100	100				100	0.1	0.00	0.00
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	kg						500							500	0.7	0.00	0.00
	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	kg	80	80	80	80	80	80	100	100	100	100		100	89	0.1	10.44	11.72
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*	fruits	dry	kg																
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	kg								320	240		240		267	0.4	46.19	17.32
	Olacaceae	Noisette	*Coula edulis*	seeds/fruits	fresh	kg							650	640					645	0.9	7.07	1.10
	Palmae	Palm wine	*Raphia sp*	sap	fresh	L	100	100	100	100	100	100	100	100		100	100	100	100	0.1	0.00	0.00
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	m	17	17	17	17	17	17	17	17	17	17	17	17	17	0.0	0.00	0.00
	Palmae	Cane	*Calamus sp*	baskets	na	No																
	Palmae	Cane	*Calamus sp*	bamboo	fresh	m	75		30										53	0.1	31.82	60.61
	Palmae	Cane	*Calamus sp*	chairs/tables		No		300											300	0.4	0.00	0.00
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	kg			134	134	133	133	133	133	133	133	134	133	133	0.2	0.48	0.36
	Piperaceae	Black/bush peper	*Piper spp*	fruits	dry	kg	1600	1600	1600	1600	1600	1600		1600	1600	1600	1600	1200	1564	2.2	120.60	7.71
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	dry	kg																
	Zingiberaceae	Bongo	*Aframonum citratum*	fruits	dry	kg	480	480	480	480	480	480	480	480	480	480	480	480	480	0.7	0.00	0.00
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	fruits	dry	kg	320	320	320	320	320	320		320	320	320	320	320	320	0.5	0.00	0.00
Yoyo Mket	Annonaceae	Ngoula	*Xylopia aethiopica*	fruits	dry	kg		600	667	885	1250								851	1.2	292.81	34.43
	Annonaceae	Pébé	*Monodora myristiaca*	seeds	dry	kg	500	800	1875	600	2000		1800			1500	1500	1440	1335	1.9	563.38	42.20
	Apocynaceae	Broom	*Picralima nitida*	branches/twigs					100										100	0.1	0.00	0.00
	Burseraceae	Plums	*Dacroyodes edulis*	fruits	fresh	kg							440	600					520	0.7	113.14	21.76
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	seeds	dry	kg	900	1300	1240	1200	1572	1200	920	667	1000	930	930	920	1065	1.5	242.66	22.79
	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	kg	100		100	180	200	90	110	84		180	180	140	136	0.2	44.73	32.79
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh	kg			1500	500					389	333	333		611	0.9	501.62	82.10
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	bark	dry	kg	500	350	350	500	1000					420	420		506	0.7	226.41	44.77
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	kg							150		200				175	0.3	35.36	20.20
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	kg																
	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	kg	120		95	200	133				180			90	136	0.2	44.93	32.96
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*	fruits	dry	kg	700		700	600					600			600	640	0.9	54.77	8.56
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	kg										160	160		160	0.2	0.00	0.00
	Olacaceae	Noisette	*Coula edulis*	seeds/fruits	fresh	kg							640	640	600				627	0.9	23.09	3.69
	Palmae	Palm wine	*Raphia sp*	sap	fresh	L	200			200		200				200	200		200	0.3	0.00	0.00
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	m																
	Palmae	Raphia/Nypa leaves	*Raphia sp/Nypa sp*	mats	fresh	kg	200	150	200										183	0.3	28.87	15.75
	Palmae	Cane	*Calamus sp*	baskets	fresh	No	1500			1500		1500							1500	2.1	0.00	0.00
	Palmae	Cane bamboos	*Calamus sp*	bamboo	fresh	m	50		40		40	20	40	40	40	40	20	20	35	0.1	10.80	30.86
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	kg				50		50							50	0.1	0.00	0.00
	Pandaceae	Panda	*Panda oleosa*	seeds	fresh	kg																
	Piperaceae	Black/bush peper	*Piper spp*	fruits	dry	kg						1100	1100	1100	1100			1200	1120	1.6	44.72	3.99
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	dry	kg			750	600	1139								830	1.2	278.19	33.53
	Zingiberaceae	Bongo	*Aframonum citratum*	fruits	dry	kg	420	300	205	400	800	360		333	333	650	700	320	438	0.6	190.21	43.40
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	fruits	dry	kg	420			400		360							393	0.6	30.55	7.77
	Annonaceae	Ngoula	*Xylopia aethiopica*	fruits	dry	kg	200												200	0.3	0.00	0.00
Roadside	Apocynaceae	Broom	*Picralima nitida*	branches/twigs	dry	kg	100									50			75	0.1	35.36	47.14
Elogotot	Gnetaceae	Eru	*Gnetum africanum*	leaves	fresh	kg	100			90	90						90		93	0.1	5.00	5.41
	Guttiferae	Bitter cola	*Garcinia kola*	seeds	fresh	kg	122						880	700	800				626	0.9	343.65	54.94
Nkangazog	Irvingiaceae	Bush mango	*Irvingia gabonensis*	fruits	fresh	kg						79							79	0.1	0.00	0.00
	Irvingiaceae	Bush mango	*Irvingia gabonensis*	seeds	dry	kg						600	600			450			550	0.8	86.60	15.75
Yadibo	Maranthaceae	Wrapping leaves	*Megaphynium spp*	leaves	fresh	kg	80	80			50	77	100	100	100	100	100		87	0.1	17.36	19.85
	Moraceae	Toué	*Triculia africanum*	seeds	fresh	kg								90		200			145	0.2	77.78	53.64
	Olacaceae	Noisette	*Coula edulis*	seeds/fruits	fresh	kg						480	500	740		700			605	0.9	134.04	22.16
Mounako	Palmae	Palm wine	*Raphia sp*	sap	fresh	L	100	100		100	100				100	100	100		100	0.1	0.00	0.00
	Palmae	Raphia bamboos	*Raphia sp*	bamboo	fresh	m	17	17		17	17			17	17	17	17		17	0.0	0.00	0.00
	Palmae	Raphia leaves	*Raphia sp*	mats	fresh	kg		150		150	100	80			67	67			102	0.1	38.85	37.96
	Palmae	Coconuts	*Cocos nucifera*	nuts	fresh	kg				50	50	133	133		40	188	100		99	0.1	55.55	56.03
	Palmae	Cane	*Calamus sp*	bamboo	fresh	m																
	Sterculiaceae	Kola nuts	*Cola sp*	seeds	dry	kg	600												600	0.9	0.00	0.00

3.1.4: Profit Margins for Traded NTFPs in the Douala-Edea Reserve (2002)

Market Type		NTFP		Month																						Mean		SD		Cv%	
		common/	*Scientific*	J		F		M		A		M		J		J		A		S		O		N		D					
	Family	local name	*name*	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP	%CP	%SP
Epollo Mket	Annonaceae	Pébé	*Monodora myristiaca*	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7			71.4	41.7	71.4	41.7	0.0	0.0	0.0	0.0
	Apocynaceae	Broom	*Picralima nitida*																														
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	30.4	23.3	27.7	21.6	26.1	20.5	27.7	21.6	26.1	20.5			26.1	20.5	26.1	20.5	22.9	18.2			25.1	19.9	27.7	21.6	26.6	20.8	2.0	1.3	7.4	6.4
	Gnetaceae	Eru	*Gnetum africanum*																														
	Guttiferae	Bitter cola	*Garcinia kola*																														
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	41.7	29.2	41.7	29.2	50.0	33.3	41.7	29.2	44.4	30.5	44.4	30.5	44.4	30.5	44.4	30.5	44.5	30.5	44.4	30.5	44.4	30.5	44.4	30.5	44.2	30.4	2.2	1.1	5.0	3.5
	Irvingiaceae	Bush mango	*Irvingia gabonensis*																														
	Irvingiaceae	Bush mango	*Irvingia gabonensis*																														
	Maranthaceae	Wrapping leaves	*Megaphynium spp*																														
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*																														
	Moraceae	Toué	*Triculia africanum*																														
	Olacaceae	Noisette	*Coula edulis*																														
	Palmae	Palm wine	*Raphia sp*							100.0	50.0	100.0	50.0	100.0	50.0							100.0	50.0	100.0	50.0	100.0	50.0	100.0	50.0	0.0	0.0	0.0	0.0
	Palmae	Raphia bamboos	*Raphia sp*																														
	Palmae	Cane	*Calamus sp*																														
	Palmae	Cane	*Calamus sp*																														
	Palmae	Cane	*Calamus sp*																														
	Palmae	Coconuts	*Cocos nucifera*																														
	Piperaceae	Black/bush peper	*Piper spp*	33.3	25.0	33.3	25.0	33.3	25.0	33.3	25.0	33.3	25.0			33.3	25.0	33.3	25.0	33.3	25.0	33.3	25.0	33.3	25.0			33.3	25.0	0.0	0.0	0.0	0.0
	Sterculiaceae	Kola nuts	*Cola sp*																														
	Zingiberaceae	Bongo	*Aframonum citratum*	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	71.4	41.7	0.0	0.0	0.0	0.0
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	37.9	27.5	60.0	37.5	60.0	37.5	60.0	37.5	60.0	37.5	60.0	37.5			60.0	37.5	60.0	37.5	60.0	37.5	60.0	37.5	60.0	37.5	58.0	36.7	6.7	3.0	11.5	8.2
Yoyo Mket	Annonaceae	Ngoula	*Xylopia aethiopica*			140.0	58.3			61.2	37.9	66.7	40.0															89.3	45.4	44.0	11.2	49.3	24.7
	Annonaceae	Pébé	*Monodora myristiaca*	91.8	43.4	141.5	58.6	102.7	50.7	152.9	59.1	88.8	45.7			64.3	39.1							80.0	44.4	116.7	53.8	104.8	49.4	30.4	7.4	29.0	14.9
	Apocynaceae	Broom	*Picralima nitida*																														
	Burseraceae	Plums	*Dacroyodes edulis*														109.1	52.2										52.2	109.1				0.0
	Euphorbiaceae	Njangsang	*Ricinodendron heudelotii*	61.8	36.9	114.4	53.4	114.8	53.4	80.0	40.5	85.4	45.6	38.6	27.8	30.4	23.3	71.4	41.7	40.0	28.6	40.0	28.6	34.0	25.3	30.4	23.3	61.8	36.6	31.3	11.1	50.7	30.5
	Gnetaceae	Eru	*Gnetum africanum*							100.0	50.0																	100.0	50.0				0.0
	Guttiferae	Bitter cola	*Garcinia kola*																	133.3	57.1							133.3	57.1				0.0
	Huaceae	Garlic tree (Ohum)	*Afrostyrax lepidophyllus*	209.2	67.7	91.7	47.8	80.0	44.4	95.9	47.5	75.0	42.9			78.6	44.0	50.0	33.3			91.7	47.8	200.0	66.7	53.3	34.8	102.5	45.3	56.0	11.5	54.6	25.3
	Irvingiaceae	Bush mango	*Irvingia gabonensis*																														
	Irvingiaceae	Bush mango	*Irvingia gabonensis*																														
	Maranthaceae	Wrapping leaves	*Megaphynium spp*																														
	Momosaceae	Elelere/Sese	*Tetrapleura tetraptera*	100.0	50.0					100.0	49.5															30.4	23.3	76.8	40.9	40.2	15.3	52.3	37.3
	Moraceae	Toué	*Triculia africanum*																														
	Olacaceae	Noisette	*Coula edulis*																														
	Palmae	Palm wine	*Raphia sp*							100.0	50.0											100.0	50.0	100.0	50.0			100.0	50.0	0.0	0.0	0.0	0.0
	Palmae	Raphia bamboos	*Raphia sp*																														
	Palmae	Raphia/Nypa leaves	*Raphia sp/Nypa sp*																														
	Palmae	Cane	*Calamus sp*																														
	Palmae	Cane bamboos	*Calamus sp*																														
	Palmae	Coconuts	*Cocos nucifera*							66.7	40.0																	66.7	40.0	0.0	0.0	0.0	0.0
	Pandaceae	Panda	*Panda oleosa*																														
	Piperaceae	Black/bush peper	*Piper spp*															83.3	45.5	50.0	33.3	50.0	33.3			71.4	41.7	63.7	40.8	16.5	6.1	25.9	15.1
	Sterculiaceae	Kola nuts	*Cola sp*							79.2	40.3	74.9	42.7			37.5	27.3											63.9	36.8	22.9	8.3	35.9	22.5
	Zingiberaceae	Bongo	*Aframonum citratum*	*127.8*	50.9	113.7	53.2	121.6	54.9	66.7	40.0	130.0	56.4	56.1	32.6					75.0	42.8	66.7	40.0	62.5	38.5	87.5	46.7	90.8	45.6	29.5	8.0	32.4	17.6
	Zingiberaceae	Nsoté (Bongo sp)	*Aframonum sp*	*116.2*	51.3					89.3	46.3			73.9	42.5													93.1	46.7	21.4	4.4	23.0	9.5

3.1.5. Etude sur le braconnage

Tableau 1 : Distribution des espèces tuées en fonction des sites de suivi de janvier à décembre 2002

Espèces	Mouanko centre	Elogotot	Nkaganzog	Yoyo	Total
Crocodile	132	45	61	26	264
Varan	34	8	10	5	57
Singe	241	27	31	33	232
Python	20	-	-	1	21
Antilope	39	12	11	5	67
Tortue	19	-	2	5	26
Chimpanzé	-	-	-	-	-
Sanglier	45	5	13	2	65
Lamantin	8	-	3	-	11
Eléphant	1	-		-	1
Autres	211	34	45	59	349
Total.	650	131	176	136	1093

Tableau 2 : Distribution des méthodes de capture en fonction de suivi

Méthode de capture	Mouanko Centre	Elogotot	Nkaganzog	Yoyo	Total
Piège	201	19	13	31	284
Fusil	293	29	55	28	405
Chiens	1	31	36	7	75
Filet	20	-	2	2	24
Hameçons	192	34	53	20	299
autres	11	5	9	1	26

Tableau 3 : Distribution des espèces tuées en fonction des sexes

Sexes	Mouanko Centre	Elogotot	Nkaganzog	Yoyo	Total
Mâle	312	46	57	45	460
Femelle	300	15	32	28	365

Figure1: Distribution des espèces tuées par rapport à l'effectif total

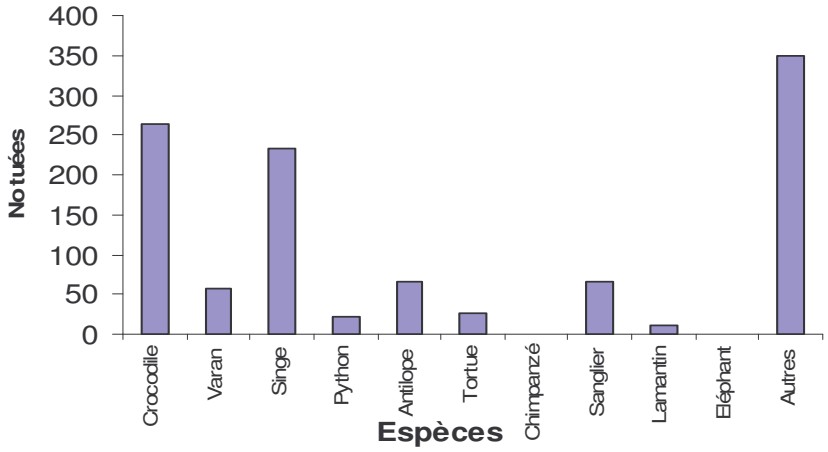


Figure 2: Distribution des éspèces tuées par site d'observation

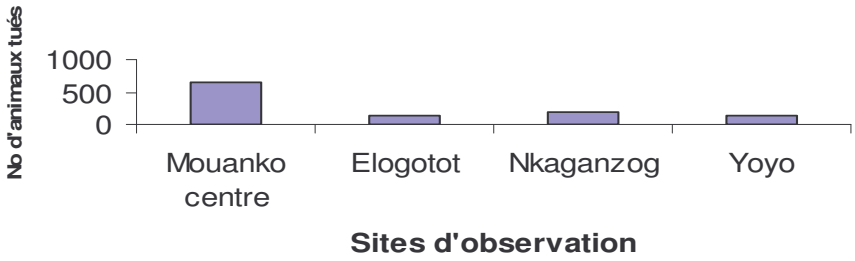


Figure 3: Distribution des espèces tuées par rapport à la méthode de capture

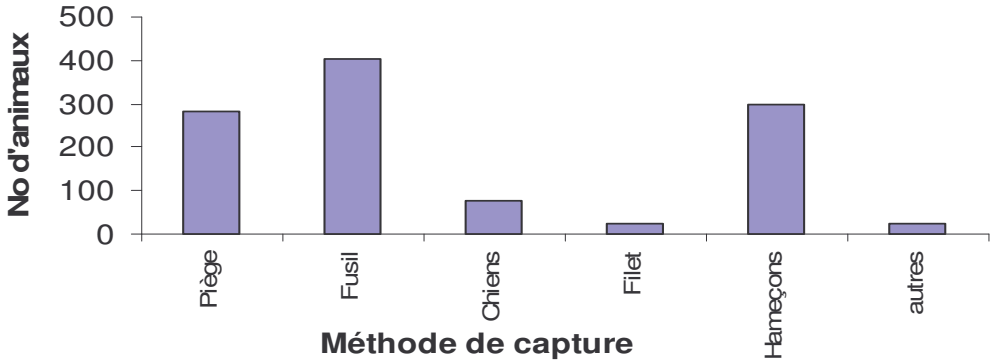
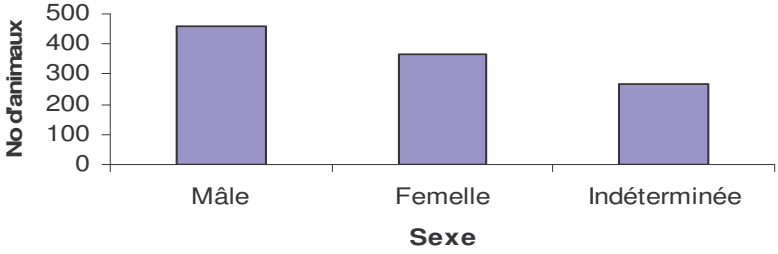


Figure 4: Distribution des éspèces tuées en fonction de sexes



3.2: Waterbird counts along R.Sanaga and associated rivers and lakes (January to December, 2002)

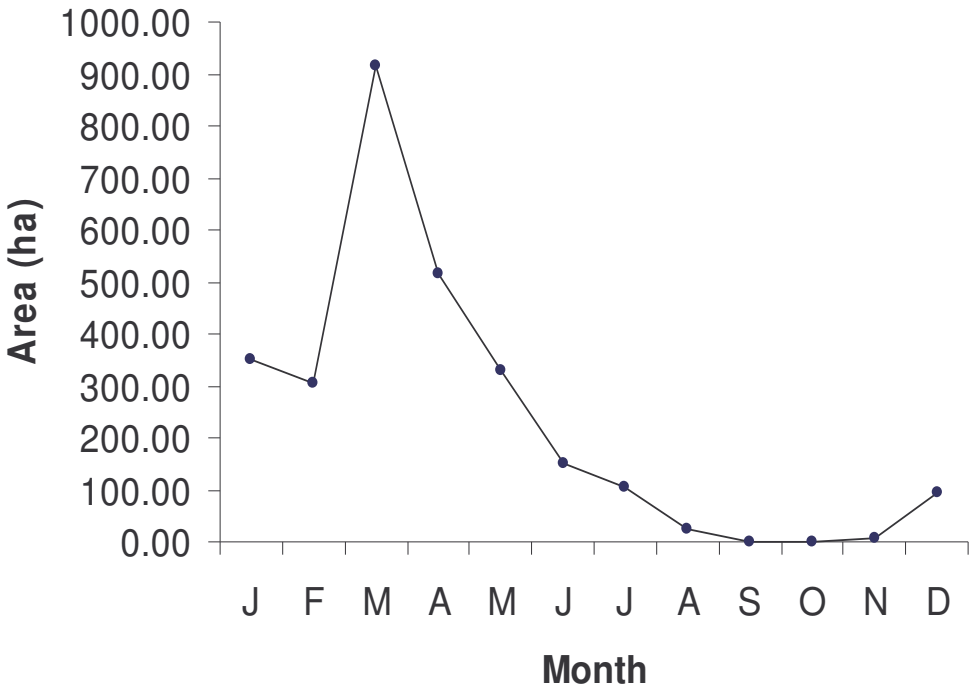
		Month (2002)											
(a) Waterbirds		**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Darters	African Darter	6	5	7	2	3	5	2	1	1	0	8	7
Herons	Grey Heron	13	6	3	1	2	0	1	2	1	2	7	9
	Purple Heron	0	1	1	0	0	8	0	0	0	0	0	1
	Squacco Heron	0	0	0	0	0	0	0	0	0	0	4	3
	Goliath Heron	1	0	1	0	0	1	0	0	0	0	1	1
	Green-backed Heron	1	0	0	0	1	0	0	0	0	0	0	1
	Black-headed Heron	0	0	0	2	0	0	0	0	0	0	0	0
Egrets	Little Egret	39	32	25	12	10	13	13	4	0	4	9	23
	Great Egret	1	0	1	0	1	1	2	0	0	0	5	0
	Cattle Egret	1	2	1	0	0	1	0	0	0	0	8	16
Storks	Open-billed Stork	111	183	81	25	2	0	1	1	20	2	27	174
	Wholly-necked Stork	0	4	4	1	0	0	0	0	0	0	0	0
	Yellow-billed Stork	0	0	6	0	0	0	0	0	0	0	0	0
Wagtails	Yellow wagtail	4	6	0	4	0	0	0	0	0	0	0	5
	Pied wagtail	2	3	1	0	2	7	1	6	8	9	6	3
Plovers	Kentish Plover	0	4	6	10	4	6	0	0	0	0	0	8
	White-fronted Plover	0	4	2	2	0	1	1	0	0	0	0	5
	White-crowned Plover	16	19	19	29	17	6	0	8	1	0	31	18
	Ringed Plover	0	2	0	0	0	0	0	0	0	0	0	0
Pratincoles	Grey Pratincole	158	212	173	105	162	327	423	298	0	0	539	283
Sandpipers	Common Sandpiper	9	13	11	4	4	0	2	8	5	2	9	21
	Wood Sandpiper	0	0	2	5	2	0	0	0	0	0	0	0
	White rump Sandpiper	0	0	3	1	0	0	0	0	0	0	0	0
Shanks	Green Shank	23	37	24	15	6	0	0	3	0	0	7	138
Terns	Black Tern	3	0	0	0	4	0	0	0	0	0	0	0
Skimmers	African Skimmer	0	14	389	653	1582	1855	1327	0	0	0	0	0
Jacanas	African Jacana	0	0	0	0	1	1	0	0	0	0	0	0
	Lesser Jacana	0	0	1	0	0	0	0	0	0	0	0	0
Curlews	Curlew	0	0	1	0	0	0	0	0	0	0	0	0
Dikkops	Water Dikkop (Thick-knee)	1	9	17	9	20	2	2	0	1	0	2	3
Knots	Knot	0	5	1	0	1	0	0	0	0	0	1	0
Finfoots	African Finfoot	0	3	10	7	1	2	0	2	2	1	1	1
Crake	Black Crake	0	0	2	0	0	4	3	2	6	2	8	6
Ibises	Hadada Ibis	4	4	5	0	10	10	2	6	3	2	9	4
Commorants	Long-tailed Commorant	2	0	0	0	0	0	0	0	0	0	1	0
Ducks & Geese	Hartlaub's Duck	0	8	6	2	5	2	7	0	1	0	0	0
	Pygmy Goose	0	0	0	0	0	8	0	0	2	0	0	4
Turnstones	Turnstone	0	5	3	0	0	0	0	0	0	0	0	0
Kingfishers	Pied Kingfisher	5	13	20	10	11	8	6	14	18	25	14	13
	Shinny-blue Kingfisher	1	2	0	0	2	0	0	1	0	0	0	1
	African pygmy Kingfisher	1	0	3	4	1	0	0	0	0	0	0	1
	Woodland Kingfisher	0	0	1	0	0	0	0	0	0	0	0	1
	Malachite Kingfisher	0	3	0	0	0	0	0	0	0	0	0	0
	Giant Kingfisher	1	1	2	0	0	2	0	1	2	2	3	1
	Blue-breasted Kingfisher	1	0	0	0	0	0	0	0	0	0	0	0
Hammarkop	Hammarkop	0	0	0	0	0	0	0	0	0	0	0	2
(b) Other Birds													
Vultures	Palmnut Vulture	9	10	15	8	6	11	12	16	10	3	1	8
Kites	Black Kite	19	23	16	12	5	0	0	0	0	5	16	26
	Yellow-billed Kite	0	0	0	0	0	0	0	0	0	0	0	2
Ospreys	Osprey	0	1	0	0	0	0	0	0	0	0	0	0
Burzards	Forest Burzard	0	0	0	0	0	0	0	0	1	0	0	0
Crows	Pied Crow	4	6	1	5	5	3	3	2	0	0	0	0
Eagles	Fish Eagle	0	0	0	0	0	0	0	0	0	0	0	1
Hawks	Cuckoo Hawk	0	0	0	0	0	1	0	0	0	0	0	0
	African ghoshawk	0	0	0	0	0	0	0	1	0	0	0	0
Hornbills	Piping Hornbill	7	2	8	4	6	48	18	14	37	18	2	8
	Blk&wht-casqued Hornbill	4	0	1	0	0	0	0	0	2	0	0	0
	Black casqued hornbill	0	0	13	0	0	0	0	0	0	10	7	0
	African pied Hornbill	15	12	6	8	6	5	9	16	54	2	3	6
Coucals	Senegal Coucal	0	1	2	2	3	0	5	0	3	3	4	2
Parrots	African Grey Parrot	20	40	34	19	28	18	10	8	6	10	23	67
Touracos	Great blue Touraco	1	1	0	0	1	3	5	2	5	11	2	3
Bishops	Yellow-crowned Bishop	0	0	0	0	14	12	9	12	21	6	0	0
Doves	Red-eyed Dove	0	1	1	0	0	0	1	0	1	0	2	0
Whydals	Pin-tailed Whydah	0	0	0	0	1	7	4	4	0	2	0	0
(c) Other Animals	Mona/White-nosed Monkey	6	0	7	0	9	2	19	0	11	6	0	0
	Manatee	0	0	0	0	0	1	0	0	0	0	0	0
	Aligator/Tortoise	0	0	0	0	0	1	0	0	0	0	0	0

3.3. Disappearance of Sandbanks along River Sanaga from January to December, 2002

Major sites	Subsites	GPS Co-ordinates	Month (2002)/Area (Ha)											
			J	F	M	A	M	J	J	A	S	O	N	D
River Sanaga	Bongo/Boloy													
	SF1	03°34.70N; 009°42.27E	7.40	8.10	8.10	6.00	5.60	3.50	1.00	0.15	0.00	0.00	0.00	2.20
	SF2	03°34.53N; 009°42.90E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SF3	03°35.45N; 009°43.15E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MF	03°34.86N; 009°42.87E	1.50	1.50	1.50	0.66	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.20
	Malimba													
	SF1	03°36.00N; 009°44.00E	0.08	0.18	0.63	0.42	0.30	0.35	0.00	0.00	0.00	0.00	0.00	0.00
	SF2	03°36.39N; 009°44.15E	99.80	2.40	127.40	94.70	88.10	14.80	2.15	1.00	0.00	0.00	0.00	4.30
	SF3	03°37.28N; 009°45.67E	17.90	10.60	39.60	22.50	24.70	4.95	0.37	0.15	0.00	0.00	0.50	3.50
	SB	03°35.15N; 009°44.10E	10.40	10.30	13.50	10.00	6.00	7.00	2.50	0.75	0.00	0.00	0.00	0.80
	Mouanko/Yavi													
	SF	03°37.56N; 009°46.98E	49.10	31.30	150.00	84.00	37.70	40.00	18.00	0.00	0.00	0.00	0.00	22.10
	SB1	03°38.30N; 009°47.75E	74.80	100.00	253.00	144.50	96.60	8.80	53.00	21.00	0.00	0.00	6.00	33.30
	SB2	03°37.75N; 009°47.00E	2.50	2.70	4.70	0.53	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Yatou/Depaga													
	SB1	03°37.98N; 009°48.69E	7.60	28.30	29.70	26.40	8.80	8.00	0.50	0.00	0.00	0.00	0.00	0.60
	SB2	03°37.25N; 009°49.14E	4.50	5.10	9.00	7.00	5.20	3.00	1.40	0.00	0.00	0.00	0.00	0.50
	Yankonzok													
	SF	03°36.91N; 009°50.77E	57.00	78.40	175.50	58.30	29.00	27.00	17.50	0.15	0.00	0.00	1.00	24.70
	SB	03°36.33N; 009°51.80E	18.00	28.00	102.00	60.00	28.00	32.00	8.00	0.00	0.00	0.00	0.00	1.60
		Total Area (Ha)	**350.58**	**306.88**	**914.63**	**515.01**	**330.71**	**149.40**	**104.42**	**23.20**	**0.00**	**0.00**	**7.50**	**93.80**
		Total Area (ha/20km River)	**2796.13**											
		Total Area/km of river	**17.53**	**15.34**	**45.73**	**25.75**	**16.54**	**7.47**	**5.22**	**1.16**	**0.00**	**0.00**	**0.38**	**4.69**
		Mean total area/km river	**11.65**											

SB: Sandbank **SF**: Sandflat **MF**: Mudflat

Figure 1: Sand bank area monitoring along 20km length of R. Sanaga (2002)



3.4. Human activities along River Sanaga and associated rivers and lakes in Douala-Edea Reserve

(January to June, 2002)

January

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
(a) Farming*	men								
i. cleaning	women								
	both								
	children								
ii. Tilling	men								
	women		x	x	x				
	both								
	children		x						
iii. Planting	men								
	women		x	x	x				
	both								
	children		x						
iv. Weeding	men	x							
	women	x							
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing									
I. Fin fishing	men	x					x		x
	women								
	both								
	children								
ii. Bivalve fishing	men	x							
	women								
	both								
	children								
(c) Others									
i. Sand extraction	men			x					
	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men		x			x		x	
	women		x						
	both								
	children								

February

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
(a) Farming*	men	x	x						
i. cleaning	women		x						
	both								
	children								
ii. Tilling	men								
	women		x	x	x				
	both								
	children								
iii. Planting	men								
	women		x	x	x				
	both								
	children								
iv. Weeding	men								
	women			x					
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing									
I. Fin fishing	men		x	x			x		x
	women								
	both								
	children								
ii. Bivalve fishing	men	x							
	women								
	both								
	children								
(c) Others									
i. Sand extraction	men								
	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women				x				
	both								
	children								
iii. Transportation	men	x	x	x				x	
	women	x	x	x					
	both								
	children								

March

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
(a) Farming*	men								
i. cleaning	women								
	both		x						
	children		x						
ii. Tilling	men								
	women		x						
	both								
	children		x						
iii. Planting	men								
	women		x						
	both								
	children		x						
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing									
I. Fin fishing	men	x	x				x		x
	women								
	both								
	children								
ii. Bivalve fishing	men								
	women								
	both								
	children								
(c) Others									
i. Sand extraction	men								
	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men	x			x	x			
	women								
	both								
	children			x		x			

April

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
(a) Farming*	men								
i. cleaning	women	x	x	x					
	both								
	children								
ii. Tilling	men								
	women	x	x	x					
	both								
	children								
iii. Planting	men								
	women	x	x	x					
	both								
	children								
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing									
I. Fin fishing	men	x						x	
	women								
	both								
	children								
ii. Bivalve fishing	men								
	women								
	both								
	children								
(c) Others									
i. Sand extraction	men								
	women								
	both								
	children								
ii. Wood harvesting/	men			x					
transport	women								
	both								
	children								
iii. Transportation	men			x	x				
	women								
	both								
	children			x					

May

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
(a) Farming*	men								
i. cleaning	women								
	both								
	children								
ii. Tilling	men								
	women								
	both								
	children								
iii. Planting	men								
	women								
	both								
	children								
iv. Weeding	men								
	women			x					
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing									
I. Fin fishing	men	x	x					x	
	women								
	both								
	children								
ii. Bivalve fishing	men								
	women								
	both								
	children								
(c) Others									
i. Sand extraction	men			x					
	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men	x	x	x					
	women		x	x					
	both								
	children	x							

June

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
(a) Farming*	men								
i. cleaning	women		x						
	both								
	children								
ii. Tilling	men								
	women								
	both								
	children								
iii. Planting	men								
	women								
	both								
	children								
iv. Weeding	men								
	women		x						
	both								
	children								
v. harvesting	men								
	women				x				
	both								
	children								
(b) Fishing									
I. Fin fishing	men	x	x	x					
	women								
	both								
	children								
ii. Bivalve fishing	men		x						
	women								
	both								
	children								
(c) Others									
i. Sand extraction	men		x	x					
	women								
	both								
	children								
ii. Wood harvesting/	men						x		
transport	women								
	both								
	children								
iii. Transportation	men								x
	women								
	both								
	children								

Human activities along River Sanaga and associated rivers and lakes in Douala-Edea Reserve

(July to December, 2002)

July

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
i. cleaning	men								
	women								
	both								
	children								
ii. Tilling	men								
	women								
	both								
	children								
iii. Planting	men								
	women								
	both								
	children								
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women					x			
	both								
	children								
(b) Fishing	men	x	x					x	
I. Fin fishing	women								
	both								
	children	x							
ii. Bivalve fishing	men		x						
	women								
	both								
	children								
(c) Others	men								
i. Sand extraction	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men		x						
	women				x				
	both								
	children								

August

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
i. cleaning	men								
	women								
	both								
	children								
ii. Tilling	men								
	women								
	both								
	children								
iii. Planting	men								
	women								
	both								
	children								
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women				x				
	both								
	children								
(b) Fishing	men		x						
I. Fin fishing	women								
	both								
	children	x		x					
ii. Bivalve fishing	men		x						
	women								
	both								
	children								
(c) Others	men								
i. Sand extraction	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men		x					x	
	women		x					x	
	both							x	
	children							x	

September

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
i. cleaning	men								
	women								
	both								
	children								
ii. Tilling	men								
	women								
	both								
	children								
iii. Planting	men								
	women								
	both								
	children								
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing	men		x	x	x			x	
I. Fin fishing	women								
	both								
	children		x						
ii. Bivalve fishing	men								
	women								
	both								
	children								
(c) Others	men								
i. Sand extraction	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men							x	
	women								
	both								
	children								

October

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
i. cleaning	men								
	women								
	both								
	children								
ii. Tilling	men								
	women								
	both								
	children								
iii. Planting	men								
	women								
	both								
	children								
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing	men		x	x	x	x			
I. Fin fishing	women								
	both								
	children								
ii. Bivalve fishing	men								
	women								
	both								
	children								
(c) Others	men								
i. Sand extraction	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men	x				x	x		
	women	x				x			
	both								
	children								

November

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
i. cleaning	men								
	women								
	both								
	children								
ii. Tilling	men								
	women								
	both								
	children								
iii. Planting	men								
	women								
	both								
	children								
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing	men	x	x	x	x		x		
I. Fin fishing	women								
	both								
	children								
ii. Bivalve fishing	men								
	women								
	both								
	children								
(c) Others	men								
i. Sand extraction	women								
	both								
	children								
ii. Wood harvesting/	men							x	
transport	women								
	both								
	children								
iii. Transportation	men						x		
	women								
	both								
	children								x

December

Human Activities	Gender	R. Sanaga							
		Bongo/Boloy	Malimba	Mouanko/Yavi	Yatou/Dépaga	Yankongzok	R. Mouaha	R. Kombé	Lk Tissongo
i. cleaning	men				x				
	women		x		x	x			
	both								
	children								
ii. Tilling	men								
	women		x		x	x			
	both								
	children								
iii. Planting	men								
	women		x		x	x			
	both								
	children								
iv. Weeding	men								
	women								
	both								
	children								
v. harvesting	men								
	women								
	both								
	children								
(b) Fishing	men	x							
I. Fin fishing	women								
	both								
	children								
ii. Bivalve fishing	men								
	women								
	both								
	children								
(c) Others	men								
i. Sand extraction	women								
	both								
	children								
ii. Wood harvesting/	men								
transport	women								
	both								
	children								
iii. Transportation	men	x						x	
	women								
	both								
	children								

*Crops: cassava, maize, cocoyams, egusi, potatoes

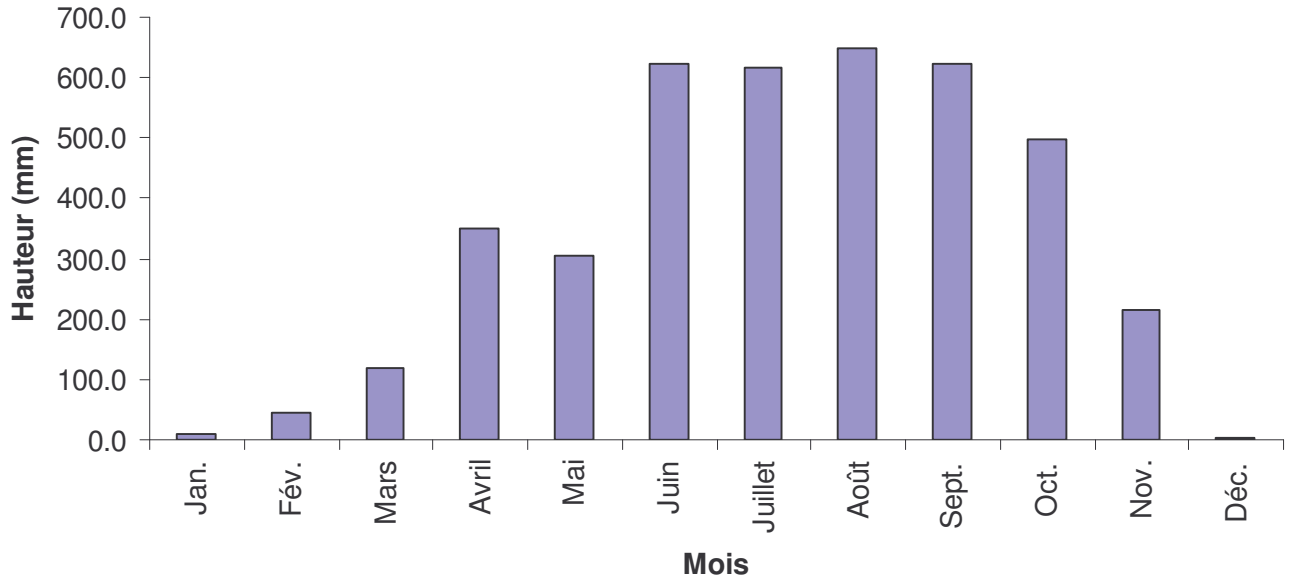
3.5: Climatic data 2002

Year	Day	Minimum Temperature (°C)												Maximum Temperature (°C)												Average Temperature (°C)											
		Month												Month												Month											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
2002	1										25	25											30	25,8											28	25,92	
	2									25,6	25	25	25,6									30	30	30	30									29,12	28	28,12	29,1
	3									25	25	25	25,6									30	27	30	30									26,36	25,4	28,16	28,7
	4						25,7			25	25	25	25,6						32,9			25,6	25,8	30	30						31,18			25,12	25,4	27,28	29,1
	5						25			25		25	25,6						25,3			25		25,6	30						25,6			25		25,32	29,1
	6						25			25		25	25,6						30			25,6		30	30						26,18			25,24		26,28	29,1
	7						25,8				25	25							30,6				30	30							28,56				28,1	28,16	
	8							27.2			25	25								25			30	30								30			26,4	27,28	
	9							27.4		25	25		25,8							25		25,4	25,6		30,6							30		25,8	25,2		29,2
	10						30,4	26.4		25	25		25,6						25,2	25		25,6	30		30						28,24	30		25,24	27		29,1
	11						25	26.4		25	25	25	25,8						30	25		25,6	30	30	30,2						27,8	30		25,24	27,2	27,16	29,1
	12						25	25		25		25	25,6						30,2	25		25,8		30	30						29,4	25		25,28		28,12	29,1
	13						25			25		25	25,6						30			25,8		25,8	30						29			25,16		25,48	29,1
	14						25,6				25	25							30				30	25							29,12				26,1	25	
	15							28.4			25	25								25			25,8	30								30				25,2	28	
	16							25		25	25		25,6							25		30	30		30							25		26	26,4		20,2
	17						25,8	25.5		25	25		25,6						30	25		25,6	30		30						29,16	26		25,24	29		29,1
	18						25	28		25	25	25,6	25,8						25	25		25,6	25,8	30	30,4						25	30		25,24	25,5	29,12	29,1
	19						30	25.2		25		25,6	25,8						25,4	25		30		30	30						27,8	26		28,12		28,28	27,9
	20						25			25		25	25,6						30			25,4		30	30,4						27,32			25,8		28,33	29,3
	21						25,8				25	25,6							30				25	30							29,16				25	29,16	
	22							25			25	25,6								25			30	30								25			28,1	29,1	
	23							25		25	25									25		25,6	25,6									25		25,12	25,1		
	24						25,8	25		25	25								30	25		25,6	30								28,32	25		25,24	28,1		
	25						25,6	25.1		25	25	25,6							30	25		30	30	30							28,24	26		29	28	29,1	
	26						25	25.6		25		25,6							30	25		30		30							28,16	26		27,16		29,1	
	27						25			25		25,6							30			30		30							28,16			27,32		29,1	
	28						25				25	25,6							25,4				30	30							25,16				26,4	29,1	
	29							29.8			25	25,6								25			30	30								30			28,1	29,1	
	30							27.2		25	25									25		30	30									30		29	26,2		
	31							25		25	25									25		25	25									25		25	25		
Average							**25.5**	**26.2**		**25.0**	**25.0**	**25.0**							**29.6**	**25.0**		**29.0**	**29.3**	**29.8**	**30.0**						**27.0**	**27.4**		**26.8**	**27.1**	**26.5**	

RAIN GUARGE READING 2002												
	Months (mm)											
DAYS	Jan.	Fév.	Mars	Avril	Mai	Juin	Juillet	Août	Sept.	Oct.	Nov.	Déc.
1								25		2	17.4	
2					69		20		67	16.2		
3				12.2		64			2.1			
4						5	4		19	73	104	
5						143		50	124		2.4	
6			12.4		47.4	27		23	38		47	
7						15.2				34		
8				7.3			37			5		
9	1.4								81	12		
10				31		27	7		53	100		
11			1.25			2	1		18	50	34	
12						0.6	82	58	18		5	
13					13			1	4			
14	7.2							43				
15				8.1			48			28	5.6	
16	0.6			20	36.2	77	18.2		50			
17				1.2		20	30		18	0.5		
18			6.8				24		10			
19			2.5	38		2	59	114	33			
20			6.8			10		6.2	20			
21		42.2			11.6			38		25		
22			62	29.4	31		85	101		7		
23				2.1			35		27	12		
24				2.1		6.6	3		17	7		2.75
25		16.2	3			2	91		1.2			
26								73	2			
27		2.8			87	145		95		0.5		
28								12		95		
29				190			6	7.2		11		
30				8		77.4		3	20	0.5		
31			24.6		10.8		67			19.2		
TOTAL	**9.2**	**45.0**	**119.4**	**349.4**	**306.0**	**623.8**	**617.2**	**649.4**	**622.3**	**497.9**	**215.4**	**2.8**
N° de Jrs	**3**	**2**	**8**	**12**	**8**	**16**	**17**	**15**	**20**	**19**	**7**	**1**

Total Hauteur d'Eau	**4058 mm**
Total nombre de jours	**128**
% annuel sur 365 jours	**35.07**

Figure 1: Histogramme de pluviometrie dans la zone de Mouanko 2002



Appendix 4: Income and Expenditure Report for the year ended 31/12/2002

Budget line Description	Budget	Actual	
INCOME:	**F.CFA**	**F.CFA**	
Opening Balance	0	25 649 855	
Own income:	0	300 000	
Income from NOVIB OXFAM (000)	146 000	103 400	
Annual Total income (000)	**146 000**	**129 350**	
EXPENDITURE BY BUDGET HEAD:			
A: *SOCIO-ECONOMIC COMPONENT*			**Percentage**
A(a) Establishment of energy efficient fish smoking houses			**Consumed**
Aa1. Identification of pilot sites for establishment of fish smoking houses	1 757 643	903 100	51.38
Aa2. Construction of energy efficient smoking houses in selected villages	6 780 783	3 508 675	51.74
Aa3. Training of local resource persons in villages for mgt/maintenance work	1 318 377	586 920	44.52
Sub-total	**9 856 803**	**4 998 695**	**50.71**
A(b) Develop & Strengthen Gender activities within Local fishing industry			
A(b)1. Assist in the establishment & functioning of women groups/CIGs	2 636 177	744 850	28.25
A(b)2. Basic training in group mgt, Agr.forestry and Constn activities with exchange visits	1 318 377	899 380	68.22
A(b)3. Material support to women groups/CIGs	5 272 353	2 264 165	42.94
A(b)4. Development of legal statutes for official recognition of CIGs	1 318 377	511 190	38.77
A(b)5. Assist in the establishment of a revolving fund (seed money)	2 636 177	0	0.00
Sub-total	**13 181 460**	**4 419 585**	**33.53**
A(c) Community Education and Sensitisation Campaigns			
A(c)1. Develop community education & sensitisation materials	1 318 377	923 475	70.05
A(c)2. Mobilisation meetings with community leaders	878 533	876 110	99.72
A(c)3. Practical Environmental demonstration sessions in villages	1 318 377	175 500	13.31
A(c)4. Training in Environmental education of community leaders and School teachers	1 318 377	0	0.00
A(c)5. Material support to community environmental education groups	1 318 377	139 500	10.58
Sub-total	**6 152 040**	**2 114 585**	**34.37**
B: *MANAGEMENT COMPONENT*			
B(d) Gazettement of Douala-Edea Reserve			
B(d)1. Organisation of stakeholder meetings to establish consultative platforms	5 272 353	0	0.00
B(d)2. Mapping of multiple use zones and important resource use areas	1 757 643	0	0.00
B(d)3. Development of base maps using GPS data points collected	0	0	
B(d)4. Effective boundary demarcation with defined multiple use zones etc	0	0	
B(d)5. Consultant study for strategic planning of gazettement process	0	0	
B(d)6. Organisation of local and national workshops	1 318 377	876 800	66.51
B(d)7. Writing and submission of gazettement document	0	0	
B(d)8. Hiring of consultant as Facilitator in the validation process of management plan	0	0	
B(d)9. Local validation meetings with stakeholders of management plan	0	0	
Sub-total	**8 348 373**	**876 800**	**10.50**
B(e) Training of project staff			
B*(e)1.* ***Project Co-ordinator***			
B(e)1a. Management and project development course (South/East Africa)	0	0	
B(e)1b. Strategic planing, project monitoring/evaluation etc (in-country)	439 267	96 300	21.92
B(e)2. ***Biologist***			
B(e)2a. Inventory work, statistical data analyses, GIS etc (in-country)	439 267	105 175	23.94
B(e)2b. Ecological monitoring training (Central Africa)	0	0	
B(e)3. ***Community Development Officers (2)***			
B(e)3a. PRA, GI training (in-country)	878 533	215 425	24.52
B(e)3b. Collaborative management approaches (South/East Africa)	0	0	
B(e)4. ***Project Finance/Administrative Officer***			
B(e)4a. Budget planning, personnel management, auditing skills etc	439 267	399 225	90.88
Sub-total	**2 196 334**	**816 125**	**37.16**
C: *RESEARCH COMPONENT*			
C(f) undertake target research			
C(f)1. Elephant surveys/conflicts	2 636 177	48 110	1.82
C(f)2. Manatee and Sea Turtles surveys	878 533	425 225	48.40
C(f)3. Bird surveys	0	665 535	
Sub-total	**3 514 710**	**1 138 870**	**32.40**

Budget line Description					Budget	Actual	%cons.
C(g) Establishment of ecological monitoring system/data base							
C(g)1. Consultant for establishment of a monotoring system (International/regional)					0	0	
C(g)2. Consultant for data base establishment (National/international)					7 029 997	2 358 205	33.54
C(g)3. Training exercises in 1 & 2 above (Staff capacity building workshops)					878 533	650 200	74.01
	Sub-total				**7 908 530**	**3 008 405**	**38.04**
D. *INVESTMENT IN FIELD EQUIPMENT & OTHER LOGISTICS*							
D1. Laptops (3) & portable printers					2 636 177	0	0.00
D2. Desktop computer & assessories					0	1 826 000	
D3. Tents, camping gear etc					1 318 377	0	0.00
D4. Binoculars, pedometers and other scientific equipment					878 533	0	0.00
D5. Audio visual aid for education programme					878 533	0	0.00
D6. Fairly used 4WD Vehicle					10 545 283	8 000 000	75.86
D7. Dug out Canoe & 25 HP boat engine					3 075 443	3 959 200	128.74
D8. Purchase of a motorbyke					3 075 443	0	0.00
D9. Canon Camera					0	0	
D10. Digital Camera					0	0	
D11. Photocopier					1 400 000	1 325 000	94.64
D12. GPS unit					0	600 000	
	Sub-total				**23 807 790**	**15 710 200**	**65.99**
E. *RECURRENT COSTS (salaries/Stipends)*					**27 540 000**	**26 080 625**	**94.70**
F. *FIELD & OFFICE / ADMIN EXPENSES*							
F.1 Office rentals					1 267 344	1 413 770	111.55
F.2 Vehicle running cost (fuel)					1 584 180	1 530 125	96.59
F.21 Vehicle running cost (Repair & maintenance)					1 056 120	2 539 850	240.49
F.3 Motobyke running cost (fuel)					316 836	0	0.00
F.31 Motobyke running cost (repair & maintenance)					211 224	0	0.00
F.4 Boat running cost (fuel)					880 100	1 090 085	123.86
F.41 Boat running cost (Repair & maintenance)					704 080	385 150	54.70
F.5 Internal travels (Field subsistenc & perdiems)					3 168 360	3 394 900	107.15
F.6 Regional/International travels					616 070	0	0.00
F.7. Daily paid workers					950 506	1 036 000	108.99
F.8 Office running cost					3 168 360	2 029 800	64.06
F.9 Telecommunication costs					528 060	745 445	141.17
F.10 First Aid kits for in-forest workers					792 090	1 141 580	144.12
F.11 Insurance					563 264	714 300	126.81
	Sub-total				**15 806 594**	**16 021 005**	**101.36**
G. *ADDENDUM*							
1. Institutional Capacity Building							
a) Provide technical and logistic support to the Conservator					880 100	1 705 690	193.81
b) Provide technical assistance to gov't services					1 320 150	1 493 080	113.10
c) Site visits and Project Staff capacity building workshops					1 144 130	1 168 685	102.15
d) Project participation and net working activities					3 960 450	5 092 075	128.57
e) Support to national student and volunteer work					352 040	460 000	130.67
d) Law enforcement					176 020	730 000	414.73
	Sub-total				**7 832 890**	**10 649 530**	**135.96**
2. Other Basic Socio-economic Research							
a) Mangrove human impact studies					1 232 140	2 374 275	192.70
b) NTFPs surveys & targeted species for marketing					440 050	907 100	206.14
c) Agroforestry research					440 050	932 200	211.84
d) Riverine vegetable cultivation research					792 090	1 332 100	168.18
	Sub-total				**2 904 330**	**5 545 675**	**190.95**
	Total expenditure				**129 049 855**	**91 380 100**	**70.81**
	Net surplus				**0**	**37 969 755**	**29.19**