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Volume 2

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# **AFRICAN FOREST POLICY FORUM**

Nairobi, August 29-30, 1996

## **PROCEEDINGS**

Volume II: Full Text Presentations

The World Bank  
Africa Region  
Environment Group

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## CONTENTS

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	Volume I	Volume II
Disclaimer .....	ii	ii
Foreword .....	v	
Acknowledgments .....	vi	
Preamble .....	vii	
Listing of Country Papers by Theme .....	ix	v
Opening Address .....	xi	
Statement on the Intergovernmental Panel on Forests .....	xiv	
 <b>Country Papers</b>		
Forest Management Planning Based on Successful Pilot Operations-- <b>Benin</b> (1, 2, 3, 4) <sup>1/</sup> .....	1	
A Pilot Operation To Develop a Community-Based Woodland Management Model-- <b>Burkina Faso</b> (2, 4) .....	4	1
Agroforestry as a Tool to Improve Natural Resources Management-- <b>Central African Republic</b> (2) .....	6	15
Forest Resources Management to Sustainably Satisfy National Household Energy Requirements-- <b>Chad</b> (1, 2, 3, 4) .....	8	
Collaborative Management of State-Owned Gazetted Forests-- <b>Côte d'Ivoire</b> (1, 2, 4) .....	10	29
The Private Sector in sub-Saharan Africa--Is it Able to Take up the Challenge of Sustainable Forest Management? - <b>With emphasis on Gabon-</b> (3, 4) .....	13	67
Eliciting People's Support to Fight Poaching-- <b>Gabon</b> (1, 2) .....	16	79
Processing and Marketing of Non-Traditional Wood Species-- <b>Ghana</b> (3) .....	17	89
Putting Forest Policy Into Practice: Interim Measures to Control Illegal Timber Harvesting Outside Forest Reserves-- <b>Ghana</b> (1, 2) .....	19	103
Coordinated Management of Forest Reserves and Peripheral Agricultural Lands-- <b>Guinea</b> (1, 2, 4) .....	21	125
Rehabilitation of Cement Factory Quarries-- <b>Kenya</b> (3) .....	23	137
Private Sector Participation in the Government Woodfuel and Afforestation Program-- <b>Kenya</b> (3) .....	25	
Using Butterfly Biodiversity for Income Generation-- <b>Kenya</b> (2) .....	27	143
Transmara Forests: Conservation and Management Issues-- <b>Kenya</b> (1, 2) .....	29	149

---

<sup>1/</sup> Numbers between parenthesis indicate the theme(s) of the case studies:

1. Policy and Legislative Reforms
2. Farmer/NGO/Local Community Participation
3. Private Sector Participation
4. Capacity Building



	<u>Volume I</u>	<u>Volume II</u>
Participatory Conservation of Coastal Indigenous Forests-- <b>Kenya</b> (2, 4) .....	30	
Community Participation in the Introduction and Establishment of Multipurpose Tree Species-- <b>Kenya</b> (2) .....	33	
Integrating Tree Cash Crops in Agricultural Production Systems-- <b>Kenya</b> (3) .....	35	157
Spontaneous Growing of Trees by the Private Sector Responding to Market Demand-- <b>Madagascar</b> (1, 3) .....	37	
Participatory Formulation of the National Forestry Policy-- <b>Madagascar</b> (1, 2, 3) .....	39	
Environmental Rehabilitation of Refugee Impacted Areas-- <b>Malawi</b> (2) .....	41	163
Stakeholder Participation in, and Restructuring of, Forestry Research Management-- <b>Malawi</b> (1, 2, 3, 4) .....	43	173
Capacity Building in Local Communities for Sustainable Resource Management-- <b>Mali</b> (4) .....	45	181
Participatory Natural Resource Management-- <b>Mali</b> (2, 4) .....	47	197
Restoration of Highly Degraded and Threatened Native Forests-- <b>Mauritius</b> (2) .	49	219
Household Energy Strategy: One Element of the Overall Forestry Policy-- <b>Niger</b> (1, 2) .....	51	229
Participatory Forest Land Use Planning - Cross River State-- <b>Nigeria</b> (2, 4) .....	53	239
Participatory Forest Policy Reform-- <b>Senegal</b> (1, 2) .....	56	255
Community-based Youth Participation in the Rehabilitation of Fragile Areas-- <b>Sierra Leone</b> (2, 4) .....	58	
Public Sector Management of Indigenous Forests for Sustainable Timber Harvesting-- <b>South Africa</b> (1) .....	60	
Integrated Industrial Forestry: The Case of The Usutu Pulp Ltd.-- <b>Swaziland</b> (3).	62	275
Adopting a Farming System Approach to Facilitate Participatory Forestry-- <b>Tanzania</b> (2, 4) .....	64	281
The Role of NGOs in Facilitating Community Participation in Forest Conservation-- <b>Tanzania</b> (2, 4) .....	66	291
Community-Based Natural Forest Management-- <b>Tanzania</b> (1, 2) .....	68	305
Donor Coordination in the Forestry Sector-- <b>Tanzania</b> (1, 4) .....	71	
Reforestation of Refugee Camps -West Nile- Lessons Learned from Implementation-- <b>Uganda</b> (2, 4) .....	73	323
Local Participation for the Conservation and Management of Natural Forests-- <b>Uganda</b> (2) .....	75	329
Promoting Community-based Reforestation and Agroforestry-- <b>Zaire</b> (1, 2) .....	77	
Local Participation and Benefit Sharing in Wildlife Management - The CAMPFIRE Experience-- <b>Zimbabwe</b> (2, 4) .....	79	339
Institutional Reforms and Activities to Allow Local Participation in Forest Management-- <b>Zimbabwe</b> (1, 2, 4) .....	81	357
The Role of the Private Sector in the Sustainable Management and Development of Forests in <b>Sub-Saharan Africa</b> (1, 3) .....	83	371
Synopsis of Participants' Comments .....	87	
List of Participants .....	89	
Map of Sub-Saharan Africa: Major Agroclimatic and Forest Zones .....	95	381

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## Listing of Country Papers by Theme

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### 1. Policy and Legislative Reforms

Forest Management Planning Based on Successful Pilot Operations--**Benin**  
Forest Resources Management to Sustainably Satisfy National Household Energy Requirements--**Chad**  
Collaborative Management of State-Owned Gazetted Forests--**Côte d'Ivoire**  
Eliciting People's Support to Fight Poaching--**Gabon**  
Putting Forest Policy Into Practice: Interim Measures to Control Illegal Timber Harvesting  
Outside Forest Reserves--**Ghana**  
Coordinated Management of Forest Reserves and Peripheral Agricultural Lands--**Guinea**  
Transmara Forests: Conservation and Management Issues--**Kenya**  
Spontaneous Growing of Trees by the Private Sector Responding to Market Demand--**Madagascar**  
Participatory Formulation of the National Forestry Policy--**Madagascar**  
Stakeholder Participation in, and Restructuring of, Forestry Research Management--**Malawi**  
Household Energy Strategy: One Element of the Overall Forestry Policy--**Niger**  
Participatory Forest Policy Reform--**Senegal**  
Public Sector Management of Indigenous Forests for Sustainable Timber Harvesting--**South Africa**  
Community-Based Natural Forest Management--**Tanzania**  
Donor Coordination in the Forestry Sector--**Tanzania**  
Promoting Community-based Reforestation and Agroforestry--**Zaire**  
Institutional Reforms and Activities to Allow Local Participation in Forest Management--**Zimbabwe**  
The Role of the Private Sector in the Sustainable Management and Development of Forests in  
**Sub-Saharan Africa**

### 2. Farmer/NGO/Local Community Participation

Forest Management Planning Based on Successful Pilot Operations--**Benin**  
A Pilot Operation To Develop a Community-Based Woodland Management Model--**Burkina Faso**  
Agroforestry as a Tool to Improve Natural Resources Management--**Central African Republic**  
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Putting Forest Policy Into Practice: Interim Measures to Control Illegal Timber Harvesting  
Outside Forest Reserves--**Ghana**  
Coordinated Management of Forest Reserves and Peripheral Agricultural Lands--**Guinea**  
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Participatory Forest Policy Reform--**Senegal**  
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Local Participation and Benefit Sharing in Wildlife Management - The CAMPFIRE Experience--**Zimbabwe**  
Institutional Reforms and Activities to Allow Local Participation in Forest Management--**Zimbabwe**

### **3. Private Sector Participation**

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The Private Sector in sub-Saharan Africa--Is it Able to Take up the Challenge of Sustainable Forest Management? -**With emphasis on Gabon-**  
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### **4. Capacity Building**

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The Private Sector in sub-Saharan Africa--Is it Able to Take up the Challenge of Sustainable Forest Management? -**With emphasis on Gabon-**  
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Stakeholder Participation in, and Restructuring of, Forestry Research Management--**Malawi**  
Capacity Building in Local Communities for Sustainable Resource Management--**Mali**  
Participatory Natural Resource Management--**Mali**  
Participatory Forest Land Use Planning - Cross River State--**Nigeria**  
Community-based Youth Participation in the Rehabilitation of Fragile Areas--**Sierra Leone**  
Adopting a Farming System Approach to Facilitate Participatory Forestry--**Tanzania**  
The Role of NGOs in Facilitating Community Participation in Forest Conservation--**Tanzania**  
Donor Coordination in the Forestry Sector--**Tanzania**  
Reforestation of Refugee Camps -West Nile- Lessons Learned from Implementation--**Uganda**  
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# *Country Papers*

**(Full Text)**

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**MINISTÈRE DE L'ENVIRONNEMENT  
ET DE L'EAU  
\*\*\*\*\***

**BURKINA FASO**  
*LA PATRIE OU LA MORT. NOUS VAINCRONS*

**OPÉRATION PILOTE POUR DÉVELOPPER UN  
PLAN D'AMMÉNAGEMENT COMMUNAUTAIRE  
DE FORÊTS**

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**Présentation par  
Issouf SOULAMA  
Inspecteur des Eaux et des Forêts**

**Août 1996**

## **OPÉRATION PILOTE POUR DÉVELOPPER UN PLAN D'AMMÉNAGEMENT COMMUNAUTAIRE DE FORÊTS**

### **INTRODUCTION**

Le Burkina Faso est un Pays sahélien enclavé situé au coeur de l'Afrique occidentale. Il est caractérisé par des variations pluviométriques considérables : les ressources naturelles notamment la terre, l'eau et la végétation sont limitées et fragiles. La dégradation de ces ressources s'accroît sous l'effet combiné de la surexploitation résultant des pratiques culturales, pastorales, de la consommation de combustibles ligneux et de l'occupation de nouvelles terres est due à une forte démographie.

Sa superficie est de 274 000 km<sup>2</sup>, et sa population estimée en 1991 à plus de 9 millions d'habitants (Enquête démographique de Juin 1991). La densité moyenne est de 33 habitants au km<sup>2</sup>.

L'économie du Burkina Faso est caractérisée par la forte prédominance de l'Agriculture et secteur tertiaire. L'agriculture représente environ 35 % du PIB et occupe plus de 5 % de la population. Quant au seul secteur tertiaire, il est fortement dominé par des activités commerciales et occupe la majorité des populations urbaines.

La période 1984-1995 a été marquée par 4 programmes de développement et de politique économique qui sont :

- Le Programme Populaire de Développement (PPD) 1984-1986
- Le Premier Plan de Développement 1986-1990
- Le Second Plan de Développement 1991-1995
- Le Programme d'Ajustement Structurel approuvé en Mars 1991.

Ces différents programmes de développement constitués de programmes sectoriels et transectoriels sont réparties selon leur typologie en matière de population, secteurs de soutien à la production, secteurs sociaux et secteurs à l'organisation et des équipements administratifs. Pour ces programmes, les ressources naturelles ont été considérées comme moteur de la relance économique. C'est dans ce contexte qu'a été élaboré le document de politique forestière nationale.

### **I. JUSTIFICATION ET FONDEMENT DE LA POLITIQUE FORESTIÈRE NATIONALE**

Le document de Politique Forestière Nationale se veut une réforme pour le Burkina Faso dans toute décision à prendre et toute action à entreprendre dans les trois (3) sous-secteurs que sont les forêts, la faune et les pêches. Il représente un outil de négociation de l'assistance extérieure et un moyen d'évaluation du développement des activités en terme d'unicité et de cohérence.

Notre politique Nationale Forestière trouve ses fondements dans les éléments tels que exprimés dans:

- la constitution nationale promulguée en Juin 1991 qui en tant qu'ordre juridique de premier ordre est la principale base institutionnelle sur laquelle s'édifie la Politique Forestière Nationale.
- Le Conseil National pour la Gestion de l'Environnement (CONAGESE) notamment en ce qu'il vise à maîtriser les pressions sur le milieu Naturel, favoriser la régénération des ressources naturelles, protéger la biodiversité, améliorer le cadre et les conditions de vie des populations et amorcer le processus d'un développement durable.
- Le code de l'Environnement qui se veut un élargissement des principes fondamentaux de gestion et de protection de l'Environnement dans le but précis de valoriser les ressources naturelles, de lutter contre les formes de pollution et de nuisance et d'améliorer les conditions de vie des populations dans le respect de l'équilibre du milieu ambiant.
- La politique de développement économique et socio-culturel à long terme du pays, en particulier au rôle dévolu au secteur primaire auquel appartient les trois sous-secteurs ainsi que la nécessité de leur apporter des transformations positives.
- Les engagements pris sur le plan international quant aux politiques et à la gestion rationnelle des ressources naturelles à l'échelle globale.

## **II. COMPOSANTE ET MISE EN OEUVRE DE LA POLITIQUE FORESTIERE NATIONALE**

La Politique Forestière Nationale du Burkina Faso se définit comme étant le reflet global des objectifs qu'elle poursuit, des options qu'elle prend en compte, de la stratégie et d'approches opérationnelles qui sous-tendent les activités programmées dans le cadre qu'elle constitue. Elle est de par sa spécificité, complétée par des textes législatifs qui orientent et facilitent son application, ainsi que des mécanismes et des instruments de gestion administrative et technique.

### **2.1. Les objectifs**

La politique forestière nationale a essentiellement pour objectifs:

- de traduire la place et le rôle des sous-secteurs forêts-faune et pêches et de préciser les options du gouvernement à travers les axes prioritaires de développement qui s'y rapportent en fonction des missions du Ministère de tutelle;
- de rationaliser la gestion des ressources des trois sous-secteurs forêts, faune et pêches à travers la mise en cohérence et en synergie des interventions dans les trois sous-secteurs avec de nettes améliorations;
- de conférer une base conceptuelle pour l'élaboration de la législation afférente à la gestion de ces trois sous-secteurs;



- de constituer un outil de négociation et un cadre de référence quant aux concertations avec les partenaires du développement pour la coordination et l'harmonisation des interventions menées dans les trois sous-secteurs;

## **2.2. La stratégie globale et les approches opérationnelles**

Pour toutes ces interventions prévues au titre de cette politique, la stratégie adoptée est basée essentiellement autour de quatre approches qui sont:

- L'approche participative
- L'approche programme
- L'approche gestion des terroirs
- L'approche par zone socio-économique

L'approche participative sera érigée en principe directeur pour l'ensemble des interventions dans ces trois sous-secteurs. Le caractère participatif à conférer aux interventions suppose la concertation, à chacune des phases des actions envisagées avec les parties concernées, surtout les populations rurales riveraines des ressources prises en considération.

Pour les autres approches, les choix seront déterminés par les réalités socio-économiques, culturelles et écologiques propres à chaque sous-secteur, en fonction des priorités nationales et des mécanismes de coordination et d'harmonisation essentiellement requis.

## **2.3. Les principes d'Action**

Les principes d'action de la politique forestière nationale reposent essentiellement sur deux (2) axes principaux:

- Une participation accrue des opérateurs économiques et des populations rurales organisées en groupements ou structures appropriées.
- Une affectation des contributions extérieures en priorité à l'acquisition de connaissances et de technologies nouvelles et à l'amélioration des capacités des ressources humaines impliquées dans la gestion des trois sous-secteurs et des activités qui y sont développées (populations rurales, agents du service forestier, opérateurs économiques, ONG).

## **2.4. Les moyens de mise en oeuvre**

L'application efficace de la politique forestière nationale nécessite un certain nombre de mesures que l'on pourrait répertorier de la manière suivante:

- Une reconsidération du cadre institutionnel afin de le débarrasser de certaines insuffisances;
- L'utilisation judicieuse de toutes les ressources humaines notamment la participation des populations en général, des femmes, des ONG et du secteur privé;

- La prise des mesures d'accompagnement en ce qui concerne la réadaptation des textes législatifs, la promotion de la recherche d'accompagnement, la poursuite des expériences du programme cadre de gestion des terroirs, la poursuite du processus de décentralisation;
- Le financement des actions par un amorcement de la contribution nationale, une orientation en direction du milieu privé et des populations;
- L'instauration d'un système de communication établissant un dialogue entre les populations à la base et les structures de gestion aux échelons local et national.

Afin d'intégrer toutes les stratégies, un programme national d'aménagement des forêts (PNAF) a été élaboré et qui se fonde sur les expériences déjà acquises à travers l'exécution du Projet PNUD/BKF/93/003 "Aménagement des forêts Naturelles."

### III. PROJET AMENAGEMENT DES FORETS NATURELLES

#### 3.1. Antécédents

Le projet "Aménagement des Forêts" est né suite à la crise en ressources énergétiques notamment le Bois dans les années 1974-1975 et 1995. Depuis deux phases se sont succédées.

Le Projet "Aménagement et Exploitation des Forêts pour le Ravitaillement de la Ville de Ouagadougou en Bois de Feu" PNUD/BKF/85/011 financé par le PNUD et exécuté par le FAO sous la tutelle de la Direction Générale des Eaux et Forêts de Novembre 1986 à Juin 1990 a permis de mettre en aménagement la forêt classée du Nazinon d'une superficie de 24.000 ha et de mettre au point un modèle d'aménagement participatif. Ce modèle, développé et consolidé lors de la Deuxième phase du Projet PNUD/FAO/BFK/89/011, a été exécuté dans le même cadre administratif que le précédent de Juillet 1990 à Août 1994 principalement dans les forêts protégées.

Cette 3ème phase "PNUD/BKF/93/003" qui se déroule de Septembre 1994 à Septembre 1998 exécutée par le gouvernement du Burkina Faso avec comme agence de coopération la FAO, utilisera les acquis techniques et socio-économiques des phases antérieures pour la réalisation de ses objectifs..

#### 3.2. Objectifs

##### Objectifs globaux

- Contribuer à la finalisation du Programme National d'Aménagement des Forêts Naturelles et à la mise en place des organes et structures de pilotage et de mise en oeuvre.
- Renforcer les capacités nationales de formulation d'exécution et de suivi des actions d'aménagement des formations forestières naturelles.

- Contribuer au rétablissement des équilibres socio-écologiques à travers l'organisation de l'espace rural et l'assistance à l'utilisation optimale des ressources naturelles.
- d'élaborer une approche technique pour la restauration des systèmes écologiques dégradés et son application sur le terrain à titre expérimental et pilote dans le bassin versant du Nakambé au nord de Ouagadougou avec la participation paysanne.
- Mettre en aménagement 100.000 ha additionnels de forêts naturelles avec la participation effective des populations rurales riveraines pour la sauvegarde du patrimoine forestier et le ravitaillement soutenu des populations rurales et urbaines en combustibles ligneux et consolidation des 100.00 ha aménagés au cours des phases antérieures.

#### Objectifs spécifiques

Les objectifs spécifiques de la mise en aménagement d'une zone s'articulent autour de:

- La sauvegarde de l'environnement par le réajustement des besoins des populations et les ressources disponibles.
  - La promotion de la prise de conscience sur la gestion du patrimoine forestier par la concertation, le regroupement afin de créer une dynamique de décisions et d'actions à entreprendre pour une gestion rentable et durable des ressources forestières.
  - La limitation de l'exode rural.
  - La création d'une espace économique viable et rentable.
  - L'accroissement de la qualité de la participation aux activités de sauvegarde et aux actions de développement par l'organisation et la formation.
- L'introduction de nouvelles connaissances (stabilisation de pistes, exploitation forestière, amélioration des conditions d'exploitation agricole et pastorale ...).

### **3.3. Situation de la zone d'intervention**

Le Projed s'exécute principalement dans la région circonscrite dans les zones qui ont une contribution quelconque au ravitaillement de la ville de Ouagadougou en bois de feu. La région s'étend sur un rayon de 150 km autour de Ouagadougou. Un schéma directeur d'aménagement des formations forestières est déjà élaboré pour la région de Ouagadougou et couvre actuellement 17 provinces. Le financement PNUD couvre les provinces suivantes : La Sissili, le Bazèga, le Zoundwéogo, le Sanguié et le Ziro.

Au total 219 villages sont impliqués dans les activités d'aménagement qui sont en cours dans cette région.

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Il faut ajouter à cette zone une extension au Nord de la ville de Ouagadougou dans les provinces d'Oubritenga et du Sanmatenga d'une superficie de 50 000 ha entièrement cartographiés où le projet interviendra sur une superficie expérimentale de 5 000 ha.

### **3.4. Stratégie d'intervention**

La démarche élaborée par le Projet peut être scindée en 2 parties:

- la mise en aménagement avec participation paysanne ;
- la mise en autonomie de gestion forestière.

Le préalable à la mise en aménagement est la définition claire des conditions de collaboration avec les populations concernées à travers des missions d'animation d'échange d'information et de communication.

#### **3.4.1. La mise en aménagement**

La mise en aménagement s'articule autour des études techniques, de la concertation entre acteurs-bénéficiaires et acteurs-encadreurs, de la réorganisation de l'espace rural, de l'exploitation forestière, de la protection, du reboisement par le semis direct, de l'organisation sociale, de la construction d'un réseau de pistes forestières. Elle dure 2 ans et est financé par le Projet.

La stratégie développée par le Projet s'inspire des approches préconisées par le Programme National d'Aménagement des Forêts Naturelles (PNAFN) à savoir l'Approche Programme, l'Approche par Zone Socio-Ecologique, l'Approche Terroir et l'Approche Participative.

La stratégie est basée sur la participation réelle des populations cibles à l'identification des ressources, des problèmes, des contraintes et des solutions : à la prise de décisions, à l'exécution, au suivi et à l'évaluation des actions à travers l'approche participative.

Deux démarches méthodologiques sont utilisées pour la mise en aménagement : la démarche socio-économique et la démarche technique.

i) la démarche socio-économique consiste en l'implication des autorités administratives et coutumières, des populations et en une collecte de données socio-économiques du site à aménager.

Elle se réalise en plusieurs rencontres avec les populations et les autorités administratives locales.

ii) La démarche technique consiste en la collecte de données qualitatives et quantitatives sur les potentialités humaines, organisationnelles et forestières techniques : à l'application du modèle lors des phases précédentes pour la mise en aménagement de surfaces additionnelles de forêts villageoises ; à la conception ou à l'adaptation de paquets techniques adaptés à chaque situation ; à l'identification et à la mise en oeuvre de micro-réalisation génératrices de revenus et au suivi-évaluation des actions développées.

Afin de limiter les pressions d'ordre anthropique et animale, des actions sont développées en vue de contribuer à l'organisation de l'élevage traditionnel, à l'accroissement de la productivité des cultures vivrières par unité de surface cultivée.

#### 3.4.2. La mise en autonomie de gestion

A partir de la première année de gestion, un fonds est constitué à partir du prélèvement de 31% des recettes d'exploitation de bois de feu afin d'assurer l'autonomie de financement. La durée d'un cycle de gestion renouvelable, est de 15 ans.

#### 3.5. Acquis réalisés par le Projet

En 9 ans d'exécution, le Projet a imprimé dans sa zone d'intervention des faits et des changements importants. Parmi lesquels on peut citer :

\* Au plan technique

- L'élaboration d'un modèle d'aménagement qui comprend des normes et des techniques d'exploitation avec pour outils d'exploitation, du matériel traditionnel; le modèle développé jette les bases d'une meilleure utilisation de l'espace rural par sa réorganisation en vue de son utilisation optimale.

- Le modèle développé assure la gestion post-projet à travers un clé de répartition du prix du stère qui comprend la part du bûcheron, fruit de la labeur du producteur, le fonds de roulement du groupement afin de donner un fonds d'investissement aux villageois, le fonds d'aménagement forestier pour assurer les charges de la gestion post-projet et enfin le permis de coupe comme taxe à reverser au trésor public de l'Etat.

Le stère est vendu à 1610 f CFA (= 3,22 \$ US) repartis de la manière suivante.

Rémunération du bûcheron .....	= 610 f cfa	(=1,22\$US)
Fonds de Roulement du Groupement .....	= 200 f cfa	(=0,40\$US)
Fonds d'Aménagement Forestier .....	= 500 f cfa	(=1,00\$US)
Permis de Coupe .....	= 300 f cfa	(=0,60\$US)

- Le modèle développé permet le prélèvement d'environ 50% du potentiel ligneux sur pied; il permet en oeuvre le repeuplement des zones dégradés, l'enrichissement des parcelles soumises à l'exploitation et la protection contre les feux de brousse tardifs par la protection préventive : application des feux précoces.

- L'application du modèle 'd'aménagement a permis de mettre à la disposition du département chargé des forêts d'éléments cartographiques, d'un schéma directeur d'aménagement pour la région de Ouagadougou et un personnel qualifié pour la formulation, l'exécution, le suivi et l'évaluation des actions d'aménagement forestier à travers la valorisation et la formation de l'expertise nationale.

- L'implication d'autres partenaires pour la reproduction du modèle aussi bien à l'intérieur du pays comme dans les pays de la sous-région. On peut citer à l'intérieur du pays le PNGT, le PDIZ, le FED à travers le PDR/Sissili et bientôt le RPTES qui s'est inspiré

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énormement du modèle développé et promet de l'améliorer à travers une forte implication des communautés à la base et des propositions de mesures à prendre pour une plus grande durabilité des actions entreprises ou à initier.

\* Au plan social

- Le système d'aménagement des terroirs a permis aux responsables villageois de retrouver leurs prérogatives dans la gestion de leurs terroirs notamment les rapports avec les migrants.

- La délimitation des terroirs en secteurs agricole et forestier dans les forêts protégées et les esquisses d'articulation entre agriculteurs, éleveurs et exploitants forestiers ont permis la réduction de plus de la moitié en nombre des conflits entre agriculteurs et éleveurs.

- Sur la base de l'exploitation forestière des structures et ouvrages d'intérêt communautaire ont été réalisés. On peut citer: puits, écoles et banques de céréales.

Il faut noter également les contributions diverses (entretien des forages, des écoles, des Centres de Santé, des pistes intervillages ...) et les achats d'équipements d'intérêt collectif (charettes, pics, pioches, et des animaux de traits ....).

- Les groupements au sein des villages et entre les villages sont un atout important pour aborder les problèmes de développement. Sur 102 groupements (2ème phase), il s'est constitué 28 sections permanentes de bûcherons afin d'exécuter les plans d'aménagement et de gestion par unité d'aménagement forestier. Ces sections permanentes se sont à leur tour érigées en 4 superstructures paysannes (Unions de Groupements).

A tout cela il faudra ajouter la formation de moniteurs forestiers, agricole, d'élevage et d'Apiculture (1 à 2 par groupement villageois en fonction des activités spécifiques).

\* Au plan économique

- L'amélioration des revenus par l'activité de gestion forestière qui procure un revenu annuel moyen par bûcheron de 50.000 FCFA (=100\$US) équivalent au revenu dû à l'activité agricole.

- 5.000 bûcherons (2ème phase) dont environ 150 femmes bénéficient directement de ce revenu supplémentaire.

- L'exploitation forestière a procuré aux populations plus de 600 millions de francs CFA (1,2 millions de \$US) au 31 décembre 1995.

- La mécanisation progressive de la production agricole avec les revenus provenant de la forêt. Un grand nombre de producteurs ont acquis du matériel aratoire moderne (houes modernes, charrues).

- L'installation du Projet a permis le développement des marchés ruraux grâce au désenclavement des zones concernées à l'essor économique et au développement des échanges commerciaux notamment les produits de rente (coton, ignames, ...).

**RECAPITULATIF DE LA CONTRIBUTION DES ZONES AMENAGEES OU EN  
COURS D'AMENAGEMENT AU RAVITAILLEMENT DE LA VILLE DE OUAGADOUGOU**

PRODUCTION EN STERES				
CHANTIERS	1987-1994	1995	TOTAL	VALEUR (F CFA)
Nazinon	250.000	77.406	327.406	527.123.660
Bougnounou-Néviel	110.000	10.260	120.260	193.618.600
Cassou	180.000	31.310	211.301	340.194.610
Nazinon-Nord/ Nakambé-Sud	25.000	2.926	27.926	44.960.860
Nakambé Nord	-	-	-	-
Silly-Zawara-Pouni	-	3.517	3.517	5.662.370
Sapouy-Biéha	20.000	38.830	58.830	94.716.300
<b>TOTAUX</b>	<b>585.000</b>	<b>164.240</b>	<b>749.240</b>	<b>1.206.276.400</b> <i>(2.412.552,8\$US)</i>

Ces recettes se repartissent ainsi qu'il suit :

LIBELLE	VALEUR EN FCFA	
Rémunération du Bûcheron	457.036.400	914.072,8 \$US
Fonds de Roulement du Groupement	149.848.000	299.696,0 \$US
Fonds d'Aménagement Forestier	374.620.000	749.240,0\$US
Permis de Coupe	224.772.000	449.544,0\$US
<b>TOTAL</b>	<b>1.206.276.400</b>	<b>2.412.552,8\$US</b>

La commercialisation du bois de feu a permis au cours des phases antérieures aux membres des groupements des 102 villages de bénéficier de 473.850.000 FCFA (947.700\$US). Elle a permis au cours de cette 3ème phase à 205 villages (103 villages pour la présente phase) de bénéficier de la somme de 149.848.000 FCFA (299.696\$US).

**\*Au plan écologique**

Le Projet a contribué à stabiliser et à améliorer 250.000 ha de forêts naturelles, dont la disparition était certaine à cause du phénomène migratoire et des pratiques néfastes d'exploitation.

Les acquis se traduisent par:

- la limitation en nombre et en intensité des feux de brousse et l'amorce de la gestion de leurs terroirs dans plus de 200 villages ;

- la réduction en nombre et en intensité des défrichements non conservatoires ;
- la contribution au ravitaillement de la ville de Ouagadougou en bois de feux de plus de 150.000 stères par an.
- la disparition progressive de l'exploitation frauduleuse ;
- l'autoformation en technique de valorisation et de sauvegarde des ressources forestières.

**LES CHANTIERS AMENAGES**

CHANTIER	SUPERFICIE AMENAGEE	NOMBRE DE GROUPEMENTS	NOMBRE D'ADHERENTS	ETAT GLOBAL DU CHANTIER
Nazinon	24.000	26	820	en autonomie de gestion
Cassou	31.000	25	1.257	en autonomie de gestion
Bougnounou/ Nébiélianayou	24.000	30	2.015	en autonomie de gestion
Nkambé-Sud Nakambé-Nord	21.000	19	715	transfert à la Direction Régionale du Centre et Extension en superficie
<b>TOTAL</b>	<b>100.000</b>	<b>102</b>	<b>4.806</b>	

L'autonomie de gestion est financée par le Fonds d'aménagement qui est un fonds alimenté par le prélèvement de 500 FCFA (1\$US) sur le prix de stère vendu à 1.610 FCFA (3,22\$US).

**3.6. Etat d'avancement**

Trois composantes essentielles sont à considérer pour apprécier l'état d'avancement :

- la composante consolidation qui concerne l'achèvement des Chantiers d'aménagement des 2 phases précédentes ;
- la composante extension du modèle d'aménagement sur 100.000 ha additionnels;
- la composante restauration de systèmes écologiques dégradés dans la zone Nord de Ouagadougou.

**Composante consolidation**

Au titre de cette composante, les actions suivantes ont pu être menées :



- l'élaboration et l'adoption d'un document de base de transfert des Chantiers autonomes aux Directions Régionales des Eaux et Forêts (DREF) du Centre et du Centre-Ouest ;
- l'adoption des projets de budgets prévisionnels des Chantiers d'aménagement forestiers ;
- l'ouverture d'un compte bancaire pour chaque chantier dont les co-signataires sont: le Directeur Régional de l'Environnement et des Eaux et Forêts territorialement compétent et le Trésorier de l'Union Précoopérative des Groupements de Gestion Forestière du Chantier concerné. La ventilation des recettes s'est effectuée en début 1995 ;
- la reconnaissance officielle des Unions précoopératives de Groupements de Gestion Forestière est en cours.

Composante extension

On regroupe sous cette appellation l'ensemble des activités visant à créer de nouveaux Chantiers sur la base du modèle d'aménagement élaboré par le Projet. L'extension a été orientée suivant les prescriptions du schéma directeur d'aménagement et de conservation de 300.000 ha de forêts naturelles dans la région de Ouagadougou.

ZONES EN AMENAGEMENT

ZONE	SUPERFICIE CARTOGRAPHIEE (ha)	NOMBRE DE VILLAGES ASSOCIES
Sapouy/Bihéa	335 000	43
Silly/Zawara	1 300 0000	48
Sud-Ouest Sissili	300 000	52
Nakambé-Sud/ Nazinon-Nord	50 000	14
TOTAL	1 985 0000	154

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Composante restauration

Au titre de la composante restauration des systèmes écologiques dégradés, notamment dans la zone Nord du Nakambé, il s'agit de

Les actions qui ont pu être menées sont:

- un diagnostic global de la zone de 50.000 ha ;
- le choix d'une zone expérimentale de 5.000 ha ;
- l'élaboration d'une stratégie d'intervention ;
- l'inventaire et l'analyse des techniques et outils utilisés par les intervenants locaux dans la zone ;
- démarrage des actions de restauration dans deux villages tests avec la participation des populations rurales.

**3.7. Contraintes et difficultés**

- La production des forêts aménagées (150 000 stères par an) représente 24 % de la consommation totale de la ville de Ouagadougou, ce qui pose un problème de concurrence négative sur la production organisée.
- Les bases de la décentralisation sont encore embryonnaires au Burkina Faso ; ce qui fait du programme gestion des ressources naturelles un pionnier exposé à toutes les lourdeurs administratives, sociologiques, ethniques et aux préjugés divers.
- Le taux d'alphabétisation et le niveau technologique est très bas. Ce qui ralentit le taux de pénétration des nouveaux concepts et le transfert technologique.
- L'inexistence de réponses techniques claires dans les domaines de l'agriculture et de l'élevage est une menace permanente contre l'intégrité des forêts aménagées ou non aménagées.
- La précarité du réseau de pistes est un facteur très défavorable pour l'écoulement des produits et le développement des collectivités rurales.

**IV. CONCLUSION**

L'incidence du caractère socio-économique et écologique de la Politique National Forestière (Participation, interaction optimale entre l'économie nationale et la valorisation des ressources des trois sous-secteurs et leur durabilité) doit être recherché dans les modes d'intervention pratique sur le terrain. C'est ce qui à quoi le projet "Aménagement des forêts naturelles" s'attèle depuis près d'une décennie avec comme cadre essentielle la participation des communautés rurales à la base et comme orientation la pérennisation des acquis obtenus à travers le renforcement des structures de gestion mises en place.

Pour ce faire, le gouvernement a déjà engagé des réflexions notamment en ce qui concerne la révision du prix du stère de bois qui est toujours de 1610 FCFA (=3,20\$US) depuis plus de 10 ans, et partant le relèvement du fond d'aménagement afin de contribuer au plan économique à assurer la pérennisation des actions entreprises en phase d'autonomie de gestion.

Toujours dans le même cadre, il y a la fixation d'un prix différentiel du stère de bois issus des zones aménagées où l'exploitation se mène de façon anarchique et incontrôlée.

# **REPUBLIQUE CENTRAFRICAINE**

**LE VOLET AGROFORESTIER/PARN:  
UN PROJET PILOTE EN REPUBLIQUE CENTRAFRICAINE**

**AGROFORESTRY AS A TOOL TO IMPROVE  
NATURAL RESOURCES MANAGEMENT**

**ETUDE DE CAS DU FINAGE AGROFORESTIER  
DE YOMBO**

**BANGUI, Août 1996**

**PRESENTE PAR**

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**PLAN DE L'EXPOSE**

- 1 - **Conditions actuelles et les corrections nécessaires ;**
- 2 - **Objectif de l'intervention ;**
- 3 - **Activités principales ;**
- 4 - **Problèmes de réhabilitation et solution ;**
- 5 - **Résultats ;**
- 6 - **Leçons tirées et leurs conséquences sur les étapes suivantes.**

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**LE VOLET AGROFORESTIER/PARN:  
UN PROJET PILOTE EN REPUBLIQUE CENTRAFRICAINE**

**RESUME**

Le finage de Yombo, situé dans la Commune de Bimbo, en zone périurbain de Bangui, subit depuis les deux dernières décennies de pressions de plus en plus croissantes.

L'importance démographique de Bangui, la capitale qui compte environ six cent mille habitants (600.000) et la conjoncture économique des dernières années ont accéléré le processus de dégradation du milieu forestier de Yombo ; phénomène dû essentiellement à l'exploitation intensive du bois de chauffage et de terres agricoles. En outre, il conviendrait de noter que le besoin en nouvelles terres agricoles se faisait de plus en plus sentir au fur et à mesure que les non-résidents s'installent.

L'enjeu était grand dans la mesure où le système de culture itinéraire, bien que destructeur, est probablement ce qui permet le mieux à des exploitants mal équipés de dégager une rentabilité à court terme élevé.

Dans ce contexte, le Ministère de l'Environnement, des Eaux, Forêts, Chasses et Pêches, grâce au financement de la Banque Mondiale et à l'appui technique de Poulin (THERIAULT et de l'ONG OXFAM-OCSD), initié en 1992 le Volet Agroforestier au Projet d'Aménagement des Ressources Naturelles (PARN) qui a pour objectif de définir une approche et un programme intégré d'activités de foresterie rurale axés sur l'agroforesterie et basés sur la participation active de la population afin d'infléchir le processus de dégradation qui prévaut dans la zone.

Ce processus est essentiellement dû à l'exploitation excessive du bois de feu, à l'agriculture itinéraire et aux feux de brousse. Pour répondre à ces préoccupations, le projet comprend quatre (4) composantes ou axes d'intervention qui sont :

- la gestion des pépinières et plantations ;
- les dispositifs agroforestiers ;
- la conservation des ressources naturelles et ;
- la diffusion des foyers améliorés.

Plusieurs études biophysiques et socio-économiques ont été réalisées dans le cadre du projet. La participation des populations à chacun des axes d'intervention a été essentielle pour les résultats obtenus, grâce à l'animation, à la communication constante entre le projet et les populations du Finage.

Aussi, il conviendrait de souligner que le début du projet a été relativement difficile au cours de cette première phase faute de compréhension de la part des paysans, qui continuent à considérer les forestiers comme des oppresseurs.

Grâce à l'approche participative développée par le projet, un climat de confiance progressif a été né et a permis d'obtenir des résultats très encourageants ces deux dernières années.

Le seul problème qui persiste reste avant tout le réaménagement des textes sur la priorité foncière et le statut des populations, leurs droits, leurs obligations et leur rôle dans la gestion des ressources naturelles.

L'Etat doit faire une certaine concession aux populations pour ce qui concerne le droit de regard sur la gestion du patrimoine forestier. Il devra s'assurer que sa relève par les paysans se fasse dans les bonnes conditions.

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## 1. INTRODUCTION

### 1.1 Présentation du finage de Yombo

Le finage de Yombo est situé dans la Commune de Bimbo, au Sud-Ouest et dans la zone périurbaine de Bangui. Il compte une trentaine de villages pour trente (30) terroirs. Les terroirs sont de taille variable selon qu'ils appartiennent aux populations autochtones ou non. L'ensemble du finage couvre une superficie de 50.000 ha avec une population flottante mal définie. Toutefois les résultats du recensement effectué en 1995 par le PARN auprès des ménages dans sept villages témoins du finage donnent un chiffre de 4.528 habitants pour l'échantillon exploré, soit plus de 33% de l'ensemble de la zone du projet. On y trouve sept (7) groupes culturels différents, avec de mode de vie allant des chasseurs-cueilleurs (autochtones) aux agriculteurs, qui, sont issus pour le rapport des communautés non-résidentes.

### 1.2 Contexte du Projet

La complexité de l'environnement socio-culturel et la position du finage de Yombo à proximité de Bangui la capitale lui font subir, depuis au moins deux décennies de pressions de plus en plus importantes.

Ainsi, l'importance démographique de la ville de Bangui qui compte environ 600.000 habitants et la conjoncture économique des dernières années ont favorisé une exploitation plus intensive du bois de chauffe et des terres agricoles, entraînant ainsi une dégradation très rapide du milieu forestier de la zone car l'agriculture itinéraire sur brûlis et l'exploitation du bois de chauffe font disparaître environ 2.500 ha de forêt chaque année.

Pour paillier à cet état de chose, il faudrait nécessairement ralentir le rythme de déboisement causé par l'exploitation spontanée de forêts pour le bois de feu et par les pratiques d'exploitation nouvelle et des techniques économiquement viables pour les populations rurales.

L'enjeu le plus important était d'essayer de ralentir ou freiner le système de cultures itinéraires, bien que destructeur, était probablement celui qui permettait le mieux à des exploitants mal équipés de dégager une rentabilité à court terme élevé.

Dans ce contexte, le Ministère de l'Environnement, des Eaux, Forêts, Chasses et Pêches, grâce au concours financier de la Banque Mondiale et à l'appui technique conjugué de Poulin THERAULT et l'ONG OXFAM-OCSD, a initié et exécuté le Volet Agroforestier du Projet d'Aménagement des Ressources Naturelles (PARN).

## 2. Objectifs de l'intervention

Étant convaincu qu'il ne peut à lui seul inverser la forte tendance à la dégradation des ressources forestières dans la zone périurbaine de Bangui qui constitue le finage de Yombo, l'État a mis en place dès 1992 le Volet Agroforestier qui a pour objectif de définir une approche et un programme intégré d'activités forestières rurales axés sur l'agroforesterie et basés sur la participation active de la population afin d'infléchir le processus de dégradation qui prévaut dans



la zone périurbaine de Bangui. Cette grande ville étant largement tributaire des localités de l'intérieur du pays, en ce qui concerne les vivriers et le gibier.

### **3. Activités Principales**

Le processus de dégradation qui sévit dans le finage agroforestier de Yombo provient essentiellement de l'exploitation du bois et de feu, de l'agriculture itinéraire et des feux de brousse. Pour parer à cette situation, il faudrait créer des activités qui corrigent les différentes tendances et qui puissent amener les populations à modifier leur comportement vis-à-vis de la nature.

Ainsi, les activités du Volet Agroforestier ont été divisées en quatre (4) axes d'intervention qui sont:

- la gestion des pépinières et plantations;
- les dispositifs agroforestiers ;
- la conservation des ressources naturelles et,
- la diffusion des foyers améliorés.

La réalisation des objectifs du projet a été rendue possible grâce à une démarche participative basée sur l'animation par étape, elle même comportant:

- l'élaboration des programmes négociés avec les populations ;
- les rencontres de sensibilisation, vulgarisation ;
- l'établissement des plans d'action villageois ;
- le suivi des activités et,
- la formation lors des rencontres spécifiques.

Cette formation a porté spécifiquement sur l'élaboration des statuts et règlements intérieurs des comités de gestion et groupements, la gestion et la comptabilité des groupements, les techniques de gestion des pépinières et des plantations, les dispositifs agroforestiers, la fabrication des savons et des confitures ;

Les autres aspects de l'animation ont porté sur l'auto-évaluation des paysans la monographie des outils participatifs tels que la flanellographie, les cartes, les documents pédagogiques sur les pratiques culturelles, les démonstrations en milieu paysan et la communication comprenant les prestations de la radio rurale de la télévision et du vidéogramme.

En définitive, quelque soit la démarche ou les outils privilégiés, le plus important demeure l'état d'esprit avec lequel ils sont utilisés. Tous les choix concernant les modes d'animation ont été faits dans un esprit d'équipe et de partenariat où paysans, animateurs et responsables ont eu à exprimer librement leurs opinions, dans l'intérêt du projet.

### **4. Problèmes de Réhabilitation et Solutions**

Les problèmes rencontrés lors de l'exécution du Volet Agroforestier sont de plusieurs ordres :

#### **4.1 Sur le plan institutionnel**

La plupart des partenaires (administrations et organisations privées) ne se sont pas sentis concernés par l'exécution du projet car, ils considèrent qu'il s'agit d'un projet forestier. L'image du forestier comme policier de la chasse a développé et nourri un certain sentiment de méfiance à l'égard des responsables du projet. Certaines populations ont purement et simplement rejeté la présence des agents du projet de leurs terroirs, les traitant d'opresseurs et de sans-cœur.

Tout ce sentiment est né du fait que les Eaux et Forêts n'ont jamais développé l'approche participative dans la zone concernée, avant l'installation du PARN.

#### **4.2 Sur le plan juridique**

La Loi ne reconnaît pas de façon formelle le droit de priorité des populations locales sur les forêts en particulier et sur l'espace rural en général. Cette préoccupation est tout simplement évoquée et non formalisé.

Le nouveau code forestier est l'unique document de l'heure qui évoque de façon subtile cet aspect du problème. Cependant le manque des textes d'application maintient le paysan à la case de départ.

L'autre réalité est l'environnement socio-culturel du projet selon lequel les membres des clans avaient un droit de propriété sur les terres de leurs ancêtres, alors que cela n'est plus le cas à l'heure actuelle.

Un certain nombre de réformes est en cours d'élaboration avec les spécialistes des domaines concernés en vue d'intégrer toutes les préoccupations soulevées.

#### **4.3. Sur le plan technologique**

Certains textes réglementant la priorité foncière sont devenus caduques ou inadéquats. La solution serait de les adapter aux réalités du moment. Une série de plans d'action a été élaborée avec la participation des paysans pour chaque terroir.

La forte dépendance de la population Banguissoise pour le bois de feu comme source essentiel d'énergie reste le plus grand problème pour le projet à qui échappe l'application de la politique énergétique du pays. Des propositions seront adressées à toutes fins utiles en vue de trouver une solution durable au problème.

#### **4.4. Sur le plan méthodologique**

Certains paysans restent encore timides à la méthode participative. D'autres parlent peu en public. Cependant le projet a connu une forte participation des femmes et des jeunes qui sont les principaux détenteurs d'enjeux en matière d'environnement. Les multiples rencontres effectuées lors de la première phase ont éveillé plus d'un paysan au problème de durabilité de ressources naturelles, car sa vie en dépend.

## **5. Résultats**

Les résultats du projet sont tirés du bilan des activités du PARN de 1993 à 1995 et les perspectives pour l'année 1996.

### **5.1 Gestion des pépinières et plantations**

Près de 90% des villages de la zone d'intervention ont participé soit à une pépinière collective soit, soit individuelle ou scolaire. Le nombre de plants produits par pépinière a diminué par rapport à l'année dernière. Par contre le nombre de plantation a augmenté de 39% et elles sont majoritairement des plantations individuelles. Le maraîchage a connu un grand essor au cours de cette campagne. Au total, 20% de pépinières ont associé le maraîchage afin de se procurer un revenu à court terme.

La pépinière du PARN a essentiellement servi à expérimenter certaines essences afin de connaître le calendrier de production. Des formations ont été offertes aux groupements pour permettre à ceux-ci de se structurer et d'améliorer les techniques de pépinières.

Les principaux problèmes rencontrés cette année, ont été la mauvaise qualité de certaines semences, les attaques d'insectes, le mauvais entretien des pépinières. Malgré ces problèmes, les résultats de la campagne ont été très satisfaisants.

Les perspectives pour l'année 1996 sont :

- de maintenir le nombre de partenaires ;
- de favoriser l'autonomie des groupements en intrants ;
- de sensibiliser les partenaires à l'entretien des plantations;
- de former les groupements aux techniques de greffage et d'entretien.

### **5.2 Dispositifs agroforestiers**

Le nombre d'essais agroforestier a augmenté de 8% cette année. Les cultures en couloirs ont été très demandées (augmentation de 118%). La moitié de ceux-ci a été réalisée avec du *Gliricidia Sépium*. Les autres essais ont été semés avec du *Calliandra Calothyrsus* (25%) et du *Leuceana Leucocéphala* (25%).

Le nombre de champs ayant été aménagés avec le dispositif d'arbres sur parcelle de cultures a diminué de moitié alors que pour les autres dispositifs le nombre n'a pas changé. Le suivi des essais agroforestiers 1993 - 1994 a été réalisé 4 fois au cours de cette année. Il a consisté au calcul des taux de survie et des auteurs.

Trois nouvelles parcelles ont été introduites au site de démonstration et d'expérimentation. Une culture en couloirs associée aux bananiers, une jachère arborée améliorée et un verger à graines de *Gliricidia Sépium* ont été aménagés. Des visites du site de démonstration ont été organisées pour les paysans qui étaient intéressés à réaliser une culture en couloir dans leurs champs.

Des semences de variétés améliorées d'arachide de maïs et des boutures de manioc ont été diffusés aux paysans de la zone d'intervention.

Les principaux problèmes rencontrés ont été la mauvaise germination des Calliandra et le sarclage des arbres par les manoeuvres.

Les perspectives pour l'année 1996 sont:

- de maintenir les mêmes dispositifs agroforestiers ;
- de diminuer le nombre de cultures en couloirs réalisées;
- de continuer le suivi des essais.

### **5.3 Conservation des ressources naturelles**

Cet axe d'intervention a connu beaucoup de succès cette année. Les Comités Villageois de Gestion des Ressources Naturelles sont présents dans toute la moitié des villages de la zone d'intervention.

Plusieurs rencontres de sensibilisation contre les feux de brousse ainsi que des mises en défens autour des villages et des champs ont eu lieu. Un inventaire des origines et des causes qui ont provoqués a été fait par le Comité.

Des activités concrètes d'aménagement des rives de cours d'eau ainsi que des règlements concernant certaines ressources ligneuses ou non ligneuses ont été instituées par les Comités en accord avec les Chefs de Villages.

Les principaux problèmes rencontrés ont été la sécheresse qui a favorisé beaucoup de feux, l'établissement de la légalité des Comités.

Les perspectives pour 1996 sont:

- de légaliser les Comités de Gestion de l'Environnement ;
- d'augmenter le nombre de Comités Villageois ;
- de rendre les Comités plus représentatifs de la population ;
- d'assister les Comités dans la mise en vigueur des règlements.

### **5.4 Diffusion des foyers améliorés**

La diffusion des foyers améliorés touche présentement 30% des ménages résidents dans la zone d'intervention de Volet Agroforestier. C'est dire l'intérêt que porte les villageoises à utiliser les foyers améliorés. Cette année, les ventes ont augmenté de 109% par rapport à l'année dernière.

Les principaux problèmes rencontrés ont été le remboursement du crédit, l'approvisionnement chez les artisans et l'usure prématurée de certains foyers.

Les perspectives pour l'année 1996 sont:

- de maintenir la vente de foyer ;
- de vendre les foyers au comptant ;

- d'encourager les femmes à acheter les foyers directement chez les artisans.

### **5.5 Services d'appui**

Les services d'appui comprennent l'animation/vulgarisation et le crédit villageois.

Animation/vulgarisation : l'augmentation des réalisations et du nombre de partenaires ont conduit le projet à revoir sa politique d'encadrement. Cette année, les animateurs ont exigé la présence et la participation active des paysans dans l'installation des parcelles agroforestières et dans les plantations fruitières ou forestières. L'animateur a donc repris son rôle d'animateur et de vulgarisateur.

Les émissions de Radio Rurale ont connu une écoute toute aussi grande que la précédente année. Les partenaires se sentent directement concernés par les émissions car, celles-ci ont été réalisées à partir des expériences de nos partenaires.

La participation aux différents rencontres d'animation et de sensibilisation a été très bonne. La présentation des vidéos réalisées par le Volet a permis d'égailler les rencontres.

Le principal problème rencontré a été la difficulté de manipuler le matériel vidéo par les animateurs et les pannes techniques.

Perspectives pour l'année 1996:

- adaptation du nouveau matériel vidéo ;
- nouvelles émissions de Radio Rurale.

### **5.6 Crédit villageois**

Le crédit villageois a augmenté de 83% cette année à cause de l'augmentation des ventes de foyers améliorés. Après une campagne de sensibilisation auprès de partenaires, le pourcentage de crédits remboursés a atteint 69%.

Le principal problème rencontré a été de faire rembourser les crédits aux femmes qui ont acheté un foyer amélioré.

Les perspectives pour l'année 1996 sont :

- de maintenir les crédits pour les équipements des pépinières;
- de vendre au comptant les foyers améliorés.

### **5.7 Autres activités connexes**

Les micro-projets permettent de financer des activités dont le projet ne dispose pas de fonds nécessaires à leurs réalisations.

Cette année, sept projets ont été financés par l'Ambassade du Canada.

Une Table Ronde de concertation des intervenants en développement de la Sous-Préfecture de la Commune de Bimbo a été mise en place sous l'initiative du PARN. Un Protocole de Collaboration a été signé avec le CARUB.

Les principaux problèmes ont concerné les forages des puits.

Les perspectives pour l'année 1996 sont :

- de financer quatre micro projets (puits, magasins, écoles) ;
- d'établir un protocole de collaboration avec l'ICRA.

## **5.8 Etudes**

Plusieurs études socio-économiques et biophysiques ont été finalisées au cours de l'année 1995. Ces études ont conduit à l'élaboration d'un Plan Directeur d'Aménagement dont la version préliminaire a été élaborée.

Pour la prochaine année, les perspectives sont:

- de financer le rapport sur le recensement de la population dans les villages témoins ;
- de financer le rapport et la cartographie de l'inventaire forestier ;
- de financer les Plans Directeur d'Aménagement.

## **6. Leçons tirées et leurs conséquences sur les étapes suivantes**

La première phase du projet a été riche en enseignement.

En ce qui concerne la gestion des pépinières villageoises, les groupements ont poursuivi la production des plants alors qu'on craignait un relâchement. Tous les villages du finage disposent d'une pépinière collective par rapport aux plantations qui sont faites individuellement. Les plantations ont connu des problèmes d'entretien, lesquelles ont occasionné des taux de mortalité assez élevés. Il conviendrait alors de mettre un accent particulier sur ce type d'activités en organisant des rencontres régulières avec les paysans. Il a été également constaté que les plantations agroforestières, notamment celles qui ont des dispositifs en couloirs, sont de plus en plus acceptées par les paysans alors qu'ils étaient réticents au départ.

Ce changement d'attitude résulte des succès obtenus dans certains champs de démonstration.

Les diverses campagnes de sensibilisation ont permis aux partenaires (paysans) du finage de mieux comprendre l'importance de l'arbre comme étant un élément moteur pour l'environnement en général et pour la communauté villageoise en particulier.

La diffusion des foyers améliorés a été un réel succès. Le nombre de foyers vendus a doublé en deux ans. Cependant, cette filière connaît de petits problèmes de remboursement de crédits par les paysans. Il serait alors souhaitable de mettre en place un mécanisme de suivi pouvant inciter les paysans à honorer leurs engagements vis-à-vis de la communauté villageoise et du projet.

En conclusion, la première étape a été celle de la collecte d'information et de l'élaboration de divers plans 'd'aménagement et de gestion de terroirs. La prochaine phase sera celle dite d'activités concrètes axées sur la mise en place d'un cadre juridique approprié et le renforcement des capacités des paysans afin de leur permettre de se prendre en charge.

Par conséquent, une approche systémique serait appropriée en vue de permettre une synergie d'actions pour une protection effective de l'environnement et du bien-être du paysan.

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**SODEFOR**  
**CENTRE DE GESTION DE GAGNOA**

**LA GESTION DES FORÊTS CLASSÉES DU  
DOMAINE FORESTIER PERMANENT DE L'ETAT  
EN CÔTE D'IVOIRE**

**L'Expérience de la Société de Développement de Forêts (SODEFOR)  
à travers la participation des populations riveraines**

**COLLABORATIVE MANAGEMENT  
OF STATE-OWNED GAZETTED FORESTS**

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## **RESUME**

La forêt ivoirienne connaît depuis 1960 une dégradation qui s'est nettement accélérée au cours des 20 dernières années sous l'effet conjugué de l'exploitation forestière et d'une agriculture traditionnelle consommatrice de terres.

Malgré les nombreuses mesures correctives prises par le gouvernement depuis lors pour inverser la tendance la situation ne s'est pas notablement améliorée. C'est véritablement à partir de 1988 que des dispositions radicales et harmonieuses dans leur application vont être prises pour une gestion rationnelle des forêts.

Ainsi au cours de l'année 1988 dite 'Année de la Forêt' plusieurs actions majeures ont été menées :

- une vaste campagne de sensibilisation a été décrétée et a permis d'agir sur la conscience collective des Ivoiriens vis-à-vis des problèmes environnementaux.
- un plan directeur forestier, véritable pari sur l'avenir pour la forêt ivoirienne a été rédigé et adopté par le gouvernement pour la période 1988-2015.
- en application de ce plan directeur le projet sectoriel forestier (1990-1996) conçu pour apporter des solutions concrètes aux problèmes du secteur a été initié puis financé par la Banque Mondiale et l'Etat ivoirien.

Pour l'exécution de ce projet et dans le cadre de la réhabilitation des forêts classées du domaine forestier permanent, la SODEFOR a initié une approche nouvelle de gestion de ces forêts basées sur la participation effective des populations riveraines.

Cette participation qui a pour finalité la réhabilitation durable des forêts classées doit faire en sorte que les populations en s'impliquent tirent profit de la gestion des forêts situées sur leur terroir traditionnel.

La participation des populations se situe à trois niveaux :

- la réalisation des travaux forestiers pour le compte de la SODEFOR par la sous traitance. C'est dans ce cadre que des structures comme les coopératives des travailleurs forestiers, les groupements informels de Jeunes déscolarisés, les petites entreprises locales, et les comités de lutte contre les feux de brousse ont été mis sur pied.

Ces organisations sont d'un grand apport pour la SODEFOR car elles permettent de réaliser des travaux de bonne qualité à moindre coût.

Par la même occasion la SODEFOR leur assure un revenu substantiel qui permet aux populations de se faire une idée beaucoup plus positive de la forêt. Ainsi l'ensemble de ces partenaires ont réalisé près de 2,800 milliards de FCFA de chiffre d'affaires pour la période 1993-1996.

- la participation à l'exploitation des ressources forestières dans le respect de la possibilité des forêts. Il s'agit de faire bénéficier directement les populations qui assurent la protection de la forêt des bénéfices de l'exploitation suivant des modalités qui reste à mieux préciser.
- la réalisation de projet d'aménagement ruraux au profit des populations riveraines en compensation de l'accueil sur leur terroir des paysans déplacés des forêts.

Grâce à ces différentes actions en leur faveur dans le cadre de la gestion concertée des forêts, les populations riveraines peuvent désormais percevoir la forêt comme sources de revenu, comme facteur et initiatrice de développement et non comme un obstacle au développement.

## **TABLES DES MATIERES**

### **INTRODUCTION**

#### **1 - SITUATION DES FORETS IVOIRIENNES JUSQU'EN 1988**

- 1.1 Présentation de la Côte d'Ivoire
- 1.2 Situation de la forêt ivoirienne jusqu'en 1988
  - 1.2.1 Superficie et dégradation
  - 1.2.2 Quelques mesures essentielles de gestion de la forêt ivoirienne

#### **2 - LES NOUVELLES ORIENTATIONS DE LA POLITIQUE**

##### **FORESTIERE IVOIRIENNE A PARTIR DE 1988**

- 2.1 L'année de la forêt (1988)
- 2.2 Le plan Directeur Forestier
- 2.3 Le Projet Sectoral Forestier

#### **3 - LA NOUVELLE STRATEGIE EN MATIERE DE GESTION DES FORETS CLASSEES : L'EXPERIENCE DE LA SODEFOR**

- 3.1 La SODEFOR
- 3.2 Les grands principes de gestion des forêts classées
  - 3.2.1 L'unicité de gestion
  - 3.2.2 La gestion des forêts avec la participation des populations
  - 3.2.3 Plan d'aménagement des forêts
- 3.3 Les structures de gestion des forêts classées
  - 3.3.1 Le Conseil d'Administration
  - 3.3.2 La Direction Générale
  - 3.3.3 Les Centres de Gestion
- 3.4 Les activités de prise en main des forêts classées : résultats et difficultés rencontrées
  - 3.4.1 Installation des structures de terrain
  - 3.4.2 Equipement des services de terrain
  - 3.4.3 Activités préalables aux aménagements
  - 3.4.4 Procédure de rédaction et d'adoption des plans d'aménagement
- 3.5 Participation des populations à la Gestion des forêts classées

- 3.5.1 Les objectifs
  - 3.5.2 Les différents niveaux de participation
  - 3.5.3 Les différentes organisations des Populations pour la réalisation des travaux forestiers
  - 3.5.4 Les conséquences de la participation des populations riveraines sur le coût des travaux
- 3.6 Politique de réinstallation des populations infiltrées dans les forêts classées
- 3.6.1 Les objectifs visés par la réinstallation
  - 3.6.2 Les grands principes de la réinstallation des populations déplacées
  - 3.6.3 De la réinstallation à la stabilisation de l'Agriculture
  - 3.6.4 Quelques exemples de réinstallation pilote

**CONCLUSION**

**BIBLIOGRAPHIE**

## **LA GESTION DES FORÊTS CLASSÉES DU DOMAINE FORESTIER PERMANENT DE L'ETAT EN CÔTE D'IVOIRE**

### **INTRODUCTION**

La forêt tropicale ivoirienne était au début de ce siècle l'une des plus importantes et des plus productives du continent puisqu'elle couvrait plus de la moitié du pays (16 millions d'ha environ).

Sous l'influence conjuguée de l'exploitation forestière, d'une pratique agricole artisanale et d'une forte pression démographique (3,8 %/an), cette forêt qui a tant apporté à l'économie du pays s'est retrécie au fil des ans comme une peau de chagrin. Aujourd'hui la forêt susceptible de jouer un rôle écologique certain ne représente plus que moins de 3 millions d'ha.

Devant cette situation le gouvernement a pris plusieurs décisions de protection qui n'ont pas toujours été efficaces puisque la tendance à la dégradation n'a pas fondamentalement changé depuis lors.

C'est à partir de 1988 que l'Etat ivoirien a véritablement pris la mesure de la situation en prenant des dispositions plus radicales et plus novatrices en matière de protection et de gestion forestière.

La présente communication a pour objectif de fournir à l'auguste assemblée du forum de NAIROBI un aperçu des dispositions en vigueur en Côte d'Ivoire en matière de gestion forestière en insistant particulièrement sur l'expérience de la SODEFOR (Société de Développement des Forêts) en matière de gestion des forêts classées de Côte d'Ivoire.

### **1- SITUATION DES FORETS IVOIRIENNES JUSQU'EN 1988**

#### **1.1 Présentation de la Côte d'Ivoire**

Située en Afrique de l'Ouest, et dans la zone intertropicale, la Côte d'Ivoire est inscrite dans un quadrilatère de 322000 km<sup>2</sup>.

- le relief est peu accidenté le plus haut sommet se trouve à l'Ouest du pays (1800m).
- le climat est de type subtropical avec une pluviométrie variant entre 2000 mm/an à 900 mm du Sud au Nord
- sa population est d'environ 14 millions d'habitants marquée par une forte immigration des populations des pays voisins et un taux d'accroissement de 3,8 %/an.
- l'économie relativement florissante repose sur l'agriculture avec comme production essentielle d'exportation le cacao, le café, le palmier à huile, l'hévéa, la banane, l'ananas etc... Le bois a apporté et continue d'apporter des revenus substantiels au pays.

## **1.2 Situation de la forêt ivoirienne jusqu'en 1988**

### **1.2.1 Superficie et dégradation**

La zone écologique propice à la forêt dense sempervirente et à la forêt semi-décidue couvre en Côte d'Ivoire environ 16 millions d'ha soit la moitié du territoire national.

Cette zone était effectivement couverte de forêt jusqu'en 1960. Malgré une exploitation forestière soutenue pendant l'époque coloniale cette superficie s'est relativement conservée puisqu'elle s'est maintenue autour de 14 millions d'ha. Mais à partir de 1960 sous l'effet conjugué d'une exploitation forestière effrénée et peu rationnelle, d'un développement agricole encouragé à dessein par le gouvernement et d'une forte immigration dans le Sud forestier de la Côte d'Ivoire des ressortissants des pays voisins, la couverture forestière s'est considérablement réduite tant en superficie qu'en qualité.

- Ainsi entre 1960 et 1970, la superficie forestière est passée de 14 millions à 11 millions d'ha.
- Entre 1970 et 1980 cette superficie forestière est tombée à 6 millions d'ha soit un taux de disparition de 500 000 ha/an.
- En 1988 la superficie forestière n'était plus que de 4,5 millions d'ha.
- Aujourd'hui la superficie forestière écologiquement viable ne dépasse pas 3 millions d'ha.

### **1.2.2 quelques mesures essentielles de gestion de la forêt ivoirienne**

Devant cette situation préoccupante de la forêt l'autorité administrative a réagi même si les mesures n'ont pas toujours été efficaces.

Ainsi :

- \* à l'époque coloniale, de 1900 à 1960, plusieurs massifs forestiers ont été constitués en forêts classées. Quelques rares autres massifs seront classés après 1960 pour porter le nombre de forêts classées et de parcs nationaux à plus de 250. La superficie totale pour ce domaine est d'environ 6 millions d'ha.
- \* En 1965 le code forestier, ensemble de textes de lois et de textes réglementaires regissant l'activité forestière a été adopté.
- \* En 1966 la Société de Développement des Plantations Forestières (SODEFOR) a été créée pour participer au développement rationnel de la forêt en Côte d'Ivoire.
- \* En 1974, le gouvernement procède à la constitution d'un domaine forestier permanent de l'Etat et d'un domaine forestier rural. Ces deux domaines ont connu des gestions différentes.



a) le Domaine Forestier Permanent de l'Etat (DFPE)

Il est constitué d'une part par les forêts classées et d'autre part par les parcs nationaux et réserves. La superficie totale de ce domaine (DFPE) est estimée à 6 millions d'ha. Ce domaine a été exclusivement géré jusqu'en 1990 par l'Administration forestière et connaît un état de dégradation assez avancé (en moyenne 30 % de la couverture forestière).

Les causes de cette dégradation sont liées au peu de moyens de l'Administration pour assurer une surveillance efficace contre les défrichements agricoles.

b) Le Domaine Forestier Rural (DFR)

Il est constitué de toutes les formations forestières en dehors du domaine forestier permanent de l'Etat de la zone forestière (environ 10 millions d'ha). Ce domaine est destiné à l'agriculture et à l'exploitation forestière. C'est ce domaine qui a été largement entamé en raison du manque d'un code domanial bien établi et d'une exploitation forestière peu rationnelle.

La gestion de ce domaine relève de plusieurs administrations :

- l'administration agricole pour les aspects de réglementation de mise en valeur agricole
- des structures de développement agricole
- de l'administration forestière pour les aspects d'exploitation forestière

**2 - LES NOUVELLES ORIENTATIONS DE LA POLITIQUE FORESTIERE IVOIRIENNE A PARTIR DE 1988**

En 1988, compte tenu de la situation alarmante que connaissent les forêts ivoiriennes, l'Etat ivoirien a décidé de prendre des dispositions plus radicales et plus harmonieuses dans leur application ;

Ces dispositions vont de la sensibilisation des populations (année de la forêt ivoirienne), à la rédaction de document de référence (plan directeur forestier) jusqu'à l'exécution de projets spécifiques rentrant dans le cadre de l'application du plan directeur (projet sectoriel forestier).

**2.1 L'année de la forêt (1988)**

En 1988, l'opinion nationale a été sensibilisée aux effets néfastes d'un déboisement inconsidéré du manteau forestier ivoirien. A l'issue d'un séminaire tenu à Yamoussoukro, le Président de la République a décrété 1988, année de la forêt ivoirienne. Au cours de cette année plusieurs actions d'envergure ont été menées :

- reboisement populaire avec un accent particulier sur l'implication de la jeunesse scolaire et rurale à cette action ;
- sensibilisation à la lutte contre les feux de brousse et les feux de forêt par l'activation des comités villageois de lutte contre les feux ;

- lutte contre les défrichements en forêts classées avec des opérations coup de poings de la police forestière etc...

Plus d'1 milliard de francs CFA ont été affectés à ces opérations et ont permis :

- d'équiper l'administration forestière en moyens de déplacement (véhicules et mobylettes)
- de réaliser plus de 10 000 ha de plantations forestières villageoises
- d'organiser plusieurs conférences et réunions populaires sur différents thèmes de la forêt.
- de concevoir, d'éditer et de diffuser plusieurs supports de sensibilisation (pancartes, film, émission radio plus.....etc...)

## **2.2 Le plan Directeur Forestier**

Appliquant les recommandations du PAFT (Plan d'Action pour la Forêt Tropicale), initié par la FAO, le gouvernement a rédigé et adopté en 1988 son plan directeur forestier 1988-2015.

Ce plan d'une importance capitale pour la forêt ivoirienne fixe les objectifs de la gestion forestière en Côte d'Ivoire pour les 27 prochaines années.

Il s'agit :

- de mettre en oeuvre une politique visant à rétablir à terme un potentiel exploitable d'environ 4 millions de m<sup>3</sup> de grumes ;
- d'engager des actions nouvelles qui permettent d'aménager sur une grande échelle les forêts classées, tout en poursuivant les efforts de reboisement industriel ;
- d'étendre le programme d'extension des reboisements dans les zones préforestières et des savanes ;
- de rationaliser l'exploitation forestière en respectant les possibilités d'une production soutenue de la forêt ;
- de mener des actions visant à promouvoir une industrie forestière efficiente soutenue par une stratégie qui favorise le développement de la filière bois.
- d'engager d'importantes actions de conservation des parcs nationaux.

La stratégie retenue pour atteindre ces objectifs consiste :

- à renforcer les actions de sensibilisation et d'éducation des populations pour les amener à protéger la forêt et à participer à la reforestation.

- à intensifier la présence sur le terrain de l'Administration forestière avec les moyens adéquats propres à une action efficace d'encadrement et de police forestière.
- à concentrer les efforts sur l'aménagement total de massifs forestiers déterminés en combinant l'amélioration des peuplements naturels dans les zones les plus riches et les reboisements industriels destinés à réhabiliter les zones les plus dégradées.
- à rationaliser l'exploitation forestière en fonction des possibilités de la forêt en encourageant le professionnalisme par des incitations et des mesures fiscales adaptées à la rarefaction de la ressource.
- à prolonger les actions de l'Etat par une participation du secteur industriel privé (intéressement aux aménagements sur la base de concessions à long terme) et des collectivités rurales et des particuliers (reboisements populaires).
- à renforcer la protection des parc nationaux et réserves avec la participation des populations riveraines à travers des projets de conservation intégrant leurs intérêts socio-économiques.
- à promouvoir une réelle stratégie d'aménagement de l'espace rural conciliant au mieux les impératifs de développement tant agricole, pastoral que forestier pour le bénéfice optimal des populations locales concernées.

Ce projet financé par la Banque Mondiale et la CDC a démarré en 1991 et a pris fin le 30 juin 1995.

Avant la rédaction d'un document de fin, on peut déjà affirmer que bon nombre des objectifs de départ sont atteints.

Dans le même esprit que le projet sectoriel forestier, plusieurs autres projets complémentaires sont en cours de réalisation. Il s'agit notamment :

- du projet de reboisement en zone de savane financé par la Banque Africaine de Développement (BAD)
- du projet d'aménagement des forêts de l'Est financé par la GTZ et la KFW
- du projet d'aménagement parc National de TAI financé également par la KFW
- du projet d'aménagement des forêts du Sud Est financé par la CFD (caisse française de développement)
- de l'aménagement des forêts de la zone côtière financée par le FED (Fonds Européen de Développement)

### **2.3 Le Projet Sectoriel Forestier**

Afin de mettre en application les objectifs du plan Directeur Forestier 1988-2015, le gouvernement ivoirien a conçu en collaboration avec les bailleurs de fonds internationaux le projet sectoriel forestier.

Ce projet qui couvre cinq (5) ans (1991-1995) vise les objectifs suivants :

- délimiter 1 500 000 ha de forêts classées
- doter 700 000 ha de forêts classées d'un plan d'aménagement
- entretenir 55 000 ha d'anciennes plantations
- créer 9 000 ha de nouvelles plantations
- créer des infrastructures dans le cadre de l'aménagement du parc national de la Comoé (1300 000 ha)
- réaliser des recherches en sylviculture en forêt naturelle, dans les techniques de plantations industrielles et en agroforesterie
- renover et équiper les écoles forestières du Banco et de Bouaflé
- donner un appui institutionnel au Ministère chargé des forêts pour des tâches de planification et de suivi du Projet et de la définition de la politique forestière.
- donner un appui à la SODEFOR dans le cadre des inventaires forestiers, de la rédaction des plans d'aménagement de la commercialisation.

## **3 - LA NOUVELLE STRATEGIE EN MATIERE DE GESTION DES FORETS CLASSEES: L'EXPERIENCE DE LA SODEFOR**

### **3.1 La SODEFOR**

La SODEFOR (Société de Développement des Forêts) est l'agence gouvernementale de gestion des forêts classées du domaine forestier permanent de l'Etat.

Créée en 1966, elle était à l'origine exclusivement spécialisée dans la création et la gestion des plantations forestières.

Ses attributions ont été élargies depuis 1990 à la gestion de toutes les forêts classées à vocation de production de bois soit un domaine de près de 3 800 000 ha.

Elle a pour objet de participer et de mettre en oeuvre la politique du Gouvernement en matière d'enrichissement du patrimoine forestier national, de développement de la production forestière, de valorisation des produits de la forêt, de sauvegarder des zones forestières et pour ce faire :

- de gérer et équiper les forêts et terres domaniales qui lui sont confiées par l'Administration aux termes de conventions générales et particulières
- de concevoir et mettre en oeuvre les modèles de gestion aptes à permettre l'exécution du plan forestier puis, progressivement, son autofinancement et le financement d'actions de développement régional
- d'exécuter ou faire exécuter tous travaux relatifs à l'entretien, l'équipement ou la restauration des domaines forestiers publics ou privés
- de contribuer à l'organisation des zones rurales voisines des zones forestières qu'elle gère
- de valoriser son savoir-faire à l'extérieur de la Côte d'Ivoire
- et d'une façon générale, de participer à toute activité et étude se rattachant à l'objet social tel que décrit ci-dessus.

A ce jour la SODEFOR gère environ 100 000 ha de plantations forestières et 3 800 000 ha de forêts classées dont 1 500 000 ha prises en main et dotées d'un plan d'aménagement.

### **3.2 Les grands principes de gestion des forêts classées**

La nouvelle stratégie de gestion des forêts classées initiée par la SODEFOR est basée sur les principes suivants :

- l'unicité de gestion
- la gestion participative avec les populations
- la dotation des forêts prises en main d'un plan d'aménagement

#### **3.2.1 L'unicité de gestion**

Il s'agit pour une forêt donnée d'avoir un gestionnaire unique qui puisse proposer un aménagement aux différents partenaires afin d'éviter les conflits de compétence avec d'autres intervenants sur la même forêt. Pour ces raisons, l'Etat a choisi la SODEFOR comme la structure unique de gestion des forêts classées du domaine forestier permanent.

#### **3.2.2 La gestion des forêts avec la participation des populations**

Pendant longtemps, la gestion des forêts classées a été du seul ressort de l'Administration qui a beaucoup plus privilégié l'aspect repressif.

A l'analyse l'on s'est rendu compte que c'est parce que les populations riveraines n'ont pas suffisamment tiré profit des forêts dont elles étaient les gardiennes naturelles qu'elles ne se sont pas senties concernées par leur préservation et leur développement.

Aujourd'hui, la SODEFOR a pris l'option d'associer effectivement les populations à la gestion des forêts. Cette association vise :

- à recueillir à travers "les commissions paysans-forêts" locales (CPFL) leur avis sur tous les actes de gestion de la forêt afin de trouver des compromis durables pour l'aménagement soutenu de celles-ci.
- à créer des structures d'exécution (coopératives forestières, groupement informel de paysans) à travers lesquelles ces populations pourront tirer profit des retombées financières générées par la gestion des forêts (travaux forestiers, bénéfice de l'exploitation forestière, aménagements ruraux à leur profit).

### **3.2.3 Plan d'aménagement des forêts**

La grande majorité des forêts classées ont connu une gestion très sommaire. L'on ne s'est pas soucié en effet du principe de la production soutenue. Ces forêts ont été plutôt livrées à une exploitation de type minier.

Dans le cadre de l'exécution du vaste programme de réhabilitation entrepris par la SODEFOR toutes les forêts classées prises en main seront dotées d'un plan d'aménagement.

Dans ces plans, généralement d'une durée de 10 ans, il est consigné :

- les grandes orientations de l'aménagement au cours de cette période.
- le programme des travaux (plan de gestion) et le plan financier de ces opérations pour la période.

### **3.3 Les structures de gestion des forêts classées**

Dans le cadre de l'exécution du projet sectoriel forestier (1990-1995), la SODEFOR a été choisie par le gouvernement pour gérer les forêts classées selon une vision novatrice telle que définit plus haut.

Afin de permettre à la SODEFOR d'avoir les capacités réelles de gestion un audit organisationnel de la Société a abouti à la proposition d'un nouvel organigramme qui met l'accent sur la déconcentration des services.

Ainsi la structure SODEFOR est organisée comme suit :

- un Conseil d'Administration
- une Direction Générale
- les services décentralisés que sont les centres de gestion

### **3.3.1 le Conseil d'Administration**

Il est composé de huit (8) administrateurs dont 1 président désigné par les Ministères spécialisés et les différents partenaires de la gestion forestière.

Ainsi on note :

- le représentant du Ministère chargé des forêts
- le représentant du Ministère de l'Economie et des finances
- le représentant du Ministère de l'Intérieur
- le représentant du Ministère de l'Environnement
- une personnalité connue pour ses mérites et sa notoriété au plan scientifique et écologique
- un représentant des professionnels du bois
- un représentant des populations riveraines

**ORGANIGRAMME GENERAL DE LA SODEFOR**

**CONSEIL D'ADMINISTRATION**

**DIRECTEUR GENERAL**  
**DIRECTEUR GENERAL ADJOINT**  
**CONSEILLER DU D.G.**

**Département Informatique  
et de Biometrie**  
\* Service Info de Gestion  
\* Service info technique  
Forestière  
\* Service techno. info  
exploitation

**Département Audit Interne**

- \* Conseil Juridique
- \* Auditeurs Techniques
- \* Auditeurs Financiers

**Direction  
projets et  
dev.**

S/D Dev.  
S/D Projets

**Direction  
Ressources  
Humaines**

S/D Ressources  
Humaines  
S/D Logistique

**Direction  
Technique**

S/D Aménagement  
S/D Reboisement

**Direction  
Technique**

Sc. promotion  
Sc. Ventes  
Sc. Product.  
Sc. Statist.

**Division  
Financier**

S/D Finance  
S/D Compt.  
S/D Contrôle  
et Gestion

**CENTRES DE  
GESTION**

- \* ABENGOUROU
- \* AGBOVILLE
- \* BOUAKE
- \* DALOA
- \* GAGNOA

**DIVISIONS**

Ingénieurs  
des eaux et  
forets

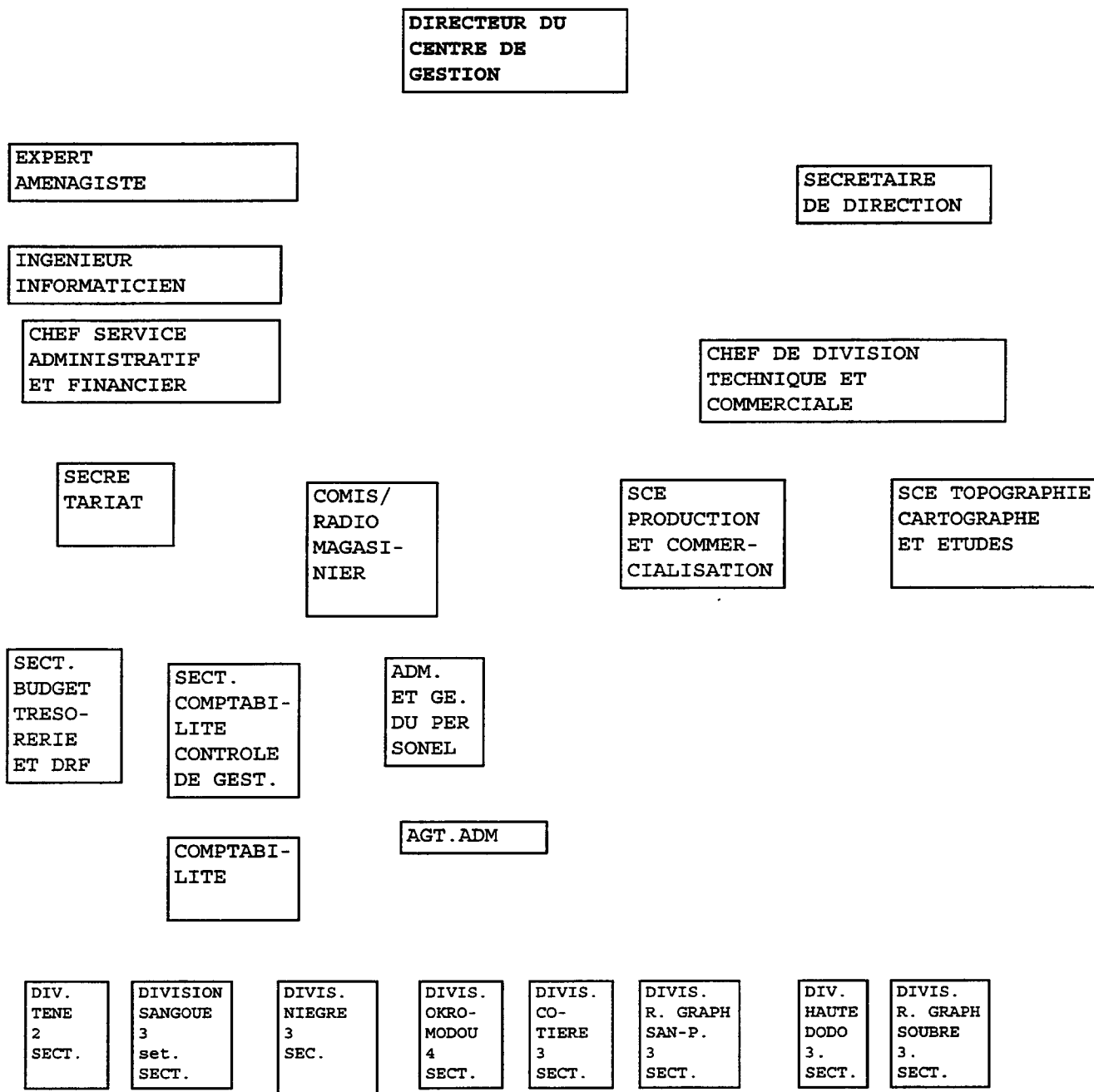
**SECTEURS**

Ingénieur des  
Techniciens  
Moniteurs et  
agents  
Prospecteurs



ORGANIGRAMME FONCTIONNEL

ORGANIGRAMME DU CENTRE DE GESTION DE GAGNOA



### 3.3.2 La Direction Générale

Outre le Directeur Général, elle compte :

- 1 Directeur Général Adjoint
- 1 Direction Technique
- 1 Direction commerciale
- 1 Direction financière
- 1 Direction des Ressources Humaines et de la Logistique Département de la Biométrie et de l'Informatique
- 1 Département de l'Audit Interne
- 1 Service de Communication

### 3.3.3 Les Centres de Gestion

A la faveur de l'Audit Organisationnel de la Société conduit par l'Office National des Forêts (ONF-France) et Uniconseil (cabinet d'Audit comptable en Côte d'Ivoire) une organisation des services déconcentrés a été proposée à la SODEFOR.

Ainsi cinq (5) centres de gestion ont été créés sur l'ensemble du territoire national. Les Centres de Gestion sont les directions régionales de la SODEFOR. Ces Centres sont localisés à Daloa (Ouest et Centre Ouest), Gagnoa (Centre Ouest et Sud Ouest), Agboville (Sud Est), Abengourou (Est) et Bouaké (Centre et Nord).

Ils comportent :

#### 3.3.3.1 La Direction du Centre

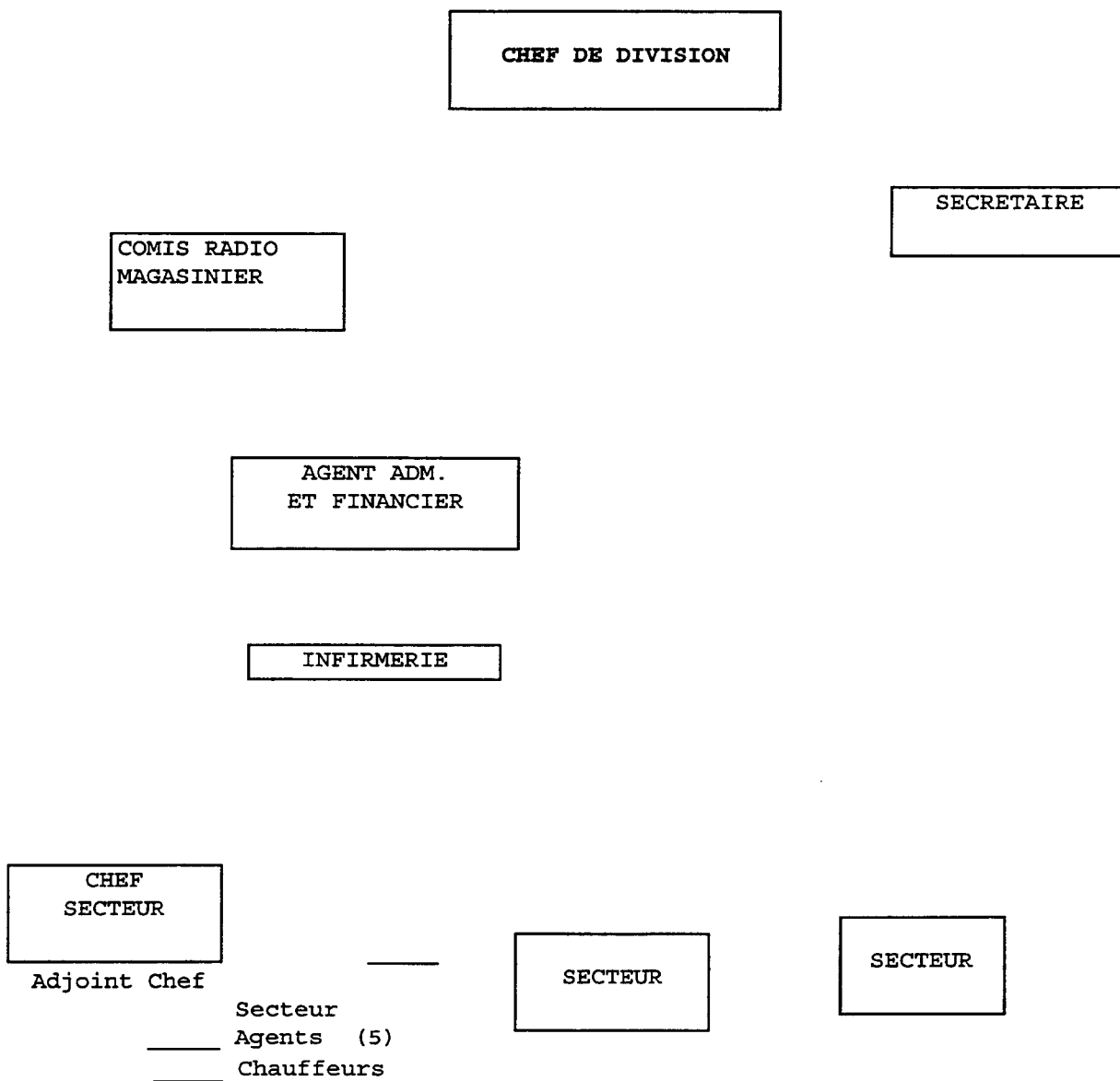
Elle est structurée autour de deux principaux services :

- la division technique et commerciale (DTC)
  - le service administratif et financier (SAF)
- les cellules d'appui que sont la cellule des aménagements, la cellule écologie et la cellule informatique soutiennent les actions de ces deux services et des divisions

Le Centre de Gestion gère dans l'état actuel des choses 300 000 ha à 1 000 000 d'ha de forêts et un personnel variant entre 100 et 350 agents.

Il propose à la direction Générale des programmes annuels d'activité (PAA) dont il suit et contrôle l'exécution sur le terrain. Le PAA et le budget constituent les éléments essentiels du contrat d'objectifs entre les Centres de Gestion et la Direction Générale.

**ORGANIGRAMME TYPE D'UNE DIVISION**



### 3.3.3.2 Les Divisions

Ce sont des unités opérationnelles qui gèrent en moyenne entre 60 000 et 100 000 ha de forêt et coordonnent les activités de 2 à 4 secteurs. Elle est structurée autour d'une administration très légère comprenant un chef de division, un agent administratif et financier, un secrétariat, un commis radio et un chauffeur (5 agents). La SODEFOR compte au total 27 divisions.

### 3.3.3.3 Les secteurs

Les secteurs constituent le maillon de base de l'organisation de terrain. Cette unité de base gère en moyenne 30 000 ha de forêt et se compose d'une équipe de 8 agents polyvalents dont 1 chef de secteur (ingénieur des techniques forestières), 6 agents techniques et 1 chauffeur.

La SODEFOR compte 76 secteurs

Le personnel de la SODEFOR est de 1 758 agents dont 82 % exercent dans les services décentralisés sur l'ensemble du territoire national.

## **3.4 Les activités de prise en main des forêts classées : résultats et difficultés rencontrées**

Il s'agit de décrire ici la chronologie des actions qui conduisent à la prise en main effective des forêts par les agents de terrain.

### **3.4.1 Installation des structures de terrain**

Le territoire de chaque Centre de Gestion est défini par la Direction Générale et mandat est donné au Directeur de Centre d'organiser la prise en main des forêts de son ressort territorial. Les actions suivantes sont menées pour l'installation des services.

- identification en collaboration avec les autorités administratives locales des sites devant abriter :
  - la Direction du Centre
  - les divisions
  - les secteurs

Par la même occasion les limites territoriales des divisions et des secteurs sont définis.

- sélection ou proposition de sélection du personnel technique et administratif de la direction du Centre, des divisions et des secteurs.

Débutée en 1990, l'installation complète des divisions et des secteurs de 4 Centres de Gestion entièrement terminée (soit 2 700 000 ha de forêts classées). Pour le cinquième centre qui gère les forêts de savanes (1 226 000 ha) l'installation des divisions et des secteurs va se poursuivre.

### **3.4.2 Equipement des services de terrain**

Un programme d'équipement des services a été défini et exécuté. Ainsi :

- 76 bases-vie de secteur ont été construites
- 27 divisions ont été installées dans les bâtiments construits ou renouvés de l'Administration
- 5 Centres de Gestion ont été installés dans des bâtiments renouvés
- chaque secteur a été doté de 2 véhicules (tout terrain) et de vélomoteurs (3 à 5 en moyenne)
- chaque division a été dotée d'un véhicule pour le Chef de division
- chaque direction de centre a été dotée de 5 véhicules pour le suivi des travaux des divisions et des secteurs
- un lot de matériel technique a complété l'équipement technique de chaque secteur (boussoles, clisimètres etc...)

du matériel informatique a été affecté aux directions des centres de gestion et aux divisions pour le traitement des informations. Ainsi :

- . les directions de centre ont été dotées de réseaux locaux d'ordinateurs
- . les divisions ont été équipées de deux ordinateurs pour la bureautique et le traitement des informations techniques (inventaires, enquêtes etc...)
- . les informations des secteurs sont traités dans les divisions.

### **3.4.3 Activités préalables aux aménagements**

Les activités qui conduisent à la consolidation de la prise en main des forêts et à la réalisation des aménagements sont multiples et diverses. Il s'agit par ordre chronologique de leur exécution :

#### **3.4.3.1 sensibilisation des différents partenaires**

Cette sensibilisation est d'autant plus fondamentale que dans la gestion antérieure des forêts classées, l'administration forestière avait privilégié la repression vis-à-vis des paysans clandestins et des populations riveraines.

Ainsi de 1990-1992 plusieurs réunions d'information et de sensibilisation ont été organisées par les Centres de gestion à l'intention des autorités administratives (Préfets, sous-Préfets, directeurs régionaux des structures décentralisées de l'administration et des sociétés de développement), des autorités politiques, des populations riveraines et des paysans clandestins à l'intérieur des forêts classées.

Au cours de ces réunions, les thèmes suivants sont développés.

- importance de la forêt comme support écologique, comme base de l'industrie forestière, comme réservoir d'emplois ;
- la situation géographique, juridique et la définition des limites des forêts classées en question ;
- la notion de cogestion des forêts avec les populations

Ces séances d'information ont été généralement bien accueillies pour clarifier surtout les problèmes de limite et ont permis aux populations d'exprimer leurs griefs vis-à-vis de l'Administration et leurs points de vue sur les problèmes forestiers.

#### **3.4.3.2 Mise en place des commissions paysans-forêt locales**

La "commission paysans-forêt" est une instance nationale (CPFLN) qui a des représentations locales (CPFL) pour chacune des forêts prises en main. Elle a été conçue comme un cadre de dialogue et de concertation dans la recherche des compromis pour la gestion durable des forêts classées. Au plan national, la "Commission Paysan-Forêt Nationale" se compose comme suit:

- un représentant du Ministre de l'Agriculture et des Ressources Animales(Président)
- un représentant du Ministre de l'Intérieur (vice-président)
- un représentant du Ministre de l'Environnement
- un représentant du Ministre de la Recherche Scientifique
- un représentant de l'Assemblée Nationale
- un représentant du Conseil Economique et Social
- le Directeur Général de l'Agriculture
- le Directeur Général des Eaux et Forêts
- le Directeur Général des Ressources Animales
- le Directeur Général de la SODEFOR
- le responsable du Service des Affaires
- un représentant des Industriels du Bois
- un représentant des Exploitants Forestiers
- un représentant des Exploitants Agricoles

Son rôle est d'entériner toutes les décisions prises dans les CPFL et faire des arbitrages en cas de besoin pour l'adoption d'un plan de remembrement ou d'un plan d'aménagement donné.

Au plan local, la CPF d'une forêt donnée est composée des membres suivants :

- le Préfet du département abritant la forêt (Président)
- les sous-Préfets relevant du département
- les services administratifs et parapublics de développement agricole du département
- les responsables politiques du département
- les représentants des populations riveraines de la forêt
- les représentants des paysans clandestins vivant à l'intérieur de la forêt
- la SODEFOR (Centre de Gestion et Division concernés).

Le rôle des CPF locales est de faire participer effectivement l'ensemble des partenaires ci-dessous cités aux différentes actions de gestion de la forêt concernée. Pour cela quatre (4) réunions importantes sont nécessaires pour délibérer des grandes décisions :

- réunion de constitution de la CPF
- réunion pour l'approbation du plan de remembrement
- réunion pour l'approbation du plan de réinstallation
- réunion pour l'adoption du plan d'aménagement

#### **3.4.3.3 Cartographie**

Les forêts confiées en gestion à la SODEFOR ne disposait pas généralement de cartes fiables. Des cartes de végétation au 1/200 000 fournies par la DCGTX et des survols aériens ont permis d'avoir une situation cartographique grossière de ces forêts.

Pour la suite un vaste programme de cartographie sur la base de photographies aériennes a été engagé sur l'ensemble des forêts concernées par le PSF.

#### **3.4.3.4 Délimitation**

Les opérations de délimitation constituent les premiers sujets de conflits entre la SODEFOR et les populations. En effet malgré les décrets et les arrêtés précisant les limites des forêts, les populations les contestent soit par ignorance, soit par mauvaise foi. Dans ces cas la CPF est la structure appropriée pour trouver le compromis nécessaire.

Pour lever tout équivoque les nouvelles limites ouvertes répondent aux caractéristiques suivantes :

- ouverture manuelle ou mécanisée sur 6 à 10 m de large
- plantation de ces limites avec des essences extratropicales (teck ou gmelina et bambou de chine)
- bornage et panneautage
- cartographie de la limite et procès-verbal de délimitation

A ce jour plus 2.605 km de limite représentant 1.756.098 ha de forêt ont été ouverts.

#### **3.4.3.4 Enquêtes socio-économique : recensement des biens et des personnes dans les forêts classées**

Ces enquêtes marquent un acte important dans le processus de prise en main des forêts par la SODEFOR. En effet, les enquêtes socio-économiques permettant aux agents de la SODEFOR gestionnaire des forêts d'avoir une bonne connaissance de celles-ci avant le démarrage de tous les autres travaux et permet d'identifier clairement les différents partenaires paysans en position illégale.

Au cours de ces enquêtes les informations suivantes sont recueillies pour chaque chef d'exploitation.

- la date d'implantation
- les cultures pratiquées et les superficies utilisées
- le nombre de personnes à charge
- la position géographique par rapport à la forêt
- le mode de cession de la terre (gratuite, onéreuse)
- l'âge et le sexe des exploitants
- leur avis vis-à-vis du départ de la forêt (abandon, participation aux travaux forestiers, participation au programme toungya etc...).

Pour l'ensemble des forêts prises en main à ce jour les principaux résultats suivants ont été obtenus :

- 46.903 Chefs d'exploitation dont 40 % Ivoiriens et 60 % Etrangers
- 44.869 superficies cultivées ou en jachère soit 26 % des forêts.

Ces résultats indicatifs sont très utiles pour la rédaction des plans de remembrement. Beaucoup de difficultés ont été rencontrées au cours de ces enquêtes :

- méfiance des paysans vis-à-vis des agents de la SODEFOR chargés de l'enquête ;



- accès très difficile aux campements clairsemés dans les forêts ;
- information souvent erronés (superficie mal estimée) donnée par les paysans etc...

### **3.4.4 Procédure de rédaction et d'adoption des plans d'aménagement**

La rédaction des premiers plans d'aménagement répond à un double souci :

- produire un document simplifié mais complet au plan technique valable pour une durée moyenne (10 ans) compte tenu de la connaissance encore sommaire des forêts.
- produire un document qui soit le produit consensuel de tous les partenaires (adm., paysans, SODEFOR).

Par conséquent le plan d'aménagement suit les étapes suivantes :

- rédaction et adoption du plan de remembrement (soit 1 à 3).
- rédaction des autres titres (4 à 6) et du plan de gestion (titre 7) et adoption général du plan de d'aménagement.

#### **3.4.4.1 Rédaction et approbation du plan de remembrement**

Le plan de remembrement est un document qui :

- décrit la situation géographique, écologique et juridique de la forêt avec carte à l'appui
- fait l'analyse socio-économique de la forêt
- propose la répartition de la forêt en plusieurs séries selon les analyses faites.

Le plan de remembrement tout comme l'ensemble du plan d'aménagement est rédigé par la division concernée. Il est ensuite validé respectivement par le Centre de Gestion et la Direction Générale de la SODEFOR avant d'être proposé à la réunion de la CPF locale.

Dans le processus de rédaction du plan de remembrement l'existence ou non d'une série agricole (série où les activités agricoles sont tolérées et mieux organisées) constitue l'élément déterminant dans le consensus à trouver entre paysans et gestionnaire de la forêt.

Ainsi l'approbation du plan de remembrement constitue une étape essentielle dans la prise en main des forêts et dans le processus de rédaction du plan d'aménagement.

Certains plans de remembrement n'ont pu être adopté en CPF locale qu'après deux (2) ou trois (3) réunions qui ont donné lieu à plusieurs réajustements des propositions initiales (exemple des forêts de Monogaga et Duékoué).

Les délibérations sur l'adoption du plan de remembrement sont portées à la connaissance de la commission paysans-forêt nationale (CPFN) qui en prend acte ou apporte son arbitrage si nécessaire.

#### **3.4.4.2 Le plan d'aménagement**

Le plan d'aménagement est un document de description, d'orientation et de décision pour la gestion rationnelle des forêts prises en main. Il compte 7 titres répartis en deux fascicules.

Le 1er fascicule traite des titres 1 à 6.

Le 2e fascicule traite du plan de gestion qui définit sur la durée de l'aménagement les travaux à réaliser annuellement.

La rédaction des plans d'aménagement est confiée aux chef de division ou aux chefs de secteurs qui proposent avec leurs équipes la première version du plan.

Après correction cette version est validée respectivement par la Direction technique et du développement et la Direction Générale. Le document validé est présenté en CPF locale et nationale pour approbation. Il est ensuite portée à la connaissance du Ministère chargé des forêts qui valide le document sous forme d'un arrêté ministériel.

#### **3.4.4.3 Les travaux forestiers**

Certains travaux forestiers sont exécutés dans la phase de diagnostic de la situation de par des forêts prises en main. Il s'agit notamment :

- des inventaires forestiers
- des inventaires de faunes
- des reboisements de reconversion

##### a - les inventaires forestiers

Afin de mieux connaître le potentiel ligneux en qualité, quantité et la repartition géographique de 75 essences commercialisables dans les forêts des inventaires généraux à 1,25 % sont réalisés.

Les inventaires sont en effet réalisés sur des placeaux de 0,5 ha de long de layon distant de 2 km les uns des autres. A ce jour plus de 700 000 ha de forêt en un inventaire général.

Les résultats obtenus indiquent que plus de 80 % de ces forêts sont dans un état de dégradation avancé. Les difficultés rencontrées dans la réalisation de ces inventaires ont été principalement l'insuffisance des prospecteurs botanistes chargés de l'identification et du comptage des essences. Ce qui a fait traîné en longueur les opérations d'inventaires. Des formations accélérées ont dû être organisées à l'intention d'anciens prospecteurs botanistes de société d'exploitation forestiers pour surmonter ces difficultés.

### b - Les inventaires faunes

Les inventaires qualitatifs ont pour but de se faire une idée sur la présence ou non et la répartition des grands mammifères dans les forêts.

Les inventaires ont été réalisés le long des layons ouverts pour les inventaires généraux. Il s'agit de noter les cris, les empreintes et la vision des animaux de jour comme de nuit.

Les résultats obtenus indiquent que plusieurs grands mammifères (éléphant, céphalopes, singes, buffles etc...) existent encore dans les forêt classées malgré un braconnage intensif de la part des riverains.

L'insuffisance des prospecteurs faunes a été le principal handicap dans la bonne progression de ces inventaires.

Mais ces difficultés ont été surmontés en reconvertissant et en formant d'anciens chasseurs des villages riverains.

### c - Reboisement de reconversion

Les reboisements de reconversion ne sont pas à proprement parler des travaux préalables à rédaction des aménagements mais constituent un acte important de reconquête de l'espace forestier dégradé par l'infiltration clandestine des paysans.

Les essences utilisées sont des essences à croissance rapide plantées à une densité d'environ 340 plants/ha et qui couvrent en moins de deux (2) ans le sol.

En effet ces reboisements qui couvrent à ce jour plus de 4 000 ha dans l'ensemble des forêts a permis à la SODEFOR de marquer sa présence effective dans les forêts.

### 3.5 Participation des populations à la Gestion des forêts classées

Depuis le classement des massifs forestiers par l'administration forestière, les forêts classées ont été gérées sans la participation réelle des populations riveraines. Cette gestion s'est beaucoup plus basée sur la repression. L'ignorance relative de ce partenaire naturel dans la protection des forêts par l'administration a créé des frustrations qui ont eu des conséquences néfastes sur l'intégrité territoriale des massifs. Il s'agit en effet :

- du non respect des limites qui se traduisent par le déplacement des bornes et des panneaux de signalisation par les paysans ;
- la vente massive à des populations allogènes de parcelles de forêts classées dont elles révoquent la propriété.

Face à ce péril la SODEFOR a initié depuis qu'elle est gestionnaire unique des forêts classées du domaine forestier permanent de l'Etat une nouvelle stratégie de gestion qui vise à associer de plus en plus les populations riveraines aux différents décisions d'aménagement.

- quels sont les objectifs visés par cette stratégie ?
- quels sont les différents niveaux de participation ?
- Quelles sont les organisation mises en place par les populations pour profiter de cette cogestion ?
- quels avantages comparatifs de l'utilisation des populations pour la réalisation des travaux forestiers ?

### **3.5.1 Les Objectifs**

La participation des populations riveraines à la gestion des forêts classées visent :

- à leur faire prendre conscience de l'importance de la chose environnementale et de la forêt en particulier
- à les impliquer dans toutes les grandes décisions d'aménagement des forêts afin de trouver un consensus et environnement social favorable à une gestion durable de celle-ci
- à leur faire profiter des retombées financières liées à la gestion de ces forêts :
  - participation à des travaux forestiers rémunérés
  - emploi fourni par la forêt (surveillance)
  - bénéficiaire de l'exploitation forestière
  - bénéficiaire des aménagements ruraux réalisés à leur profit

### **3.5.2 Les différents niveaux de participation**

La participation des populations à la gestion des forêts classées se situe à différents niveaux:

#### **3.5.2.1 Participation à la commission paysans-forêt (CPFL)**

La Commission paysans-forêt est l'outil par excellence de gestion participative des forêts avec les populations. Car elle se prononce sur les grandes décision d'aménagement (plan de remembrement, plan d'aménagement) avec leur application dans la composition des membres, les populations riveraines et les populations à l'intérieur des forêts sont majoritaires et tiennent par conséquent une place importante dans les prises de décision.

#### **3.5.2.2 Participation des populations à la réalisation de travaux forestiers**

L'objectif de cette participation est de montrer aux populations que la forêt est une source de revenus pour elle et non un ennemi qu'il faut nécessairement défricher.

Ainsi les populations sont utilisées comme :

- agents de la SODEFOR pour certains travaux spécifiques (prospecteurs de faune, prospecteurs botanistes, boussolier etc...)
- sous traitants pour les travaux forestiers.

Ces travaux concernent :

- la délimitation
- la surveillance des forêts
- la production de plants
- le reboisement etc...

### **3.5.2.3 Participation des populations à l'exploitation des ressources de la forêt et au développement socio-économique de la zone périphérique des forêts**

Jusqu'à une époque très récente les populations et particulièrement les populations riveraines ont toujours considéré les forêts classées comme des propriétés qui leur a été "arrachée" par l'Administration.

Pour les intéresser réellement à sa protection et à son développement il est nécessaire qu'elles en tire des bénéfices financiers substantiels. Ces bénéfices portent sur :

- l'exploitation des ressources forestières à leur profit
- les aménagements ruraux réalisés à leur profit.

#### **a - Exploitation des ressources forestières**

Cette exploitation concerne les produits secondaires et le bois d'œuvre:

- *les produits secondaires*

Ces produits secondaires concernent, le bois de chauffe, les bois de services, les feuilles, les plantes médicinales etc...

Pour ces produits, l'idée est de faire en sorte qu'en même temps qu'elles jouissent de leur devoir d'usage, les populations participent à leur développement et à leur gestion durable en favorisant :

- leur culture (plantes médicinales...)
- leur élevage (escargot, petit gibier...)

Les populations riveraines de la forêt de Bossématie (Est de la Côte d'Ivoire) ont tenté cette expérience qui donne des résultats très encourageants.

- *le bois d'oeuvre*

L'exploitation du bois d'oeuvre en Côte d'Ivoire est assez réglementée et ne laisse pas suffisamment de profit direct aux populations riveraines des forêts classées exploitées.

L'idée est de faire en sorte que les populations organisées dans certaines structures prennent une part active aux activités de la filière de valorisation du bois exploités.

Un critère hypothèse est de penser que des dividendes substantielles issue de la vente annuelle du bois des forêts concernées puisse être reversées aux populations qui auront le plus participé à la protection, au développement et au respect de l'intégrité des forêts de leur terroir traditionnel.

Pour cet aspect de l'exploitation du bois d'oeuvre aucune expérience concrète n'a encore été .mais l'idée quit son cours afin de trouver le meilleur système de redistribution des fonds générés aux populations.

**b - Aménagements ruraux au profit des populations**

L'une des actions qui incite les populations riveraines à participer effectivement à la gestion des forêts classées est la réalisation de certains aménagements ruraux à leur profit.

Ces aménagements ruraux concernent :

- les infrastructures sociales (écoles, puits, centre de santé, magasin de stockage)
- les pistes et ponts
- parcellisation de site de réinstallation
- encadrement agricole etc...

Dans le cadre de la réinstallation de certains chefs d'exploitation à la périphérie des forêts classées. La SODEFOR participe en collaboration avec d'autres structures gouvernementales (fonds régionaux d'aménagements ruraux) à la réalisation de certaines de ces infrastructures en compensation de terres cédées.

C'est ainsi que la réinstallation des chefs d'exploitation de la forêt classée de TENE le village de Kimoukro qui cède plus de 100 ha de terres pour l'opération ; bénéficié de certains travaux en compensation :

- réaménagement de l'Ecole primaire du village
- construction d'une cantine scolaire

Ces compensations se sont élevées à près de 30 millions de francs CFA.

**3.5.3 Les différentes organisation des Populations pour la réalisation des travaux forestiers**

Pour mieux participer à la réalisation des travaux forestiers, les populations ont adopté plusieurs organisations encouragées le plus souvent par la SODEFOR.

Ces organisations sont :

- les coopératives des travailleurs forestiers
- les groupements informels de jeunes ou de paysans
- les petites entreprises locales de travaux
- les comités de surveillance des forêts et de lutte contre les feux

### **3.5.3.1 Les coopératives des travailleurs forestiers (CTF)**

Ce sont les partenaires privilégiées de la SODEFOR pour la réalisation des travaux forestiers.

Leur création a été initiée et encouragée par la SODEFOR en 1990. L'expérience a commencé avec deux coopératives des travailleurs forestiers dans les forêts de TENE et MOPRI grâce à un financement de l'ACDI (Agence Canadienne de Développement Industriel).

La création de ces coopératives répondait à trois (3) objectifs principaux :

- former des ouvriers forestiers capables de maîtriser les techniques sylvicoles et doter en amont la filière forêt et bois d'un maillon essentiel qui lui manquait.
- faire baisser les coûts de réalisation des travaux forestiers et des reboisements en particulier.
- initier et encourager la participation des populations à la gestion des forêts.

A ce jour quatre (4) coopératives forestières exerçant dans les forêts de TENE (coopérative des travailleurs forestiers d'Oumé CTFO 1990) de MOPRI (coopérative forestière de Mopri CFM 1990), de Dougbafla (CTFD -1994), de Bouaflé (CTFB - 1996) ont été créées. La CTFD n'a été créée qu'en 1996.

Les coopératives réalisent toute la gamme de travaux participant à la mise en place et à la gestion des plantations forestières (préparation de terrain, production de plants, plantation, entretien, travaux de sylviculture etc).

Les membres de ces coopératives ont une moyenne d'âge de 18 à 20 ans et sont des jeunes gens descolarisés riverains des forêts classées. Ces coopératives emploient à ce jour 259 personnes.

Les organes de gestion de ces copératives sont l'Assemblée générale, le Conseil d'Administration, le Comité de gestion dirigé par un gérant.

Dans l'ensemble les objectifs visés et les résultats obtenus sont encourageants.

Le tableau ci-dessous présente le résultat obtenu par ces coopératives de 1991 à 1996.

C.A.A (1) Coopératives	1991	1992	1993	1994	1995	1996	Total
CTFO	7 506 851	26 211 538	37 759 129	53 608 583	78 112 781	103 000 000	306 199 182
CTFM	10 323 631	25 290 106	29 438 174	23 492 467	52 403 076	44 964 620	185 912 000
CTFD	-	-	-	29 985 292	58 420 475	81 562 600	169 683 678
Total	17 830 482	51 501 694	67 197 303	107 086 345	108 936 332	229 527 220	662 079 623

(1) C.A.A. = Chiffre d'Affaires annuel

Les trois coopératives en activité totalisent un chiffre d'affaires cumulés sur les 6 ans de plus de 662 millions de francs CFA dont 308 millions (soit 46,5 %) représentent la masse salariale versée aux coopératives. Ce qui est très encourageant pour des jeunes du milieu rural.

Un plan national pour l'émergence et le développement de nouvelles coopératives a été édité et vise à définir les conditions idéales de création d'autres coopératives dans les forêts classées prises en main. Il définit également les conditions d'une bonne diversification des activités des coopératives.

### 3.5.3.2 Les groupements informels de jeunes ou de paysans

Les groupements se mettent spontanément en place pour réaliser des travaux à la demande de la SODEFOR.

Ces travaux concernent généralement :

- les production de plants
- les reboisements de reconversion
- l'ouverture de layons pour les inventaires

Pour les campagnes 93/94, 94/95 et 95/96 les chiffres d'affaires réalisés par ces groupements dans le centre de Gagnoa est de 57 025 425 FCFA.

Ces groupements peuvent évoluer vers des coopératives à court terme.

### 3.5.3.3 Les petites entreprises locales

Elles réalisent avec les coopératives de travailleurs forestiers, l'essentiel des travaux forestiers donnés en sous traitance à des tiers.

Ces entreprises sont généralement dirigées par des hommes ou les femmes qui ont perdu leurs emplois, salariés et qui n'ont que ces activités comme occupations principales.



A la différence des coopératives, elles offrent de moins bonnes conditions de travail à leur employés.

Par ailleurs ces employés sont moins spécialisés et ne bénéficient pas de formations appropriées.

Le chiffre d'affaire réalisé pour les quatre (4) dernières années dépassent 2.100 milliards FCFA.

#### **3.5.3.4 Les comités de surveillance des forêts contre les feux**

Chaque année les plantations forestières réalisées et certaines forêts existant dans les zones de savane ou de transition forêt/savane sont exposés au feu.

En 1983, la SODEFOR a connu des sinistres importants dans ses plantations. Plus de 4.000 ha ont ainsi été brûlés.

Pour lutter contre cette situation une stratégie complexe impliquant l'utilisation d'engins lourds a été mise en place. Les résultats sont relativement satisfaisants mais le système de lutte assez onéreux.

C'est pour cette raison que dans le cadre de la participation des populations riveraines à la gestion des forêts, la SODEFOR a initié depuis 1992 une nouvelle stratégie qui implique un peu plus ces populations dans les opérations de surveillance.

Dans la pratique les forêts concernées sont subdivisées en secteurs de surveillance et confiées à chacun des villages riverains.

Une équipe de 20 personnes par secteur est constituée pour organiser la surveillance du secteur contre les feux et les nouveaux défrichements pendant la période sèche de l'année (décembre à avril).

La rémunération est liée à l'efficacité de la surveillance. Ainsi cette rémunération est composée de deux volets : le salaire de base qui est fixe et la prime qui est donnée de façon dégressive en fonction des superficies sinistrées (10 à 15 ha brûlée ou défrichées dans un secteur annule la prime).

Le chiffre d'affaires annuel des comités du Centre de Gestion de Gagnoa est d'environ 84.000.000 FCFA

Les résultats obtenus depuis 1994 sont assez satisfaisants et cette organisation va bientôt toucher toutes les forêts des zones sempervirentes dans le cadre de la lutte contre les nouveaux défrichements.

### 3.5.4 Les conséquences de la participation des populations riveraines sur le coût des travaux

L'utilisation des populations riveraines pour les travaux a permis de baisser les coûts de certains travaux. Il s'agit notamment des travaux de création de plantation et de délimitation dont les coûts de réalisation sont nettement moins élevés par rapport aux travaux mécanisés. (cf tableau ci-dessous)

Travaux	Coût des travaux mécanisés FCFA/HA	Coût des travaux réalisés par des coopératives ou populations	Ecart
Préparation de terrain	284 722	175 500	+109 722
Délimitation de forêts	1 256 000	625 000	+631 000

### 3.6 Politiques de réinstallation des populations infiltrées dans les forêts classées

La réinstallation est une conséquence de l'adoption du plan de remembrement.

Si le remembrement indique les mouvements possibles des populations infiltrées dans les forêts ; le plan de réinstallation quant à lui définit les zones d'accueil et les modalités de départ de ces populations.

Pour l'ensemble des populations riveraines des forêts du centre de gestion de Gagnoa, le chiffre d'affaires réalisé depuis 1991 s'élève à près de 2,800 milliards FCFA.

#### 3.6.1 Les objectifs visés par la réinstallation

Le plan de réinstallation vise les objectifs suivants :

- organiser un départ en douceur des paysans infiltrés dans les forêts classées des séries non agricoles vers la série agricole ou la périphérie des forêts.
- encourager par des projets compensatoires les populations riveraines à accueillir sur leur terroir les paysans sortis des forêts.
- initier la stabilisation de l'agriculture avec les populations déplacées sur les nouveaux sites de réinstallation.

Ces objectifs concourent à consolider la stratégie de participation des populations à la gestion des forêts classées. Les riverains ayant pris très souvent une part prépondérante dans la pénétration des forêts, par les allogènes, il est juste que ces populations apportent leur concours et prennent leur part de responsabilité dans la recherche de solutions pour la réinstallation sur leur terroir des paysans déplacés.

### **3.6.2 Les grands principes de la réinstallation des populations déplacées**

Ces principes ont été précisés dans "la charte entre l'administration et les populations rurales pour la gestion des forêts classées ivoiriennes" en 1992 et on été réajustées lors de l'atelier de Yamoussoukro (1995) sur les aménagements socio-économiques.

Ces principes se fondent sur les considérations suivantes :

- la réinstallation des paysans doit être perçue comme un problème national et d'aménagement du territoire. En effet tous les chefs d'exploitations déplacés ne peuvent pas être accueillis à la périphérie des forêts. Il faut envisager d'encourager certains d'entre eux à retourner dans leur département d'origine où les terres existent afin de s'insérer dans des terres projets de développement initiés pour résoudre en partie le problème.
- La SODEFOR n'est pas le seul partenaire habilité à rechercher des terres et des sites de réinstallation.
- Tous les autres partenaires (administration, autorités politiques et les populations) doivent fournir le même effort de recherche de terres d'accueil pour les paysans à déplacer.
- le calendrier de départ des paysans des autres séries vers la série agricole ou vers la périphérie doit être respectée.
- Les cultures pérennes en production continueront d'être récoltées en même temps que les parcelles concernées sont reprises par la SODEFOR pour être reboisées progressivement à grand écartement.
- Les paysans bénéficiant de terres de réinstallation doivent se soumettre au programme de stabilisation de l'agriculture encouragé par la SODEFOR et encadré les structures spécialisées (Instituts de Recherche (IDESSA, IDEFOR); (ANADER).

### **3.6.3 De la réinstallation à la stabilisation de l'Agriculture**

#### **3.6.3.1 zones de réinstallation**

La réinstallation concerne aussi bien les blocs de série agricole que la zone périphérique des forêts.

réinstallation en série agricole

Elle consiste :

- à confirmer les exploitations de cultures pérennes en production existant déjà dans la série agricole.
- à réinstaller dans la série agricole dans la mesure des terres disponibles, les chefs d'exploitation venant des autres séries notamment les série de production et de protection.

réinstallation à la périphérie des forêts

D'autre part à réinstaller à la périphérie des forêts les paysans déplacés après négociation de terres avec les populations riveraines. Les terres disponibles sont rares et les négociations sont assez longues et difficiles.

réinstallation dans d'autres zones de la Côte d'Ivoire

Dans le cadre général de l'aménagement du territoire les régions d'origine de ces populations (Centre, Est, Nord de la Côte d'Ivoire) constituent également des zones naturelles de réinstallation pourvu que des projets attrayants de développement y soient réalisés.

**3.6.3.2 La nécessité d'une stabilisation de l'Agriculture**

D'après des études récentes sur l'occupation du sol en Côte d'Ivoire il a été démontré que près de 70 % des terres cultivables sont en jachère. Cela est le résultat d'une pratique agricole dévoreuse de terres et une législation en matière foncière presque inexistante.

Les forêts classées ne sont malheureusement pas épargnées par cette pratique.

Il est donc évident que si l'on veut sauver les forêts, il est primordial de créer dans le monde rural les conditions d'une agriculture stable, moderne et à forte productivité.

C'est pour cette raison que la SODEFOR a obtenu de ses partenaires que toute réinstallation (en série agricole ou à la périphérie) de paysans soit accompagnée par des programmes de stabilisation et de modernisation des systèmes agricoles à mettre en oeuvre.

Pour réussir ce programme la SODEFOR s'est attachée les services de certains instituts de recherche et des structures de développement agricoles. L'IDESSA (Institut des Savanes) s'est vu confié l'étude et l'application des systèmes de cultures sur jachère chez les paysans réinstallés sur des jachère.

Le Département Forêt de l'IDEFOR (Institut des Forêts) quant à lui s'est vu confié l'étude de l'association légumineuses arborées/cacaoyers sur jachère.

L'ANADER (Agence Nationale d'Appui au Développement Rural) devrait prendre la relève des instituts de recherche pour vulgariser les méthodes de stabilisation de l'agriculture à la périphérie de toutes les forêts gérées par la SODEFOR.

### **3.6.4 Quelques exemples de réinstallation pilote**

Afin de maîtriser tous les problèmes liés à la réinstallation des paysans à la périphérie des forêts classées et dans les séries agricoles, la SODEFOR a mis en place à travers toute la Côte d'Ivoire un réseau d'observatoires dans différentes zones écologiques. Il s'agit :

- des forêts de TENE, SANGOUE et HAUT-SASSANDRA en zone de transition et de forêt semi décidue;
- des forêts de NIEGRE, SCIO et GOIN DEBE en zone de forêt sempervirente.

#### **3.6.4.1 Réinstallation pilote de paysans à la périphérie de la forêt classée de Téné**

La forêt classée de TENE est la première forêt classée qui a expérimenté la réinstallation de paysans dans sa périphérie.

D'une superficie de 29 700 ha, elle a été infiltrée par près de 472 chefs d'exploitation cultivent 1 970 ha le plan de remembrement adopté en 1992 n'a pas retenu la création d'une série agricole. En conséquence les chefs d'exploitation infiltrés dans cette forêt devront à terme sortir de la forêt.

Cette réinstallation a suivi les phases suivantes :

- identification d'une zone de réinstallation à cette zone a été cédée par le village de Kimoukro, village riverain de la forêt ;
- enquête de commodo et incommodo relative à la zone ;
- cession traditionnelle par les chefs de terres ;
- délimitation et parcellisation de la zone ;
- occupation de la zone par les paysans sélectionnés. En effet 20 paysans ont retenu pour cette première phase de l'opération chaque paysan s'est vu attribué une parcelle de 5 ha dont 2 ha sont destinés au cacaoyer ou en café et 3 ha aux cultures vivrières.

L'IDESSA (Institut des Savanes) a pris une part prépondérante dans l'encadrement des paysans. Il leur enseigné les techniques de défrichement sur brûlis, la mise en place de billon antiérosif et a indiqué l'assolement à adopter sur les 3 ha détruits aux cultures vivrières.

L'IDEFOR/DFO (l'Institut des Forêts) a initié avec les paysans l'association légumineuse arborée/cacaoyers. Ce qui leur a permis de cultiver le cacaoyer (culture pérenne de leur choix) dans une zone écologique où les conditions s'y prêtait que passablement.

- réalisation de travaux d'aménagement de l'Ecole primaire et construction d'une cantine scolaire au profit du village.

Ces travaux se sont élevés à plus de 30 millions FCFA.

Pour cette opération pilote les résultats obtenus sont encourageants.

Des négociations sont en cours pour la réinstallation d'une autre vague de 40 paysans sur les terres du même village.

#### **3.6.4.2 Réinstallation en série agricole**

Le plan de remembrement de la forêt classée de NIEGRE a été adopté en 1993. Il a été retenu une série agricole de 6 650 ha située dans le Nord de la forêt. La série forêt naturelle de production couvre 46 250 ha. la série de reconstitution couvre 19 900 ha. la série de protection couvre 19 700 ha.

1 214 chefs d'exploitation vivent dans cette forêt et devront partir des séries de production ; et de constitution vers la série agricole.

Depuis 1995, une opération pilote de réinstallation dans la série agricole de 5 paysans résidant dans la série de reconstitution.

Le programme va toucher progressivement les autres chefs d'exploitation de la série de reconstitution.

### **CONCLUSION**

Depuis 1990, la SODEFOR a initié la gestion participative des forêts avec les populations à travers des structures et des réalisations concrètes (coopératives des travailleurs forestiers, comité de lutte etc...) sur la base de principes claires et consensuels.

L'expérience est certes nouvelle, donc sujette à beaucoup de critiques mais elle reste perfectible et promotrice. Les premiers résultats obtenus dans cette expérience sont en effet encourageants et non confortent dans la certitude que seule la stratégie ainsi développée peut assurer une réhabilitation durable des forêts classées du domaine forestier permanent de l'Etat en proie à une dégradation accélérée au fil des ans.

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**RCI - BM/PNUE**

**--LES COMPAGNIES PRIVÉES EN AFRIQUE--  
POURRONT-ELLES RELEVER LE DÉFI DE  
L'AMÉNAGEMENT DURABLE ?**

**THE PRIVATE SECTOR IN SUB-SAHARAN AFRICA--  
IS IT ABLE TO TAKE UP THE CHALLENGE OF  
SUSTAINABLE FOREST MANAGEMENT?**

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**--LES COMPAGNIES PRIVÉES EN AFRIQUE--  
POURRONT-ELLES RELEVER LE DÉFI DE L'AMÉNAGEMENT DURABLE ?**

**1 - OBSTACLES À L'AMÉNAGEMENT DURABLE EN AFRIQUE**

L'aménagement des forêts naturelles tropicales productives rencontre de nombreux obstacles, en général bien connus, et qu'il faut d'abord rappeler :

**1.1 - Forêts pauvres.** Les forêts africaines sont pauvres en bois d'oeuvre commercialisable. Guère plus de 10 % des espèces ont un bois apprécié sur le marché international. On ne coupe qu'un ou deux arbres à l'ha. Par contre, les grumes correspondantes sont souvent de très haute valeur (gros diamètres, peu de défauts), mais cette ressource est très dispersée et l'exploitation reste chère à cause des travaux routiers et du transport, toujours très importants.

**1.2 - Gestion très extensive.** Selon les experts, la productivité des forêts denses africaines, en essences commerciales, ne dépasse pas 0,4 m<sup>3</sup> /ha/an. Il s'agit donc de forêts économiquement très extensives. Cela signifie que la rentabilité des opérations forestières (exploitation, aménagement, sylviculture), ne pouvant être trouvée qu'en amortissant les frais sur de gros volumes de bois, nécessitera de grandes surfaces.

**1.3 - Lenteur de la reconstitution.** Les écosystèmes complexes, que sont les forêts denses africaines, freinent la reconstitution du stock de bois d'oeuvre initial. On estime, qu'il faudrait respecter un temps de repos de 40 ans entre 2 passages de l'exploitation (rotation).

**1.4 - Petites concessions et faible durée des permis.** Une mauvaise habitude en Afrique a été, jusqu'ici, de donner des concessions de surfaces réduites et de courte durée (10-15 ans). Les exploitants forestiers ne se sentent pas responsables des peuplements qu'ils exploitent et règlent leur capacité d'exploitation sur la durée de leurs permis, après quoi ils demandent une nouvelle concession. C'est la "fuite en avant". Après retour au domaine, les permis sont à nouveau alloués, de plus en plus rapidement. On peut donc affirmer que les rotations actuelles sont inférieures à 25 ans. Les arbres étant plus jeunes, le nouvel exploitant a, de plus, tendance à ne pas respecter les diamètres d'exploitabilité.

**1.5 - Manque de compétence des Sociétés d'exploitation pour la gestion forestière.** Contrairement à ce qui se passe dans les autres continents (Asie, Amérique), la gestion forestière en Afrique, est un domaine entièrement réservé de l'Etat, et de ce fait, ce secteur est resté souvent très peu développé. Les Sociétés d'exploitation forestière ne disposent pas en Afrique du savoir faire en matière de gestion forestière.

**1.6 - Insuffisance des administrations.** En Afrique centrale, la tâche est immense, les administrations, sont faibles, et ne disposent généralement pas des moyens et de l'autorité suffisante (ou de la volonté), pour faire respecter la réglementation. Les services aménagements sont sous-équipés et les plans d'aménagement quasi inexistant.

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## **2 - POUSSER LES ENTREPRISES A S'INTEGRER EN AMONT DE L'EXPLOITATION**

### **2.1 - Sociétés forestières, acteurs privilégiés mais fragiles**

L'opinion mondiale s'émeut facilement de l'avenir des forêts tropicales et l'expertise internationale conclut rapidement à la nécessité d'aménager les forêts. Dans ce domaine, il est cependant plus facile de dire que de faire.

En Afrique centrale, parmi les acteurs possibles, l'exploitant forestier tient une place privilégiée. C'est en effet le seul à être présent en permanence sur le terrain et à disposer de moyens importants et en particulier de l'infrastructure indispensable à la prise en main des forêts, en vue d'une gestion convenable.

Pourtant, rien n'a été fait pour en arriver à cette solution. En Afrique, ni les Etats, ni les instances internationales n'ont l'habitude de confier une telle responsabilité aux entreprises. Pourtant, il ne semble guère y avoir d'autre alternative et il est grand temps d'agir, tant que les forêts ont encore un peu de valeur commerciale.

Quelques initiatives privées existent mais elles restent très fragiles. Pour ne pas les décevoir, il est indispensable que les administrations soient coopératives et que les aides extérieures puissent s'appliquer aux entreprises.

### **2.2 - Implication obligatoire des entreprises forestières**

Pour les Sociétés, la durabilité de la production forestière est l'élément essentiel qui conditionne non seulement leur développement mais leur existence même.

Etant donné la carence actuelle, certaines compagnies commencent à se poser des questions sur leur avenir (et avec lui, les rares chances de développement des régions forestières en Afrique). L'aménagement forestier devrait donc, à l'évidence, faire partie de l'activité des entreprises qui doivent nécessairement intégrer ce nouveau savoir faire. Il leur faudra recruter peu à peu leurs cadres, parmi les ingénieurs ou les techniciens ayant une formation mixte (forêt-bois). Les plus importantes se constitueront un bureau spécialisé dans l'aménagement forestier. Toutes pourront dialoguer plus facilement avec l'Administration forestière.

Les entreprises devront stabiliser (ou réduire) leur récolte, la diversifier et en transformer localement une bonne part. A une augmentation des volumes prélevés (arbres de moindre qualité, essences de bois "divers"), devra correspondre une réduction de la vitesse d'avancement des chantiers d'exploitation, une industrialisation plus poussée, une meilleure technicité.

L'aménagement des forêts de production consiste à rechercher un équilibre, et c'est aux entreprises à trouver chacune le leur. Il leur en coûtera environ 2 à 3 % de leur chiffre d'affaires. C'est loin d'être négligeable mais c'est la meilleure offre du marché car les entreprises disposent sur place de toute leur infrastructure.

Soulignons cependant qu'en dehors de quelques économies venant d'une exploitation plus rationnelle, l'aménagement ne peut pas procurer de bénéfices immédiats. L'intérêt pour l'Entreprise est sur le long terme, dans la constance de l'approvisionnement d'un ensemble

industriel de plus en plus performant. Aménagement et industrialisation apparaissent bien comme les deux bases indissociables de la gestion des forêts productives.

Enfin, certaines mesures d'intérêt plus général (conservation de la biodiversité, protection de la faune, volet social...), sont à ajouter aux aspects strictement forestiers, mais rien ne se fera sans les aides extérieures.

En définitive, l'exploitant forestier doit devenir un acteur privilégié de l'aménagement durable mais ce sera pour lui une véritable mutation. Les chances de succès existent, mais pour y parvenir, sans tuer les entreprises, il faut à la fois la confiance des administrations et l'aide des organisations internationales.

### **2.3 - Développement indispensable des industries du bois**

Bien que les réglementations locales obligent de plus en plus les Sociétés d'exploitation forestières à investir localement dans des unités industrielles de transformation, de telles décisions restent difficiles. Il est vrai que le marché du bois n'est pas toujours porteur et que les industriels du bois en Afrique, évoluent dans un climat général de plus en plus hasardeux. Cela freine énormément leur dynamisme et pèse sur leurs décisions.

La possibilité de créer une industrie de transformation est liée à la garantie d'approvisionnement en bois. Les concessions étant de plus en plus restreintes, la durabilité de la production est un point capital pour une telle décision.

La transformation sur place doit être l'occasion de réduire les déchets en forêt et d'exploiter les arbres de basse qualité. Il s'agit d'un facteur essentiel, visant à augmenter la possibilité nette, sans accroître l'intensité de la coupe en tiges de qualité supérieure. Cette prise en compte des « sous-produits » doit faire partie des objectifs de l'aménagement. Le volume maximum de bois à prélever à chaque passage (possibilité), ne saurait passer avant l'accroissement des coefficients d'utilisation.

Beaucoup de contraintes de l'aménagement peuvent être levées par un double effort de transformation et de commercialisation des bois. Au lieu d'embargo commercial, les entreprises forestières africaines auraient, au contraire, bien besoin de promotion du bois dans la construction, et en particulier à partir des essences secondaires.

### **2.4 - Renforcement des administrations et confiances aux entreprises**

Parallèlement à l'intégration des entreprises en matière de gestion des forêts, on doit assister à un renforcement des administrations forestières. Il faut créer, en particulier, un "bureau national des aménagements" (BNA), aidé par un cabinet d'experts extérieurs, reconnu au plan international, apte à concevoir, analyser et contrôler l'application des plans d'aménagement des sociétés.

Il manque aussi une commission régionale d'agrément des aménagements, pour examiner ces plans, les discuter, les agréer ou les rejeter. Parmi les difficultés actuelles, la plus importante à notre avis est la perte de confiance entre Administration et Entreprises. Aucun aménagement durable n'est concevable dans ces conditions. Tout doit être fait pour rétablir un climat de confiance permettant de jeter les bases d'une collaboration efficace entre l'Etat et les Sociétés.

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Une société qui décide d'investir dans l'aménagement de sa concession, doit être considérée avec bienveillance par l'administration forestière et une étroite collaboration doit s'établir aussitôt.

Des mesures doivent être prise rapidement pour placer la concession "sous aménagement durable" à titre provisoire, puis définitif. La Société ne peut en effet s'engager à investir, que si elle obtient des garanties de durée de ses permis.

### **2.5 - Appui massif des organisations internationales**

Une telle mutation peut être largement souhaitable, elle ne se fera pas sans les aides extérieures qui doivent comprendre :

- une aide morale, conduisant à l'établissement d'un large consensus quant à la reconnaissance des sociétés forestières comme acteurs privilégiés de l'aménagement durable.
- des aides techniques permettant l'acquisition du savoir faire moderne en matière de gestion des forêts tropicales aussi bien par les Entreprises que par les BNA.
- des aides financières permettant de soulager les entreprises et les administrations pour les travaux liés à l'aménagement durable (inventaires d'aménagement, équipements, contrôles etc..).

Des dispositions doivent être prises afin que les entreprises puissent bénéficier des aides financières venant des organisations internationales. Les pratiques actuelles ne l'admettent généralement pas, et on risque de décevoir bien vite les quelques initiatives en cours.

## **3 - OBJECTIFS ET CONTRAINTES DE L'AMÉNAGEMENT PAR LES ENTREPRISES**

### **3.1 - Objectifs**

Cette gestion à long terme des concessions forestières par les entreprises elles-mêmes se fera obligatoirement en accord avec les normes nationales, et restera ouverte aux contrôles de l'Administration. Mais, préalablement, deux conditions essentielles doivent être réunies :

- **garantie de longue durée des permis** par les Gouvernements (au moins une rotation, soit de 30 à 40 ans), avec procédure d'inscription sous aménagement durable.
- **mise en place rapide d'aides adaptées**, par les organisations internationales (aussi bien pour les entreprises, chargées du travail, que pour les administrations, responsables du contrôle).

La durabilité de la production sera le résultat de l'équilibre, trouvé dans l'ajustement des prélèvements, à la capacité industrielle de l'entreprise d'une part, et aux potentiels de reconstitution des peuplements d'autre part. C'est le but majeur de l'Aménagement durable. Les objectifs suivants en dépendent directement:

objectifs principaux de l'entreprise:

- développement des industries de transformation et réduction des déchets en forêt.
- consolidation sociale de l'entreprise (emplois, formations, qualifications, environnement)

objectifs secondaires (aides indispensables):

- amélioration des conditions de vie des populations riveraines (incitations au respect des forêts, utilisation écologiques des ressources locales, gestion de forêts villageoises).
- maintien de la biodiversité (mesures de protection particulière selon les sites)

La stabilisation des entreprises forestières en Afrique dépendra donc étroitement de leur capacité à gérer durablement leur concession ; c'est à dire à concevoir un plan rationnel d'exploitation (aménagement), et à le respecter.

### **3.2 - Contraintes**

Il faut de grandes concessions, mais celles-ci ne pourront pas être démesurément agrandies. L'allongement des rotations diminue fortement la capacité annuelle des entreprises. Certaines pourraient même se trouver alors en dessous de la taille limite pour permettre un investissement industriel rentable.

Pour les essences commerciales classiques, faire respecter systématiquement des rotations de 40 ans, reviendrait à réduire de près de moitié, les cadences d'exploitation actuelles. Ce serait faire payer à l'exploitant la mauvaise gestion de l'Etat. Il serait préférable de doubler la surface des concessions, équivalant à confier à l'exploitant la mise en attente des peuplements pour reconstitution. Ce doublement des surfaces allouées se ferait avec des surfaces déjà exploitées, ce qui reviendrait à confier à l'exploitant la mise en attente de ses anciens permis. Le plan de gestion imposerait une limitation des assiettes annuelles de coupes à 2,5-3% (1/40<sup>e</sup> à 1/33<sup>e</sup>), seulement de la surface totale productive.

**Des opérations sylvicoles seront souvent nécessaires.** Certaines éclaircies, bien adaptées seront à inscrire aux plans d'aménagement, (afin de compenser le manque de surface). Ces opérations alourdissent la tâche mais ce sont les seules actions qui permettent d'augmenter la productivité des forêts.

**La possibilité a des limites,** surtout en cas de forte demande en essences secondaires. Certaines conséquences néfastes peuvent découler d'une coupe trop intensive (dégâts d'exploitation, multiplication des ouvertures, fort développement des essences pionnières et des lianes, étouffement de la régénération naturelle des essences commerciales, etc..).

Il n'en demeure pas moins que les essences difficiles à commercialiser constituent, un potentiel important et que les efforts de promotion de ces bois sont à encourager, mais la recherche d'un certain équilibre des exploitations restera primordiale pour l'aménagiste.

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#### 4 - EVOLUTION RÉCENTE AU GABON

##### 4.1 - Début d'engagement des grandes sociétés forestières au Gabon.

Dès mars 95, la CEB (groupe THANRY-GABON), a décidé de se lancer dans une politique d'aménagement durable et dans ce domaine, elle a fait figure de pionnier. D'une part, la CEB désire transformer une partie de sa production de bois, afin de réduire le gaspillage en forêt et pouvoir ainsi rationaliser son exploitation. Elle affiche un programme d'industrialisation en 3 tranches dont la première est réalisée. Elle vient en effet d'investir dans une scierie moderne avec séchoirs à bois de 1500 m<sup>3</sup> de capacité mensuelle. D'autre part, la CEB souhaite pouvoir réaliser l'aménagement de ses permis dans l'objectif de stabiliser à long terme sa production de bois en accord avec sa capacité d'exploitation et de transformation.

Les autres grandes sociétés (ROUGIER-GABON, LEROY-GABON, SBL), se sont également engagées dans un processus similaire. Elles ont toutes fait appel à une expertise extérieure pour mettre sur pied un avant projet d'aménagement durable de leur concession et, à plus ou moins brève échéance, elles seront amenées, comme la CEB, à demander au gouvernement des garanties sur la durée de leurs permis.

##### 4.2 - Lancement du projet CEB

La CEB s'est doté des moyens nécessaires à une gestion durable de ses permis. Un bureau aménagement a été créé au sein de la direction des exploitations et un inventaire d'aménagement sur la totalité des permis, est en cours de réalisation. L'objectif premier est de pouvoir édifier un plan d'aménagement global. Ce plan sera présenté à l'Administration, (en conformité avec les normes nationales), en vue d'une approbation et d'un classement de la concession "sous aménagement durable". La CEB s'est déclarée prête à s'ouvrir à tout contrôle de son plan d'aménagement.

Les différentes actions, en cours ou programmées, sont indiquées en annexe 1.

Dans ce projet, une grande importance a été accordée au suivi du plan d'aménagement et, à cette fin, la mise au point des inventaires d'exploitation est pour l'instant l'élément technique le plus difficile. Il faut en effet "coller" à l'exploitation et se substituer aux équipes de prospection de l'entreprise sans nuire à l'exploitation actuelle. Il faut également ajouter des données d'inventaires, utiles à l'aménagement (mesure des arbres d'avenir), sans pour autant coûter trop cher. Le manque de bons techniciens locaux, motivés pour ce type de travail est crucial.

La sylviculture est un élément important du projet car les permis CEB comprennent des surfaces importantes de jeunes peuplements d'Okoumé purs (gagnés récemment sur les savanes) et très hétérogènes. La faisabilité d'une "sylviculture d'arbre de place" doit permettre à moyen terme (1 rotation), de couvrir une part significative de l'alimentation des industries de transformation à partir d'arbres de diamètre relativement réduit mais parfaitement aptes au déroulage. L'existence d'une telle série intensive permettra de réduire la pression exercée sur les autres séries de production.

La CEB a sollicité l'appui des instances internationales (CFD, FAC, FFEM, CEE). Au gouvernement gabonais, il a seulement été demandé de garantir la pérennité de la concession forestière. Il est cependant certain que l'entreprise devra échapper aux éventuelles taxes futures d'aménagement.

#### **4.3 - Eco-certification**

Récemment les problèmes d'écocertification sont venus souvent occulter l'objectif à long terme de l'aménagement forestier.

En effet, pouvoir continuer à commercialiser librement sa production, est fondamental pour l'entreprise et cela lui semble beaucoup plus facile à atteindre que le but de l'aménagement forestier, à très long terme pour elle.

L'appartenance à un système d'éco-certification est une décision de l'Entreprise, pour écouler sa production vers les pays qui exigent des normes écologiques fortes.

Contrairement à ce que certains industriels pensent, il ne s'agit pas d'une simple formalité administrative, même si les mesures paraissent douces au départ. Les sommes payées aux organismes certificateurs, ne deviendront pas non plus la bonne conscience des exploitants forestiers (ni des Administrations), envers la forêt. Leur budget aménagement sera tout simplement plus lourd, et elles subiront un contrôle supplémentaire.

En dehors de LEROY-GABON, qui commercialise des panneaux d'okoumé dans les pays nord-européens et qui a besoin d'un "éco-label", les entreprises forestières au Gabon, n'ont pas jusqu'ici rencontré la nécessité de satisfaire commercialement à une telle condition, mais il faut dire que 80 % de leur production est absorbée par la SNBG, société nationale ayant le monopole commercial des grumes d'Okoumé.

La CEB pense que sa concession forestière serait dès à présent éco-certifiable (au moins au premier stade). Avec le développement de la transformation locale du bois, la CEB doit rechercher de nouveaux marchés et la Direction générale de l'entreprise étudie la possibilité d'adhérer à un système d'éco-certification, neutre, et reconnu.

Cependant, il faut bien reconnaître que cette éco-certification n'a pas grande signification tant que le Gouvernement du Gabon n'aura pas donné à ces Entreprises des contrats de longue durée pour l'ensemble de leurs permis forestiers.

#### **5 - PROBLÈMES ACTUELS ET CONCLUSIONS**

L'initiative de la CEB apparaît comme un premier test, malheureusement assez négatif pour l'instant, eu égard à l'administration gabonaise et aux bailleurs de fonds. En effet, contre toute attente, le projet CEB, un an après son lancement, rencontre toujours les mêmes difficultés :

- **L'Administration forestière gabonaise**, n'a toujours pas accepté de prolonger, même provisoirement, la durée des permis CEB.
- **les organisations internationales** et les bailleurs de fonds n'ont pas encore donné de réponses officielles aux aides demandées.

On peut être surpris de l'incohérence qui règne en matière d'aménagement durable. Tout le monde semble le désirer mais personne ne veut s'engager, ce qui laisse le champ libre aux groupes de pression. De plus, pour gérer convenablement les forêts, il faut des moyens mais il

semble bien qu'une fois de plus, seul le bois payera. Protéger en augmentant les charges! Est-ce possible dans un contexte aussi difficile que celui des forêts tropicales ?

Pourtant, nous pensons que des mesures urgentes s'imposent, si l'on veut éviter de décourager les quelques initiatives actuelles. (voir proposition en annexe 2).

Les entreprises volontaires doivent être reconnues et leurs concessions consolidées. Une entreprise ne peut en effet investir sans garanties ; elle se trouverait rapidement sans argument, face à certains de ses actionnaires, très opposés aux investissements à long terme.

Finalement, il semble bien que le plus difficile soit la restauration préalable d'un climat de confiance général, sans lequel toute tentative d'aménagement durable sera un échec.

Pour conclure, il apparaît de plus en plus clairement que l'aménagement durable des forêts en Afrique, n'est pas seulement un enjeu important pour les entreprises, c'est en fait, pour elles, un véritable défi, mais il est certain qu'elles ne pourront le relever, seules.

Il faut les aider.



# ANNEXE 1

## FICHE DESCRIPTIVE DU PROJET CEB

### GROUPE THANRY-GABON

**Nom du projet :** Projet d'aménagement durable des permis forestiers de la CEB  
(Compagnie Equatoriale des Bois)

**Société concernée :** CEB B.P. 2262 Libreville GABON

**Directeur Général :** Pierre CHIRON

**Surface concernée :** 505 000 ha dans la région de Lastourville (Est-Gabon)

**Date des travaux :** Avant projet lancé en Mars 95

**Responsable du projet :** Dr. B. MARTIN, ICGREF

#### **1 - Coût du Projet :**

11 Millions de FF au cours des 5 premières années, répartis comme suit :  
0,4 M FF en 1995, 3,3 MFF en 1996, 2,7 MFF en 1997, et 2,3 MFF à partir de 1998,  
actuellement en totalité à la charge de CEB. Montant des aides demandées : 9 MFF à la CFD  
(prêt), 2 MFF au FFEM et 2 MFF à la CEE.

#### **2 - Bailleurs de fonds :**

Nombreuses demandes (CFD, Coopération française, Fonds Français pour l'Environnement Mondial, CEE). Les aides demandées au FFEM et à la CEE correspondent à des volets supplémentaires non encore développés actuellement (maintien de la Biodiversité et Actions auprès des Populations locales) et non prévus dans les budgets actuels.

#### **3 - Objectifs :**

-Garantie de durée des concessions par le Gouvernement

Inscription des permis sous "CFAD" -"Concession sous aménagement durable",

-Aménagement durable des permis avec :

- - Limitation de l'exploitation à des coupes sélectives
- - Respect d'une possibilité moyenne inférieure à 20 m3 /ha de bois utile
- - Stabilité de la production de bois, à long terme
- - Développement des industries du bois  
(Impossible sans aides extérieures:)
- - Maintien de la biodiversité
- - Participation des populations riveraines

**4 - Travaux en cours (1996):**

- - Création d'un bureau aménagement auprès du directeur d'exploitation (en cours)
- - Recrutement de deux VSN spécialisés (depuis décembre 95)
- - Lancement d'un inventaire d'aménagement sur l'ensemble des permis (avril 95)
- - Organisation des inventaires d'exploitation (en cours)
- - Constitution d'une base de données forêt et exploitation (à réaliser)
- - Constitution de tarifs de cubages adaptés (en cours)
- - Approches sylvicoles (mars 96 : études pour la constitution d'une série spéciale)

**5 - Programme 97 :**

- - Constitution d'une base de données forêt géo-référencée (inventaires et exploitation), par parcelle ou "crête".
- - Rédaction d'un document d'aménagement avec plan de gestion (fixation des paramètres de l'aménagement en fonction des résultats de l'inventaire).  
Soumission au Gouvernement pour agrément.
- - Incidence de l'exploitation sur la régénération naturelle de l'Okoumé; mesures éventuelles d'amélioration.
- - Délimitation d'une série sylvicole bien adaptée à la production rapide, de bois destinés aux industries, et lancement d'une équipe spécialisée.
- - Suivi du plan d'aménagement au moyen de la base (élaboration de plans d'exploitation réguliers, adaptés à chaque parcelle, selon les résultats de l'inventaire d'exploitation).

**6 - Travaux futurs (après obtention des aides extérieures) :**

- - Mesures en faveur du maintien de la biodiversité
- - Mesures en faveur des populations locales

à Libreville, le 1-06-96

## **ANNEXE 2**

### **Liste d'actions pour une politique d'aménagement durable des forêts productives par les entreprises, en Afrique centrale.**

- 1. Reconnaître les entreprises forestières comme les acteurs privilégiés de l'aménagement durable,**
- 2. Inciter les entreprises à se lancer dans la gestion forestière,**
- 3. Pousser les entreprises à investir localement dans des industries de transformation du bois,**
- 4. Réduire progressivement les quotas d'exportation de grumes,**
- 5. Disposer d'un code des investissements, favorable aux entreprises forestières,**
- 6. Changer progressivement de système commercial (vendre des produits semi-finis dans les pays consommateurs et non plus des grumes dans les ports des pays producteurs),**
- 7. Réaliser un gros effort de promotion des bois d'essences secondaires,**
- 8. Demander aux projets pilotes de devenir des centres de stages pour aménagistes,**
- 9. Promouvoir une sylviculture bien adaptée à certaines essences (Okoumé, Ayous, etc.)**
- 10. Aider les administrations pour la consolidation des bureaux nationaux d'aménagement,**
- 11. Mettre en place une commission internationale d'agrément des aménagements,**
- 12. Aider financièrement les entreprises à réaliser leurs projets d'aménagement durable,**
- 13. Taxer les entreprises récalcitrantes (taxe d'aménagement).**
- 14. Mettre en place des systèmes d'éco-certification graduels, neutres (indépendants des groupes de pression), reconnus par tous les acteurs et basés sur la durabilité des aménagements.**

Libreville le 2 juillet 1996

**SITUATION DU BRACONNAGE AU GABON**

**ELICITING PEOPLE'S SUPPORT TO FIGHT  
POACHING**

**GABON**

par

Adrien Nougou  
Ingenieur des Eaux et Forets  
Chef de Service de l'Aménagement de la Faune  
Libreville

**SOMMAIRE**

1- **INTRODUCTION**

2- **DEFINITIONS**

3- **DIFFERENTES FORMES DE BRACONNAGE**

- 3.1. *Braconnage de subsistance*
- 3.2. *Braconnage commercial*
- 3.3. *Braconnage pour les sous-produits*
- 3.4. *Braconnage des animaux vivants*
- 3.5. *Braconnage par les forces publiques*

4- **CONSEQUENCES DU BRACONNAGE**

- 4.1. *Conséquences écologiques*
- 4.2. *Conséquences économiques*
- 4.3. *Conséquences sociales*

5- **ORGANISATION DU COLLOQUE NATIONAL SUR LE BRACONNAGE**

- 5.1. *Niveau des Participants, thèmes retenus et objectif du colloque*
- 5.2. *Déroulement du colloque*
- 5.3. *Constats*
- 5.4. *Recommandations*
- 5.5. *Activités réalisées après le Colloque*

6- **CONCLUSION**

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## SITUATION DU BRACONNAGE AU GABON

### 1. INTRODUCTION

Le Gabon présente une faune abondante et diversifiée comprenant plus de 150 espèces de mammifères et 600 espèces d'oiseaux. Le pays est un refuge important pour les éléphants, les lémentins, les gorilles et les chimpanzés. L'on a découvert au centre du pays une nouvelle espèce de cercopithèque (*Cercopithecus l'hoesti solatus*) et au sud-ouest de la région de la Moukalaba, une nouvelle espèce de céphalopode (*Cephalopus ogilby crusabum*). Les grands amphibiens sont représentés par les trois espèces de crocodiles et plusieurs espèces de tortues dont la tortue Luth.

L'avifaune est constituée par:

- une forte proportion d'espèces sédentaires forestières ;
- une très faible proportion d'espèces de savane ;
- de nombreuses espèces aquatiques ;
- de nombreux migrants afro-tropicaux ;
- de nombreux migrants paléarctiques.

En dépit de cette richesse diversifiée, la faune gabonaise est menacée par ce fléau international connu sous le nom de braconnage.

### 2- DEFINITIONS

Le braconnage peut se définir comme étant l'exploitation illégale de la faune sauvage. Mais le braconnier n'est pas seulement celui qui chasse illégalement mais aussi et surtout ceux qui encouragent de quelque manière que ce soit la chasse c'est-à-dire les vendeurs, les transporteurs et les restaurateurs.

Selon la destination que le braconnier donne à son produit, il existe plusieurs formes de braconnage.

### 3. DIFFERENTES FORMES DE BRACONNAGE

#### 3.1. Braconnage de subsistance

Le braconnage de subsistance est pratiqué dans toutes les zones rurales et concentré principalement autour des villages. Il est très intense autour des zones où la densité de la population est forte. Pour abattre le gibier, on utilise le plus souvent les armes à feu. Le produit issu de cette chasse est vendu sur place ou dans les localités avoisinantes. Cette forme de braconnage s'attaque à toutes les espèces sans distinction de statut juridique.

#### 3.2. Braconnage commercial

Le braconnage organisé constitue une menace importante pour la faune sauvage. Des individus sont envoyés en forêt; ils piègent et abattent tout gibier sans discrimination. La viande

est conservée dans des congélateurs, fumée ou boucanée. Quand la quantité de viande est jugée suffisante, elle est acheminée dans les grands centres urbains (Libreville, Port-Gentil, Franceville) où elle est vendue ouvertement sur les marchés. Cette viande est destinée à alimenter les restaurants et de nombreux particuliers. Les principales zones de braconnage intensif sont: Miélé (réserve de faune de la Lopé), Vieux tonneau (Tchibanga), Saint Germain (Mitzic), Okondja, Mandji, Mékambo.

### ***3.3. Le braconnage pour les sous produits***

Il découle des deux précédents lorsqu'il n'est pas pratiqué d'une façon délibérée. Les trophées d'animaux abattus sont récupérés par les consommateurs ou les chasseurs et peuvent être vendus. Il est encore moins menaçant lorsqu'il est pratiqué pour se procurer des amulettes.

Par contre, lorsqu'il est pratiqué dans un but lucratif, le braconnage présente un danger. Il concerne surtout les éléphants, les léopards, les crocodiles, les pythons etc... Le but visé étant de se procurer de l'ivoire et des peaux d'animaux afin de les exporter.

### ***3.4. Braconnage des animaux vivants***

Ce braconnage concerne surtout les singes, en particulier les chimpanzés et les gorilles qui sont des espèces très recherchées à l'étranger pour des expériences médicales, les parcs zoologiques, les cirques ou les particuliers. Les oiseaux comme le perroquet gris à queue rouge du Gabon en font également partie.

Compte tenu de l'agressivité des animaux adultes, les jeunes essentiellement sont recherchés par les braconniers, qui abattent souvent les mères et d'autres adultes de la troupe.

### ***3.5. Braconnage par les forces publiques***

Les forces publiques, militaires et autorités administratives pratiquent souvent le braconnage pour se procurer gratuitement de la viande de brousse. Ce braconnage est très meurtrier car il est effectué la plupart du temps avec des armes automatiques de guerre qui blessent beaucoup de gibier perdu.

Au niveau national, les agents de la Brigade de faune de Moukalaba ainsi que ceux de la Direction de la Faune et de la Chasse, ont souvent eu des accrochages avec les forces de sécurité basées à Tchibanga pour braconnage régulier dans la réserve de faune de Moukalaba.

Toutes ces formes de braconnage ont des conséquences multiples tant sur le plan écologique, économique que social.

## ***4. CONSEQUENCE DU BRACONNAGE***

### ***4.1. Conséquences écologiques***

En détruisant la faune sauvage, le braconnage détruit les équilibres naturels. Le rôle de la faune sauvage dans la propagation des espèces végétales et les interactions entre espèces animales peuvent être sérieusement compromis.

Les graines de nombreuses espèces végétales sont disséminées par les animaux ou les oiseaux en se fixant sur leur fourrure, les plumes ou en passant par leur tube digestif. Ainsi l'éléphant souvent considéré par les populations rurales comme nuisible, en raison de sa taille et de son impact sur la végétation et les cultures vivrières ou industrielles, joue pourtant un rôle important dans la propagation de certaines espèces et la régénération forestière.

On peut encore citer le cas des touracos qui jouent un rôle capital dans la dissémination des graines de parassolier dans les zones dégradées par l'exploitation forestière.

#### 4.2. Conséquences économiques

Elle sont de deux ordres :

1) Les conséquences économiques directes se traduisent par :

- des pertes de recettes fiscales pour l'Etat; elles sont considérables du fait que les braconniers ne payent généralement ni taxes sur les permis ordinaires de chasse et de port d'arme, ni taxes sur les assurances, ni taxes d'abattage ;
- des pertes pour l'économie du pays; la viande et les sous-produits sont perdus ;
- des pertes de recettes touristiques; en raison de la raréfaction du gibier, le tourisme basé sur la faune sauvage, baisse considérablement.

2) Les conséquences indirectes du braconnage sont très difficiles à évaluer.

Cependant on peut citer entre autres, le coût de la reconstitution d'un environnement viable, le coût du remplacement d'une source naturelle de protéines animales par l'élevage domestique et le coût de la réintroduction d'espèces disparues.

#### 4.3. Conséquences sociales

Dans certaines régions impropres à l'élevage du gros bétail (Woleu-Ntem, Ogooué-Lolo, Moyen-Ogooué, partie Nord de l'Ogooué-Ivindo) la faune sauvage fournit l'essentiel des protéines animales aux populations rurales. Le braconnage intensif est en train de détruire cette ressource naturelle et renouvelable et de forcer les populations à un exode progressif vers des régions plus propices.

Malgré diverses mesures prises par le Gouvernement pour freiner le phénomène du braconnage sur l'ensemble du territoire, ce fléau a pris de jour en jour une dimension très préoccupante et risquait à terme, si une réflexion approfondie n'était pas engagée, de décimer notre faune.

Dès lors il devenait impératif d'organiser un colloque national regroupant des participants représentatifs de diverses couches de la population et concernés de près ou de loin par le fléau du braconnage.



**5. ORGANISATION DU COLLOQUE NATIONAL SUR LE BRACONNAGE**

**5.1. Niveau des participants, thèmes retenus et objectif du colloque**

Cette manifestation nationale a non seulement vu la participation des responsables provinciaux de l'Administration des Eaux et Forêts, mais également celle des autres Administrations (Justice, Gendarmerie, Police, Armée, Administration du Territoire). Y ont également pris part les ONG locales et internationales, les Chefs de Cantons, de Regroupement de villages et de villages venus de l'ensemble des provinces de l'intérieur du pays et particulièrement les représentants des populations vivant à l'intérieur ou à la périphérie des aires protégées, les commerçants de gibier et des produits de la chasse, les transporteurs et les restaurateurs.

Il a été aussi l'occasion pour d'éminents conférenciers des pays amis de présenter des communications relatives à leurs différentes expériences.

Lors de ces assises, seize (16) communications (voir en annexe) regroupées en trois (3) thèmes ont été livrées à savoir :

- thème No.1 traitant du braconnage proprement dit ;
- thème No.2 relatif à la lutte contre le braconnage, notamment les aspects juridiques et réglementaires des solutions alternatives;
- thème No.3 ayant trait à la biodiversité et aux risques sanitaires liés aux produits issus de la chasse.

La tenue de ce colloque avait pour objectif de mener ensemble une réflexion approfondie sur l'exploitation abusive et incontrôlée de notre faune sauvage et par la même occasion trouver des solutions alternatives pouvant freiner ce fléau.

**5.2. Déroulement du colloque**

Avant la tenue du colloque, des invitations ont été adressées aux différents participants. Pour ceux venant de l'intérieur du pays à savoir les Chefs d'Inspection et de Cantonnement des Eaux et Forêts, les chefs des Brigades de faune, les chefs de Canton, de Regroupement des villages et de villages, ils avaient droit à des titres de transport aérien, terrestres ou ferroviaire et à des per diem correspondant à leurs frais d'hébergement et de restauration. Les invités de l'extérieur sont arrivés pour la plupart en avion; ils avaient eux aussi bénéficié des per diem.

Trois jours durant, les participants ont eu à traiter des sujets liés au braconnage, lesquels sujets ont suscité des débats très enrichissants et constructifs qui se sont déroulés dans une ambiance sereine et détendue ayant permis à tout un chacun de s'exprimer librement.

L'occasion était donnée aux notables locaux (qui s'exprimaient en français) de les inviter à prendre conscience du danger que fait courir à la faune une chasse abusive et incontrôlée qui, exercée souvent de nuit avec des moyens modernes massifs, la fait disparaître très rapidement au détriment des villageois qui devraient en être les premiers bénéficiaires, et qui,

malheureusement deviennent aussi les premières victimes quand la faune sauvage vient à se raréfier dans leurs zones usagères.

Les travaux se sont poursuivis par la constitution de trois commissions qui ont donné lieu au dégagement des constats et des recommandations.

### 5.3. Constants

Des discussions qui s'en ont suivi, le colloque a dégagé les constats suivants :

- intensification du braconnage à des fins commerciales ;
- introduction, distribution anarchique des armes et bons de munitions ;
- risques encourus par les agents des Eaux et Forêts dans l'exercice de leurs fonctions ;
- faiblesse des effectifs des agents intervenant en matière de protection de la faune et insuffisance des moyens appropriés mis à leur disposition ;
- inorganisation de l'exploitation des ressources animales ;
- insuffisance des aires protégées et non aménagement de celles qui existent ;
- méconnaissance des ressources animales ;
- insuffisance de la recherche et de la formation en matière de faune ;
- conditions inappropriés de capture, de conditionnement et de commercialisation ;
- rareté du gibier aux alentours des communautés rurales ;
- insuffisance et non application des textes régissant la protection de la faune sauvage ;
- implication directe et effective des autorités administratives politiques et militaires dans les actes de braconnage ;
- non prise en compte des conventions auxquelles le Gabon fait partie.

### 5.4. Recommandations

De ces constats, le colloque a recommandé :

- au niveau politique, le concours permanent et total de tous les Départements ministériels et des autres hautes instances décisionnelles de l'Etat; la nécessité et l'urgence pour notre pays de connaître la valeur économique intrinsèque de la faune sauvage pour qu'elle puisse justifier de la part des pouvoirs publics, de toutes les attentions qu'elle mérite ;
- au niveau institutionnel, le renforcement soutenu de nos services avec notamment le redéploiement des effectifs et des moyens appropriés sur le terrain, au bénéfice des Brigades de faune, des Inspections et des Cantonnements des Eaux et Forêts ;
- au niveau législatif, qu'un travail de réflexion sur les textes doit se faire à terme pour compléter l'arsenal juridique existant ;
- au niveau éducatif, la mise en place des actions de sensibilisation, notamment en direction des populations locales afin qu'elles deviennent les gestionnaires de leurs propres ressources.

La sensibilisation doit également concerner tous ceux qui ont une responsabilité dans le développement du phénomène de braconnage à savoir : les commerçants de gibier et des produits de la chasse, les transporteurs et les restaurateurs.

- au niveau des solutions alternatives, la prévoyance et l'encouragement de celles qui modéreraient les effets dévastateurs du braconnage, tel l'élevage du petit gibier.

L'après colloque s'est caractérisé pour la cellule de coordination du projet Forêts et Environnement, la Direction de la Faune et de la Chasse et les Brigades, par une relance très significative de certaines activités issues des recommandations dudit colloque.

#### **5.5. Activités réalisées après le colloque**

Parmi les activités réalisées en 1995, on cite entre autres :

- la participation des agents de la Direction de la Faune et de la Chasse à la réunion technique de classement et de déclasserment des forêts de l'Etat tenue à Tchibanga en Avril 1995 en vue du classement du massif forestier des Monts Doudou en aire protégée ;
- l'aboutissement de l'arrêté N<sup>o</sup>.000491/MEFPTE/SG/DGEF/DFC du 14 Août 1995 fixant les dates d'ouverture et de fermeture de la chasse ;
- la contribution de la Direction de la Faune et de la Chasse au lancement de l'expérimentation du livre sur l'éducation environnementale dans les écoles primaires, initié par le W.W.F. GABON ;
- campagne de sensibilisation contre le braconnage menées par les agents de la Direction de la Faune et de la Chasse dans les réserves de faune de Sette-Cama, Moukalaba et Lopé ;
- exécution par deux agents de la Direction de la Faune et de la Chasse de la mission exploratoire de reconnaissance de terrain et d'évaluation des moyens logistiques à la Brigade d' Oyan située au nord-ouest de la réserve de Wonga-Wongué ;
- le renforcement en moyens humains et matériels des brigades de faune de Lopé, Moukalaba, Sette-Cama et Iguela ;
- l'envoi en stage à l'école de faune de Garoua de deux fonctionnaires des Eaux et Forêts ;
- la présentation des exposés relatifs aux problèmes de chasse par les agents de la Direction de la Faune et de la Chasse et les professeurs de l' Ecole Nationale de Eaux et Forêts, au centre Culturel Français ;
- le passage à deux radios privés des agents de la Direction de la Faune et de la Chasse en vue de sensibiliser le public sur l'importance de la conservation de la faune sauvage ;

- opérations de lutte contre le braconnage à travers les marchés de Libreville et sur les axes routiers Libreville - Kango - Coco - beach et le renforcement en effectif des réserves de faune de Lopé et Moukalaba selon le tableau ci-dessous ;
- tournées à l'intérieur du pays en vue de créer des associations des villageois avec l'encadrement et l'appui du service des Eaux et Forêts afin qu'ils deviennent des partenaires dans les actions de protection de la faune.
- confection, impression, affichage des posters relatifs à la protection de la faune dans des endroits où le message frappe à première vue (école, marchés, restaurants, villages situés à l'intérieur ou à la périphérie des aires protégées, gares).

Saisies	Armes	Munitions	Câbles	Gibier	Bâches
Unité					
Direction Faune et Chasse	83	-	-	299	-
Lopé	8	70	631	391	-
Moukalaba	20	42	-	-	-

Pour l'année 1996, les agents de la Direction de la faune et de la chasse ont effectué deux missions de soutien à la Lopé (3 armes, 4 cartouches, 4 pointes d'ivoire, 311 câbles, 131 gibiers saisis et 8 campements de chasse détruits) et Moukalaba (28 armes, 2 pointes d'ivoire saisis).

## 6. CONCLUSION

Hormis son intérêt alimentaire, émotionnel, culturel et scientifique, la faune sauvage occupe une place importante dans l'économie de nos pays.

Hier, pratiquée avec des armes de fabrication locales pour subvenir aux besoins en protéines animales de la famille, de nos jours, la chasse est devenue une activité lucrative avec la prolifération d'armes à feu.

Cette nouvelle pratique constitue un réel danger pour la survie de plusieurs espèces animales qui parfois sont menacées de disparition dans certains de leurs habitats.

Afin de sauvegarder cette ressource à même de jouer son rôle, nous devrions d'ores et déjà prendre les mesures préventives et répressives qui s'imposent, car s'il faut remettre à plus tard, il sera peut être trop tard.

**ANNEXE**

**Liste des participants, des thèmes et des communications**

No.D'ORDRE	THEMES	COMMUNICATIONS	INTERVENANTS
1	1	Impact du braconnage sur la faune sauvage	Adrien NOUNGOU
2	1	Situation présente de la faune au Gabon et suggestions relatives à l'éradication du braconnage	Henri GUIARD
3	1	Etude sur la qualité et la quantité du commerce de la viande de brousse au Gabon	Lisa STEEL
4	1	Parcs nationaux et braconnage	Alain MONTFORT
5	1	Problématique de la gestion des aires protégées en Afrique de l'Ouest : le cas de la République du Bénin	Pascal OUDE
6	1	Bilan général du braconnage	Charles DOUMENGE
7	2	La lutte anti-braconnage : le cas de la Brigade de faune de la Lopé	Alphonse MACKANGA MISSANDZOU
8	2	Contribution à l'élevage du petit gibier dans la lutte contre le braconnage	Professeur HEYMANS
9	2	La problématique de la lutte anti-braconnage dans les aires protégées du Gabon	Joseph NGOWOU-NZIGO
10	2	La législation du braconnage	Jean Hubert EYI-MBENG
11	2	La lutte contre le braconnage. Problématique juridique : aspects institutionnels et normatifs.	Jean Marie BRETON
12	2	L'expertise juridique appliquée à la réglementation nationale en matière de protection de la faune	Jean Marie MALOLAS
13	2	Le braconnage et ses solutions	Benoît DOAMBA
14	3	Produits de braconnage et santé de consommation	Ibrahim CAMARA
15	3	Biodiversité	Alfred NGOYE
16	3	Perspectives de l'élevage de rongeurs comme appui à la lutte anti-braconnage au Gabon	JORI Ferran

**PROCESSING AND MARKETING OF  
NON-TRADITIONAL WOOD SPECIES**

**LESSONS LEARNT FROM THE IMPLEMENTATION OF THE  
NEW FOREST POLICY AGENDA**

*[ Secondary Processing of Lesser-Used Timber Species ]*

**A CASE STUDY OF THE  
SPECIALIZED TIMBER PRODUCTS (STP) LIMITED  
OF GHANA**

**BY**

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C O N T E N T S

1. ACKNOWLEDGEMENTS
2. EXECUTIVE SUMMARY
3. BACKGROUND
4. THE PREVAILING CIRCUMSTANCES AND WHAT NEEDED TO BE CORRECTED
5. OBJECTIVES
6. MAIN ACTIVITIES
7. IMPLEMENTATION PROBLEMS AND HOW THEY WERE DEALT WITH
8. RESULTS
9. LESSONS LEARNT
10. THE NEXT STEP
11. CONCLUSION AND RECOMMENDATIONS

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## **PROCESSING AND MARKETING OF NON-TRADITIONAL WOOD SPECIES**

### **BACKGROUND**

#### **THE GHANA SCENE**

Ghana's high forest covers an area of about 7 million hectares out of the total 23.9 million hectares land area, and is located in the South and South Western parts of the country. About 680 tree species are known to occur in these forests. Until 1988, these species had been put into 4 broad classes based on their economic importance as determined by market demands.

There were 14 prime species in class 1 with sub-classes a,b and c; and 12 in class 11 (also with 2 sub-classes). Together, these two broad classes constituted the resource base for the timber industry with a few of the 23 species in Class 111 being exploited to a lesser extent. Of these forty-nine (49) so-called marketable species, only a few were actually exported.

Now tree species have been reclassified to broaden the timber production potential from 49 to 126 species. But markets are yet to be developed for these potential species.

#### **THE PROFILE OF THE COMPANY - SPECIALIZED TIMBER PRODUCTS LTD**

The Specialized Timber Products (STP) Limited is a wood processing company located in Kumasi, the second city in Ghana. It was established in November 1985 and production started in January 1986.

From an initial total staff strength of 72, the Company has expanded considerably within the decade; by 1st June, 1996 the labour strength had risen to 314, seven of whom are management staff.

The Company has two Bandmills supported with an efficient Gangsaw capable of producing 50 M3 of high quality lumber daily. Two modern Boilers and 15-chamber kiln dryers of 1,500 M3 capacity provide the necessary facilities for kiln drying the products in line with Government policy. STP also has moulding machines which turn out high export quality planed (four sides) lumber, profile boards, dowels, etc.

Export products are subjected to scrupulous grading by experienced Graders on the production line and the packing section to ensure that only good quality wood products which conform to specifications in each contract are bundled for export. On account of the high quality of our products, our traditional overseas buyers are always willing and eager to renew export contracts.

The company has been working hand-in-hand with the Forestry Research Institute of Ghana (FORIG) on the research into marketing and adding value to lesser-known species. Efforts in this direction together with the difficulties encountered and the successes chalked form the subject of this presentation.



## THE CASE STUDY

### THE PREVAILING CIRCUMSTANCES AND WHAT NEEDED TO BE CORRECTED

In the early 80's, the Specialized Timber Products -Limited (STP) observed that the timber trade in the country and indeed on the continent as a whole, was concentrating on just a few species of the forests, i.e. the so-called prime species, eg. Odum, (*Milicia spp*), and the Mahoganies (*Khaya spp*) . This situation led to over-supplying the markets in Europe; while at the same time greatly reducing the stocking of these species in the forests. In addition, the quality of logs was also coming down. This was manifested in small diameter, immature logs and of wrong shapes.

Against this background, we started asking questions such as:

- (a) Why should all countries supply the same species, and oversupply the market in certain cases resulting in lower prices, whilst the supply of these few species from the forest was fast running out.
- (b) How to meet installed mill capacities, since not enough logs were supplied to the mills.
- (c) From the records, there are hundreds of species in Ghana's forests (680 spp) ; why were most of these never touched? It seemed illogical to say that all these were of no commercial value.

About the same time too, the Environmental NGOs had started challenging the sustainability of tropical forests, thereby putting pressure on the market. Moreover, there was the fear that at the same levels of harvesting of just the few species, problems would be created in the marketing of the species in the near future; this indeed is now actually happening.

In the 80's we analyzed the human nature and the thinking where it is normal for any one anywhere to clamour for change or something new. Considering that for most of the market-countries in the north, there are fog, clouds and not so much sunshine, we reasoned that there would be the need for brighter colors to offset the rather dark/gloomy weather. Thus, we had to look at what these countries would need and not so much what the markets were used to selling.

### OBJECTIVES

From the foregoing, we set ourselves the task of introducing more species, especially the lesser-used (and lesser-known) ones unto the market. The objectives, as explained above, were:

1. to broaden the supply base and thereby reduce pressure on the few virtually endangered species;
2. to increase the contribution of the timber trade to the national economy;
3. to secure regular supply of raw materials (timber) to the industry.
4. By introducing new species, the industry will have more Flexibility in managing our Forest Resources on a sustainable basis, and consequently introducing supplying more environmentally Friendly Species to the outside World.

5. This also could help the Tropical producing Countries to reduce the pressure of the environmental groups, and will allow the industry to work on the certification issue.
6. Due to the fact that the lesser used and lesser known species are available in good volume in our Forest, this can allow the industry to guarantee regular supply and regular volumes for larger time to the importing countries and this will encourage the buyers all over the world to spend on marketing these species.

### MAIN ACTIVITIES

In 1986, we decided to go into extensive research on different species from the forest in both low, medium and high density ranges which were not exported nor even felled at all. We also looked at some species that were exported but only in small volumes in the round log form only.

To be able to convince buyers to at least try these new species in their product range, we had to do all the work on their behalf; they were still getting the traditional species and would not want to spend time nor money experimenting with the so-called unknown species.

This was not easy to do, because as a private enterprise, we did not have any outside support. All the costs of the research, both in machinery and material had to be met on account of the main production cost and upkeep of the factory. But we were on the other hand, very much convinced that this was the way forward for the future and the earlier we started, the better, even if results would not be achieved overnight or in a quick manner. Research was therefore pursued, howbeit more slowly but persistently.

Species selected initially were Onyina (*Ceiba petandra*), Chenchen (*Antiaris africanum*), Koto (*Pterygota macrocarpa*), Akasa (*Chrysophyllum* spp), and Essa (*Celtis* spp).

It took a couple of years in buying logs. We had to keep one kiln-drying chamber for developing drying schedules for the various species and a moulding machine to work on various mouldings and finished products to be sent to the various world markets. This meant lost machine time - another opportunity cost.

More specifically, we carried out many experiments investigating how these species dry for different sawing methods the wood (i. e. 1/4 -sawn, flat sawn, or semi 1/4 sawn); and for various thicknesses ranging from 1" (25mm) to 3" (75mm). It was observed that the drying schedule can vary tremendously depending on thickness. We had to experiment with combined schedules of temperature, relative humidity, and the rate of drying that cause the minimum damage on the timber.

Another aspect of the research was to establish the various technical properties and description of each species such as density, durability, shrinkage on drying and the bending capability. This was deemed necessary to be able to recommend or at least suggest to the buyers possible uses of each species. After obtaining all the above-mentioned data, we had to start our research into product development, market possibilities, and sales objectives.

## IMPLEMENTATION PROBLEMS AND HOW THEY WERE DEALT WITH

As you would perhaps know, with this kind of approach, it takes quite a long time to convince the end-users to try and import the new timber species; apart from that the buyers were not prepared to pay for the trial parcels so long as they could still obtain supplies in the traditional primary species.

Most buyers contacted, stated clearly that they did not see the reason in spending money when they were not facing any problem. We therefore had no choice but to give the samples free. You can imagine our predicament: after buying logs, processing and drying them and shipping all by ourselves, only to go and plead with buyers to test the sample as finished products in their market.

For these experiments, we had to invest heavily in machinery and technology, in addition to budgeting each month for the cost of raw materials required for the research. The volumes needed to establish the drying programmes, technical data, and processing the samples into the various suggested finish the products, ranged from 300 to 700 M3, depending on the species; thus we spent about c50 million (about US\$ 30,000 - 35,000) per species.

In terms of other facilities, a 40 M3 kiln chamber was reserved for the purpose for about a year. If used for drying say Wawa, *Triplochiton scleroxylon*, this kiln would have brought in about US\$32,000. Over and above all these, one must add the moulder and labour costs as well as freight charges estimated at about US\$27,000). From such considerations, it is not difficult to appreciate that for each species promoted, close to US\$94,000 would have been expended.

## RESULTS

Nevertheless that system worked well. We were pleased and encouraged that at least we found a head way to get these species known in the market. In certain cases, we had to send 3 or 4 small parcels for further tests by the same buyer until they got convinced; we then sat together with them to work out a long-term supply programme. This usually started with the supply of small parcels on a monthly basis. Here too, we needed to prove to the buyer that we could maintain regular supply with consistent quantity and quality. Gradually we were able to convince the buyers, month-by-month, to reduce their intake from the primary species and increase intake of these lesser known species by the same percentage.

By 1993, we are glad to mention, certain markets and buyers had shifted fully from the traditional species to these new species. And once the new species had been accepted in the markets and the technical data and end-uses of such species known by the buyers, coupled with the assurance of regular supply, we were able to gradually push prices up.

In 1990, about 80% of our export lumber was Wawa (*Triplochiton scleroxylon*), but as a result of such promotional efforts, we have been able to diversify our export products considerably. By 1995 our product mix was as follows:

Koto kiln dried	:	70%
Akasa kiln dried	:	10%
Dowels/moulding	:	15%
Chenchen and Ceiba kiln dried	:	5%

We are glad to mention here that at the moment, species such as *Akasa (Chrysophyllum spp)* and *Koto (Pterygota macrocarpum)* are achieving prices higher than the traditional primary hardwood species, by between 40 and 60% and over 100% higher than the traditional softwood species. Sample data to illustrate the point are given in Tables 1 - 3 and Figs 1 - 4. This is a practical demonstration that these lesser-known species which in the past, as we were made to believe, had no use, can benefit the economies of our nations even more than the traditional species.

Other benefits that go with these accomplishments are listed below:

- (1) Part of the environmental problem has been solved since these species are plentiful in the forest and could be harvested in a very sustainable programme.
- (2) we can now supply the market with something new to satisfy the human need for change, and a desired one at that.
- (3) Buyers and the markets generally, can also be sure of regular supply, both in time and in quantity to keep their industries running for a long time to come. That would also allow them to cover their initial expenditure on marketing and advertisement, for these new species.
- (4) With the higher prices obtainable, returns to our countries' incomes would be much higher, thereby helping to solve some of the socio-economic priorities.

#### LESSONS LEARNT

1. Research by industry can be very expensive, in terms of both direct costs in terms of bigger samples and indirect costs like lost machine time, and useful man-hours. It would definitely be cheaper to fund a research Organization to undertake such major investigations.
2. The big importers in USA, Europe and Japan are willing and can market and introduce the new species into their markets; they can also remove any species from the market. However, they must be assured of the regularity/volume of supply, to enable them cover their marketing costs as well as maintaining constant supply to their industry and distribution outlets, such as the DIY chains of stores. If these criteria of regularity and assured volume cannot be met for any reason whatsoever, then it is totally impossible to commercialize such species.
3. Without investing heavily in new technologies, which are very expensive, and in certain cases such technologies have to be computerized to be able to achieve constant qualities, then it is not possible to achieve such goals.
4. our success in introducing the few species into the market, has also encouraged some buyers themselves to experiment with other species sent to them.
5. Finally we have been convinced that for the industry to go in that direction, certain policies must be put in place by the various ministries and institutions responsible for the timber trade and industry. And for sure, industrialists willing to go into such long-term research and expenditure must be given some incentives which will encourage them to undertake or sponsor

such research. In the long run, whatever incentive package put in place will be much cheaper, than the huge benefits which the industry will bring in return to the national economies of the producing countries.

#### **THE NEXT STEP**

At STP, our next step, after having had the few lesser-used species accepted in the market, is to invest in further technologies to supply the markets with more added-value products from those lesser-used species. These products will include dowels, curtain rails, kitchen cabinet parts, finger-jointed and laminated products e.g. staircases, window and door sills, solid doors, laminates for shelves, and table tops.

Such new technologies will be very advantageous because they will tremendously increase the yield from the harvested wood; hardly anything will be wasted. Moreover, that will make it possible to prove to the various environmental groups worldwide that we are utilizing our forest resources very efficiently and in a sustainable manner. Secondly, prices for such value-added products will be much higher than the ordinary sawn timber product. This will further enhance the returns from the forest to the national economy.

In order to realize all these benefits or advantages, we at STP, have already installed the following production sections in addition to the basic sawmill line:

- Kiln Drying facilities
- Treatment and Sterilization Unit
- Moulding section
- Dowels and round rod section.
- Finger-jointing and lamination sections (to be installed in the second half of the year, 1996).

With all the above mentioned sections, we could utilize small pieces of wood such as 25mm x 25mm x 150mm. We also have in place a new burning technology which is capable of utilizing even the wet saw dust in our steam generating boilers for the production of steam. The steam is fed to the kiln dryers. We consider timber drying as the door to any further processing for added-value products,. Besides these, we have recently also installed the first Band-Rack which will enable us utilize the branches and the leftovers of the felled trees in the forest.

Thus at STP, we maximize the recovery from both the tree and the log; even sawdust is our fuel and cannot be treated as waste. It is worth mentioning that our research programme on lesser-known species is still going on.

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## CONCLUSION AND RECOMMENDATIONS

The efforts have been very costly to the company, being a purely private concern with no external injections. Moreover it was initially very difficult to make in-roads into the established markets. In the long run however, our tenacity, commitment and perseverance have proved very rewarding: now many more "lesser-used" species (LUS) are accepted on the market, with some even fetching higher prices than the traditionally preferred species.

From our practical experience we believe strongly that the following points can assist and allow the industry to achieve its goals in a faster time and will also allow the industry to adjust itself on a long term basis in the interest of their National economies and their future generations.

- 1- Research institutions, like Forestry Research Institute (FORIG) in Ghana, be supported to undertake such much needed research for the industry. The Donor communities could assist in the provision of the necessary prototype facilities.
- 2- A technical team could also be set up between the industry and research institutions, to identify research programmes together. This will better address the research needs of the industry, This team could have a better link with consumer in various buying countries to determine research priorities to minimize cost. Multilateral bodies like the International Tropical Timber Organization (ITTO) could facilitate such an arrangement.
- 3- The industry must have a long term permanent policy by the sector ministry. Without this it is not possible to go into research and marketing.
- 4- The various Governments must work an incentive programme which will encourage the industry, to go into research, marketing, investing in new technology to achieve the National goals. Some of these incentives are:
  - As a start, all Kiln dried lumber, and for a period of about 3 years must be treated as a non traditional export product. This will give the industry a breather to go into research and to start developing new products and new markets.
  - After the lapse of the 3 years mentioned in the above item, further processed products only, will continue to be treated as not traditional exports.
  - The Lesser Used Species will be treated as non traditional exports for a minimum of 10 years, because this is a condition by the purchasing markets. The buyers require long term guaranteed supply to enable them, advertise, market, and promote these LUS.
  - Products such as K.D. Lumber, ordinary produced plywood, ordinary produced peeled and sliced veneers, the industry must be allowed about 3% of the FOB value to be exempted before Tax. This money will enable the industry to spend on research and marketing development.
  - The further processed products such as jointed veneers, special plywood products, planed and moulded lumber, must be allowed about 8% of the FOB value, Tax free, this will enable the industry to invest that money in new machinery and further market development.

- The finished and semi-finished products, such as knock down furniture, furniture, finger jointed, laminated and sanded products, which can achieve high value products, the industry must be allowed about 15% of the FOB value which will enable the industry to invest further, in the necessary sophisticated machinery and market development.

5- The Timber Industry, must be treated as any other industry in the liberalised systems. All restrictions and bottle necks, must be eliminated.

6- It will be imperative to assist the industry by providing external soft loans, on medium and long terms, at low interest rates.

7- The Government must support the establishment of a strong and powerful Association of Ghana Timber Industry (AGTI).

#### 8- Raw-Material

To the industry the understanding of sustainability of our forests and the issue of world wide certification of timber products, it is understood by us that: The industry must plant more trees than the number felled. To be able to achieve this goal the industry must be supported and assisted by:

A- Lands for plantations

B- Seedlings.

C- Full ownership and exploitation rights of the planted land.

D- Donor agencies have to assist with grants and long term self loans to private companies doing plantations.

E- The establishment of a private plantation company, run by the AGTI and financed by the industry, Such company could be assisted financially by various Donor agencies to start and take off. The initial target of plantations have to be a minimum of 1.5 million trees per year. The benefits which could be achieved from such plantations are tremendous:

- The industry can expand a lot, increase employment, and increase the export capacity and earnings, because the raw material will be available in bigger quantities from such plantations.

- The employment will increase in the rural areas.

- Plantations and due to employment possibilities will reduce the trend of urbanisation.

- There will be a better distribution of wealth and income to rural areas.

- Plantations will help in the reduction of Bush fires and illegal felling of trees.

- Plantations will help in the development of the rural areas. Therefore due to such tremendous benefits the Private Plantation Company must be supported with certain incentives. One suggestion is to allow the company 100% Tax relief on plantation expenditure.

TABLE 1. TRENDS IN EXPORT OF KILN DRIED AKASAA LUMBER  
BY S. T. P

YEAR	VOLUME M3	AV.PRICE, DM/M3
1989	212.890	800.00
1990	1,000.361	852.03
1991	719.128	854.50
1992	560.448	800.00
1993	947.661	883.68
1994/95	1,194.532	901.63
Jan. - June, 1996	300.000	1,050.00

TABLE 2. EXPORT OF KOTO LUMBER (KILN DRIED) BY STP

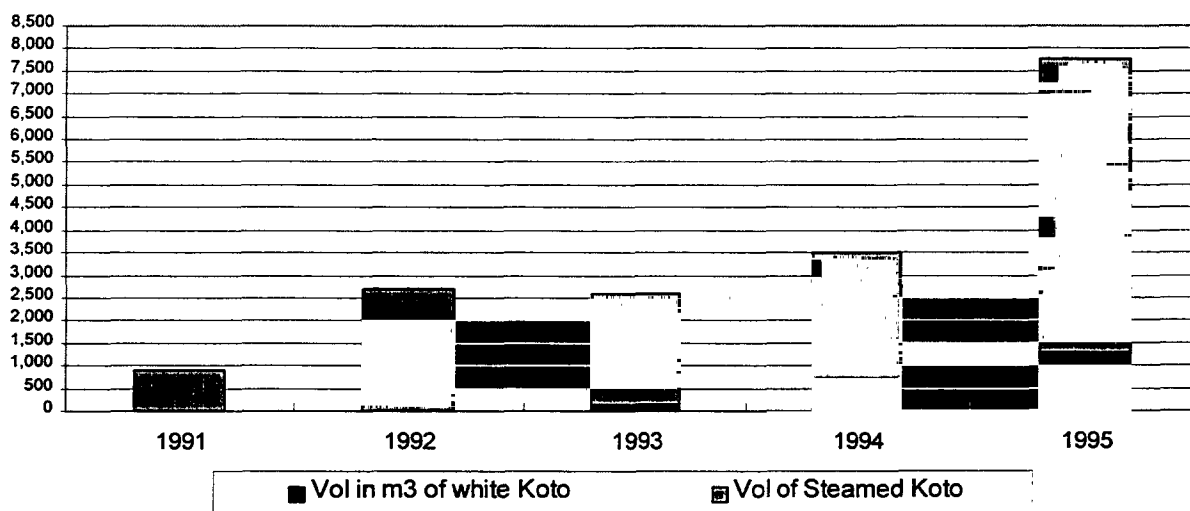
YEAR	VOLUME,IN M3		VOLUME IN M3 VOL.IN M3		PRICE DM/M3	
	WHITE KOTO	STEAMED KOTO	WHITE	STEAMED	WHITE	STEAMED
1991		886.048	886.048		854.5	
1992	-	2,811.151	2,811.151	-	870	
1993	63.251	2,620.697	2,620.697	871.79	880.66	
1994	701.089	2,802.480	3,503.569	827.76	885.82	
1995	1,296.899	6,476.041	7,772.940	845.10	892.22	



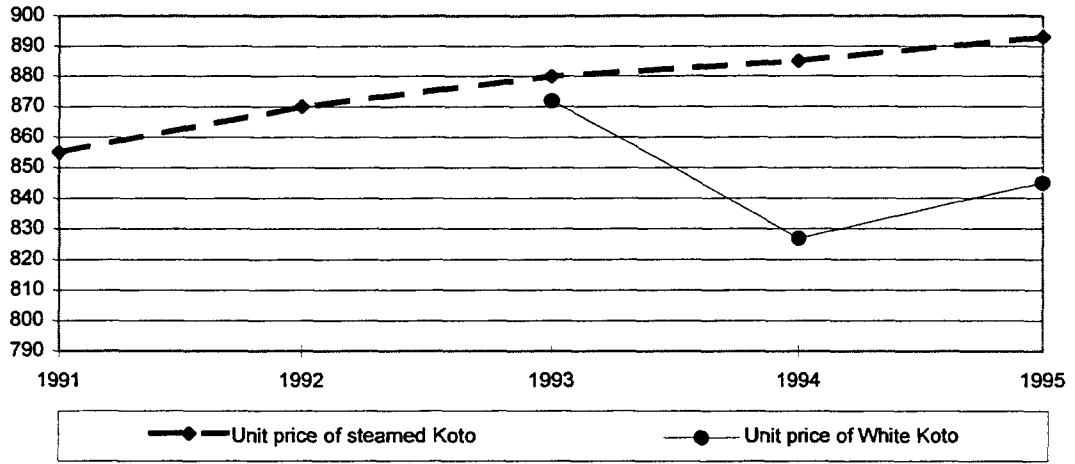
TABLE 3. COMPARATIVE PRICES FOR KILN DRIED LUMBER

SPECIES	UNIT PRICE DM/M3	DATE
Chenchen	450	1993
Wawa	400	1993
Chenchen Dowels	1200	1994
Essa	650	1994
Koto Dowels	1650	1994
White Koto	850	1995
Steamed Quota	890	1995
Quota Dowels	1300	1995
Akasa	1050	1996
Odum/Sapele/Mahogany	775	1996

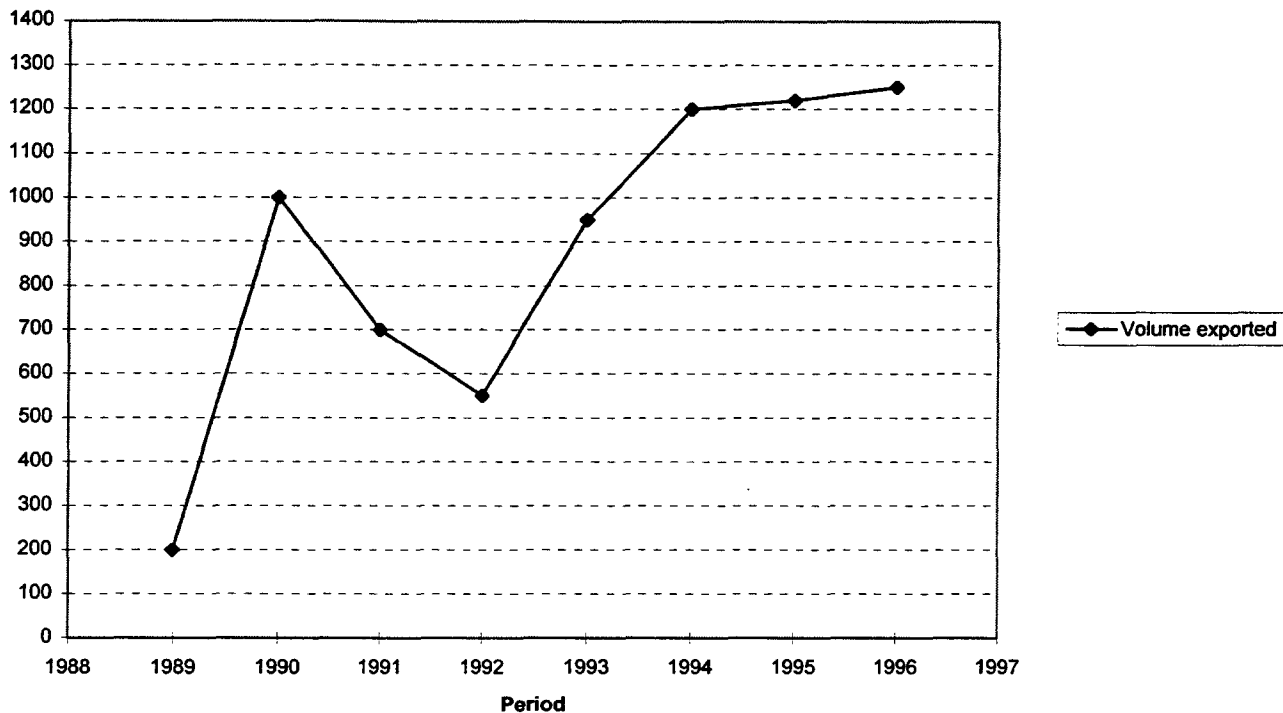
Koto Exports (m3) by STP



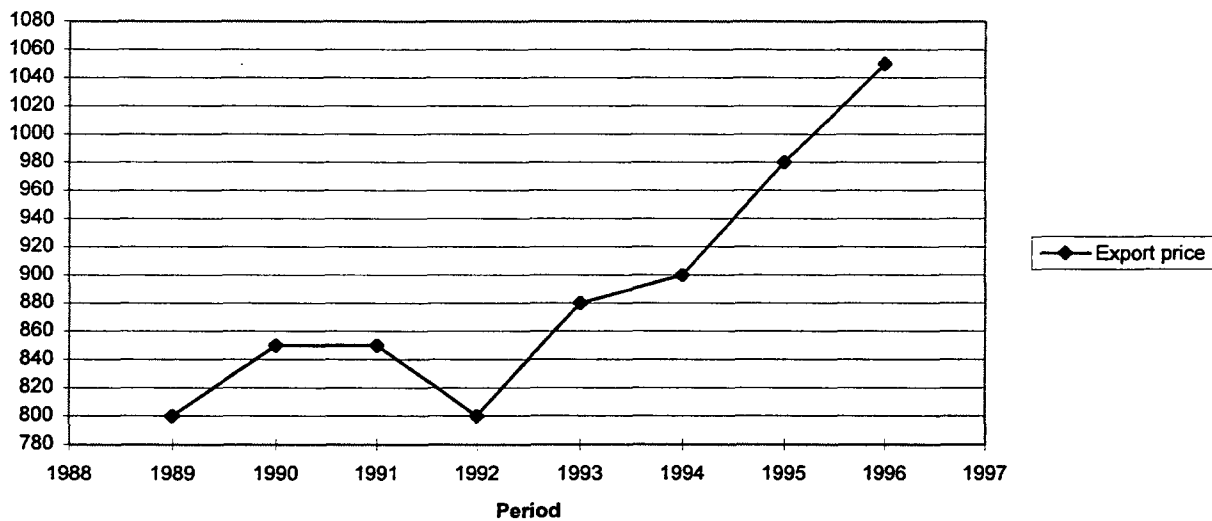
Prices of kiln-dried Koto lumber in DM



Export volumes (m3) of kiln-dried Akasaa lumber



Export price of kiln-dried Akasaa lumber in DM



**Putting Forest Policy Into Practice:**

**Interim Measures to  
Control Illegal Timber Harvesting  
Outside Forest Reserves**

**THE EVOLUTION OF POLICY INTO PRACTICE  
A CASE STUDY OF GHANA'S FOREST POLICY:**

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## CONTENTS

Acknowledgements

List of figures

List of acronyms

1. INTRODUCTION
2. FOREST POLICY AGENDAS IN GHANA
3. CRISIS AND INSANITY IN THE TIMBER SECTOR
4. THE INTERIM MEASURES TO CONTROL ILLEGAL TIMBER HARVESTING
5. SUPPORTING A PARTICIPATORY AGENDA
6. CONCLUSION

References

Endnotes

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## LIST OF FIGURES

- Figure 1. Successive forest policy agendas in Ghana.  
Figure 2. System of forest reserves in southern Ghana  
Figure 3. Timber harvesting levels off-reserve in Ghana 1988-1994  
Figure 4. Press reports on the illegal logging crisis  
Figure 5. Logging patterns in Ghana 1960 - 1995.  
Figure 6. LMC volume by month 19945  
Figure 7. Proportion of cut from unknown sources.  
Figure 8. Forestry Department forest fees collection returns from 1989-1996.

## LIST OF ACRONYMS

AAC	Annual Allowable Cut
DFO	District Forest Office(r)
ERP	Economic Recovery Programme
FD	Forestry Department
FRMP	Forest Resource Management Project
GOG	Government of Ghana
GTA	Ghana Timber Association
MLF	Ministry of Lands and Forestry
RFO	Regional Forest Office(r)
TO	Technical Officer
TUC	Timber Utilization Contract

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## PUTTING FOREST POLICY INTO PRACTICE: INTERIM MEASURES TO CONTROL ILLEGAL TIMBER HARVESTING OUTSIDE FOREST RESERVES

### 1. INTRODUCTION

A new forest policy agenda is emerging across much of Africa. The agenda signifies a commitment by policy makers to sustainable, democratic and efficient forestry. But forestry paradigms are only ever a product of the wider world beyond the forest edge. The changes in forest policy reflect a deeper movement across much of our continent which I am sure you will agree signals the resurgence of Africa and the end of our 'Lost Decade'. In 1994 the Ministry of Lands and Forestry of the Government of Ghana promulgated a new Forest and Wildlife Policy. In this presentation I wish to focus on one aspect of our new Policy, that of local participation in sustainable forest management.

In Ghana the state owns neither the trees nor the land on which they grow, the Government is mandated only to manage the forest resource on behalf of traditional landowning groups<sup>1</sup> and the nation. However, over the years our forest management systems have developed in such a way as to largely exclude the landowning communities from receiving their share of the benefits. Participation is an imperative if our forestry sector is to be fully equitable and efficient. Putting a participatory framework in place is not an easy option. It requires us to reconsider not merely the strategies we have adopted to manage the forest resource but also to consider the very purpose of forestry.

The subject of this case study is the Interim Measures to Control Illegal Timber Harvesting Outside Reserves. New measures to control illegal logging may not seem like an obvious choice for a study of participation. But as you will see the case study will throw up many issues related to participation in forest management.

### 2. FOREST POLICY AGENDAS IN GHANA

Ghana has a long and distinguished tradition of formal<sup>2</sup> forest management. Down the years a succession of forest policies has been articulated each reflecting the agenda of the day.

#### The origins of the colonial forest conservation agenda [1830-1897]<sup>3</sup>

'How different it would have been had there been some system of forest conservancy... when we have a good thing we should treat it kindly and tenderly.' (Moloney, 1887 on the demise of the colonial rubber trade in Gabon due to overcutting)

The high forest zone of southern Ghana is a botanically wealthy, lush forest environment, capable if properly managed of yielding many rich harvests. In the, 1830s cocoa was first introduced into southeast Ghana, by the 1890s it was the most important harvest in the forest zone and the mainstay of colonial economic activities. In 1874, alarmist reports from colonial botanists of the danger of widespread desiccation through the destruction of indigenous forests (especially in Cape Colony and Mauritius) with its implied, threat to the economic basis of colonial rule encouraged the British Colonial Office in London to contemplate some kind of unified forest protection policy in the colonies' (Grove, 1994). This colonial anxiety is the rootsource of formal forest management in many of the-Countries gathered here today In Nairobi.

In the Gold Coast colony a treatise on forestry published in 1887<sup>1</sup> formed the basis of official conservation policy. The author believed that the dry and treeless reaches of the Accra plains were early evidence of the threat of climatic change to the commercial potentials of the forest zone if deforestation went unchecked<sup>4</sup>. The author called for conservation.

'Let landlords...specially conserve, at least, such belts of wooded land as cover mountains or hills and flank rivers and streams.' (Moloney, 1887)

The conservation systems that were introduced across the world at the end of the last century were broadly similar in their scientific approach, but colonial conservation strategy in Ghana was defined by the distinctive local conditions of indirect rule and local autonomy. An attempt by the colonial administration in 1897 to create Crown Lands had been fiercely resisted. Land was (and is) communally held and administered by traditional authorities.<sup>5</sup> The only strategy available to the colonial administration was to persuade the Native Authorities to set aside some of their land under permanent forest. Of necessity, the first attempt at implementing forest policy was participatory.

These distinctive features of our situation; the potential wealth of the forest zone, communal ownership of land, and the political economy of forest use have continued to shape our forest policy agendas for the last one hundred years.

Figure 1. Successive forest policy agendas in Ghana (with special reference to participation).

- 1874 - **The origins of the colonial forest conservation agenda**  
The British Colonial Office begins to develop a universal forest conservation policy to avert a perceived worldwide threat to the economic base of colonial rule from deforestation.
- 1909 - **A period of forest reservation for conservation**  
The Forestry Department is established by the colonial government in 1909 in order to encourage forest reservation by traditional landowners so as to maintain a favorable climate for cocoa. Of necessity the first policy is particularly with the landowning communities as the client of the Forestry Department. The Forest Ordinance is passed in 1927, compulsory reservation becomes possible.
- 1939 - **World War II and the new emphasis on timber harvesting**  
The colonial Forestry Department turns to timber exportation in support of the war effort. The 1948 Forest POLICY emphasizes timber production in addition to the earlier protective values of the forest resource. A salvage felling policy is instituted off-reserve. The Forestry Department is seen increasingly to be working in the interest of the timber contractors off-reserve.
- 1957 - **Independence and forestry in support of nation building**  
State control over forest resources is increased. Rural communities are increasingly alienated from forest resource management.
- 1972 - **The 'Lost Decade' - economic decline**  
Timber production declines. The resources available for forest management are severely limited.
- 1983 - **Rejuvenation - economic recovery and grassroots development**

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<sup>1</sup> Sketch of the Forestry of West African by Alfred Moloney, later Governor of Lagos Colony.





World War II and the new emphasis on timber harvesting 1939-1957

During the war years the colonial Government instructed the professional foresters to concentrate on exporting timber, roundlogs and rubber for the war effort. Timber production rather than environmental protection began to dominate the forestry agenda. In 1948 the first national Forest POLICY was articulated. The POLICY maintained the protective goals of reservation but placed great emphasis on the productive potential of the estate.<sup>8</sup> The POLICY also covered the off-reserve lands, where it envisaged the,<sup>9</sup>

‘controlled, progressive utilization without replacement of the remainder of the forest resources not permanently dedicated to forestry prior to their destruction to farming.’  
(1948 Forest POLICY, Gold Coast)

The ensuing salvage felling policies changed the relationship between the foresters, farmers and loggers. In the eyes of farmers<sup>10</sup> the concessionaire was now the client on whose behalf the foresters were working.

‘The large demands for timber necessitated a good deal of control to ensure adequate and stable supplies. The burden of introducing these regulations fell largely to the FD and added considerably to its work and also to its unpopularity.’ (Logan, 1945)

The salvage felling systems are still in place today and have fuelled a long standing conflict between the farmers and the concessionaires<sup>11</sup>.

‘the cocoa farmer who has developed a more implacable hatred towards the timber contractor than the beasts that thrive on his cocoa ... now makes sure that during the clearing of the forest, every good quality timber tree is destroyed before the contractor menacingly invades his cocoa farm with the caterpillar.’ (Asare, 1970)

By the 1940s the early cocoa growing areas were being abandoned due to swollen shoot, a disease linked to desiccation.

Independence and forestry in support of nation building [1957-1972]

The clamour for greater indigenous control of the wealth of the forest zone fuelled our demands for Independence, which we realized in 1957. A period of bold and confident nation building began. The new Government increasingly regarded the timber and cocoa harvests as national economic resources to be extracted cheaply from rural areas to fund national development drives<sup>12</sup>.

State control over the forest resource was extended in 1962 with the passing of the Concessions Act which vested the rights to all timber trees in the President.<sup>13</sup> Ultimate title to the economic trees remained with the traditional authorities who received a share of the timber royalty. Farmers lost all rights to utilise the timber trees they left standing on their farms.

‘The Lost decade’ - economic decline [1972-1983]

It has been argued that poor cocoa producer prices and the declining rural economy in the face of increasing urban demands, precipitated the problems that beset us during the late

1960s. The economy went into decline in 1970s. Along with many other African nations we slid into a 'lost decade.'<sup>14</sup> By 1980, production of timber and cocoa was less than at Independence in 1957. The resources available to the Government to manage the forest estate were severely stretched.

#### Rejuvenation - economic recovery and grassroots development [1984 -1991]

In order to reverse the decline, the Economic Recovery Programme (ERP) was launched with World Bank/IMF support in 1983. The focus on export-led growth under the ERP led to the rehabilitation of the mining, cocoa and timber sectors. The last decade has been a period of steady renewal In Ghana.

Timber production rose throughout this period. Most of the timber harvesting took place outside reserves. While virtually all the forested land has been converted to agriculture, there is still a considerable timber resource ,outside reserves. The timber trees have been retained by farmers as shade for cocoa and for other environmental, spiritual, medicinal and livelihood values. Logging was primarily taking place on these farms.

In this period the World Bank, and DANIDA provided funds for a major programme of forest management improvement through the Forest Resource Management Project [FRMP].

#### An agenda for today : the 1994 Forest and wildlife POLICY

A new Forest and Wildlife POLICY that would reflect the spirit and realities of the day and guide us into the future was formulated by the government in 1994. The POLICY lays emphasis on sustainability, multiple use values, efficient commercial utilization of forest produce and participation. The overall aim of the POLICY is the:

Conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of benefits to all segment of society.

A key aspect of the POLICY is that it is people centered. There are specific principles on rights of local access<sup>15</sup> to basic natural resources, local democracy and 'participatory management and protection of forest and wildlife resources'<sup>16</sup>. The new POLICY also signifies a major shift in policy outside reserves from 'liquidation' to 'sustainable management of unreserved forests.

However, in 1994 the legacies of previous forest policies were still very much in place; redundant procedures, entrenched relationships, unhelpful legislation. Almost all corners of the forestry sector were due for overhaul. But it was not long before a series of crises in the timber sector put the new policy off-reserve to the very top of our agenda.

### **3. CRISIS AND INSANITY IN THE TIMBER SECTOR**

In 1993 an aggressive new export market for round logs opened up in the Far East. Timber felling on farms soared. Much of the felling was illegal and speculative; undertaken by unauthorized 'Wayside'<sup>2</sup> contractions whenever there was rumour of a ship coming to port. All

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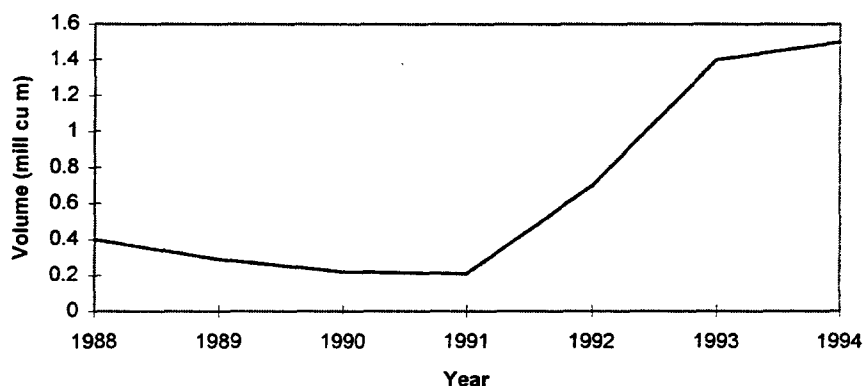
<sup>2</sup> A phenomenon that goes back to at least the mid 1970s.

too often the logs went to waste, huge sums of revenue were being lost and the resource was heading for oblivion with little gain. Relations between the farmer, the forester and the concessionaire were worsening still further:

'In the past farmers made a lot of efforts to tend trees on their farmlands. Then you wake up one day to find the very tree you tended has been logged-and your crops destroyed. Tending of trees has become an abomination.' (Farmer survey, Assin Fosu, 1994)

By 1994 what had been a lingering problem was now a crisis. A huge pile of decomposing logs at the harbour served as a constant reminder to the general public and to the Ministry of Lands and Forestry of the insanity prevailing in the timber sector. The situation had to be brought under control.

**Figure 3. Timber harvesting levels off-reserve in Ghana  
1988-1994**



The Ministry instituted a series of measures to bring exploitation down to sustainable levels: bi-annual property mark renewal after payment of royalties, task forces, levies on export of round logs and eventually a temporary suspension of log exports. These measures were partially successful .

In mid 1994 the Ministry of Lands and Forestry learnt that some farmers were having some success in controlling illegal felling on their farms. I visited the community concerned to find out what they were doing and the kind of backing they needed. The next day we wrote to the Forestry Department explaining the 'need for immediate action by the Ministry to bring levels of exploitation down to a more sustainable level.' and requesting, *inter alia*:

recommendations on appropriate control measures to be initiated by District Forest Officers and communities., (MLF, 23rd June, 1994)



#### 4. THE INTERIM MEASURES TO CONTROL ILLEGAL TIMBER HARVESTING OUTSIDE FOREST RESERVES

##### Developing and launching the Interim Measures

The Forestry Department swiftly set up a Working Group to address the problem. The Working Group was hand-picked and comprised:

- \* Concessionaires and chainsaw operators
- \* Local timber task force members & District Assemblymen
- \* Stool chiefs, Farmers and Community Representatives
- \* Ministry and Forestry Department officers

The Working Group identified the key issues and drafted proposals for new felling procedures, corresponding modifications to legislation and public education campaigns. The proposals became known as the 1 Interim Measures. The key issues reported by the Group were:

1. No single institution has overall responsibility for overseeing exploitation of timber trees outside reserves.
2. Harvesting rights and benefits are skewed in favour of the industry. Farmers have no incentive to protect timber trees.
3. Monitoring and regulation of off-reserve harvesting is pitiful.
4. Sanctions against illegal operators are ineffective.
5. Farmers and the public at -large are not well informed about the benefits they should receive and felling rules.
6. Contracts are issued without regard for the state of the resource or whether the contractor has legal access to it.

The new Interim felling procedures are at the heart of the 'Interim Measures, they aim -to regularize timber production from stump to port with the involvement of farmers, their key features<sup>3</sup>" are:'

- \* Before felling begins, the desired trees will be inspected by the Forestry Department, logger, community representatives and farmer. Farmers may raise ANY objections they have over a tree being felled on their farms, even for concession areas. Any tree felled on a farm against the wishes of the farmer is therefore felled illegally.
- \* A Forest Officer will issue a felling permit before felling commences.
- \* Post felling, farmers may bring any complaints about the felling operation to the attention of the Forest Officers. A Conveyance Certificate authorizing the movement of logs will NOT be issued if there are any outstanding disputes over compensation for crop damages.

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<sup>3</sup> Interim denotes that the Measures were originally designed to bring logging under control in the interim while long term management systems were designed. The Measures have proved to useful that they will be made permanent and their provisions legislated for under the new consolidated Forest Act.

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In August 1995, the Minister for Lands and Forestry launched the Interim Measures to an assembly of timberman and professional foresters. At the launching the Minister requested all responsible citizens to share with the Forestry Department the responsibility for monitoring felling.

'The new POLICY is to sustain and develop the resource through the energies of communities, farmers, loggers and foresters working together. The first step is to stop the illegal plundering which is spoiling our future. So timbermen, chainsaw operators, millers and those officials who are colluding with illegal operators decide now, either you are with us and you are going to help look after the resource or not. If not, be warned, the farmers, communities, and foresters under these new 'Measures' will stop you.' (GoG, 1995)

The Forestry Department instituted the 'Interim Measures in the districts through local fora for timbermen, chiefs and assemblymen. The 'Interim Measures' were put in place very quickly and then - all hell broke loose.

Within just a few weeks the plentiful flow of cheap logs to the main inland processing centres became a trickle. Pressure was exerted on the Ministry by the big mills to modify or withdraw the 'Interim Measures. The millers claimed that production was being crippled because of the cumbersome nature of the new felling procedures. This was partly true. The measurements though time-consuming also created a rent-seeking behavior in the Technical Officers who were few on the ground and also immobile. The logistical aspects were not well prepared.

However, the Ministry did not budge as it had become clear that much of the illegal harvest had been destined not only for the ports but for the big mills in the urban centers. Much of the hue and cry was coming from millers who had relied on this flow of cheap logs. The Ministry pressurized the Forestry Department to sort out the bottlenecks. The 'Interim Measures' has been in place for one year, its impact has been remarkable.

#### Impact of the 'Interim Measures' on illegal felling<sup>4</sup>

Illegal logging has been massively reduced. The Wayside contractors have been almost wiped out, as the Planning officer noted, the opportunity to operate illegally is not there. The Forestry Department with assistance from the police checkpoints can now monitor all log, lumber, firewood and charcoal movements from the stump to the port. As two Technical Officers (TOs) noted:

'If you see logs without a Conveyance Certificate you know immediately that they are illegal. We can monitor from the forest to the Mill. It makes us smart.

The farmers are also reporting illegal operations. The hoped-for switch to monitoring of felling by farmers on farms seems to be happening:

'the local people are there on the ground, we only go there when called, when the crime is committed. The concessions outside reserves are all on farms and they have the power now.'

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<sup>4</sup> The information in this section is collated from a recent FD review of the Measures.

Impact of the Interim Measures on farmers and landowning communities

Soon after the launch the Ghana Timber Association (GTA) issued a statement supporting the 'Interim Measures' but deploring the decision to involve chiefs or representatives of timber producing communities as unacceptable.'

'The GTA is not happy with the PRACTICE whereby cultivators frequently appealed against the felling of certain trees for environmental or farming reasons. (Ghanaian Times, 8-8-95)

The timbermen felt the Interim Measures were a betrayal by the Forestry Department and put pressure on the Department to drop the farmers from the pre-felling inspection. However, a recent Forestry Department survey of twenty concessionaires found that most no longer objected to the pre-felling inspection. Twelve respondents said that compensation payments had increased and one stated that the 'interim Measures has stopped litigations between farmers and contractors'<sup>17</sup>.

Relations between farmers and foresters have improved in many localities. As Forest Officers explained:

'If they know the tree helps the farm to yield well, they will not allow the concessionaire to fell. They feel a belongingness to Forestry, they are part and parcel of us, they hold power.'

'If the farmer complains about destruction of farms and neglecting to pay compensation then we impound the truck. We have opened a Farmers Complaints Book for crops destroyed and we stop the Conveyance Certificate until the problem is solved.

A recent survey in nine communities where there was previously a lot of illegal felling tells a similar story. The community members hailed the new Measures and reported that the Measures' two objectives have been attained in their area; slowing down the logging and wiping out the Wayside contractors. The people of Assin Darmang reported that,

'Hitherto, logging - activities were rampant and teachers, nurses, businessmen -and chainsaw operators could do whatever they liked even in the night without permit as well as not paying compensation.'

The farmers have all been briefed about the new Measures by the chief of Darmang at a farmer's forum and we are now all aware of our rights to compensation. All the Assin Nyankumasi illegal operators have stopped the timber business and are now farmers and traders and miners.

In some places the Chiefs and District Assemblymen reported a significant increase in the revenue they are receiving from timber royalties<sup>5</sup>

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<sup>5</sup> Two food sellers and four second hand clothes traders in Assin Darmang were not happy with the departure of the illegal operators as they were patronising their trade, their departure has been a great blow to them.

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Impact of the 'Interim Measures on the timber industry

All the timber contractors who took part in the Forestry Department's recent questionnaire survey on the impact of the 1 Interim Measures 1 reported that log production had fallen by 30-40 % depending on the area. While log production has undoubtedly dropped, the 1 Interim Measures' has affected people in diverse ways. The following is a crude synopsis of the impact of the Interim Measures on different sections of the timber industry.

While they still complain of logistical problems and expansive delays in getting logs to -the mills, the loggers who hold timber concessions generally support the Interim Measures. Two respondents to the Forestry Department's survey explained that 'the Measures has brought job security to the genuine producers' and 'deleted non timbermen <sup>18</sup> from the trade. The legal loggers can also sell their logs to the mills at higher prices. As one DFO reported

The timbermen that initially opposed the Interim Measures on the grounds that they would slow down logging see they have become a blessing rather than a bane. They have observed that the measures have crippled the wood thieves who encroached upon their concessions.'

One concession holder went further:

The 'Interim Measures will now pave the way for those in it with good equipment to be protected for a good work done and to be rewarded. Those affected by the 'Measures had all the chances to get the capital and establish genuine business elsewhere but they lead foolish lives. It serves them right.

The concessionaires who responded to the survey were all clear as to the modifications needed to make the 'Measures less cumbersome. The onus is on the Forestry Department to sort out the problems as soon as possible.<sup>19</sup>

However it appears to be a different story for millers operating without a secure resource base or on tight margins. Millers who set up processing lines assuming they could always purchase cheap logs<sup>20</sup> are finding it difficult to bear the increased costs of production resulting from higher log prices and the delays in transporting their own logs to mills. As one logger/miller who is experiencing difficulties stated

'The Technical Officers complain of broken motor bikes and staff shortages. Our staff are working longer hours with overtime claims so as to meet FD staff. Where there are 3 or 4 companies in one area the TO finds it difficult to meet the pressures, and this paves the way for survival of the fittest. Previously, company vehicles could return from the bush the following day but now some take four days.

These millers claim that the 'Interim Measures has increased bureaucracy, slowed down legal operators and are generally too pro-environment and supportive of farmers.

Impact of the 'Interim Measures' on the resource base

Based on a recent national inventory of the timber resource outside forest reserves we have pegged the Annual Allowable Cut (AAC) from outside reserves at 500,000 m<sup>3</sup>. The AAC for



the forest reserves has also been set at 500,000m<sup>3</sup> making a combined total for Ghana of one million m<sup>3</sup> per annum. The graph below demonstrates that this is attainable.

**Figure 5. Logging patterns in Ghana 1960 - 1995.**

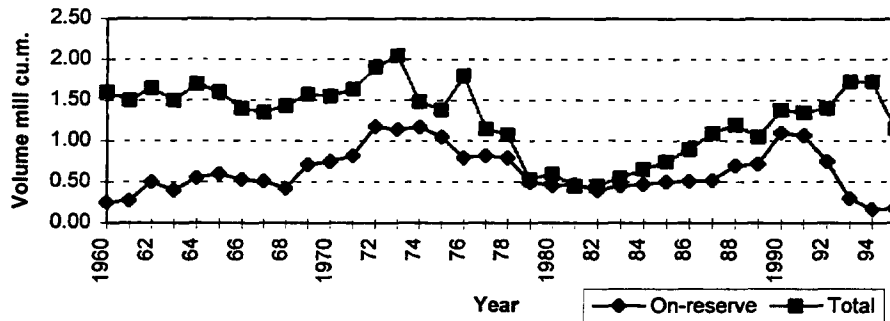
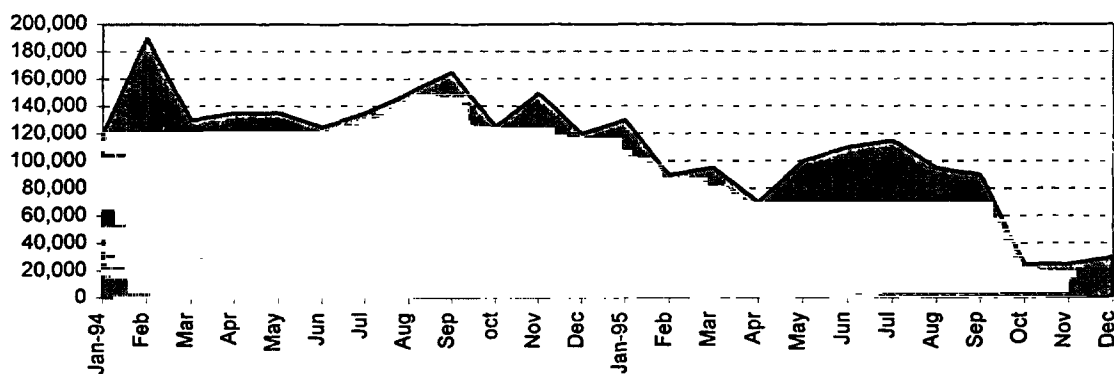


Figure 5 shows logging patterns in Ghana in the last thirty-five years. The fall in log production during the years of economic decline is clearly depicted followed by the steady rise in production after the launch of the ERP in 1983. The soaring rate of felling outside reserves in 1993 and 1994 can be seen<sup>21</sup>, most importantly the graph shows that by the close of 1995 log production on-reserve had stabilized at a level below the AAC, while off-reserve log production was falling rapidly.

Overall 1995 saw a reduction in total extraction of 42% due to a combination of the 'Interim Measures 1', the temporary suspension on export of roundlogs and depressed European markets. During the last quarter of 1995 when the 'Interim Measures' were introduced there was a drop in production of 78% on 1994. This is depicted in Figure 6.

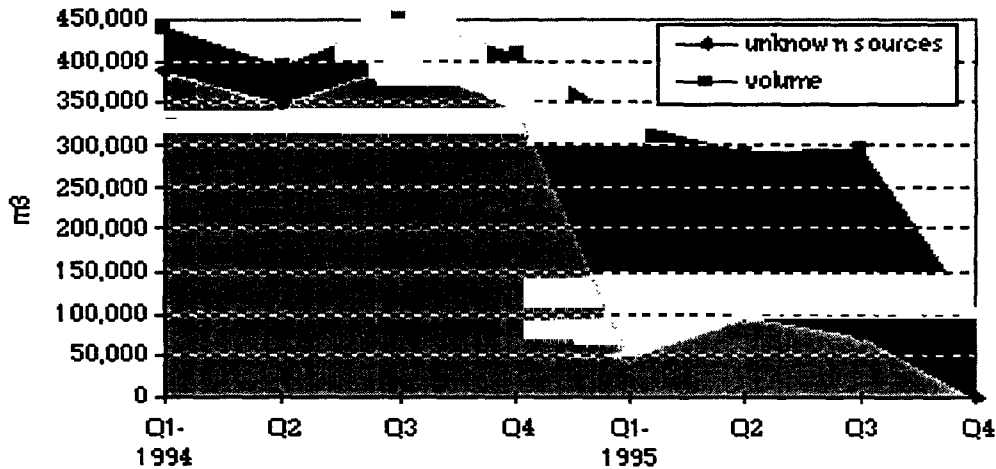
**Figure 6. Log Measurement Certificate volume by month 1994-95**



During the first quarter of 1995, logs registered as from "unknown sources" reduced to 15% of 1994 levels. In the last quarter of 1995 this figure reduced to 7%. This phenomenon is depicted in figure 7.

Figure 7

## Proportion of cut from "unknown sources"



The pre-felling inspection has helped reduced the felling of undersize trees. There are also reports of less waste because the permit holder is billed for everything. The Planning Officer summarized the situation.

The millers can now see the true situation with the resource - the wayside contractors distorted it. Now they have to plan their intake in relation to the forest resource base ... and what is available is going to be controlled by the AAC.

#### Impact of the Interim Measures on the Forestry Department

One unintended effect of the 'Interim Measures' has been on the morale of the Forestry Department. Although the impact has been double-edged, there is undoubtedly a sense of pride in the 'Interim Measures' that has led to renewed self confidence and a sense of duty. As one Regional Officer explained,

When the new Minister first came it was shameful to be a forester. Public opinion as regards us was bad and the Minister felt the same thing - that we were failing the nation. There were a lot of things going on and then the corrective measures came in from the Ministry and some people in Forestry were punished. Then through the 'Interim Measures' we had a chance to show what we can do. Now people in Forestry are riding high. This is the only policy since 1948 that has worked.

The key point is that Forest Officers now feel they can control harvesting and are no longer blamed for the over-logging. The general public are that the Forestry Department and the Ministry are on top of the problem.

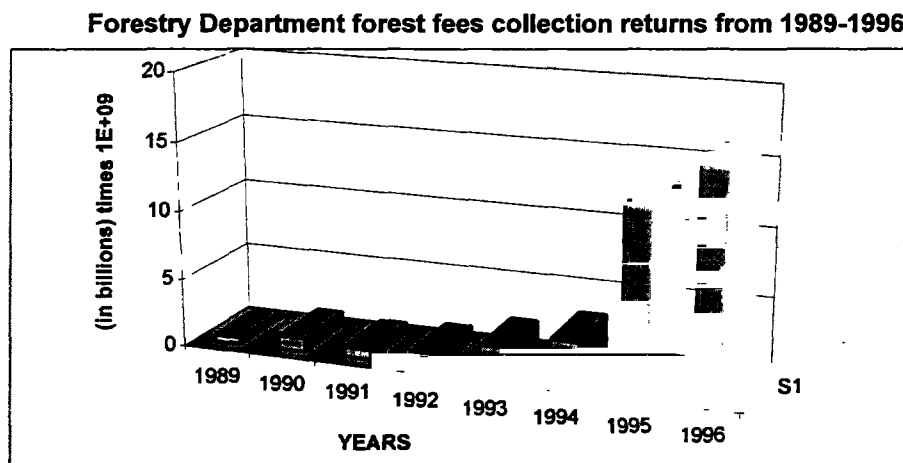
The other side of the story also concerns morale. The logistical aspects of the new felling procedures are not well thought out. In the recently completed Forestry Department survey every respondent remarked on the increased workload, the following comments are typical,

I don't even get chance to go to church on Sunday..... no fuel . allowance, no transport allowance, no night allowance and timber producers make us work at weekends without allowances. If the FD does not want the personnel to be corrupt these items should meet immediate attention and ' action please. Please sort out our mobility problems and boost our morale so we can work efficiently.

The general view in the Forestry Department' is similar to that of the concession holders. The procedures themselves are vital, but the logistical issues need to be resolved. However, the larger issue of better allowances can only be tackled during the forthcoming institutional reform of the Forestry Department.

The most phenomenal impact of the 'Interim Measures has been on revenue collection. Although log production dropped massively in 1995, revenue from timber harvesting in 1995 was quadruple the amount collected in 1994 ! The total revenue collected by the Forestry Department from timber royalties and fees in 1994 (both inside and outside reserves) was just over 3,262 million cedis, in 1995 the total was just over 13,228 million cedis. 23 This improvement bodes extremely well for the future financing of a more autonomous Forest Service and more equitable returns to the resource owners. Figure 8 shows the trend in Forestry Department revenue collection returns from 1989 to 1996.

Figure 8:



## 5. SUPPORTING A PARTICIPATORY AGENDA

### Future initiatives in support of participation

The 1994 Forest POLICY asserted our commitment to sustainable, efficient and participatory forestry outside reserves. Through the Interim Measures and complimentary strategies like the

temporary suspension on log exports, discipline and some degree of equity have now returned to the sector.

For the future we wish to see a situation in which farmers and landholders<sup>22</sup> will be encouraged to grow and tend timber trees. Some advisory and possibly financial support will be provided by the Government and the NGOS. Regulatory functions will remain the overall responsibility of the Government. The timber contractor will be expected to realize the economic value of the resource for the owners and the nation and to ensure a supply of timber products to local and export market. The timberman will be required to operate in a socially and environmentally responsible manner. Market forces will be used to ensure more efficient utilization of the resource base.

In trying to establish this new framework we will have to work to finalize a number of strategies, some of which are outlined here.

**(a) Benefits to farmers and landowners**

Due to the existing tenurial and revenue-sharing arrangements few tangible benefits from timber harvesting reach the communities where logging takes place. It is imperative that the flow of benefits to the farming communities that tend timber trees is improved. A number of mechanisms are being worked, on including:

- \* Payments by timber contractors to farmers at the time of felling for tree tending
- \* Social responsibility agreements between timber utilization contract holders and landowning communities
- \* Improved revenue flows to stool communities from timber royalties
- \* Ownership of planted trees to rest wholly with the planter
- \* Support to local resource development initiatives through a National Reforestation Fund and Dedicated Forests
- \* Local consultation during the identification of timber utilization contract areas
- \* A new technical approach to supporting tree management in farming systems based on an understanding of the farmer's perspectives.<sup>23</sup>

**(b) An appropriate timber industry**

We are pursuing a number of strategies to transform our timber sector into one which is able to use the AAC as efficiently as possible. Strategies include:

- \* A determination to enforce the overall AAC of 1 million m<sup>3</sup>
- \* Downswing of the timber industry in line with the AAC
- \* Introduction of a Timber Utilization Contract system for allocating timber rights to efficient, responsible operators.
- \* Transformation of the timber industry from a high volume, low value industry into a low volume, high value industry
- \* Encouragement of investment in commercial forestry development

**(c) A reformed Forest Service**

A programme of Institutional Reform is underway. Fundamental financial, organizational and systems reforms will ensure the new Forest Service can operate efficiently outside the Civil Service.

**(d) A new legislative framework**

The old salvage felling framework is being dismantled. The Protected Timber Lands Act and Concessions Act are being replaced by Dedicated Forests and Timber Utilization Contracts. A new Consolidated Forest Act will supplant all previous legislation.

Supporting a Participatory agenda - lessons from the Interim Measures

Perhaps it might be necessary to draw some lessons for the Nairobi Forum from the theory and practice of the 'Interim Measures. Some thoughts are offered on participation, sustainability and policy implementation.

**(a) Sustainable resource utilization**

While there was insanity in the sector, sustainability and participation were out of reach. Discipline had to come first. The 'Interim Measures has helped to create a framework in which legitimate stakeholders can fulfil their potential. As one of the TOs noted,

' All have to sacrifice for good benefit of our nations wood resources. Our planners should continue with the fight and we the implementors in the field are solidly behind them. (FD survey, 1996)

The Ministry can now give the initiative back to the communities, foresters and industrialists who are committed to sustainability. The Government's regulatory role in the sector has often been like that of a referee trying to ensure the smooth running of a football match; we clarify the rules, we encourage those who respect them and we send off those who do not. The framework for regulating the behavior of the Government is built on transparency, accountability, personal integrity and participatory democracy.

**(b) Peoples participation**

The 'Interim Measures has clarified our 1994 POLICY commitment to participation. We see participation as,

Any collaboration between the Forestry Department and local people which improves the flow of benefits to local people and improves forest resource management.

Collaboration is a working partnership in support of more efficient and equitable forestry. The 'Interim Measures is a good example of the kind of collaboration we want; the farmers are now able to improve forestry on farms by controlling illegal felling and are able to receive a fairer share of the benefits too. We are piloting similar collaborative frameworks in all aspects of our forest management systems on and off reserve, for instance; NTFP management, rehabilitation and savanna woodland management.

Establishing collaborative frameworks requires a shift in the political economy of forest use that is long overdue. The 1994 POLICY requires that forestry should 'benefit all segments of society.' Timber extraction for nation building and private sector growth cannot be allowed free rein at the expense of forestry for rural development. We do not see the national, industrial and community interests as inherently conflicting as long as the Government can correct the imbalance created by previous forest policies.

Our experience with the 'Interim Measures has also shown that 'participation' is not just concerned with local communities. We need the participation of the Forestry Department and the timber industry too.

**(c) POLICY implementation**

The 'Interim Measures' has shown the utility of a link between innovative field work and action on policy reform. The experience has also given us a new tool for policy implementation, the working group. As a senior forester noted,

I don't know of anything where members of the FD and outsiders had been invited to give their ideas, to -contribute to a new procedure. It had never - happened before. just instructions from Accra on what should be done. Sometimes they don't understand the system so things get messed up. It was a very useful process for those of us involved.

A key factor in their success was that for once the implementors were committed to the new procedures, as one Regional Forest Officer noted,

' This time we were serious because we the Forestry Department did it and the politicians backed it. With some of the previous directives from the Ministry e.g. fell 1 tree, plant 2, nobody would try to work out the modalities of such a thing. POLICY evolves but the details should be worked out by the implementors. We just need a bit more independence from the Civil Service and the results will come. Before the political will was hot there, but this time the MLF gave us a chance.'

The Ministry will be making more use of working groups. There are situations when a directive is not practicable and times when turning to consultants who cannot grasp the complexities of our systems or the realities of our field stations may end in disappointment.

**6. CONCLUSION**

Ghana is a resurgent African nation with a market oriented, people-centred, democratic agenda. This is reflected in our new Forest POLICY. To implement all our policy reforms we require some financial and specialist technical assistance from the donor community. We have recently completed a Forestry Sector Development Master Plan to ensure all donor-supported activities in the sector are coordinated and supportive of our new Forest and Wildlife POLICY.

However the 'Interim Measures is home grown and it has shown us that to put our new POLICY - 'into Practice we should look primarily to ourselves for new ideas and practical innovations.

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<sup>1</sup> Stools, skins and clans.

<sup>2</sup> Informal forestry undertaken by traditional authorities and farmers has an even longer history as seen in our systems of sacred groves and rotational bush fallow.

<sup>3</sup> This section draws from a draft of an excellent paper by Richard Grove of Churchill College, Cambridge. "Chiefs, boundaries and sacred groves; early nationalism and the defeat of colonial conservationism in the Gold Cost and Nigeria, 1870-1916."

<sup>4</sup> Grove argues that the author, Moloney also knew that it was the commoditization of agricultural output and the penetration of the European market demand that was largely responsible for a very recent increase in rates of deforestation.

<sup>5</sup> In 1987 the colonial administration tried to pass a Land Bill which would have given it the power to create public land. This was vehemently opposed by the African elite and the landowning chiefs. The controversial sections were never passed. Subsequent attempts to pass a Forest Ordinance also failed as the Chiefs and local governing councils were suspicious of any attempt by the colonial administration to control land use. The opposition to land and forestry legislation was spearheaded by a group of intellectuals known as Aborigines Rights Protection Society which had considerable support in the UK.

<sup>6</sup> "There shall be paid to the owner or owners in such proportion as the Governor shall decide the whole gross yearly revenue of the Forest Reserve accruing under this Ordinance, subject to the deduction of such sum not exceeding one third of such gross revenue as may at the discretion of the Conservator of Forests be reserved for expenditure on the improvement of the forest in the interest of the owner or

owners. If such deductions are made the Chief Conservator of Forests shall render an account of its expenditure to the owner or owners concerned"[CAP 157 18 (2)]

<sup>7</sup> There are distinct rights to land and trees. The stool's ownership of timber trees was a construct of the colonial administration who were trying to consolidate power in the chiefs. Traditionally, timber trees on farms would have been owned by the farmer to whom the land had been allocated.

<sup>8</sup> "Clause 1: The creation of permanent forest resources by the reservation, either by the Central Government or by local Authorities of suitably situated areas of forest or land desirable and suitable for afforestation, of a total extent sufficient to supply the benefits necessary for the welfare of the people, indirect benefits in the form of the preservation of water supplies, maintenance of climatic conditions favourable to the growth of the principal agricultural crops and minimization of erosion, and direct benefits in the form of a sustained adequate supply of forest produce to meet actual and potential local requirements and the demands of the export trade."

<sup>9</sup> "The progressive utilization without replacement of the remainder of the forest resources not permanently dedicated to forestry, controlled to make the resource last as long as compatible with market requirements, and particularly until the exploitation of the Forest Reserves can be accompanied by successful regeneration, whilst at the same time utilising its supplies to the utmost prior to their destruction by farming".

<sup>10</sup> Cocoa was never established as a plantation crop but rather produced by farmers.

<sup>11</sup> State control over farming intensified with the Protected Timber Lands Act in 1959 which authorized the Forestry Department to regulate the expansion of farms in areas of well stocked forest outside reserves.

<sup>12</sup> This was also part of a general move to shift power away from the chiefs and towards the Government reversing the colonial policy of Indirect Rule.

<sup>13</sup> This was meant to be partly in local peoples favour due to the way chiefs were giving them out.

<sup>14</sup> In 1964 world cocoa prices fell and the producer price was decreased. The Government used the difference to meet interest payments on international loans and government obligations and large industrial developments like VALCO. Cocoa production fell and decline set in.

<sup>15</sup> "Access. The rights of people to have access to natural resources for maintaining a basic standard of living and their committant responsibility to ensure the sustainable use of such resources.

"Democracy. The need to develop a decentralized participatory democracy by involving local people in matters concerned with their welfare."

"Participation. In view of the importance of local people in pursuing these principles, the Government proposes to place particular emphasis on the concept of participatory management and protection of forest and wildlife resources and will seek to develop appropriate strategies, modalities and programmes in consultation with relevant agencies, rural communities and individuals."

<sup>16</sup> The Forestry Department has set up a Collaborative Forest Management Unit at the Planning Branch to develop the potential for local participation in forest management in accordance with the Policy.

<sup>17</sup> The contractor bears the cost of transporting the pre-inspection team to the site and the chop money. Many respondents asked that the consultation be restricted to the farmer due to the cost of finding and transporting the Assemblyman, Unit Committee and chief to the site. There are also reports of DAM and chiefs pushing the compensation price up so that they can take a cut.



A senior forester also contended that within the community power over felling has gone from the chiefs to the people. He noted that three special permits issued in Accra have been blocked by farmers who knew about the IM and felt they were not consulted in the issuance of the permit; they want to re-negotiate the time of felling to better suit them 'even though the chief had agreed but he does not live in the village, the power has gone from the chiefs to the people'.

<sup>18</sup> The concessionaire respondents showed a good level of understanding of the objectives of the Interim Measures. The responses included - 'to curb illegal felling and protect resource for legal operators, to bring harmony between farmers and loggers, to stop curring of undersize logs, protect environment and slow down rate of felling and to ensure royalties are paid.'

<sup>19</sup> The suggestions included the following: more FD staff, only involve farmer in pre-felling inspection, others force farmer to take higher compensation so they can get a cut, also delays the work, Tos should be mobile, increase time period for which permit is valued, allow DFOs to cover their transport costs by pre-felling inspection and CC fees.

<sup>20</sup> In general banks do not ask for information on the available resource base before extending loans to people to set up mills. The information was readily available at Forestry Department.

<sup>21</sup> In this same period log production on-reserve was declining due to the re-introduction of strict timber harvesting systems on-reserve.

<sup>22</sup> Both traditional landholding groups and investors from the private sector who haveacquired access to land for forestry development.

<sup>23</sup> This development will be based on work recently undertaken for us by Dr. Kojo Amanor.



République de Guinée

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**L'AMENAGEMENT DES RESERVES FORESTIERES ET LA  
GESTION DES TERRES AGRICOLES DES ZONES  
PERIPHERIQUES:**

**Cas de Diécké - Ziama.**

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**COORDINATED MANAGEMENT OF FOREST  
RESERVES  
AND PERIPHERAL AGRICULTURAL LANDS**

\*\*\*\*\*

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## **L'AMENAGEMENT DES RESERVES FORESTIERES ET LA GESTION DES TERRES AGRICOLES DES ZONES PERIPHERIQUES: Cas de Diécké - Ziama.**

### **I INTRODUCTION**

#### **1.1 La politique forestière**

L'Administration forestière, mise en place en Guinée à partir de 1931, s'est attelée dès son origine à la constitution d'un domaine forestier permanent de l'Etat. Trois grandes étapes ce sont succédées:

\* De 1930 à 1940, la délimitation des "forêts du rail" tout au long du chemin de fer Conakry - Niger destinées à l'approvisionnement en bois des locomotives à vapeur.

\* De 1940 à 1950 les classements ont eu toujours pour but principal: le maintien d'une capacité nationale de production de bois d'oeuvre, la lutte contre l'érosion des sols et le maintien d'un microclimat forestier favorable au développement de cultures pérennes telles que café, cacao, cola, thé, quinquina, palmier.... L'essentiel des forêts classées de la Guinée l'ont été à cette époque. Les forêts de Ziama et de Diécké entrent dans ce groupe.

Aucune action d'expropriation n'a eu lieu lors de ces classements. En application du décret de 1935, seuls les terrains vacants et sans maître, c'est à dire les peuplements naturels non défrichés et les jachères vieilles de plus de 10 ans peuvent être classés. Les classements ont été stoppés par le décret foncier de 1955, qui imposât au service forestier de faire la preuve de la vacance des terrains avant leur classement. Dans les faits, s'il est quelquefois difficile de prouver l'existence de droits fonciers sur un terrain, il est pratiquement impossible de démontrer leur absence.

\* A partir de 1986 à l'issue de la prise de conscience mondiale des problèmes de l'environnement et de la destruction massive des forêts tropicales, la communauté internationale des bailleurs de fonds a confié à la FAO la coordination de leurs interventions en zone intertropicale. Le Plan d'Action Forestier Tropical (PAFT) est né.

Le changement de régime politique en Guinée a coïncidé avec cette nouvelle politique et l'Administration forestière a largement profité de l'engouement des Bailleurs de fonds. Elle a élaboré un Plan d'Action Forestier National (PAFN). Ce PAFN approuvé en 1990 par Décret, est devenu la Politique Forestière Nationale basée sur deux options fondamentales:

- \* le libéralisme économique
- \* la décentralisation administrative

Le but poursuivi est d'agir contre tous les facteurs de dégradation de la forêt. Cette politique est organisée autour de 6 grands principes dont l'association de toute la population du pays à la gestion des ressources naturelles renouvelables. La politique forestière est renforcée par:

- ⊗ un code forestier et ses textes d'application
- ⊗ un code de protection de la faune sauvage et réglementation de la chasse
- ⊗ un code foncier domaniale
- ⊗ un code de l'environnement

## 1.2 Les ressources forestières de la Guinée:

La Guinée n'est à proprement parler pas un pays forestier. Les données actuelles des formations boisées peuvent être les suivantes:

Formations boisées	superficies en Ha	%
Mangroves	250.000	1,02%
Forêts denses humides	700.000	2,85%
Forêts denses sèches et Forêts claires	1. 600.000	6,51%
Savanes boisées	10.636.000	43,25%
Total	13.186.000	53,60%

La Guinée compte 791 forêts classées pour une superficie totale de 1.391.496,7 Ha soient 4,2% de la superficie totale du pays et 7,83% de la surface boisée. (carte n° 1 en annexes)

## II LE PROJET DE GESTION DES RESSOURCES FORESTIERES:

Parallèlement à l'établissement de la Politique Forestière, la Guinée a identifié un certain nombre d'actions prioritaires qu'elle a présenté aux bailleurs de fonds. Le Projet de Gestion des Ressources forestières et Halieutiques identifié avec le Centre d'Investissement de la FAO fait partie de ces priorités. Ce projet qui incluait l'aménagement des deux forêts classées de Ziama et de Diécké vestiges de la forêt dense ombrophyle Guinéo-Libérienne, avec d'importants travaux de plantation et un renforcement institutionnel par la remise à niveau du personnel; a été évalué conjointement par la Banque Mondiale et la KfW de la République Fédérale d'Allemagne.

2.1 **Composantes:** Ce projet a été subdivisé en trois volets à savoir:

- \* Gestion des ressources forestières,
- \* Opération pilote du plan foncier rural,
- \* Gestion des ressources halieutiques.

Le premier volet a fait l'objet d'un cofinancement IDA- KfW; le deuxième est resté lié au premier pour des raisons de complémentarité, mais avec le seul financement de la Banque Mondiale. Ces deux volets réunis sous la dénomination de Projet de Gestion des Ressources Forestières (PROGERFOR) comportaient quatre sous-composantes:

- Appui institutionnel à l'Administration centrale et à 5 services de terrain dans la zone du projet,
- Aménagement des forêts denses humides de Ziama et Diécké,
- Aménagement des forêts sèches du massif du Tinkisso,
- La remise à niveau de 80 ingénieurs de l'Administration forestière,
- L'opération pilote du plan foncier rural (OPPFR).

2.2 **Coûts :** Le coût total du projet était de: 10,72 millions de USD dont:

Banque Mondiale:	4,52 millions de USD
KfW:	5,50 millions de USD
Guinée:	1,70 millions de USD

### **III L'AMENAGEMENT DES RESERVES FORESTIERES DE DIECKE ET ZIAMA: (carte n°2)**

#### **3.1 La Problématique de l'aménagement:**

L'aménagement de ces réserves se heurte à trois grandes contraintes dont:

##### **3.1.1 Les cultures agricoles en forêt classée parmi lesquelles on dénombre:**

\* les culture pérennes provoquant un appauvrissement marqué de la biodiversité par l'élimination complète de la strate inférieure, et de la régénération et par l'ouverture du toit. Elles sont pratiquées et par les allochtones et par les autochtones.

\* les cultures vivrières: elles provoquent une destruction complète de la forêt.

\* les cultures de bas-fonds: elles amènent une perturbation de cet écosystème et sont à la base de la pénétration en profondeur de la forêt.

**3.1.2 La chasse:** quand elle est commerciale (c'est souvent le cas), elle entraîne une destruction indiscriminée des espèces. Elle est moins néfaste quand elle est de subsistance mais n'épargne pas non plus les espèces protégées.

##### **3.1.3 Les enclaves:** elles sont de trois ordres:

\* les enclaves légales localisées: ce sont celles reconnues par l'arrêté de classement de la forêt. Leurs limites sont largement dépassées aujourd'hui à cause de la croissance de la population, des techniques agricoles et du système d'occupation du sol.

\* les enclaves légales non localisées: 377 hectares de quinquina sont aujourd'hui abandonnées sur le Ziama. Les ouvriers y ont maintenu leurs campements et des nouveaux arrivants s'y sont installés et tous font de l'agriculture.

\* les villages presque enclavés: Ce sont des villages situés à la lisière du domaine classé et qui à cause du laxisme de l'administration, ont largement pénétré la forêt.

#### **3.2 Les Objectifs:**

- ⇨ Conservation de la biodiversité floristique et faunistique,
- ⇨ Régulation climatique et hydrologique de la région
- ⇨ Satisfaction des besoins des riverains
- ⇨ Production de bois à long terme

#### **3.3 Le zonage de la forêt: (cartes n° 3 et 4)**

Pour atteindre ces objectifs dans une démarche cohérente de gestion durable, trois séries d'aménagement ont été définies en fonction de l'état de la forêt:

##### **☞ La série d'amélioration:**

Elle contient essentiellement les surfaces où les ressources forestières ont été détruites dans le passé, soit par l'installation de cultures agricoles soit par l'exploitation du bois. elle représente 22,8% de la superficie au Ziama et 42,3% à Diécké.

Les opérations pour cette série consisteront essentiellement aux actions de reconstitution forestières; et à la suppression progressive des plantations agricoles pérennes. Les actions de reforestation seront manuelles afin d'employer le maximum de riverains.

☛ La série d'utilisation durable: elle représente 41,5% au Ziama et 32,8% à Diécké.

C'est la série où la dégradation est moins évidente et où des prélèvements au bénéfice exclusif des populations riveraines peuvent être autorisés. L'espace est reparti par zone d'influence des villages limitrophes (2000 à 2500 ha). L'exploitation est de type artisanale afin de:

- adapter l'intensité des prélèvements au rythme de la régénération de la ressource,
- perturber le moins possible l'écosystème et lui permettre de remplir au mieux les fonctions de conservation de la diversité biologique,
- éviter la construction de voies d'accès (la sortie des produits se fera à tête d'homme),
- rendre les abus moins probables, moins néfastes et plus faciles à maîtriser qu'avec une exploitation industrielle (le marquage se fera pied à pied).

☛ La série de protection: (35,7% Ziama et 25% à Diécké)

Ce sont les zones où la concentration des espèces typiques de faune et de flore de ces formations humides est la plus importante. De plus ce sont des zones à risque d'érosion. La protection sera intégrale pour la faune et la flore pour leur permettre de jouer leur rôle de réservoir génétique des zones limitrophes.

La chasse: Elle sera interdite dans la série protection et autorisée au bénéfice exclusif des riverains. Elle s'exercera sur les espèces non protégées et sera à but non commercial.

### 3.4 Les mesures d'accompagnement:

Un aménagement tel que celui-ci ne peut se concevoir sans mesures d'accompagnement qui répondent aux particularités socio-économiques et aux problématiques de la zone concernée. La forêt même si elle est classée au bénéfice de l'Etat, elle fait partie du terroir ancestral des villages riverains. Il devient absurde d'essayer de l'en soustraire et d'en faire une parcelle strictement réservée à l'administration. Pour la gérer durablement, il convient de l'insérer dans le concept global de gestion de terroirs.

Dès le démarrage du projet, l'on s'est rendu tout de suite compte que les solutions pour une gestion durable de la forêt se trouvaient à l'extérieur de celle-ci; d'où la nécessité de prendre en compte les mesures utiles à la limitation des pressions exercées depuis l'extérieur par les riverains.

Ces mesures appelées mesures d'accompagnement ont porté principalement sur:

- ☉ L'intensification et la diversification de la production agricole,
- ☉ L'emploi préférentiel pour les travaux sylvicoles, des populations riveraines manquant de terres agricoles dans les zones périphériques; notamment dans les enclaves ou villages presque enclavés. Les salaires générés sont le plus souvent supérieurs aux revenus agricoles de la contrée.

- L'extinction progressive des plantations pérennes à l'intérieur de la forêt par la récolte annuelle des produits sans possibilité d'entretien.
- Le retrait et recasement des villages installés dans des zones jugées très fragiles.

### **3.5 L'intensification et la diversification de la production agricole dans les zones périphériques: ex: la forêt du Ziama (carte n°3)**

Pour réaliser cette opération, il a été envisagé de traiter les problèmes de la tenure foncière et d'impliquer intimement les administrations, projets et Ongs actifs dans la région.

#### **Présentation sommaire de la forêt du Ziama:**

La forêt du Ziama d'une superficie de 120.000 hectares, a été classée comme réserve forestière en 1942 par arrêté du Gouverneur des colonies et en 1981 la Guinée l'inscrira comme réserve de la biosphère.

Le code forestier de 1989 l'inscrit sur le domaine naturel de l'Etat, la rendant inaliénable et imprescriptible ne pouvant être ni vendue ni donnée.

L'arrêté de classement prévoit des droits d'usage au bénéfice des habitants de la périphérie et des enclaves. Ces droits sont: la cueillette, le ramassage de paille et de bois mort, la culture de riz de marais (sur autorisation écrite), la chasse d'animaux non protégés pour la consommation familiale.

La richesse floristique et faunistique du Ziama est des plus inattendues; l'inventaire du PROGERFOR dénombre:

- \* plus de 90 espèces de bois de valeur,
- \* 90 amphibiens et reptiles, 128 mammifères et 346 oiseaux. Parmi ces espèces, 71 seraient endémiques et protégées par la convention de Washington.

#### **3.5.1 La situation foncière autour du Ziama:**

a) **La population:** la population autour du Ziama se répartie en deux grands groupes:

- La population d'origine dite forestière, composée de Toma et Toma-manian.
- La population halogène constituée principalement par l'ethnie malinkée venue du Nord à la recherche de meilleurs terres et pour le commerce.

Ces deux types de populations, vivent dans 29 villages repartis en 8 Districts et en 5 Communautés Rurales de Développement CRD. Soit une population totale de 32728 habitants (1994) et en comptant 10,2 personnes par foyer, soit 3209 ménages.

b) **Le mode d'occupation foncière:**

- Chez les Tomas, la propriété et donc, le pouvoir de disposer des terres est le droit exclusif de l'individu pionnier et de sa descendance. Par conséquent le droit de tous ceux qui sont venus plus tard et se sont rattachés aux premiers reste limité à l'usufruit qui peut être très

stable et de longue durée. Les descendants des familles fondatrices restent les propriétaires de toutes les terres des villages et en assurent la distribution aux autres familles venues s'y installer. Les autres modes de gestion foncière à savoir le don, l'héritage, le gage, la vente (très rare chez cette ethnie) le prêt, le métayage, peuvent se rencontrer.

- Les malinkés se concentrent dans deux villages où ils sont dominants par leur nombre et leur statut socio-économique. Les conceptions foncières sont basées sur le principe coutumier de l'ancienneté d'appropriation. L'accès aux terres obéit à une stratification sociale liée à la famille. Par exemple à Avilissou le premier groupe arrivé représente 20% et occupe 90% des terres cultivables. Le deuxième composé de tenanciers 40%, occupe 10% et le troisième n'a aucune propriété; pour survivre il fait de la main d'oeuvre agricole ou emprunte temporairement des terres.

c) L'utilisation des sols:

L'économie villageoise autour de la forêt classée étant basée essentiellement sur l'agriculture, la disponibilité des terres est le facteur le plus limitant. La densité de la population sur une zone test au nord du zياما était de 13 hab/km<sup>2</sup> en 1932 et de 89 hab/km<sup>2</sup> en 1991. La capacité portative du système "défriche-brûlis" se trouve de très loin dépassé (20-30 hab/km<sup>2</sup>).

Pour parer à ce déficit, la population a choisit deux options:

- La pénétration de la forêt classée par le défrichement, dont la conséquence a été la suivante:

En 1979 une couverture aérienne montrait 7600 hectares de forêts défrichées (Atlanta 1989), une autre couverture en 1989 faisait ressortir 27 233 hectares de forêts dégradées (Progerfor 1994), ceci dénote une augmentation considérable de la dégradation de la forêt en une décennie (5 fois plus).

- Le raccourcissement de la durée des jachères (de 7 ans à 2-5 ans) rompant ainsi le cycle de reconstitution naturelle de la fertilité des sols.

C'est ainsi que dès lors qu'on a parlé d'intensification agricole comme mesure d'accompagnement à la gestion durable des forêts classées, l'on s'est rendu tout de suite à l'évidence qu'il n'y a pas d'intensification sans garantie foncière.

Il fallait sécuriser les droits des propriétaires coutumiers sur leurs terres pour favoriser les spéculations sur la terre seules garantes des investissements agricoles.

Il fallait en outre à partir d'un cadastre foncier et de l'observation du système d'occupation et d'exploitation agricole, se rendre à l'évidence ou non d'une saturation quelconque de la capacité de charge des espaces agricoles périphériques des réserves forestières justifiant ainsi ou non leurs pénétration.

### 3.6 L'Opération Pilote du Plan Foncier Rural OPPFR:

Cette composante identifiée au départ comme Opération Pilote des Régimes Fonciers avait plusieurs sous-composantes:



- \* La préparation d'une politique foncière permettant à l'Etat de finaliser un projet de loi foncière qui traduira la tournure libérale prise par la politique économique du pays.
- \* Le recensement et l'inscription cadastrale de 40 à 80.000 ha de terres agricoles aux abords des massifs de Diécké et de Zياما.
- \* La création et la tenue à jour d'un ou plusieurs registres cadastraux
- \* La levée topographique des fonds de vallée pouvant recevoir des cultures intensives.
- \* L'établissement d'un ou plusieurs livres fonciers et la formation du personnel des CRD à leur tenue.

### 3.6.1 L'approche utilisée:

a) La stratégie: Pour s'assurer de l'adhésion des villageois et des élus locaux, l'opération pilote du plan foncier rural (OPFR) a été séparée du volet Aménagement forestier et mis en oeuvre comme une composante indépendante.

L'aménagement lui doit travailler à l'intérieur de la forêt classée ce qui l'amènerait à s'opposer aux nouvelles pénétrations et à l'extension des défrichements; ce qui peut lui valoir l'antipathie des populations.

b) La démarche méthodologique: Pour la mise en oeuvre de cette composante, l'équipe du projet a procédé:

\* à la sensibilisation des autorités et à l'animation villageoise: une réunion est organisée avec le Préfet, le Secrétaire Général chargé des collectivités décentralisées et les Sous-préfets et présidents de CRD. Au cours de cette réunion, les agents du projet expliquent les objectifs, principes et stratégies du projet; par la même occasion, les appuis requis de la part de ces autorités sont largement explicités. Les présidents de CRD et les agents du projet se rendent ensuite dans les districts où commence l'animation rurale.

L'équipe du projet est basée au village ou District à traiter de façon à mieux connaître et à mieux intégrer les différentes contraintes qui pourraient apparaître en cours d'exécution(us et coutumes, désaccords, travaux agricoles...).

La procédure d'animation a permis de révéler des litiges fonciers latents qui grâce à la motivation des agents ont pu être solutionnés à l'échelon du village avec les sages et le conseil villageois. Le succès de l'opération a eu comme préalable une bonne animation qui a levé toute suspicion de la part des villageois.

#### \* aux enquêtes foncières:

Elles permettent de définir tous les éléments caractéristiques des ayants droit de telle ou telle parcelle: droits principaux et droits superposables ainsi que les caractéristiques de ces droits. Ces enquêtes sont publiques et contradictoires.

#### \* au levé des parcelles et la saisie des données:

L'importante couverture végétale de la zone a fait que la méthode retenue a été le cheminement à la boussole du périmètre de chaque parcelle avec piquetage des sommets en vue d'un

restationnement éventuel et de la reprise avec la parcelle voisine. Chaque parcelle délimitée par l'agriculteur est ainsi parcourue. Les angles et les distances sont noté sur carnet en vue de la restitution au bureau.

#### IV LES ACQUIS DE L'OPPFR

Selon les rapports d'avancement de l'OPPFR, il y aurait globalement à ce jour: (pour l'ensemble des deux massifs):

27.638 hectares restitués à la parcelle dont une faible partie a fait l'objet d'un tableau d'assemblage;

3.514 parcelles sont topographiquement levées et traitées dans treize villages.

Ces données sont stockées sur des archives magnétiques (3.1/2 pouces) et chaque parcelle est associée à quatre fichiers (dessin DWG; base de données dbf et angles distances s-dbf).

Une technique d'animation qui a fait ses preuves. En effet tout permet de penser que tout près du terrain, la réalisation du plan foncier sécurise les populations, c'est la première fois qu'on enregistre graphiquement et alphanumériquement le sol qu'ils exploitent.

Un code foncier et domanial reconnaissant la propriété privée de la terre est promulgué par le gouvernement de la R. de Guinée.

Les enquêtes foncières et l'étude socio-économique qui a suivi ont permis de savoir que:

⌘ Dans certaines localités il existe suffisamment de terres agricoles pour absorber les besoins des riverains en terres agricoles. C'est plutôt la technique d'occupation qui immobilise les terres. En effet le paysan après deux ans de cultures vivrières sur une parcelle, dissémine quelques rejets de bananier plantain (15 à 30/ha) et colonise une autre parcelle la campagne suivante. La parcelle abandonnée ne sera plus redéfrichée et restera immobilisée pendant plusieurs années (12-15 ans) avec un rendement très faible 5 à 6 régimes ha/an. C'est ce qui crée à terme le sentiment d'une crise aiguë en terres agricoles.

⌘ Plus de 80% des plantations pérennes en forêt classée appartiennent aux halogènes les natifs eux se limitent le plus souvent aux cultures annuelles. Ce qui suppose que s'ils étaient garantis dans leurs droits de propriétaires fonciers sur leurs terroirs ils pourraient non seulement sortir de la forêt classée mais aussi accepter des spéculations foncières avec les halogènes sans terre.

#### V LES INSUFFISANCES DE L'OPPFR

Une succession de décisions inadaptées ont entraîné le travail de l'OPPFR dans une impasse. Les causes de cette impasse sont:

- Les hommes choisis n'avaient pas toujours la technicité adaptée au but poursuivi,
- La méthode utilisée n'a pas permis d'établir des ratios de production ce qui rend difficile toute évaluation de la productivité. Brutalement si l'on fait le rapport: coût total de la composante par superficie couverte, l'on aboutit à un coût de 68.000 francs guinéens (68 \$ USD)

à l'hectare. Ce qui est prohibitif même si le coût pondéré (avec déduction de tous les amortissements) se trouve autour de 58 \$ US/ha.

L'archivage magnétique est inapproprié: en effet les informations collectées sont stockées sur des disquettes de 3,1/2 pouces et chaque parcelle levée est associée à trois fichiers: (DWG, dbf et s-dbf DBASE3 sur AUTOCAD).

Chaque fichier de parcelle dans chaque village n'est identifié que par un seul numéro. Ce qui rend l'exploitation très aléatoire et périlleuse.

- Le coût de l'immatriculation est inabordable pour le paysan requérant.
- L'environnement institutionnel est très peu favorable au succès du plan foncier. En effet le Département responsable de la gestion foncière le Ministère de l'Urbanisme et de l'Habitat n'est pas celui qui a exécuté l'OPPFR (le Ministère de l'Agriculture et Eaux et Forêts). Le niveau de collaboration entre ces deux institutions n'a pas été celui souhaité.
- Les Collectivités décentralisées (Communauté Rurales de Développement CRD notamment) qui devraient gérer leurs plans fonciers ne sont pas encore préparées et motivées pour assumer cette fonction.

## **VI CE QUI EST SOUHAITABLE D'ENVISAGER POUR L'AVENIR:**

Au regard des insuffisances constatées ci-haut, il faudra dans l'avenir améliorer:

### **\* La méthode d'animation:**

- meilleure formation des animateurs,
- animation à l'amont des actions de levés,
- formation des responsables locaux à la gestion et au suivi du plan foncier.

### **\* La technique du plan foncier:**

- le levé parcellaire (matériel de support notamment)
- le géoréférencement pour le rattachement parcellaire et zonal
- le bornage

### **\* L'exécution et la gestion du PF:**

- mettre en place les bureaux préfectoraux de la conservation foncière.
- responsabiliser au maximum les collectivités rurales dans la gestion des plans fonciers ruraux.

### **\* Les moyens humains**

- sélection rigoureuse et formation du personnel actuel.
- instaurer une complémentarité entre les services de l'habitat et ceux de l'agriculture.
- former les responsables locaux à la gestion et mise à jour du livre foncier.

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# **Rehabilitation of Cement Factory Quarries**

**REHABILITATION OF DISUSED LIMESTONE QUARRIES  
THROUGH REAFFORESTATION  
(BAOBAB FARM, MOMBASA, KENYA)**

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## Rehabilitation of Cement Factory Quarries

### Introduction

Our forestry activities at Baobab Farm actually start with a cement factory. Bamburi Cement Ltd. started operating outside Mombasa, on the Kenyan coast, in 1954. Now one of the biggest cement factories in Africa, it was also the first one to use limestone of a fossil coral reef as raw material. Its quarries extend for 6 km along the Indian ocean, 10 km north of Mombasa island, only 1-2 km inland from the shore.

In 1959, the cement factory employed an agronomist, René Haller. He is now the managing director of Baobab Farm Ltd., a subsidiary of Bamburi Cement, and is also the initiator and driving force in the successful quarry rehabilitation scheme at Bamburi. His initial task was to utilize Bamburi Cement's reserve land for agriculture, and to produce food for the workforce of the cement factory. Then as the open and disused quarries grew bigger and bigger, the directors of the cement company decided to try to renature the huge scar in the coastal landscape, and Mr. Haller was given free hand to experiment in the disused quarries.

### Rehabilitation: Starting point

Rehabilitation was not an easy undertaking under the difficult circumstances. Excavation for the coral limestone continued to just above the groundwater level. As quarrying is taking place very close to the Indian Ocean shoreline, the groundwater is saline. No soil or overburden was available in sufficient quantities to make the useful revegetation of the quarry floors possible, without destroying valuable agricultural land.

Mr. Haller's approach to the challenge was based on common sense; he aimed at growing vegetation in the vast open quarry to cover the damage, and if possible, to get a financial return as fast as possible.

He decided to start with two projects: reforestation and aquaculture. Reforestation would transform the landscape, and aquaculture would pay for the initial steps of rehabilitation, as fish grow fast and bring a fast economic return.

### Initial trials

In 1971 the first reclamation trials began. 26 different species of trees were planted into the quarry, around the first fish pond. After 6 months, of the 26 species only 3 were still alive and thriving. These were *Casuarina equisetifolia*, *Conocarpus lancifolius* and the coconut palm.

*Casuarina* and *Conocarpus* were now planted on a larger scale, in pure plantations and in mixed stands to the best combination. *Casuarina equisetifolia* is a typical pioneer tree. It grows locally along the sea shore, and is drought and salt tolerant. It lives in symbiosis with various microorganisms, which fix nitrogen from the air and make other nutrients available to the host plant. So *Casuarina* is able to grow without soil and colonise badly disturbed areas. *Conocarpus lancifolius* is a drought, flood and salt tolerant swamp tree from Somalia. It is not as well equipped with symbionts as the *Casuarina*, and grows better when some nutrients are available from the substrate.

Casuarina was found to be the ideal pioneer tree for the Bamburi conditions, and was planted intensively into the quarries. Over the years, simple and efficient techniques were developed to propagate and plant Casuarina seedlings in big quantities entirely without soil.

In the newer Casuarina plantations, the seedlings are planted at densities of 1600-10000 trees per hectare. Already after two years thinning and harvesting starts. Casuarinas can be sold at any stage, as fence droppers, rails, fence posts and for house roof construction. For certain purposes Casuarinas can replace mangroves, and therefore ease the pressure onto the heavily exploited mangrove forests.

Because of their high tannin content, humus formation from Casuarina leaf litter is very slow. By chance local red-legged millipedes were observed to feed on dry Casuarina leaves, and were then introduced into the plantation in big numbers from surrounding bushland. The millipedes thrive in the Casuarina plantations, and considerably speed up humus formation. In the oldest parts of the rehabilitation quarry the humus layer is now, after 25 years, more than 10 cm thick.

#### **Quarry Rehabilitation : Diversification**

While the Casuarinas were growing taller and taller, and were transforming the former quarries into a cool forest, new developments went on their shade.

#### **The integrated aquaculture system**

The initial trials to produce tilapia in groundwater ponds were not very successful. The fish reproduced so fast, that their growth stunted and they never reached marketable size. But the initial failure stimulated research, and by 1980 the first commercially viable tilapia tank culture system, with a production capacity of 35 tons of fish per year, was built.

For economical and ecological reasons two new components were included: crocodile farming and rice culture. Crocodiles were introduced to utilize any animal carcasses occurring on the farm not fit for human consumption - from livestock, poultry and fishfarm - and transform the waste produce into a valuable commodity: crocodile meat and skins. In addition the crocodiles' excrements are rich in phosphate, and ideally supplement the nitrogen-rich fishfarm effluents as fertiliser for the rice fields.

A set of rice paddies was set up as a biological filtration system for the recirculated fishfarm water. The rice fields act as sedimentation ponds, trapping particular waste from the fish and crocodile farm and using it as fertiliser. Dissolved waste products are removed in ponds overgrown with Nile Cabbage (*Pistia stratiotes*). Nile cabbage roots in the water, and through its fast growth incorporates dissolved nutrients into biomass; by regular harvesting of the plants the nutrients are eliminated from the system with the biomass.

#### **Game Farming**

In 1977 a group of eland and oryx antelopes was introduced into the rehabilitated quarry. Elands are browsers and can utilise a big variety of bushes not suitable for domestic livestock. Oryx are grazers and are well adapted to life in dry areas with poor grazing. The aim was to utilize the cement factory's isease-fly- and tick-infested bushland, as well as the vegetation coming up in the disused quarries, for game farming. The indigenous antelopes have a high natural resistance



to the local wildlife diseases, and therefore don't need regular chemotherapy and dipping against ticks.

Through herding them alternatively on the reserve bushland and in the quarry, the antelopes fertilise the quarry floor, and disperse the seeds of their food plants by dropping the seeds with faeces.

#### Tourism:

The oldest part of the rehabilitated quarry is open to the public since 1984 as the "Bamburi Quarry Nature Park". It has become world famous and attracts approximately 100000 nature-loving local and overseas visitors per year. It has also become a major source of Baobab Farm's income.

New developments in the tourism sector are walking, jogging and cycling paths through the various stages of the quarry rehabilitation, from open quarry to cool lush Casuarina forest. CEO-tourism tours include bird watching, a drive to the ostrich and game farm, and tree planing for visitors.

#### **New Forestry Developments**

After more than 20 years the pioneer Casuarinas had fulfilled their task to transform the former harsh and hostile quarries into a lush forest, with fertile soil and a balanced microclimate. Many of the old Casuarinas are becoming top-heavy with their shallow root systems and fall in heavy winds, and many are being harvested for building timber.

So room is created for second generation of forest plants.

Animals which have come to live in the Casuarina forest, have brought in many new species of plants. Neem and various fig trees dominate the upcoming undergrowth; their seeds have been planted by fruit-eating bats and monkeys. Birds have brought in shrubs and bushes with bright coloured fleshy berries.

However, according to the aim of creating an ecologically and economically self-sustaining coastal forest, the secondary tree species are selected with care.

More than 200 species of indigenous coastal forest species have so far been planted into the old part of the rehabilitated quarry. Some of these are indigenous hardwoods of potential economic value, lime Mvule (*Millicia excelsa*), Mbambakofi (*Azelia quanzonsis*), Mpingo (*Dalbergia melanoxylon*), Mgurure (*Combretum schumanall*), and various species of mangroves. Muhuhu (*Brachylaena huillensis*), one of the heavily exploited local hardwood trees used mainly for wood carvings, unfortunately doesn't grow well under our conditions; it seems not to be able to cope with the hard rocky substrate.

In order to increase the diversity of the forest, also to encourage and experiment with non-timber uses of the forest, many other forest species are being introduced and tested for their ability to grow under our conditions.

Some plants are being introduced as bee-plants for honey production, others for their edible fruits, others for their potential as indigenous ornamental plants for eco-landscaping. Other species are planted to increase the diversity of the forest providing food and/or habitat for animal life. Some of the plants are of medicinal or other traditional value, and some very rare trees have been planted for conservation purpose.

At present we are experimenting to find the ideal method of planting the second generation of trees. We are working with clear-cut section of various shapes and sizes, clear-cut-corridors, and interplanting in between the existing *Casuarina* trees. Our small banana plantation serves as a trial plot to test the compatibility of banana plants with *mivule*, *mipingo* and *muhuhu* trees.

In very low areas, where excavation had gone slightly into the groundwater, we are planting mangrove trees. Initial trials with *Rhizophora mucronata* and *Avicennia marina* had been carried out along the edge of the rice fields, actually more for fun than as a serious enterprise, not really expecting any success. But as those trees grew so well, without tidal movement and in almost fresh water, we carried on in other areas. It seems from our experience, that the availability of nutrients is much more important for mangrove trees than salinity and tidal movements.

One very rare mangrove species looks very promising from the economical point of view: *Heritiera littoralis*. It naturally grows on the higher inland side of the mangrove areas. It grows into very strong and straight poles, and it is said to be very durable. That is probably also why it has become so rare. Only very few remaining stands of this species have been reported in a recent survey of the Kenyan mangroves, and we have to get its seeds from the beach, as they are washed ashore as drift-seeds.

### Conclusions

Many lessons have been learnt in the Bamburi Quarry Rehabilitation Scheme so far, and many more are still waiting to be explored and actually learnt.

Propagation and planning techniques for the *Casuarinas* are well established by now, also management techniques for the older plantations. These techniques are now being applied widely outside the Bamburi Quarries, as *Casuarina* poles are in high demand in the local building industry.

Many more is to be learnt in regard to the indigenous trees. Interesting aspects are showing already, like the good growth of mangrove trees outside their natural habitat.

Performance of the indigenous hardwood species so far is very promising. Some of our oldest *Mvule* (*Millicia excelsa*) trees are now approx. 5 years old. The tallest ones have reached 10-15 m in height, and the strongest ones have produced a stem of almost 20 cm in diameter. Also *Mpingo* (*Dalbergia melanoxylon*) grows very well; our only 2 year old *Mpingo* trees are already coming up to 4 m in height.

We hope, that our slowly increasing experience with the indigenous timber trees will be applied and improved outside the quarries, and more and more people will start using for example, *mivule* instead of *Eucalyptus*.



**USING BUTTERFLY BIODIVERSITY FOR  
INCOME-GENERATION**



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## USING BUTTERFLY BIODIVERSITY FOR INCOME-GENERATION

The Kipepeo Project (KP) aims to win the support of local communities for the conservation of Arabuko-Sokoke Forest (ASF) through the sustainable utilization of its butterflies for their benefit. This forest is famous for its avifauna which includes six rare and endangered species (Sokoke Scops Owl, East Coast Akalat, Spotted Ground Thrush, Sokoke Pipit, Amani Sunbird and Clarke's Weaver) in addition to a further 17 species which are coastal endemics. It is also home to four rare or threatened mammals (Elephant, Ader's Duiker, Golden-Rumped Elephant Shrew, and Sokoke Bushy-Tailed Mongoose). Situated on the north coast of Kenya, over 400 km<sup>2</sup> in area and containing no human settlements, Arabuko-Sokoke is the largest remaining piece of the coastal forest mosaic which once stretched from Southern Somalia to northern Mozambique. During long periods of isolation from other forests this coastal mosaic evolved a distinctive fauna and flora of its own which is now seriously eroded. The protection of ASF is the last best hope of retaining a viable fragment of this once extensive ecosystem. For its birds alone, it has been ranked as the second most important forest in Africa (Collar & Stuart, 1985). Its conservation is therefore of global significance.

All of this however means little to the people around the forest. Their numbers are growing rapidly and they are hungry for land, short of cash incomes and jobs, impoverished and harassed by forest wildlife, misled by local politicians, and hostile to the forest. Independent surveys (Mogaka, 1991; Maundu, 1993) estimated their *per capita* cash incomes at less than US \$ 50 per year, and showed that over 90% are unhappy with the forest's presence, with over 50% wanting the entire forest cleared for settlement. Wildlife crop-raids by elephants and baboons cause much anguish and economic hardship, and are a major cause for resentment. The population surrounding the forest cultivates to its edges and erodes its interior through subsistence demands for fuelwood, poles, game-meat, wild honey, fruits and medicinal plants. The forest has been invaded no less than five times in the last three years, each time with the aim of cutting plot-lines in anticipation of de-gazettement, and each time led or encouraged by people with official positions in the administration. In March 1995, the Kilifi District Development Committee supported a call for the excision of 1,200 ha in its south-eastern portion for settlement.

It is obvious that Arabuko-Sokoke cannot survive without the long-term support of the local people and their leaders, but there is little prospect of this unless it is seen to be of benefit to them. The Kipepeo Project is one of several efforts (including, most notably, assistance for schools and water supplies from the Kenya Wildlife Service (KWS) Community programme) to build such support. It is situated near the forest at the National Museums of Kenya (NMK) site at Gede Ruins 18 km south of Malindi and is administered by the East Africa Natural History Society (EANHS) in Nairobi. Set up in June 1993 with an initial grant of US \$ 50,000 from the Global Environmental Facility Small Grants Programme administered by UNDP, it has introduced butterfly farming to the forest-adjacent community as a means of earning cash incomes from the forest. More recently, with the arrival of a British volunteer (VSO), Tansy Bliss, it has also become a vehicle for environmental education with an active schools programme centered on ASF in collaboration with the Wildlife Clubs of Kenya. By showing that the forest can provide unexpected sources of income to the local community, and by

teaching local children about its extraordinary biodiversity and conservation importance, the Kipepeo Project aims to help to secure its future.

Before the commercial activities of Kipepeo began, there was a nine month survey of butterfly populations in ASF (Ayiemba, 1995) and a month-long socio-economic and attitudinal survey of the local community (Maundu, 1994). We are therefore in a position to obtain the kind of before and after data that will help in objectively assessing the success of the project as a conservation tool. With the aid of a grant from the WWF/USAID Biodiversity Support Programme, these surveys will be repeated in 1997 by the same personnel. This will provide an assessment of the impact on wild butterfly populations of three years of harvesting for breeding, and will examine perceptions of the financial benefits of butterfly farming and whether these have increased community support for the conservation of Arabuko-Sokoke Forest. Selected Kipepeo farmers will also be trained in butterfly monitoring, and the socioeconomic and attitudinal survey will include questions on events in the last three years such as the forest invasions and the de-gazettement proposals.

Both of the pre-project surveys were also essential in project implementation. The butterfly survey helped us to select species for breeding, based on abundance and seasonal availability. It involved walking transects and general collections using butterfly nets and traps in the three different vegetation types of the forest. About half (139) of the total number of butterflies (261) listed for the forest were captured and the numbers of sightings of some 40 of the commoner and more easily recognized species were recorded for each month of sampling. The community survey enabled us to introduce the project and to recruit project participants. At village meetings the project was explained and PRA maps were drawn on the ground to identify those households which satisfied the criterion of being immediately next to the forest. Over 150 such households were mapped, and 144 of these were subsequently interviewed and 132 agreed to participate. The use of an objective (and obviously practical) criterion for participation, and the direct involvement of the community in the identification of participants, were important elements in establishing trust in the project. We ended up with a more or less continuous chain of future butterfly farmers along 45 kilometers of the eastern margin of ASF, roughly one third of its total circumference.

The farmers were trained in butterfly rearing techniques both in their households and at the project headquarters at Gede Ruins. These activities were carried out in parallel with the construction of two large flight cages and a breeding shed with water storage tanks, the establishment of a plant nursery, and further research on forest butterflies and their foodplants. A local Extension Officer was recruited and trained together with casual staff in the basics of butterfly rearing. As a dry run, some 20 volunteers from the forest-edge community participated in a short experimental rearing programme which established that our techniques would work out on the forest-edge farms. Lastly, an agreement was negotiated with a British company, Entomological Supplies Ltd., for the supply and purchase of butterflies in 1994.

Exports started more or less on schedule in February 1994, and by the end of the year over 10,000 pupae belonging to 14 species had been exported, earning a little over US \$ 15,000. About 40% of the pupae had been produced by the community and the remainder by the farm headquarters. Total payments to the community for the year amounted to just over 260,000/= (ca. US \$ 5,000). In 1995 the number of pupae exported grew by 23% (to ca. 12,500), overall earnings for the year increased by 15% (to just over US \$ 18,000) and payments to the community by 25%. Growth has continued in 1996 with around 15,000 pupae exported so far.

To date cumulative exports amount to a little over 37,500 butterflies and in the (course of this month (August, 1996) , we have passed two important milestones: total exports of US \$ 50,000, which was the amount of the original grant, and total community payments of 1,000,000/= (ca. US \$ 18,000).

An important additional benefit for the community has been the building of a sense of pride and empowerment. The project has been featured in the press, in magazines and newsletters and on international television (through the UNDP magazine programme *Azimuths*). Members of the community have been featured in this coverage, and their views have been sought by consultants from overseas. This has all helped them to understand that their forest really is important to the outside world. On a more practical level they have also formed Self-Help Groups which have enabled them to establish savings accounts and to access donor funds for their own projects. At their first attempt, these groups secured 375,000/= from the Belgian Embassy to build sixteen 5,000 liter water storage tanks, and they have begun to understand that the forest allows them to make special claims on development funds. We hope that these Self-Help Groups will eventually form the basis for a grass-roots community Organization, whose members are drawn specifically from the forest edge and whose principal agenda lies with forest conservation and rural development.

None of this has been easy. The project has been vulnerable to the whole gamut of problems that make rural development in Africa such a difficult challenge, ranging from transport and communication breakdowns, through poor rains, administrative conflicts, marketing problems, and unreliable water supplies, to insect parasitoids, foodplant pests, and diseases of the butterfly livestock. The export market is becoming increasingly demanding in terms of what it will and will not take. It also suffers from transit losses amounting to around 20-25%, in part due to transit delays, and from late and unreliable payments from overseas dealers. The firm to which we exported exclusively in 1994 went into liquidation in 1996, leaving the project with a bad debt of US \$ 4,000. We have now diversified our export market and are currently shipping to two British and four American dealers, but still suffer from delays in payments leading to considerable cash flow problems. We were certainly over-optimistic in our expectations of becoming self-sustaining, and will not achieve this goal in 1996 as we had hoped.

Meanwhile many lessons, both technical and managerial, have been learned. On the technical side, disease outbreaks have demonstrated the importance of keeping the densities of breeding stock at moderate levels and of breeding a diversity of species. While it has been satisfying to demonstrate that a lot can be done with a little, the project has been badly under-funded. A three year project, with full support for all capital and running costs with the aim of being sustainable thereafter, would have provided a much more secure base for the launch into self-sustaining operations. It would also have been wiser to start with a domestic eco-tourist attraction featuring live butterflies before going into the export trade. The business management aspects of the project have not been handled as well as they might have been, partly because of our own lack of expertise in such matters, but also as a result of the compromises that are inevitable in the attempt to unite conservation and commerce. Professional help in this area would be highly useful, particularly with respect to handling cash flow problems, bad debts and the problems of a mixed agenda.

The key to the future lies in developing a substantial domestic market for our butterflies through ecotourism. Plans are being developed to establish an Eco-Cultural Centre at another

NMK site at Mnarani Ruins in Kilifi. This will focus on the interactions between coastal people and coastal forests and will feature live butterfly displays from ASF, Shimba Hills and one of the Kaya forests, with the livestock being -purchased through KP from the relevant forest edge communities. A domestic market, with flexible demand and cash at the door from visitors and shop sales, and without the problems of transit delays and losses, will go a long way to making the Kipepeo Project truly viable.

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**TRANSMARA FORESTS:  
CONSERVATION AND MANAGEMENT ISSUES**

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## **TRANSMARA FORESTS: CONSERVATION AND MANAGEMENT ISSUES**

### **INTRODUCTION**

Forest resources in Kenya and in many other parts of the world are undergoing a variety of environmental as well as human related stresses. Transmara (recently carved from Narok) is a district faced with development challenges; and other single most important objective is being able to manage and sustain the development impetus now created while at the same time ensuring sustainable use of natural resources. Real rural development is directly linked to conservation and wise use of land resources (soil, water, forest and wildlife resources). Most forests in Transmara are either owned privately under group ranches or communally under the provisions of Trust Land Act. The forests are increasingly being depleted because of the sociocultural and socioeconomic changes in the livelihood of the Maasai, from traditional pastoralism to commercial land use which entails converting forest and rangelands to crop production. The shift from mainly pastoral and small scale subsistence crop production to a cash-oriented large scale cultivation is evidenced by conversion of forest lands into extensive maize and sugarcane fields. This situation will inevitably lead to accelerated deforestation following land adjudication and subdivision of group ranches into individual parcels (now in progress), which not only allows the owners to lease, sell, and mortgage the land, but also enables them to adopt modern agricultural production methods. Traditionally, land was regarded by the Maasai as the property of the community, and it was the community which therefore imposed controls on its use, and allowed individuals access to it. Under community controls, selling and leasing of land to neighbouring communities, which is the major cause of environmental degradation in the district, was out of the question.

In spite of the rapid rate of forest depletion, Transmara district still has substantial forest resources that should be conserved and managed not only to improve the welfare of present residents but for future posterity. This paper outlines key ecosystem features of these forests, identifies specific causes of deforestation in the district; and offers suggestions for sustainable conservation and management of the forests.

### **Background Information**

Transmara district occupies a total of 2900 km<sup>2</sup>. The Mara river marks its eastern boundary with Narok district from which it was separated. To the south it is bordered by the United Republic of Tanzania and Westward by Kuria and Migori districts. Kisii and Bomet are its northern and north-eastern neighbours respectively.

The Mara river originating from eastern Mau forest drains the low altitude eastern section and flows to Tanzania. The Migori river which almost bisects the district into two flows in a south westerly direction from south west Mau joining Kuja river to flow and empty into lake Victoria. There are many small streams and rivers which drain into river Migori. The land on both sides of Migori river is a plateau. The altitude rises from 1524 m along the Mara river to about 1950 m above sea level around Kilgoris to 2073 m a.s.l. on the hill tops. Topography is gentle to flat in the plains but rather steep on some hills.

Rainfall generally increases from about 1000 mm along the Mara river as one climbs along the escarpment up to Kilgoris town. The highest rainfall of about 1800 mm per year is realized along the Kisii border. March to May is the period of long rain while short rains fall between November and December. Mean annual temperatures in Kilgoris (district head quarters), for example, range between 17°C to 21°C with January to March temperatures averaging 27°C while August to October average 11°C. Because of good rainfall distribution crops are grown throughout the year. Jaetzold and Schmidt (1983) have calculated the rainfall reliability and water availability for Transmara and have shown high potentiality of agriculture for both livestock and crops in the district.

### Data

Data reported here is based on a comprehensive field survey conducted in February 1996, in which key forest types were covered. Data were collected on species composition, forest structure, disturbance, ecological characteristics (regeneration, drainage, topographic factors); forests which form critical wildlife corridors.

Extensive interviews were also conducted with the local people to determine forest ownership status, sociocultural values of forests, conservation and management perspectives

### Ecosystem Features

#### Physiognomic characterization: Overview

Broadly speaking, forests of Transmara range from open woodlands, partially open to closed canopy forests. Although open woodlands (clumped forests) were not sampled, they contribute a substantial quantity of forest resources. Much of the rangeland in the district is confined to the open woodlands. In terms of vertical structure, two categories are distinguished:

**Low canopy forests e.g., (upper most canopy layer in 10-20 m height range)** usually characterized by 1-2 canopy layers.

**High canopy forests (upper most canopy layer in 30-40 m height range)** with at least 3 canopy layers. Very tall trees (sometime up to 40 m) predominantly *Diospyros abyssinica* are found in this category of forests. Some of the forests are characterized by vertical forest structures typical of those found in tropical rain forest such as Kakamega forest in western Kenya. For example the multi-storey (several canopy layers), and thick understorey (below canopy) vegetation dominated by the shrub species *Dracina afromontana* occurs in most of Laila forest. These ecosystem characteristics are useful indicators for monitoring changes in forest conditions following human induced disturbances.

The physical micro-environmental features such as slope, susceptibility to erosion and drainage are generally similar in the various forest categories. However, significant site variations are found within a given forest. Differences observed along a transect are often related to forest types (species associations). Localized drainage patterns seem to have significant influence on tree species growth and distribution. In general, most forests in Transmara are found on plains (< 5 % slope) underlain by poorly drained clay soils.

However, differences in topography greatly influence drainage conditions even within a small area under the same soil type and hence different forest types. For example, the low canopy shrub species *Trichocladus ellipticus* which is very prevalent in most parts of Transmara usually forms a belt along the forest edge on poorly drained sites. The species would sometime form a very dense impenetrable thicket with virtually bare forest floor. In better drained sites (50-100 m into the forest from edges) much taller trees and high density ground vegetation would be found.

### **Soil Erosion Susceptibility**

Evidence of erosion was minimal in most forests except along cattle or elephant trails. But there is potentially high erosion hazard in most areas if the tree cover was removed. Most of the forested areas in the district are dissected by a network of perennial and seasonal streams. Any unplanned, wanton destruction of forests would accelerate run off (causing soil loss) and increased downstream flow and siltation. Soil erosion is already a serious problem in the intensely cultivated parts of the district along the Transmara-Kisii border. The history of erosion problem in this zone can be traced back to the 1970s when through mutual agreements between the Maasai land owners and the Kisiis, much of the natural vegetation was removed and land converted into maize fields and more recently sugar cane plantations. Continued cultivation progressively led to declines in crop yields attributed largely to loss of top soil owing to poor farming practices. This scenario could be replicated in other parts of the district if present rate of deforestation continues.

### **Regeneration**

Sustainable forest management means that the forest is management in a manner that ensures supply of goods and services in perpetuity. It means that the amount and nature of forest products to be removed (e.g., timber) will be determined to a large extent by the rate at which the system replenishes itself. Regeneration is one very useful indicator of sustainability. An ideal natural forest should have a high proportion of seedlings and saplings and progressively fewer trees of large sizes (what is commonly referred to in literature as the reverse J-shape distribution). In practical terms, it is not sufficient that a forest has many overmature trees for exploitation: sustainable management requires that such a forest should have all size classes evenly or equitably represented.

In general, regeneration is higher in partially open canopy than in completely closed canopy forests. Although Transmara is endowed with vast wood resources of harvestable sizes, this is not matched by a corresponding high level of regeneration of the species. Regeneration in most of the completely closed canopy forest blocks could be described as moderate to poor. Large wildlife populations (especially elephants) often trample on young seedlings and cause soil compaction limiting the regeneration potential of a forest. Evidence of this is seen in areas frequented by elephants.

### **Forest Disturbance**

Forest disturbances in the district can be attributed to the following main causes:

**(i) Forest clearing for agricultural production**

Transmara has experienced unprecedented shift in pastoralism as the major form of land use to crop production (maize). Unlike in the past when most of the cultivation was by non-Maasai cultivators, most Maasais have now entered into small as well as large scale farming. Land renting to farmers outside the district on a short term basis (usually one year) is also very common in the district. There are several underlying reasons for the apparent "rush" in forest clearing. Two obvious ones are 1) the inevitable shift by the Maasai (especially the elite group) from a predominantly pastoral lifestyle to a cash oriented economy and land is seen as the resource that has hitherto remained unexploited and should now be fully tapped to achieve this; and 2) the on going land demarcation process where land owned by group ranches is being subdivided among the members. In most cases, this has not been without controversy and forest clearing by individuals is often one way of legitimizing ownership.

**(ii) Charcoal burning**

A flourishing charcoal business across Transmara-Kisii border is also a major factor contributing to depletion of forest resources in parts of Transmara district. Superficially, there appears to be restriction on charcoal burning but in reality, there is no control at all. This raises two fundamental questions: is charcoal burning supposed to be controlled (or prohibited)? If yes, how is this enforced? If limited charcoal burning is allowed, should not the alternative of conversion to timber be explored as opposed to the wasteful, low value return of charcoal production?

**(iii) Extraction of pole size trees for fencing and house construction**

An increasing number of Transmara residents are fencing their farms and posts are obtained locally from nearby forests. In absence of the prime cedar posts, other alternative species such as *Olea africana* and *Euclea & vinorum* are used. There is considerable commercial incentive to exploitation of pole size trees as one post could fetch Kshs. 10-13, and the demand is currently very high. This is an alternative means of forest clearing for crop production.

**(iv) Clearing for settlement**

In some areas where land adjudication and demarcation is taking place there is spontaneous mushrooming of human settlements. This is particularly the case where membership of a group ranch is controversial. Most individuals believe that the only way to assert ownership rights is to clear the forest and settle there or put the land under crop production even when it is evident that crop harvest is unlikely due to high wildlife concentration in the area. "Migrant members" are keen to move in swiftly to occupy new found territory. A good example is Oloonkolin forest near Ooloo escarpment where there is currently a proliferation of settlements scattered over the entire forest - a phenomenon akin to "scramble for forestland". The same is happening in a number of other forest blocks in the district. Part of the solution to halting forest destruction therefore, lies in addressing the problems of land tenure.

**Wood volume**

The survey revealed the existence of commercial quantities of valuable species such as *Olea Capensis*, *Olea Africana*, *Warbugia ugandensis* (*Osokonoi*), *Diospyros abyssinica* and

*Manilkara butugi* (Olairrenyi). Based on conservative estimates the forests of Transmara can support an industry requiring about 10,000 m<sup>3</sup> per year on sustainable basis if the whole forest is treated as a sustained yield unit. The establishment of an industry would however require a feasibility study to establish the economic size, location, nature of industry etc.

### **Habitats and Major Corridors**

Forests in the district are important wildlife sanctuaries and form a crucial dispersal zone for the Maasai Mara National Reserve. The Maasai traditional land use pattern allowed maintenance of rangeland production potential and was compatible with wildlife use of the area. Compatibility of land use with wildlife is particularly important in the eastern portion of Transmara because it borders the Maasai Mara National Reserve and has historically been an important dry season forage source for wildlife during drought in the Serengeti (Thurrow 1995).

### **Human-Wildlife Conflicts**

For years, the Maasai have coexisted with wildlife and there is ample historical evidence to show that present human-wildlife conflicts in much of Maasailand can be traced back in inappropriate policy decisions as well as the exploitative tourist industry in this country which until recently, totally disregarded the rights of local people at whose expense wildlife are conserved. In Transmara for example, forests have remained important wildlife habitats because for many years, land owners simply didn't bother about the economic value of land. This has, however, changed in recent years (thanks to the land demarcation process!) and people are now set on the path of development. Norton-Griffiths (1995) presents an interesting economic analysis that revenues (benefits) accruing to the Maasai landowner from agricultural production is much more than the revenue from livestock keeping which in turn is more than the benefit from conservation thus:

Net Revenue (agriculture) >>> Net Revenue (from livestock) >>> NR (from Conservation)

This is an important consideration in addressing wildlife conservation issues. Table 1 below, shows damages to livestock and property caused by wildlife which exacerbates the human-wildlife conflict.

In spite of the conservation value, socioeconomic contributions, roles and potentials, the existence of these forests is at the crossroads because of the land adjudication and the subdivision of the group ranches now in progress. Decisions should be made on the forests which can be saved and the possible management options which can be adapted in order to save the forests in the first instance and finally to conserve them in perpetuity.

The options available may be:

- (a) Individuals to be encouraged to conserve forests on their private land;
- (b) County Council to retain some forests and forested land as trust land;
- (c) Get individuals or members of the group to set aside land for forest conservation.
- (d) Form cooperative or community system of forests ownership.
- (e) Take measures to curb practices that hinder conservation.

Table 1: Data on wildlife damages (animals reported killed and crop acreage destroyed) in the past 2-4 years based on surveyed households

	Homes Surveyed	Year Cult. Started	Number of Animals Reported Killed			Total Area Cult. (ha) (Maize)	Area Destr (ha)	Loss Bags/Ha
			goats	sheep	cows			
Ntulele	5	1988	15	3	2	55	10	20-30
Olosakuana	1	-	-	-	-	2	0.5	25
Oloonkolin	2	1993	-	-	-	4	0.5	10-15
Kilena	2	1992	33	16	2	1	1	30-35
Kilae/Olorok	7	1986	160	114	393	70	31	25-30
Nkararu	5	1963	63	44	3	65	13	20-30
Nyakueri	3	1990	70	34	15	6	6	20-30
Olomismis	1	-	-	-	-	-	-	-

Note: Among the individuals interviewed:  
 8% favoured conservation of wildlife under existing conditions  
 73% would not favour conservation under prevailing conditions but would favour conservation of forests  
 But 88% would support wildlife conservation as long as the animals are confined to the parks or if there is adequate compensation for wildlife damages

### Forest conservation and individual tenure

Under individualized land tenure system, the proprietor of land has the power of use and abuse. To the extent that land is defined to include things affixed to it, the proprietor has power to do as he pleases with things growing on his land, such as trees.

The regime of private property can affect forest resources in many ways. Noteworthy is the fact that land as private property is a commodity that can be offered for sale. In relation to forest conservation, the following questions need to be posited:

- Does individualization vest too much power in individuals by virtue of the right to use and abuse that may be inimical to forests conservation?
- In case forestry is not economically productive to an individual property right holder, how do we balance private property interests with the social responsibility of forest conservation?
- Can the state, for example, legally compel people to plant trees in their lands?

### Community Forest Management Options

Presently, in Trans Mara district, Communities do not exist as legal persons. Consequently, before communities can own forests and forest resources, it is necessary for the Communities to be incorporated as a legal persons.

The question posited at this juncture is what form of organization should be adopted in the creation and/or registration of communities as legal persons? Various options are available. The communities can be incorporated as limited liability companies, societies, associations or cooperative societies. In this regard, there is the Companies Act (Cap 485 of the Laws of Kenya) regulating the incorporation of limited liability companies, the Societies Act making provision



for the registration of societies and the Cooperative Societies Act regulating the registration of cooperative societies.

Communal or community ownership as a forest management option has several drawbacks. It can be argued that management of forests requires a level of professionalism and scientific competence that lies outside the capacities of communities. In this respect, communities have no managerial skills, technical and fiscal resources to manage and conserve forest resources. A major advantage of community management is that members of the local community have indigenous technical knowledge on the values of trees within the forests.

### **Setting apart of land**

Ownership status under private and community has been outlined above. Other possibilities which can be undertaken in view of the urgency of the situation is for the council to "Set Apart" the land for forestry in accordance with the provisions of the Trust Land Act and for subsequent gazettment under the Forest Act. The major drawback with this procedure is the long period taken before the area is finally gazetted under the Forest Act. It should be noted that there is strong feeling of people against Government ownership in view of its recent spate of excisions. They quote examples such as Olposimuru which were gazetted but ended up in the hands of people.

The solution is however for the council to set apart the forests but under the County Council. They could argue that the forests would be for the benefit of the community as a whole. In such circumstances little compensation if any is paid.

The councils usually pay for personal rights such as houses only. Fortunately personal rights are few in Transmara especially with regard to recommended forests. A positive aspect of County Council ownership is that no County Council forest has ever been excised in the history of independent Kenya.

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**INTEGRATING TREE CASH CROPS IN  
AGRICULTURAL PRODUCTION SYSTEMS**

**THE CASE OF MACADAMIA NUTS IN KENYA**

by

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## **INTEGRATING TREE CASH CROPS IN AGRICULTURAL PRODUCTION SYSTEMS: THE CASE OF MACADAMIA NUTS IN KENYA**

### **History**

The macadamia nut tree is exotic in Kenya, having been introduced after the Second World War around 1944 to 1948 by European settlers. Initially it had no commercial value and was basically for ornamental and a household delicacy edible nut. The macadamia nut trees remained almost totally unknown in the country until after independence in 1964 when a Kenya farming family, Bob Harries and Peter Harries started multiplying the trees in a seedling nursery, planting them on their farms and selling some to other interested farmers, both African and non-Africans. At that stage, the tree remained doubtful as to its commercial value and even the promoters had not assured potential growers of the economic benefits. Therefore sales were minimal and remained insignificant.

In 1969 - 1971 Bob Harries Limited, a company founded by the late Robert Harries initiated a campaign to sensitise the Kenya Government to commercialise macadamia nut growing and establish processing and marketing the edible nuts. This effort resulted in the Government's intervention to seek commercial interests in the private sector for the purposes of establishing a macadamia nut industry covering production and distribution of trees as well as purchasing nuts in-shell from farmers, processing them and marketing the ready to eat kernels in the world market.

The Kenya Nut Company Limited was formed in 1974 after a feasibility study and preliminary investigations conducted during 1971 - 1973, and was appointed by the Kenya Government to spearhead and invest in the development of the macadamia nut industry in Kenya. The company immediately followed up the trees previously planted in the field totalling about 800,000, all but very few based on un-grafted materials, and encouraged owners to look after them and sell the nuts-in-shell to the Company. Simultaneously the company established a nursery to multiply specific selections previously introduced and locally selected so as to make available the essential planting materials.

The Government intervention continued by way of getting bilateral aid from the Government of Japan to construct a macadamia nut research centre, equipment, transport and personnel for conducting research and providing extension services to growers.

A training program was also drawn up for Kenyan scientists to relevant universities overseas to learn horticulture, pomology and related specialist subjects.

The Kenya Nut Company has since 1975 been responsible for the commercial development of macadamia nut industry in Kenya by multiplying and supplying planting materials, based on selections from the research centre, to potential growers. The company purchases all the nuts-in-shell from growers, processes them and markets the kernels and other by products locally and internationally.

The industry growth has been very slow due to financial constraints to meet planting material production according to demand. Research support from public sector i.e. the Kenya Agricultural Research Institute has been inadequate and a number of diseases and pests of the macadamia nut

are causing economic damage. The industry is not threatened by this situation but its growth may be slowed even further.

Recently other commercial participants have entered the macadamia nut industry by putting up small processing facilities but are not involved in crop development activities. Farmers needs for planting materials, husbandry knowledge and crop management on the farm are not being met fully because Kenya Nut Company has very limited resources for these aspects. It has spent over K.Shs. 600 million in developing very modern processing/manufacturing facilities, commands a world wide market and maintains a very efficient marketing system which could market much larger quantities than are available annually at present.

#### Present Status:

The Kenya macadamia nut industry is currently made of approximately 900,000 trees of varying ages from one year to 20 years, grown by over 100,000 small scale farmers with an average of 6 - 12 trees per grower. Annual production is about 4,000 metric tons of nuts-in-shell. These produce about 800 metric tons of marketable kernels, making the main commercial product. Other by products such as oil, are minimal. The future is bright because world demand could take over 20,000 metric tons of kernels per year. At the current price of K.Shs. 23/- per kg of nuts-in-shell the producers are getting Shs. 92 million per year.

### **THE MACADAMIA TREE**

#### **1. TAXONOMY**

The macadamia is an evergreen tree of the family PROTEACEAE. It is native to Australia but is currently grown commercially in several other countries of the world. There are ten trees and shrubs in the genus Macadamia six of which are native to Australia, three to New Calendonia and one to Indonesia. The following species are listed in the IBPGR 1986 (Story 1965)

*Macadamia integrifolia* (from Australia)  
*Macadamia tetraphylla*  
*Macadamia ternifolia*  
*Macadamia heyana*  
*Macadamia prealta*  
*Macadamia whelani*  
*Macadamia francii* (from Calendonia)  
*Macadamia rousellii*  
*Macadamia veilandii*  
*Macadamia hildebrandii* (from Indonesia)

Only the first two are so far of any commercial value. *Macadamia Integrifolia* is highly dominant in the commercial clonal production area. Hybridisation occurs freely between this species and *Macadamia tetraphylla* and is becoming important in the development of new clones. In Kenya the bulk of selections being currently grown is from such hybrids such as KIAMBU 3, KIAMBU 9 and 5, MURANGA 12 and 20, KIRINYAGA 1 and EMBU 1. More selections are being developed from the research programs (K.A.R.I. 1993).

Some confusion has existed over the species *Macadamia ternifolia* and *Macadamia Integrifolia* but the former produces a bitter and unpalatable nut. Natural stands of macadamia trees are highly variable in characteristics such as fruit size, shell thickness and yield. Branching habits and foliage density also very widely indicating a heterozygous outbreeding nature.

## **2. DISTRIBUTION**

Wide covering of 25° to south 28° south in the eastern coastal strip of Australia where wild populations still exist in natural forests intermixed with timber trees. The *Macadamia tetraphylla* is more temperate and less tolerant to lowlands in the tropics.

Cultivation began early 1800 and the tree has been introduced for commercial growing in New Zealand, Hawaii, California, South Africa, Brazil, Costa Rica, Guatemala, Malawi and Kenya. The IBPGR 1986 gives a detailed description of *Macadamia integrifolia*.

## **3. USES OF MACADAMIA**

The macadamia is primarily used as a dessert nut of very high quality with a unique taste and flavour. It is eaten fresh or salted. Oil is extracted from the lower grade kernels and used as a salad or cooking oil or for making cosmetics and soaps.

Diced kernels are used in confectionery ice cream and chocolate making industries. The cake after oil extraction can be used as a livestock feed but must be mixed with high fibre fodder crops.

The hard shells can be used for fuel and potential for making charcoal from the shells has not been fully exploited. It is inadequately researched. The wood produces hard and very durable timber but to date all commercial uses are confined to the kernel as a food product.

## **4. COMPOSITION**

The kernels are rich in unsaturated fatty acids with an oil content of about 88% (Dela Cruz et. al. 1966) with *Macadamia integrifolia* having the higher oil content than *Macadamia tetraphylla*. The high unsaturated fatty acids content is considered beneficial to health in terms of controlling blood cholesterol.

The analysis of a whole kernel is as follows.

Oil	78%
Carbohydrates	10%
Protein	9%
Moisture	2 - 3%
Potassium	0.17%
Magnesium	0.17%
Phosphorus	0.17%
Calcium	360 mg/kg
Sodium	66 mg/kg
Iron	18 mg/kg
Zinc	14 mg/kg

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Manganese	4 mg/kg
Copper	3.5 mg/kg
Niacin	16 mg/kg
Thiamin	2 mg/kg
Riboflavin	1 mg/kg

The composition of oil varies between species and clones and is considered to have outstanding stability. The main acids constituents are oleic (59 - 67%), palmitoleic (19 - 22%) and palmitic (6 - 9%) (Saleeb et. al. 1973). Protein composition also varies and consists primarily of arginine, formic acid, glutamic acid, leucine.

## **5. COMMERCIALISATION**

The development of macadamia nuts as commercial tree crops will be largely determined by local research to identify suitable cultivars for planting. Each different climatic situation will require different cultivars. Trials of selections from Hawaii and Australia in Kenya have not resulted in very suitable selections and we have had to go to seedlings populations planted during 1969-1975 to select the few that are currently being propagated. All aspects of physiology, flowering and pollination habits fruit development and maturation are greatly influenced by local environments in terms of weather and edaphic factors. Therefore the development of a wide genetic base at local level may be necessary in order to create a range of selections suitable in various parts of the country.

The world's macadamia industry is poised to grow fast because of widening interest by many countries in search for new agricultural based industries and insatiable demand by consumers for health foods. The tree could therefore gradually grow to join the small group of 'cinderella' trees like the cashew, the coconut, the carob, the pistachio and other edible nut trees which are already well commercialised in other parts of the world.

### **Importance:**

The importance of macadamia nut as a tree for inclusion in agro-forestry products lies in the fact that the tree can be inter-planted with other cash crops and once established, it needs minimal care in comparison to other tropical tree crops such as the cashew nuts which is confined to the coastal region only. The macadamia tree has a wider ecological suitability.

Being evergreen trees, the macadamia nuts have a canopy which provides protection to the micro environment where they are grown while at the same time allowing the use of the land underneath for production of annual crops. There are a few large plantations where the trees have been successfully inter-planted with coffee and it seems that the concept of multi-storey farming with the two crops can be practised and thus enhance economic returns per unit of land.

The main uses for macadamia nut still remain as the kernel which is eaten as a dessert nut, in raw or roasted form, but also for making confectionery products. Soaps and cosmetics industries use the oil as a raw material. The oil press cake can be used as a livestock feed additive, the shells can be used to make charcoal while the wood also has the potential for production of hard timbers for the furniture or building industry.

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**ENVIRONMENTAL REHABILITATION OF THE  
REFUGEE IMPACTED AREAS IN  
MALAWI**

by

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## REHABILITATION OF REFUGEE IMPACTED AREAS IN MALAWI

### 1.0. EXISTING SITUATIONS AND MAJOR CONSTRAINTS

Malawi is a land locked country bordered by Mozambique, Tanzania and Zambia. The total size of the country is 118,428km square of which 23,658km square is water. The larger portion of the country is plateau and 25% of land is arable.

With one of the highest population growth rates of 3.4% the majority of Malawi's population live below the poverty line. The country remains one of the world's poorest countries with per capita GDP of US \$230 (according to 1991 statistics) with agriculture dominating the economy. The sector provides 35% of GDP and employs 80% of the population.

The forest resources of Malawi are mainly dominated by "miombo" the most common species being *Branchystegia* and *Julbernadia*, which are a major resource of wood fuels and poles for both the rural and urban population.

Forests are the most extensive terrestrial ecosystem in Malawi and over 90% of the population depend on forests for their livelihood. In spite of their importance, forests are the most abused natural resource in the country.

Malawi hosted over 1 million refugees at one single time period. The presence of such a proportion, at the ratio of 1:10 (1 refugee to 10 Malawians) posed a big strain on an already fragile environment

The high rate of population growth, and the high population density particularly in the central and southern regions (87 and 125 respectively) placed the country among the top countries experiencing the highest rate of deforestation (3.5%) in Africa. The depiction of forest resources, caused by the increasing demand for fuel wood and building poles, has been exacerbated by the influx of the refugees.

The high rate of deforestation ensuing from demand for more farm land, firewood and timber for construction has caused a myriad of environmental and social problems. Much of the agricultural land is continuously deteriorating due to soil erosion and water tables have dropped down due to loss of ground cover resulting in drying up of water points, streams and rivers.

The adverse effect of soil erosion on crop yield is serious, food deficit is chronic and poverty is significant.

Through the refugee assistance programmes before repatriation, Non governmental Organizations such as ELDP and government departments in collaboration with UNHCR made a lot of efforts to reduce the rate of environmental degradation in the refugee camps/settlements. ELDP/LWS produced and distributed fuel wood saving stoves to the refugees and planted trees in and around the settlements. Although, this had a significant contribution in conserving fuel wood and therefore saving the few remaining surrounding trees and shrubs, the rate of tree felling for various reasons (charcoal burning, firewood selling to generate income) was beyond the limit that the control mechanism could cope with.

The fact that the refugees stay in the country was temporary also meant that the incentive to plant trees in an area they did not consider home was non-existent. In some settlements they did plant seedlings but only to uproot and take them across the border to Mozambique. In one settlement they cut down all the trees they planted. In some settlements like Chiringa, Mwawa, and Kalanje camps, the trees planted by refugees, are still standing today.

After the refugees had repatriated, the challenge of reconstruction and rehabilitation was left to the Malawians. The new intervention, therefore, needed an integrated approach, a holistic approach taking into account a change in altitude (awareness building through environmental education) of the Communities, agroforestry, crop diversification and general land husbandry and enhance the scope of self-reliance and sustenance. It also meant to be planned and implemented through Community participation that directly felt the blunt of the devastation, the Malawians themselves.

The Malawi government was among the first to notice the appealing impoverishment (the price) that its country had dearly paid as a result of hosting one of the greatest number of refugee populations in the Southern Africa at a single period of time. Wildered by the multiplicity of problems that debased the survival of thousands of Malawians whose lives have already been marginalized by the general level of poverty in the country the government require enhanced financial and technical support from donors and NGOs to combat them. Responding to the Governments call a few NGOs embarked on environmental rehabilitation projects. ELDP after being involved in environmental protection through production and distribution of firewood stoves to the refugees and tree planting, also joined other NGOs in rehabilitating the refugee impacted areas.

## 2.0. AREA OF SERVICE

Malawi has 24 districts 12 of which hosted the Mozambican refugees with the largest populations in the Southern and Central regions (see Table 1).

Table I. **REFUGEE STATISTICS DECEMBER 1992**

<u>DISTRICT</u>	<u>MALAWIANS</u>	<u>REFUGEES</u>
Lilongwe	1,011,379	35,000
Dedza	453,398	149,495
Chikwawa	355,606	90,108
Nsanje	222,254	304,390
Ntcheu	400,057	126,869
Mulanje	711,212	56,039
Machinga	577,860	33,300
Mchinji	275,595	21,043
NKhata Bay	160,023	4,200
Mwanza	191,031	149,352
Thyolo	480,068	44,715
Mangochi	551,190	46,973

*(Source Office of the President and Cabinet December 1992.)*

An assessment survey conducted in the impacted areas indicated that the natural resources have been exploited due to the abrupt population increase. It highly recommended a multi-sectorial intervention if both the human and physical environment is to be rehabilitated. To combat the environmental problem, the project has the following goals and objectives:

**3.0. PROJECT GOALS, AND OBJECTIVES**

**3.1. THE OVERALL GOALS OF THE PROJECT ARE:**

- a. To promote the ecological balance through conservation and reforestation.
- b. To reduce chronic under development and promote improved living standards of Malawian communities in the refugee impacted areas.
- c. To raise community awareness regarding the inter dependence of the community and the environment.

**3.2 OBJECTIVES**

**3.2.1. FORESTRY**

- To promote the production and use of less expensive and fuel efficient stoves.
- To reduce the burden of women in fetching firewood and increase their participation in natural level resource management.
- To assist and encourage farmers in the establishment of individual tree nurseries and woodlots.
- To organize environmental awareness and education, meetings, seminars and workshops in the target areas.
- To strengthen the capacity of village level organizations in the development and management of natural resources in a sustainable and environment friendly way.

**3.2.2. AGRICULTURE**

- To encourage farmers practice agroforestry to increase crop productivity with minimum production costs.
- To train farmers in soil and water conservation practices.
- To promote crop diversification.

**3.2.3. WATER**

- To rehabilitate defunct water points and construct new wells in order to improve quality and quantity of domestic water supply.
- To minimize water borne disease incidences through environmental sanitation training.

## **4.0 ACTIVITIES**

### **4.1 FORESTRY**

#### **4.1.1 ENVIRONMENTAL EDUCATION AND TRAINING**

For sustainability of the project community involvement and ownership was sought from the onset. The communities participate in all the stages of the project. There are always new beneficiaries and graduates. After every season, the project move to other villages and previous beneficiaries continue on their own with minimum supervision from the project staff. The graduates act as community based trainers who work hand in hand with the project staff.

Environmental awareness, education and training of the target groups is strongly emphasized. The beneficiaries are made to understand the importance of afforestation and sustainably utilize the natural resources.

Many trees have been cut down carelessly in the past because, people looked at them as government trees. The policing activities of the Forestry department in Malawi contributed to the unsustainable use of natural resources. It is a greater challenge to change the altitude of the people through environmental education and training which NGOs and now the government are doing.

#### **4.1.2 NURSERY ESTABLISHMENT AND TREE PLANTING**

People get organized into village groups and they select village forestry and nursery committees. The nursery committees oversee the nursery operations with the guidance from a nursery assistant. When seedlings are transplanted the village Forest committees look after the management of the woodlots and all the other trees within the village jurisdiction. ELDP trains these local institutions to empower them on natural resource management. Particular emphasis is placed on achieving standard practice and maintaining it.

Each farmer owns his or her own seedlings in the nursery. They make the decisions on what type of species and how many they have to raise and plant. Seedlings are transplanted to their areas of choice. Apart from individually planting in their woodlots or gardens, village woodlots are also established and managed by the village community. Since the project started in 1994 close to 2,000,000 trees have been planted (see table below). This year alone the target is to raise 3,000,000 seedlings. The survival rate of the planted tree is as high as 95% which is very commendable. Some farmers have already started harvesting their trees. Over 25 different tree species have been raised and planted (exotic and indigenous).

#### **4.1.3 FUEL EFFICIENT STOVES**

Women are being trained on production and use of the clay stove in order to minimize their use of fuel wood and reduce their burden of fetching firewood frequently. They walk 15-20 km to collect firewood in most villages and less time is spent on family care. The stove uses less (1/3 of) firewood compared to the traditional three stone when cooking. After being trained to produce, women are also selling the stoves as an income generating activity. Many women have been motivated to produce and use the stove. The stove is fixed in the kitchen, it uses less firewood and wastes no heat when cooking. The stove can be replaced when broken by the

women themselves . A recent stove user survey indicated that 97% of the 2000 stoves produced by 1700 women are being used and some women have fixed two stoves in their kitchens.

#### **4.2.0 AGRICULTURE**

##### **4.2.1 AGROFORESTRY**

Rapid population growth has exerted so much pressure on the land, more food is required to feed, the ever increasing population to be produced from ever dwindling land holding size. Most of the land in the refugee impacted areas has lost its productive capacity because of soil erosion because of the loss of the vegetative cover. Farmers need to apply high amounts of inorganic manure or fertilizers to improve crop production. The required input package of fertilizer is unaffordable by the resource poor farmers. Mixing crops with some soil improvement trees to reduce the inorganic fertilizer intake by farmers is the only likely solution at the moment. Farmers are being trained to mix crops with soil improvement trees species like faildebia and grilicidia in hedge rows or systematically interplanted. To improve the food security which is perpetually poor, farmers are also growing fruit trees of various species. Soil and water conservation practices are being emphasized in conjunction with the ministry of agriculture and other NGOS.

##### **4.2.2. CROP DIVERSIFICATION**

The frequent droughts which affected most of the sub Saharan Africa including Malawi, caused a lot of suffering of the people. Most crops failed to produce many families became food insecure. The project is promoting crop diversification and growing of drought resistant crops such as cassava and sweet potatoes and sorghum. Cassava cuttings and sweet potato vines are given to farmers to multiply and distribute to other farmers who had no access to the seed material.

##### **4.2.3. WATER**

Due to the drought, many water points have out. The project is assisting people in protecting and sinking new water points and also rehabilitating some. ELDP water technicians train water committee who are responsible for the management of the water points in the village. Each village has a water committee. The beneficiaries are trained on health and sanitation, care and maintenance of the water points.

#### **5.0. IMPLEMENTATION PROBLEMS**

Natural resource management was perceived to be government work by many rural people. Tree ownership especially indigenous species was for the Forestry department. This attitude contributed to the mismanagement of natural resources . If a farmer had a tree in his or her garden permission from the forestry department needed to be sought before the tree could be cut. The permission was in many occasion in form of payment officially or unofficially, but this is a tree which has been in the protection of the poor farmer for a long time. The policing activities of the forestry department contributed to the careless cutting of trees. It has been difficult to change the people's attitude towards tree planting and protecting the remaining indigenous tree species. The project through environmental awareness meetings, trainings, and education has managed to change some of the people's attitude and they believe now that whatever they plant belongs to them. The communities are being empowered to make the project sustainable. They

are being educated on the changes in forestry policy and the National Environmental Action Plan and many other developments taking place to transfer the powers of natural resource management.

The southern and central region of the Malawi is overpopulated, land is limiting factor to crop production. Many people would like to participate in the project but they have a problem of land to plant trees. Farmers are being encouraged to practice agroforestry because of its multiple advantages. Agroforestry apart from improving the land productivity, the households benefit from the tree branches which they use as firewood.

There is only one seed center in the country where high quality and certified seed is obtained. It is very difficult for many farmers to get access to the seed. The price of seed is also very prohibitive to resource poor farmers. The Forestry Research Institute is working very closely with NGOs to make seed available to farmers in the future. This would be done by training farmers on how to collect seed locally which they can plant and sell to the research or to NGOs at a very small scale.

Many people have realized the need to restore their lost environment, therefore, the demand for both technical and financial assistance from government and NGOs is high. There is great need to support these efforts since the problem of environmental degradation is huge.

## **6.0. RESULTS**

Good progress has been made in this project after a pilot project which was successfully implemented in 1994/95 rainy season. The project extended to many villages. Through community participation 1,200,000 trees were planted in homestead boundaries, gardens and individual woodlots (see Table 11). The survival rate of 95% has been achieved. The farmers look after their trees as children. They plant in time, make basins to catch more water and weed early to achieve maximum survival.

Those women who have been trained on stove production and use have now more time available to care for their families. The frequency of firewood collection has reduced therefore giving the women more time to fulfill other household roles.

The project has attracted more women than men in some districts like Dedza and Chikwawa. Those villages where matrilineal system of marriage is practiced, more women are participating in the project because they own the land. Most men under this system of marriage divide the trees they raise. If one man raises 1000 seedlings, he plants 500 where he has married and plants the remainder where he originally comes from.

As a result of training, many farmers especially women would like to mix their crops with soil improvement tree species and fruit trees. (See Table II & III)

Table II. ENVIRONMENTAL REHABILITATION PROJECT (ERP) 1995/96

	LILONGWE	CHIKWAWA-	DEDZA	TOTAL	% TOTAL
<b>NUMBER OF PARTICIPANTS</b>					
Men	723	505	469	1,697	44%
Women	637	970	576	2,183	56%
<b>Total</b>	<b>1,350</b>	<b>1,475</b>	<b>1,045</b>	<b>3,880</b>	<b>100%</b>
<b>NUMBER OF VILLAGES</b>					
	74	20	39	13	
<b>NUMBER OF NURSERIES</b>					
	22	20	24	66	
<b>FARMERS IN AGROFORESTRY</b>					
Men	175	505	454	1,134	45%
Women	101	715	565	1,318	55%
<b>Total</b>	<b>276</b>	<b>1,220</b>	<b>1,019</b>	<b>2,515</b>	<b>100%</b>
<b>STOVES:</b>					
Women trained	300	174	141	615	
Stoves produced/used	<b>316</b>	<b>446</b>	<b>198</b>	<b>960</b>	
<b>TREES PLANTED:</b>					
Schools	35,000	900	7,445	43,305	4%
Fruits	688	14,129	4,035	18,852	2%
Agroforestry	60,228	112,707	84,869	257,804	21%
Afforestation	424,617	294,897	161,383	880,902	73%
<b>Total</b>	<b>520,533</b>	<b>422,633</b>	<b>257,797</b>	<b>1,200,913</b>	<b>100%</b>

Table III. ENVIRONMENTAL REHABILITATION PROJECT (ERP) 1996/97

	LILONGWE	CHIKWAWA-	DEDZA	TOTAL	% TOTAL
<b>NUMBER OF PARTICIPANTS</b>					
Men	1,305	769	832	2,906	54%
Women	590	949	918	2,457	46%
<b>Total</b>	<b>1,895</b>	<b>1,728</b>	<b>1,750</b>	<b>5,373</b>	<b>100%</b>
<b>NUMBER OF VILLAGES</b>					
	109	30	50	189	
<b>NUMBER OF NURSERIES</b>					
	39	38	35	112	
<b>FARMERS IN AGROFORESTRY</b>					
Men	250	600	600	1,450	43%
Women	150	900	900	1,950	57%
<b>Total</b>	<b>400</b>	<b>1,500</b>	<b>1,500</b>	<b>3,400</b>	<b>100%</b>
<b>STOVES:</b>					
Women trained	1,000	1,000	1,000	3,000	
Stoves produced/used	1,000	1,000	1,000	3,000	
<b>TREES PLANTED:</b>					
Schools	100,000	100,000	150,000	350,000	11.6%
Fruits	150,000	100,000	100,000	350,000	11.6%
Agroforestry	300,000	250,000	100,000	550,000	18.3%
Afforestation	550,000	550,000	650,000	1,750,000	58.0%
<b>Total</b>	<b>1,100,000</b>	<b>1,000,000</b>	<b>1,000,000</b>	<b>3,000,000</b>	<b>100.0%</b>

## 7.0. LESSONS LEARNT

For sustainable natural resource management to be achieved environmental education is a must. People need to know the environmental relationships which exist between humans and nature.

Environmental management projects would sustainably be implemented if the feeling of ownership by the local communities is achieved. Many new approaches to environmental management such as community management strategies, wildlife utilization, and microprojects require high level of understanding and commitment by the individual members of local communities. This can only be achieved largely through effective environmental education and communication approaches involving as many implementors as possible.

Community empowerment through leadership and community organization training will ensure success of the tree planting activities or any other community based projects.



There are different reasons for planting trees by men and women. Women want to plant trees mainly for firewood whereas men plant trees for construction and income generating purposes. Usually, there is high female participation in matrilineal than in patrilineal systems of marriage. In matrilineal system of marriage men are the head of the family while women are the owners of the land. In few occasions women are being discouraged from planting trees by their husbands.

The element of environmental protection is often overlooked during refugee influx and settlement. It is only after damage has already taken place that planners start discussing the remedies. This trend needs to be revisited and changed in the future.

Wide spread poverty amongst the majority of the people in the country is a major force that has significant role in environmental degradation. Due to their immediate consumption needs, the poor are unable to make critical trade-off for the long term sustainability of natural resources on which their survival depends. Economic and social factors that contribute to low income are essentially the same as those that lead to the deterioration of natural resources.

Village Forestry and Nursery Committees play a very big role in natural resource management if properly trained. Trees owned individually receive maximum care and protection than those owned communally. Survival rate is very high in individually owned woodlots than in village woodlots.

The changes in the Forestry Policy and development of the National Environmental Plan by the Government will remove the negative attitude which the communities had on tree planting and natural resource management.

## **8.0. CONCLUSION**

The problem confronting Malawians living in areas where Mozambican refugees settled presents an immense challenge.

Some of the approaches used before on natural resource management left many rural people wondering. Only a collaborative effort of government, donors and NGOs will pave the way for improved environment in the country.

Participatory approaches in community projects will improve relevance and efficiency in service delivery to the affected communities. Involving local institutions, NGOs, village groups in collaboration with the government as part of a broader institutional network would be most beneficial in the process of environmental recovery.

It is also worth mentioning that a good networking system in the country is now established through the Coordinating Unit for Rehabilitation of the Environment (CURE) has effectively assisted in the implementation of environmental projects.

**STAKEHOLDER PARTICIPATION IN, AND  
RESTRUCTURING OF,  
FORESTRY RESEARCH MANAGEMENT**

**INCREASING STAKEHOLDER PARTICIPATION  
IN FORESTRY RESEARCH:**

**THE CASE OF THE FORESTRY RESEARCH  
INSTITUTE OF MALAWI**

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DRAFT

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## STAKEHOLDER PARTICIPATION IN, AND RESTRUCTURING OF, FORESTRY RESEARCH MANAGEMENT

### **Introduction and Background**

Malawi, with a per capita GDP of US\$230 is amongst the world's poorest countries (World Bank, 1995). It is land-locked and has no substantial mineral resources or industrial development. The population of around 10.4 million is increasing at 3.3% per annum (NSO, 1991). At an average density of some 110 per Km<sup>2</sup> Malawi has one of the highest population densities in sub-Saharan Africa. Agriculture supports about 85% of the population, mainly through subsistence farming (World Bank, 1995).

Most land suitable for traditional agriculture is now settled and farmed. As a result of the increasing population land holdings are declining while declining soil fertility results in reduced crop yields. Declining soil fertility and erosion are widely considered to be the major agricultural problems (Dept. of Agriculture, 1992). Tobacco accounts for 36% of GDP and 90% of foreign exchange earnings (World Bank, 1995). Recent liberalization of the burley grower sector has resulted in a massive increase in smallholder production.

About 28% of the total land area is still forested but deforestation is progressing at a high rate estimated at 1% to 3.5% per annum of forest cover (MNR, 1995; Swedish Space Corporation, 1993).

Wood-fuel continues to provide some 90% of the energy supply. Poles, withies, rope fiber and thatch for utensils, house and granary construction are all essential woodland products. Wild fruits, fungi, bush-meat and insects are also vital sources of dietary supplement, particularly for children. Poverty and isolation restrict access to modern drugs and indigenous woodlands are an important source of medicinal products for rural people. Deforestation results in the loss of many of these products, loss of biodiversity and environmental degradation.

Forestry and agroforestry have considerable potential to ameliorate the effects of Malawi's environmental and economic crisis. The effects of tree planting and indigenous woodland management could be felt in the domestic and national economy through the provision of utility products, employment and export opportunities; in agriculture through soil amelioration, restoration of soil fertility and microclimate; in the environment through retention of biodiversity, reduction of erosion and maintenance of watersheds.

The techniques, models and in some cases the species for intensive woodland management and agroforestry are largely undeveloped. In order for forestry to achieve its undoubted potential in supporting the economy, environment and quality of life a healthy forestry research and extension programme is therefore essential.

### **Policy Environment**

Forest policy was static and conservative for many years. Access to state owned Forest Reserves by the public was restricted and governed by the Forest Act of 1964. Access to tree and forest resources on communally owned customary land was also restricted. ownership by individuals of many species of indigenous tree was impossible. Meanwhile, the state forest

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service, supported by research, focused almost exclusively on the establishment and management of industrial timber plantations.

Forest policy was guided by the government's Development Policy Document (DEVPOL, 1986). This document was brief, imprecise and of limited use in relation to forestry. However, since the election of a new government in 1994 a new forest policy has been developed.

The new forest policy was approved by the Cabinet in January 1996. This policy places emphasis on more equitable access to state resources and poverty alleviation. The goal of current policy is to:

*"sustain the contribution of the national forest resources to the upliftment- of the quality of life in the country by conserving the resources for the benefit of the nation".*

Its general objectives are to:

*"satisfy the people's many diverse and changing needs, particularly those of the rural people who are the most disadvantaged".*

The strategies proposed for achievement of the objectives place reliance on increased productivity, agroforestry, plantation forestry and the general promotion of all aspects of tree growing and management (MNR, 1996).

A new Forest Act of 1996 to replace that of 1964 has been drafted in support of the 1996 forest policy. The bill is awaiting parliamentary approval and is:

*"An act to provide for participatory forestry, forest management, forestry research, forestry education, forest industries, protection and rehabilitation of environmentally fragile areas and international cooperation in forestry and matters for incidental thereto or connected therewith"*

#### **The mission of the Forestry Research Institute of Malawi**

The role of the Forestry Research Institute of Malawi (FRIM), as a government institution, is to serve national interests as defined by the policy of the government of the day. Accordingly, in early 1995 FRIM defined its mission in advance of changing policy as to:

*"provide information and germplasm and to carry out research on the sustained management, utilization and conservation of trees and forests emphasizing people's participation and benefits for poor people"*

#### **Need for action**

The gap between the demand and supply of wood products has been increasing. In 1995 demand was estimated to be 13 million m<sup>3</sup>, primarily for fuelwood, while sustainable production was estimated at 8 million m<sup>3</sup> (Davis and Gjessing, 1995).

The need to optimize use of available land through more intensive production is becoming ever more pressing as the population rises. Agroforestry interventions offer scope for increased

production of both agricultural and tree products. The Forest Reserves and National Parks occupying 8.4% and 10.4% of land area respectively can no longer be left idle. The ways and means of bringing these areas into sustainable production constitute a major challenge.

The potential of the timber plantations to create employment and export earnings should not be forgotten. Here too production per unit area can be increased through the application of research and better silvicultural management. The involvement of the private sector, communities and individuals in increasing agricultural, woodland and plantation productivity is crucial. Their involvement is essential not only in management and control of the resources themselves but also in research.

Forestry research in Malawi has tended to be driven by professional researchers and by the state-owned timber plantation sector. This was perhaps fine in the days when the users of forestry research were primarily fellow professionals and the issues were relatively simple. In today's environment, however, research cannot continue to operate in isolation from a wider audience of users and stakeholders.

Increased stakeholder involvement is necessary to ensure the relevance and validity of research programmes. This is particularly important as forestry research becomes more complex and multi-disciplinary in its nature. Research relating to agroforestry, social or community forestry in particular must be carried out in consultation and dialogue with the intended beneficiaries.

Forestry Research had tended to become somewhat compartmentalized along disciplinary lines and needed to become more problem focused in formulation and execution. Consequently a need was identified for redesign of the institutional approach to research planning and management.

#### **Objectives of improvements to Research planning and management**

The objectives of increasing stakeholder participation in forestry research planning, management and evaluation were:

1. To improve the relevance of research by making it more demand driven,
2. To improve the relevance, quality and value of research results and information disseminated to potential beneficiaries,
3. To increase the use and adoption of research results and recommendations,

The objectives of re-organizing institutional aspects of research planning and management were:

1. To encourage problem and development orientated research
2. To encourage a more multi-disciplinary approach to research
3. To simplify coordination, control and review
4. To make more efficient use of staff skills

#### **Main Activities**

The first need was to identify fora and mechanisms through which a wider range of stakeholders could be involved in research planning and management. Initially a wider range of

interest groups were invited to participate in the three yearly National Forestry Research Council 1 (NFRC) meetings. Subsequently, and with the approval of the NFRC, sub committees termed Strategy Area Coordinating Committees (SACC) were established. The SACCS are intended to meet twice yearly in order to monitor the research programmes and approve or recommend new research projects. SACCS report to the chairman of the NFRC, currently the Director of Forestry.

The next requirement was to identify appropriate stakeholder representatives for participation in the three-yearly NFRC meetings and twice yearly SACC meetings. Some groups of stakeholders cannot be effectively represented directly at this level. There is for instance no grouping or union which can adequately represent small farmers; in this case NGOs were chosen as proxy representatives.

Having identified the individual stakeholder representatives it was necessary to define their roles and to jointly develop mutually agreeable terms of reference for the SACCS. The development of prioritization criteria and methods for prioritization of research was one of the earlier areas identified.

The involvement of intended beneficiaries of research in field research programmes was considered important, particularly in Indigenous Woodland Management and Trees on Farm research. A collaborative programme of pilot woodland management involving research, forestry extension and villagers is now in the early stages of implementation. Plans for agroforestry systems research aimed at identifying farmer's perceptions and existing tree management practices are at an advanced stage of development. Involvement of tree seed customers in the establishment and management of seed orchards has also been attempted. Over time the direct involvement of grass roots level stakeholders is expected to become routine and extensive.

The institutional approach to research planning and management was redesigned through the formation of problem orientated research strategy areas and teams. Research projects are now located in one of four research Strategy Areas; 'Indigenous Woodland Management', 'Trees on Farm', 'Industrial Plantations' and 'Seed'. Two additional non-research Strategy areas 'Technical and Information Services' and 'Management Services' are also being developed. Each Strategy Area relates directly to a SACC whose membership is selected accordingly.

Following the creation of new systems and practices it was necessary to make them work! This required the development of Annual Plans of Operation and budgets in new formats, the institution of a system of Management By objectives and Exception and, perhaps most problematically, the devolution of control over very scarce and limited resources to Strategy Area Coordinators.

### **Implementation Problems**

- Representation of some groups difficult- small farmers, industry, NGOs
- SACCS, funding difficult, expansive (like democracy), continuity questionable, some poor attenders, ignorance of research methods, researchable problems etc.
- Criteria, Prioritization process a bit skewed; choice of criteria for all areas of diverse research programme problematic, Executive decision used to modify rankings!

- Implementation; coordination, process of change, resistance and misunderstanding (NFRC, FD, Researchers), over time improved understanding
- Development of Team Spirit
- Management By Objectives and Exceptions
- Staffing, quantity, quality, retention
- Understanding by FD management, stakeholder groups, staff

### **Results**

- Increased exposure to stakeholders
- Increased mutual understanding
- Increased participation of Stakeholders in research planning and management but still early for results to be seen and for full involvement in decision making.
- Increasing relevance of research
- Increased demand for outputs, reports, information, newsletters, correspondence, seed, training (seed and IWM)
- Increased profile and improved relationships with stakeholders
- Increased pressure, accountability and transparency
- Increased awareness of deficiencies
- Increased awareness of opportunities for R&D

### **Lessons Learned**

- SACC members need training and domestication
- Villagers and FD staff need training for involvement in research
- Need for tolerance and positive approach
- Staff need management training and assistance in process of change
- Value of Socio-economic inputs
- Costs are high, need to budget for this
- Resistance to change from many quarters

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**CAPACITY BUILDING IN LOCAL COMMUNITIES  
FOR  
SUSTAINABLE RESOURCE MANAGEMENT**

**MALI**

**L'EXPERIENCE DU PGRN DANS LE DEVELOPPEMENT DES  
CAPACITES DES COMMUNAUTES LOCALES EN MATIERE  
D'ORGANISATION, DE GESTION FINANCIERE ET  
RESOLUTION DES CONFLITS AU NIVEAU TERROIR**

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Projet Gestion de Ressources Naturelles*

**SOMMAIRE**

1. Description sommaire du projet
2. Principes suivis par le projet
3. Montage institutionnel
4. Démarche du projet
5. Vue d'ensemble sur le Développement des capacités dans le cadre du PGRN
6. Expériences du PGRN sur le Développement des capacités des communautés locales
  - En matière d'organisation
  - En matière de gestion financière
  - En matière de résolution des conflits
7. Problèmes fonciers rencontrés dans les villages sites du PGRN
  - Région de Kayes
  - Région de Koulikoro
  - Région de Mopti

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**L'EXPERIENCE DU PGRN DANS LE DEVELOPPEMENT DES  
CAPACITES DES COMMUNAUTES LOCALES EN MATIERE  
D'ORGANISATION, DE GESTION FINANCIERE ET RESOLUTION  
DES CONFLITS AU NIVEAU TERROIR**

**1. DESCRIPTION SOMMAIRE DU PROJET**

**1.1 Durée du projet**

Le PGRN s'inscrit dans le cadre d'un programme national à long terme de 15-20 ans. La phase actuelle du PGRN/IDA qui est de 8 ans va de 1993 à l'an 2000 au lieu de 5 ans 1993-1997 initialement prévus. Il comprend deux composantes: la composante IDA et la composante GTZ. La 2ème composante GTZ est de 4 ans (1995-1998).

**1.2 Objectifs de la phase actuelle**

Les objectifs poursuivis par le PGRN jusqu'à l'an 2000 sont les suivants.

1. Appuyer environ 650 communautés à élaborer, mettre en oeuvre, suivre et évaluer les plans de gestion de leurs terroirs et espaces pastoraux;
2. Elaborer et mettre en oeuvre un plan de gestion du Parc National de la Boucle du Baoulé;
3. Renforcer les compétences des structures techniques du MDRE pour leur permettre d'assister les communautés rurales à élaborer et mettre en oeuvre leurs plans de gestion;
4. Mettre en oeuvre un important programme de formation, d'information et de sensibilisation du public à la gestion des ressources naturelles et de l'environnement;
5. Apporter un soutien financier pour l'assistance technique, les services de consultants, les audits, la recherche appliquée et les études nécessaires à l'exécution du projet;
6. Créer et mettre en oeuvre un système de suivi environnemental en vue du coordonnier et de guider les nouvelles initiatives en cours au Mali et d'intégrer les leçons de l'expérience acquise dans une stratégie nationale de gestion des ressources naturelles.

**1.3. Zone d'intervention**

Jusqu'à l'an 2000, le PGRN/IDA interviendra sur quelques 600 terroirs villageois et espace pastoraux répartis entre quatre régions administratives du Mali (Kayes, Koulikoro, Mopti et Tombouctou) et situées dans des zones agro-écologiques représentatives du territoire national.

Les cercles concernés sont: kayes, Diéma, Kita., Dioïla, Kati, Kolokani, Nara, Djenné, Tenenkou, Douentza et Gourma-Rharous.

La composante GTZ intervient dans trois des quatre régions citées (Kayes, Koulikoro et Mopti). Les cercles concernés sont: Bafoulabé, Yélimane, Kolokani et Bankass. Elle couvrira entre 1991 et 1988 41 terroirs et espaces pastoraux.

#### **1.4 Bénéficiaires**

Les groupes-cible du PGRN, pendant la phase actuelle, comptent quelque 406 000 agriculteurs et pasteurs dont 26 000 répartis dans 41 villages au compte du PGRN/GTZ et environ 380 000 habitants et 600 villages pour le PGRN/IDA, répartis sur les zones d'intervention ci-dessus mentionnées.

#### **1.5 Coût**

Le coût total du projet se chiffre à 32,1 millions de dollars US pour le PGRN/IDA (1ère phase) et 20 millions de DM pour le PGRN/GTZ (1ère et 2ème phase). Le financement du PGRN comporte 20,4 millions de dollars US de crédit et tout le reste consiste en des dons et subventions.

#### **1.6 Financement**

Banque Mondiale	-	20,4 Millions de Dollars US
Norvège	-	5,0 Millions de Dollars US
PNUD	-	1,5 Millions de Dollars US
Allemagne	-	20,0 Millions de DM
Bénéficiaire	-	4,0 Millions de Dollars US

#### **1.7 Résultats attendus**

Le Projet contribuera à améliorer la qualité de vie de quelque 406 000 ruraux habitants dans la zone du Projet:

- En augmentant la production de l'agriculture de la foresterie et de l'élevage;
- En renforçant les capacités de gestion locale et en donnant aux villageois les compétences leur permettant de gérer leur développement;
- En rétablissant la stabilité écologique et en introduisant un système viable d'utilisation des terres dans lequel la production et la consommation seront équilibrées.

Les expériences de la gestion de l'environnement et des ressources pourront ensuite être appliquées à d'autres parties du Mali non convertes par le Projet. La capacité du Mali à mieux utiliser ses ressources naturelles et à suivre leur évolution dans le court et long termes en sera renforcée. La bonne gestion du Parc National de la Boucle du Baoulé avec la participation de la population aidera à préserver la diversité biologique.

## **2. PRINCIPES SUIVIS PAR LE PROJET**

La réussite de l'approche Gestion de terroirs adoptée par le PGRN est conditionnée par la prise en compte de certains principes opérationnels, à savoir:

- l'approche globale, multisectorielle ou holistique
- la faisabilité
- la durabilité
- la reproductibilité
- la participation.

### **Le principe de globalité**

L'approche sectorielle trop souvent orientée vers une augmentation de la production, n'a pas entraîné les résultats escomptés, bien au contraire. Une approche globale et interdisciplinaire s'impose donc, qui prend en compte et s'efforce d'intégrer l'ensemble des facteurs d'ordre socio-économique, politique, écologique, technique, qui déterminent les relations entre une communauté rurale et son espace.

### **Les principes de faisabilité, durabilité et reproductibilité**

Ces trois principes doivent être respectés pour toutes les mesures planifiées au niveau du village comme aux autres niveaux du projet. Les mesures doivent être faisables du point de vue socio-économique. Toutes les actions doivent être durables, surtout après l'intervention du projet et sans effets négatifs sur l'environnement et reproductibles sous les mêmes conditions, même sans l'intervention du projet.

### **Le principe de participation**

C'est certainement le principe le plus difficile à appliquer. Il est évident que les populations rurales doivent être impliquées à toutes les étapes de l'approche en tant que partenaires responsables du processus. Cela signifie, travailler sur la base de rapports de confiance qui ne dépendent ni de méthodes, ni d'outils, mais d'attitudes.

La participation ne peut être effective sans une mise en oeuvre réelle de la décentralisation. Un des objectifs de la gestion des ressources naturelles et de restituer aux populations le pouvoir de décision par rapport à leur destin.

## **3. MONTAGE INSTITUTIONNEL**

Les organes d'action et de gestion du PGRN sont les suivants:

Au niveau national:

- Le Comité National de Coordination du Projet,
- La Direction du projet ou unité centrale d'exécution et de suivi du projet communément appelée UCMO (Unité Centrale de Mise en Oeuvre)

Aux niveaux régional et sub-régional:

- Les Comités Régionaux de Coordination du Projet
- Les Comités de Cercle de Coordination du Projet
- Les Comités d'arrondissement de Coordination du Projet.

Au niveau des villages;

- Les comités villageois de gestion des ressources naturelles

Les équipes d'appui technique (EAT) et les chargés d'Appui Technique (CAT): Dans la composante IDA il est prévu dix (10) EAT d'ici l'an 2000 au lieu cinq initialement prévues. Les

membres des EAT sont recrutés sur une base contractuelle et financé par le projet pendant toute sa durée. Chaque EAT est composée de 3 spécialistes:

- Un spécialiste en communication et organisation
- Un spécialiste GRN
- Un spécialiste financier et administratif.

Elles appuient les organes d'action au niveau local.

Au niveau village, les CVGRN sont appuyés par les animateurs dans la mise en oeuvre du Projet. Chaque animateur, appuie trois CVGRN en moyenne par rapport aux activités du PGRN et du PNVA.

Dans la composante PGRN/GTZ quatre (4) chargés d'appui technique (CAT) ont été recrutés sur une base contractuelle. Ils appuient le coordinateur local et les équipes multidisciplinaires dans la mise en oeuvre de la démarche et veillent au respect des principes du Projet il y en a un par cercle concerné.

#### **4. DEMARCHE POUR L'ELABORATION ET LA MISE EN OEUVRE DES PLANS DE GESTION DES TERROIRS**

La dégradation des ressources naturelles renouvelables constitue à l'heure actuelle, le plus grave danger à une croissance agricole durable, par conséquent, à un développement socio-économique soutenu au Mali, l'économie malienne reposant principalement sur le secteur primaire.

C'est pourquoi depuis une décennie on assiste au Mali à la mise en oeuvre d'actions en faveur de la gestion participative des ressources naturelles renouvelables sur des domaines agricoles, des jachères, des pâturages et des forêts villageoises à l'échelle communautaire ou inter-communautaire.

Dans ce cadre, l'approche du PGRN est originale puisqu'il cherche à éviter les erreurs des démarches technicistes et productivistes du type "top-down", au profit d'une démarche souple, participative sur toute sa longueur et dont la finalité est le transfert des compétences de gestion des terres aux populations concernées, organisées.

En effet, au tout début du processus, à travers des séances de formation, d'information et de sensibilisation au moyen de techniques participatives, les techniciens-conseillers suscitent chez leurs interlocuteurs la mise en place d'organisations villageoises représentatives de toutes les catégories socio-professionnelles impliquées dans l'utilisation des ressources forestières fauniques, halieutiques, hydrauliques et pastorales. Il s'agit du Comité Villageois de Gestion des Ressources Naturelles, (CVGRN).

L'étape suivante consiste en une étude détaillée des milieux physique et humain. Celle-ci est menée en moyen d'outils très participatifs comme ceux du PRA (Participatory Rural Appraisal) avec la participation des hommes, femmes, jeunes, .... L'évaluation des contraintes et potentialités des milieux physique et humain qui en résulte débouche sur des négociations entre le deux parties (populations d'un coté, Projet de l'autre) qui aboutissent à une zonage du terroir villageois (ou de l'espace pastoral) et à l'affectation des "zones" à une ou plusieurs utilisations compatibles en fonction de leurs vocations respectives. C'est ainsi qu'on a des zones sylvicoles,

des zones agricoles, des zones sylvo-pastorales, de mise en défens, etc. Ce document est appelé "Schéma d'Aménagement".

Pour la mise en oeuvre de ce schéma, les investissements nécessaires pour l'équipement et les infrastructures adéquats sont identifiés localisés et planifiés dans un document appelé "Plan d'Aménagement".

Suite à une hiérarchisation des priorités, les investissements les plus urgents et financièrement faisables sont étudiés sur les plans technique et socio-économique. Avec les populations et suivant, les capacités contributives des parties en discussion/négociations, (Le Projet et les populations bénéficiaires), un dossier d'exécution est ficelé pour le reste de la durée financée du projet: c'est un Plan de Gestion.

C'est ce Plan de gestion qui constitue le point de départ de la dernière étape du processus. En effet, sur la base dudit document, différentes "Conventions de co-financement", qui définissent les engagements des deux parties, sont signées entre le Projet représenté par son Directeur et les populations représentées par le Président du CVGRN. Enfin commence l'exécution du projet en question qui est suivi aussi bien par les populations elles-mêmes que par le Projet à travers des documents conçus à cet effet.

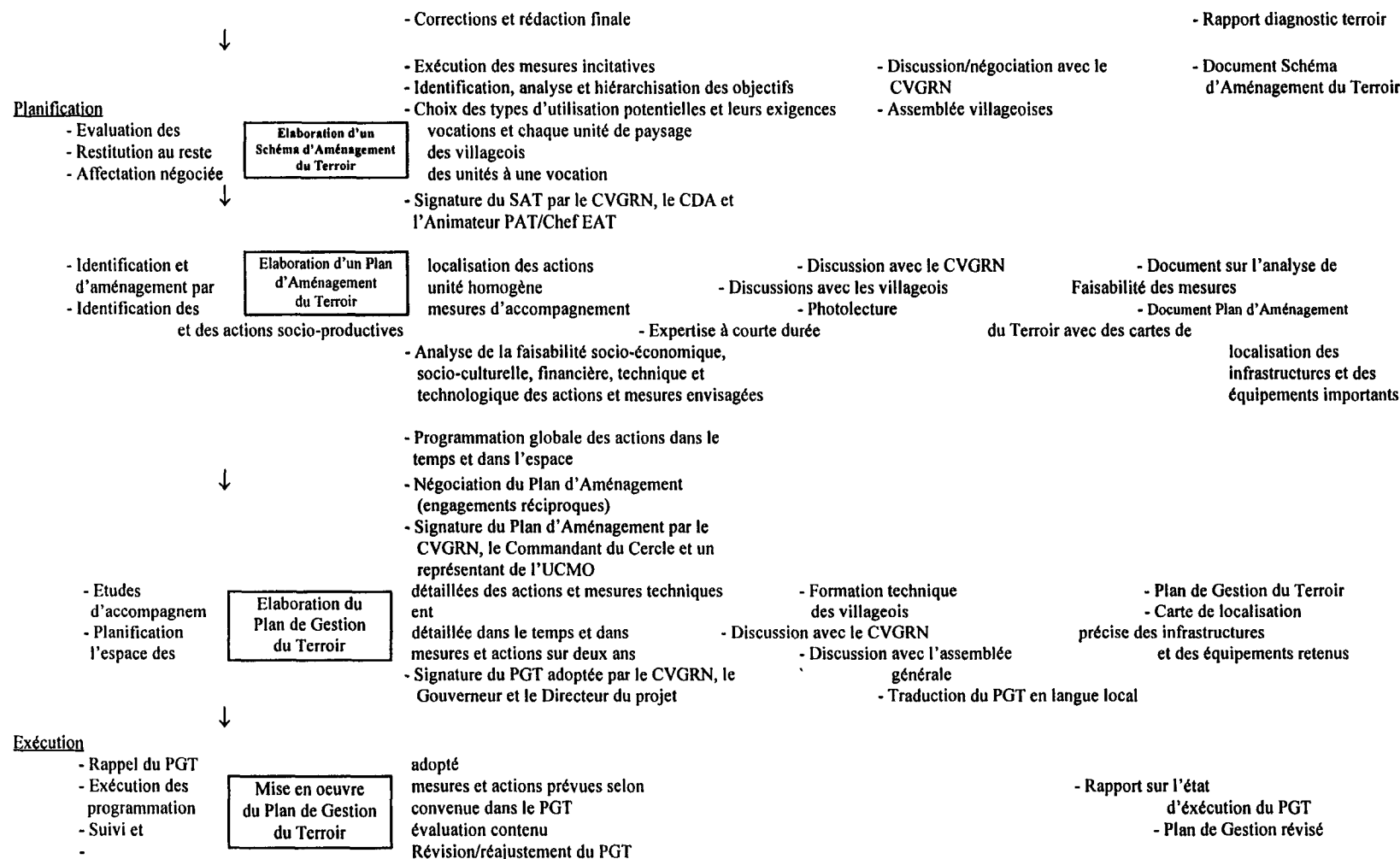
C'est ainsi que plusieurs activités de gestion de forêts villageoises furent mises en oeuvres dans des villages du projet. On peut citer de Badougou-Nafadji, à 50 km à l'Ouest de Bamako où dans la protection d'une zone forestière, le village réalisa en 1995 un parefeu après avoir convenu des principes d'utilisation et les dispositions à prendre pour leur respect par les populations du village et d'ailleurs.

Il s'agit là d'un processus très participatif mais qui ne peut se réaliser qu'au prix d'une méthodologie appropriée, d'une patience mais surtout d'une formation, information et sensibilisation conséquentes des populations partenaires.



**Elaboration d'un Plan de Gestion du Terroir**

PHASES	ETAPES	ACTIVITÉS	METHODES	DOCUMENTS d'aménagement et Gestion attendus	
<u>Préparation</u>	- Visite	<b>Prise en contact et échange d'idées entre techniciens et villageois</b>	du village Sensibilisation initiale Discussions techniciens & villageois Explication de la démarche PGT	- Assemblée villageoise - GRAAP	Rapport de mission PV des réunions villageoises
	-	↓			
	-	<b>Création d'un Comité Villageois de GRN (CVGRN)</b>	Formation, information et sensibilisation	- Assemblée villageoise	
<u>Diagnostic</u>	-	↓			
	-	<b>Diagnostic Socio-économique</b>	Formation, sensibilisation et information Etude de la documentation existante Préparation de la méthodologie Collecte des informations sur - le milieu humain et l'habitat - le budget et la consommation - Formation, information, sensibilisation - Analyse - du milieu physique et des ressources naturelles - des systèmes de production - Identification et hiérarchisation des problèmes généraux - Identification des mesures incitatives et étude sur la faisabilité	- Exploitation de la documentation existante (monographies villageoises existantes, registres de recensement, statistiques agricoles - Assemblée villageoise - Enquête participative - MARP - Interview - Visite de terrain - Discussions avec les villageois - Discussions avec les villageois	Rapport MARP  - Fiche de projet mesures incitatives
	-	↓			
	-	<b>Diagnostic physique détaillé</b>	- Délimitation du terroir - Identification et description des unités de paysage et unités homogènes - Identification et description des types d'utilisation actuelles de terre - Analyse et hiérarchisation des problèmes généraux et spécifiques à chaque unité de paysage	- Photolecture - Discussions avec CVGRN et personnes ressources - Visite de terrain	- Carte du terroir - Carte des Unités des paysage et des unités homogènes - Tableau descriptif des unités - Tableau des types d'utilisation actuel
		- Evaluation des tendances évolutives - Rédaction du diagnostic - Restitution du diagnostic du terroir	- Discussion avec les villageois en assemblée générale	- Carte d'utilisation actuelle des unités des paysages - Tableau des problèmes	



## **5. VUE D'ENSEMBLE SUR LE DEVELOPPEMENT DES CAPACITES DANS LE LE CADRE DU PGRN**

### **5.1 Objectifs**

L'objectif à long terme du Développement des capacités est de transmettre aux communautés rurales concernées un outil méthodologique qui leur permettra d'exploiter les ressources naturelles de manière plus efficace et soutenue.

La réussite de cet objectif suppose que les groupes, organisations concernés par le PGRN acceptent l'approche et s'associent activement au processus. Il s'agit essentiellement des communautés villageoises concernées, des cadres techniques chargés de les assister, des autorités administratives et politiques à tous les niveaux, et à la limite, de l'opinion publique dans son ensemble.

### **5.2 Domaines d'activités du Développement des capacités**

Pour chacun des groupes concernés, les activités de Développement des compétences (D.C.) touchent de nombreux domaines. Il s'agit entre autres:

- Pour les villageois:
  - \* Capacité d'établir ou renforcer les formes d'organisation sociale et de responsabilisation
  - \* Capacité de développer leur niveau de connaissance technique en vue de la programmation et de l'exploitation rationnelle des ressources naturelles
  - \* Capacité de négocier avec les autorités techniques et administratives
  - \* Capacité d'accroître significativement leurs revenus et prétendre à l'autonomie financière afin d'augmenter leurs capacités propres d'investissement.
  
- Pour les techniciens
  - \* Développement de leur capacité d'animation
  - \* Compréhension approfondie des processus d'élaboration et de mise en oeuvre des PGT
  - \* Renforcement de l'efficacité de leur travail au sein de 'l'équipe (esprit d'équipe)
  - \* Amélioration de leur niveau de connaissance technique
  - \* Capacité de communication à l'égard des villageois
  - \* Capacité d'identifier la validité des pratiques traditionnelles et de prendre en compte leurs besoins.
  
- Pour les autorités administratives, et politiques, opinion publique:
  - \* Sensibilisation aux problèmes de dégradation de l'environnement
  - \* Adhésion aux principes de gestion des terroirs basés sur la participation des communautés rurales
  - \* Compréhension du projet pour qu'elles l'appuient

### **5.3 Démarche méthodologique**

La méthodologie consiste à décomposer le processus de la formation en plusieurs étapes successives et liées qui vont être exécutées par (ou sous la responsabilité) de structures différentes. Les étapes suivies dans les grandes lignes sont les suivantes:

- 1 L'identification des compétences manquantes au niveau des populations Bénéficiaires, d'un organe d'exécution ou de décision du Projet;
- 2 L'analyse des compétences manquantes. Elle a pour objectif de préciser la nature de la défaillance et les détails y afférents;
- 3 La conception d'un module de formation à partir des résultats de l'analyse de la compétence manquante;
- 4 L'identification des structures (ONG, Bureau d'études, sociétés, etc) et personnes-ressources capables d'exécuter le module en question;
- 5 Le lancement d'un appel d'offres ou consultation restreinte, dépouillement des offres, choix d'un consultant;
- 6 L'exécution du module
- 7 Le suivi-évaluation de la session de formation
- 8 L'évaluation rétrospective in situ.

### **5.4 Les atouts du système de Développement des capacités (D.C.) du PGRN**

Le système de DC du PGRN présente des atouts du fait que ce soit la direction du projet qui conçoit et exécute les sessions de formation en faisant appel aux ressources humaines les plus compétentes en la matière, évitant ainsi le pluricéphalisme. Par ailleurs le PGRN a développé une banque de données informatisées (SIRF) permettant l'enregistrement, le stockage et la recherche de profil correspondant à toutes les qualifications pouvant être utiles au projet au titre de facilitateurs et de personnes ressources (un millier de références disponibles).

Le choix strict des formateurs et la sélection rigoureuse des prestataires de service pratiques par le PGRN au moyen du SIRF permet de disposer d'un stock de spécialistes pluridisciplinaires compétents tant au niveau national qu'international. Une telle sélection a permis d'écarter progressivement les consultants n'ayant pas donné satisfaction. Par ailleurs le PGRN a basé son programme de formation sur une méthodologie simple basée sur l'andragogie et la Recherche-Action. Les formations du PGRN sont basées sur les méthodes participatives (MARF, GRAAP, ZOPP).

Pragmatique, la formation à la "carte" de compte durée pratiquée par le PGRN fait appel aux ressources déjà existantes. Tous ces atouts ont abouti à l'amélioration des capacités d'analyse, de conception et d'exécution des groupes-cibles.

### **5.5 Les faiblesses**

Le système de formation du PGRN comporte quelques faiblesses qui peuvent être résumées comme suit:

- L'analphabétisme qui est un handicap à la bonne mise en oeuvre des activités de Développement des capacités

- Le choix des périodes de formation qui peut poser des problèmes du fait des occupations des communautés villageoises à certaines périodes de l'année.
- Le décalage pouvant exister parfois entre les sessions de formation suivie par les villageois et leur applicabilité.

## **6. EXPERIENCES DU PGRN SUR LE DEVELOPPEMENT DES CAPACITES DES COMMUNAUTES DANS LE CADRE DU PGRN**

### **6.1 En matière d'organisation**

Les Comités Villageois de Gestion des Ressources Naturelles (CVGRN) constituent la base matérielle de l'organisation des populations au PGRN. A travers des séances de formation, information et sensibilisation, les techniciens -conseillers expliquent le but et le rôle du CVGRN. L'assemblée villageoise le met en place sur la base de critères préalablement discutés avec les équipes multidisciplinaires (EMP) des comités locaux de Développement (CLD).

Le CVGRN est l'instance villageoise chargée de négocier et de superviser l'exécution des PGT. Interlocuteur principal, du village, il dispose d'un pouvoir reconnu à la fois par les communautés et les autorités politiques et administratives. Il est formé afin d'atteindre d'un niveau de technicité lui permettant de mieux participer aux différentes étapes de l'élaboration des PGT. Dans ses attributions, il doit:

- Pouvoir interpréter et expliquer le PGT aux différentes instances de décision à tout moment
- Veiller à l'application des décisions prises par l'assemblée villageoise relatives à l'affectation de l'espace et à la protection des ressources naturelles
- Proposer des sanctions aux autorités compétentes en cas d'abus dans l'utilisation des ressources naturelles
- Mobiliser les ressources humaines et financières nécessaires à l'élaboration et à la mise en oeuvre des PGT
- Jouer le rôle d'interface entre la communauté et les techniciens.

Le CVGRN est l'émanation des différentes couches de la population (agriculteurs, éleveurs, exploitants des bois, pêcheurs, femmes, jeunes ...). Au nom de la population le CVGRN s'occupe de l'identification, de la planification, de l'exécution et du suivi-évaluation des actions et mesures de gestion des ressources naturelles. Il regroupe des personnes dynamiques et disponibles pour la transmission des messages, la mobilisation et la conscientisation des populations.

### **6.2 En matière de gestion financière**

Le financement des investissements villageois se fait dans le cadre de conventions signées entre le PGRN et le CVGRN du village concerné quand il s'agit d'une réalisation qui intéresse le seul village (par exemples un puits, le traitement d'un site anti-érosif situé en plein terroir ...) ou entre le PGRN et les CVGRN des villages concernés quand il s'agit plain terroir ...) ou entre le PGRN et les CVGRN des villages concernés quand il s'agit d'une réalisation qui intéresse plusieurs villages (par exemples, le traitement, anti-érosif d'un bassin versant ou d'une dune située à cheval sur plusieurs terroirs, la restauration et l'aménagement d'une zone de ressources communes telles qu'une forêt, une grande mare, un pâturage ...).

Cette convention définit explicitement les apports des différentes parties au contrat, la nature de la réalisation à faire, les procédures de gestion de l'exécution du projet, les modalités de gestion durable de réalisation, etc ....

Dans le cas des investissements productifs et dans l'infrastructure socio-économique, le PGRN met un fonds de roulement à la disposition du CVGRN concerné qui accorde des prêts aux producteurs intéressés. Ces intérêts perçus par le CVGRN alimentent le Fonds Villageois de GRN qui finance à son tour tous les aspects du Développement local.

Les taux d'intérêt sont convenus localement village par village sous la gestion de chaque CVGRN. Les procédures de passation des marchés sont simples, compte tenu de leur caractère formateur surtout pour les villageois en général et le CVGRN en particulier. Chaque financement d'investissement villageois doit donner lieu à la signature d'une convention entre le ou les CVGRN concerné(s) et le PGRN. Sont également parties prenantes à la convention de co-financement, les comités régionaux, locaux et d'Arrondissement de Développement concernés.

L'exécution de chaque convention de cofinancement donne lieu à la signature d'un contrat de fourniture de bien ou service ou de travail entre le CVGRN concerné et "consultant" ou une "Entreprise" privée ou un service gouvernemental ou une Organisation non-gouvernementale (ONG) compétent dans le domaine en question. Les Passations de marchés portent sur l'exécution des contrats liés à l'objet des conventions de co-financement.

Les études sont commandées par la direction du projet suivant les directives pour l'emploi des consultants. Ces études portent sur la faisabilité socio-économique et technique du projet en question et surtout sur un coût de référence. Elles permettent de programmer techniquement et financièrement l'action au PGRN et d'apprécier les offres des Entreprises soumissionnaires à l'appel d'offre des CVGRN. Il en est de même pour les projets d'acquisition de biens d'équipement.

Les contrats entre les CVGRN et les "Entreprises" sont conclus sur la base de résultats d'un appel d'offre à la concurrence organisé par le CVGRN avec l'appui et l'assistance des techniciens du PGRN et des comités de Développement.

La participation effective des villageois à tout le processus (consultations, appels à la concurrence, suivi de l'exécution des contrats, paiements des contrats, contrôle à posteriori de l'exécution des investissements, évaluation des procédures, évaluation du schéma de financement et passation des contrats avec leurs fournisseurs) est la meilleure manière de les former à ces procédures qui respectent les principes de transparence, de libre-concurrence et de protection des ressources du projet et des populations.

La mise en compétition de différents fournisseurs par le CVGRN permet d'aboutir à l'un des objectifs principaux du Projet à savoir: ramener le pouvoir de décision et des capacités nouvelles aux niveaux des populations rurales pour la gestion de leurs propres affaires.

Ainsi les CVGRN, selon que la nature des fournitures ou des travaux soit plus ou moins complexe, et selon leur importance pourront organiser à leur niveau des appels à la concurrence locaux, des consultations ou des demandes de cotations et procéder à leur adjudication pour en faire des contrats dont ils suivront les exécutions du début à la fin.

### **6.3 Expérience du PGRN dans le foncier**

“Le foncier est constitué à la fois de la terre et des ressources naturelles qui y sont directement attachées et l’ensemble des relations entre individus ou groupes pour l’appropriation et l’utilisation de ces ressources”. En d’autres termes “Le foncier est l’ensemble particulier des rapports sociaux ayant pour support la terre ou l’espace territoriale. Ces rapports sociaux sont principalement déterminés par des facteurs économiques (accumulation primitive de capital et extraction de rente), juridiques (modes d’appropriation et modalités de règlement des conflits) puis par des techniques d’aménagement pouvant matérialiser et caractériser ces rapports sociaux.

Mais plus substantiellement, c’est la politique qui influe sur la manière de poser et de traiter la problématique foncière, la sensibilité du foncier ou politique étant augmentée par la concurrence ou la contradiction des choix pouvant émerger aux échelles nationale et locale. Pour PGRN le processus d’élaboration et de mise en oeuvre des PGT ne peut être traité en dehors du foncier. C’est pourquoi, volontairement ou non, les aspects du foncier sont abordés dans tout le processus d’élaboration du PGT.

Le tableau ci-dessous montre les aspects fonciers abordés dans le processus d’élaboration des PGT.

#### **LE FONCIER DANS LE PROCESSUS D’ELABORATION DU PGT**

<b>PHASE</b>	<b>ASPECTS FONCIERS ABORDES</b>
Sélection des terroirs	Les critères de sélection des villages tiennent compte de: <ul style="list-style-type: none"><li>- Absence de problèmes fonciers majeurs</li><li>- Existence de ressources communes avec d’autres terroirs</li><li>- Possibilité de former une commune rurale avec d’autres terroirs</li></ul>
Phase de préparation	<ul style="list-style-type: none"><li>- Sensibilisation sur les impacts positifs et négatifs du Foncier sur l’environnement à travers les systèmes de productions</li><li>- Incitation des populations à la mise en place d’un CVGRN en vue de la prise en compte des besoins des différents utilisateurs</li></ul>
Phase de diagnostic	<ul style="list-style-type: none"><li>- Etude des rapports sociaux ayant pour support la terre: Mode d’attribution des terres, aménagements réalisés (puits pastoraux, mares etc ...) et leurs modes d’utilisation</li><li>- Détermination des limites du terroir</li><li>- Prise en compte de l’espace foncier traditionnel (terroir avec 25 hameaux par exemple)</li></ul>
Phase de planification	<ul style="list-style-type: none"><li>- Affectation globale des terres à des vocations permettant de visualiser et de faire connaître (sans ouvrir de droits réels au bénéfice des particuliers) les divers types d’utilisation reconnus à l’échelle du terroir</li><li>- Dédommagement ou compensation d’individus ou groupes d’individus touchés par l’affectation des zones sur une base négociée</li><li>- Identification d’investissements collectifs pouvant matérialiser et caractériser les rapports sociaux (internes et externes) - Etude de faisabilité pour éviter des problèmes fonciers</li><li>- Elaboration de modalités de gestion des ressources (exploitation de bois, pâturage, gestion des points d’eau etc.</li></ul>

## **7. PROBLEMES FONCIERS RENCONTRES DANS LES VILLAGES SITES DU PGRN**

### **7.1 Région de Kayes**

#### **7.1.1 Cercles de Diéma**

##### **Village Kourougé**

- \* Problème de terres de cultures entre Kourougé et Mina. Les habitants de ce dernier village avaient défriché sur les terres de Kourougé sans leur autorisation en Mai 1994 puis en Mai-Juin 1995;
- \* Une solution locale n'ayant pu être trouvée le problème fut porté devant l'administration.

##### **Village de Méréla**

- \* Relevant administrativement du village de Dianguirde, le hameau de N'Gabanikori est géographiquement situé sur le terroir de Méréla. Au moment de l'élaboration des PAT, les habitants de Méréla ont posé le problème de la participation de N'Gabanikoro sans laquelle ils n'accepteraient pas l'exploitation des aménagements par ce dernier;
- \* Il a été proposé d'engager des pourparlers auprès du village de Dianguirde pour que N'Gabanikoro soit associé à l'exécution des actions d'aménagement de Méréla.

### **7.2 Région de Koulikoro**

#### **7.2.1 Cercle de Dioïla**

##### **Village de Dioumanzana**

- \* Le hameau de Konkon dirigé par le frère du chef de village de Djoumanzana ne le reconnaît plus;
- \* Des actions de GRN sont menées parallèlement dans ces deux sites. Des réflexions ont en cours pour voir si des réalisations communément exploitable par eux ne pourraient pas favoriser l'entente.

#### **7.2.2 Cercles de Kolokani**

##### **Village de Missira et Sébékoré II**

- \* Problème de limites entre Missira et Sébékoré II;
- \* Favoriser les solutions locales en vue d'arriver à un consensus.

### **7.3 Région de Mopti**

#### **7.3.1 Cercle de Djenné**

##### **Village de Djimatogo**

- \* Problème de pêche en Djimatogo et Gomitogo, le 1er étant maître de la terre et le 2ème, maître de l'eau;
- \* Des réflexions sont en cours pour voir si la réalisation d'investissements au bénéfice des deux villages peut favoriser la cohabitation.



Village de Kobassa, Ballé et Nialla

\* Problèmes communs avec les transhumances de petits ruminants.

Dans les zones forestières communautaires les projets relatifs à foresterie sont financés dans le cadre de conventions signées entre le PGRN et le CVGRN.

Les intérêts perçus par le CVGRN sur les fonds de roulements qu'il prête aux individus servent à alimenter les fonds villageois de GRN qui finance à son tour des actions de foresterie dans l'espace communautaire.

Les activités forestières dans les parcelles individuelles sont réalisées par les exploitations agricoles et concernent surtout l'agroforesterie.

Les collectivités villageoises définissent également des mesures de protection sur l'utilisation de l'espace sylvo-pastoral (ex. dans le village de Bena à Yélimané l'exploitation illicite du bois est sanctionnée par la confiscation du matériel de coupe et une amende de 2500F à 500 FCFA selon que l'on soit autochtone ou étranger).

**PARTICIPATORY NATURAL RESOURCES  
MANAGEMENT**

**MALI**

**Projet de Gestion des Ressources Naturelles  
PRGN**

*Adikarim Toure  
Direction des Ressources Forestières  
Ministère du Développement Rural et de l'Environnement  
Mali*

---

**Projet de Gestion des Ressources Naturelles  
PRGN**

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**Bien fondé du projet:**

Fragilité des écosystèmes sahéliens et déséquilibre entre ressources naturelles et besoins des populations dus à:

- Forte pression démographique
- Epuisement et dégradation des ressources naturelles
- Aléas climatiques

&

Echec ou insuffisance des résultats obtenus par les projets de développement rural, autant

- Approche techniciste
- Approche productiviste
- Approche intégrée/sectorielle

**Constat:**

- Accélération de la dégradation des ressources naturelles
- Paupérisation des populations rurales
- Non prise en compte de la dimension sociale du développement et de la participation effective des populations

→ D'où la recherche de nouvelles stratégies pour un développement durable

**Gestion des ressources naturelles  
par la gestion des terroirs:**

Mise en valeur rationnelle d'un terroir dans un souci d'intensification des systèmes de production tout en assurant le renouvellement à long terme de ces ressources.

**Axe fondamental:**

La participation de la population, à qui il faut redonner la capacité et le pouvoir d'initier les actions de développement les concernant. L'approche globale et multisectorielle du projet s'articule autour des axes suivants:

- Sensibilisation et responsabilisation des populations, décentralisation du pouvoir de décision
- Connaissance du milieu (diagnostic)
- Elaboration concertée des plans d'aménagement et de gestion des terroirs
- Réalisation des aménagements faisables, reproductives durables

**Objectif du Projet**

Un système rationnel d'utilisation des terres est introduit dans des sites sélectionnés afin d'arrêter et de renverser le processus de dégradation des ressources naturelles.

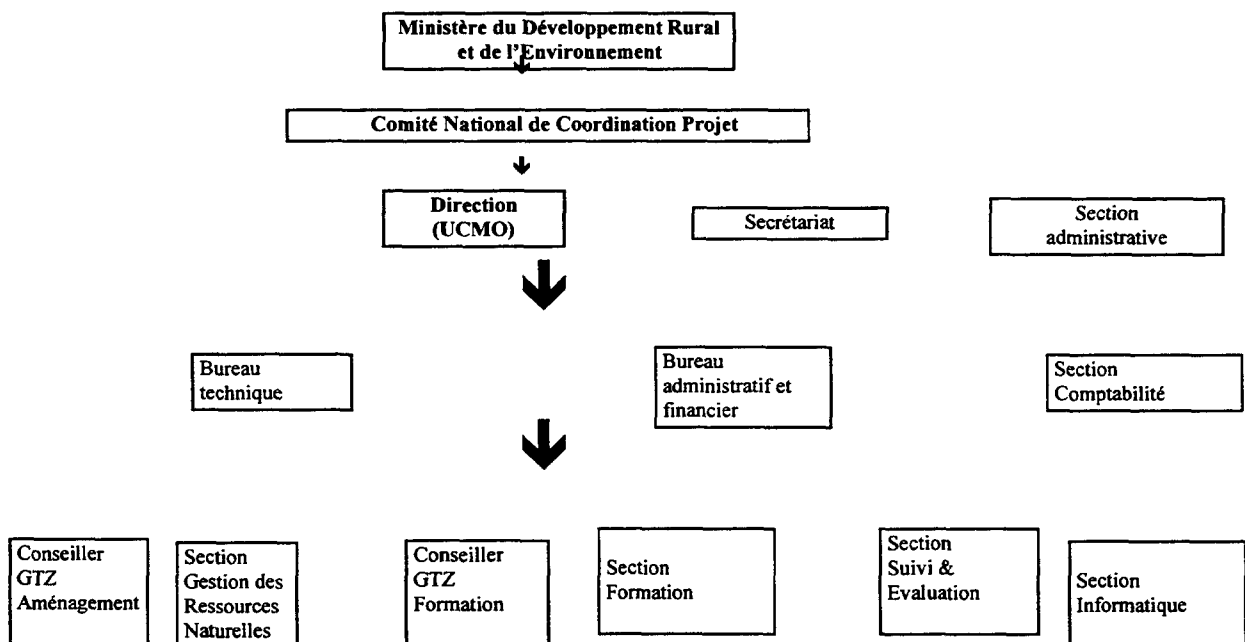
**Opérationnalisation de cet Objectif:**

Elaboration et Mise en Oeuvre de Plans de Gestion simples par la population avec le soutien des services techniques et des ONGs. Le Projet intervient sur la base du Programme National de Lutte Contre la Désertification (PNLCD) du Mali.

**Montage institutionnel**

**Niveau National:**

Le Projet est rattaché au Secrétariat Général du Ministère du Développement Rural et de l'Environnement. Il est dirigé par l'unité centrale d'exécution et de suivi du projet communément désignée par l'Unité Centrale de Mise en Oeuvre (UCMO).



UCMO
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EAT Kayes	CAT	GRCP Kayes	CAT	EAT Dienna	EAT Kolok	CAT	GRCP Koulikero	EAT Kati	CAT	CRCP Mopti/ Toukoure	EAT Mopti
-----------	-----	------------	-----	------------	-----------	-----	----------------	----------	-----	----------------------	-----------

CCCP Kayes	CCCP Rafoulable	CCCP	CCAP Dienna	CCCP Kita	CCCP	CCCP Kolokani	Nara CCCP Dioila	CCCP Kati	CCCP Bankass	CCCP Djenne	CCCP Ténenkou	CCCP Douentza	CCCP Ghouma-Kharou
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4 CACP	6 CACP	6CACP	2 CACP	1 CACP	CACP	4 CACP	1 CACP	2 CACP	5 CACP	2 CACP	CACP	CACP	CACP
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30 CVGRN 10 CVGRN 10 CVGRN 30CVGRN 10 CVGRN 15 CVGRN 15 CVGRN 15 CVGRN 15 CVGRN 9 CVGRN 16 CVGRN 16 CVGRN 2 CVGRN 10CVGRN

**National Régional, Subrégional, Village**

Les Comités Régionaux, de Cercles et d'Arrondissements de Coordination du Projet (CRCP, CCCP, CACP) constituent les organes d'action et de gestion du projet aux différents niveaux déconcentrés. Les comités villageois de Gestion des Ressources Naturelles (CVGRN), élus par la population, sont les interlocuteurs privilégiés du projet au niveau es villages.

**Zones d'Intervention**

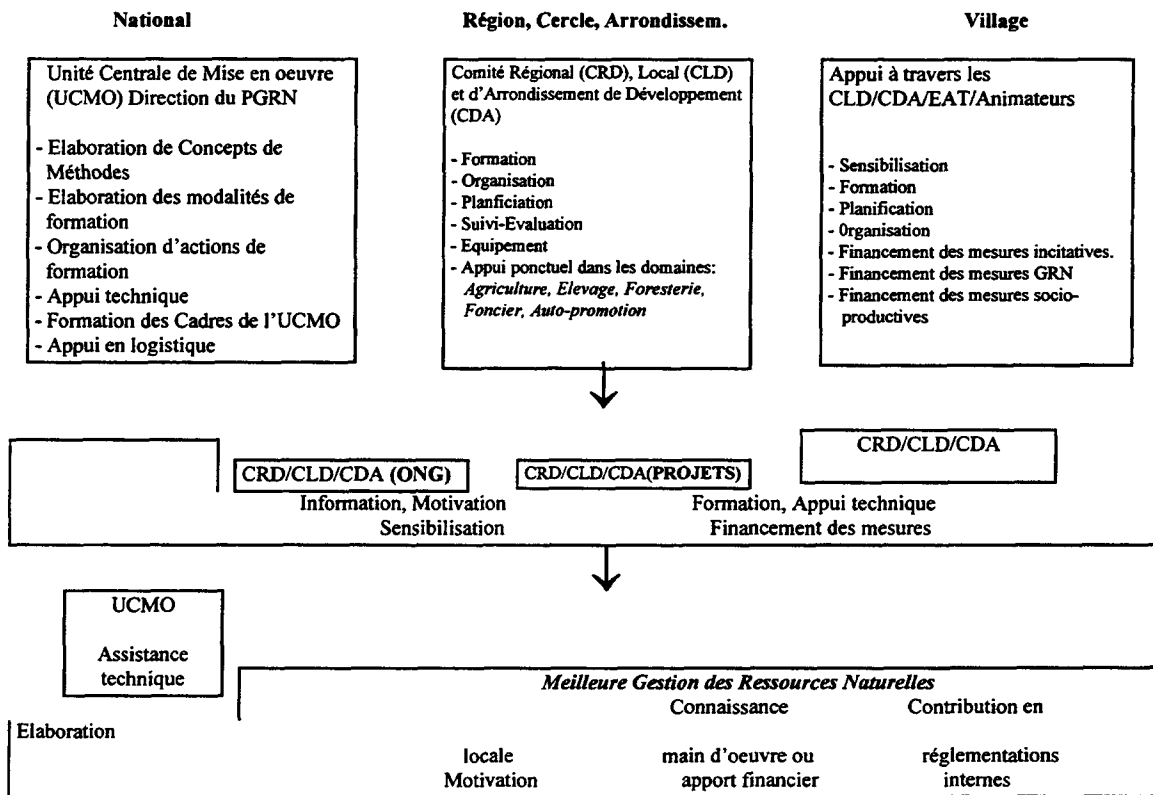
**14 Cercles:** (Kayes, Yélimané, Bafoulabé, Diéma, Kita, Kolokani, Kati, Doïla, Djenné, Bankass, Nara, Ténenkou, Douentza, Gourma Rharous) représentatives pour le Mali et choisies selon les critères suivants:

- représentative:
- d'une ou plusieurs zones agro-écologiques
  - des systèmes de production
  - des réalités foncières
  - de l'organisation socio-ethnique

**Sites d'intervention:** Représentatifs de la réalité du Cercle selon les mêmes critères et aussi l'exploitation des ressources communes et la possibilité de constituer une même commune rurale dans la perspective de la décentralisation.

<b>Zones</b>	<b>1. Kayes</b>	<b>2. Yélimané</b>	<b>3. Bafoulabé</b>	<b>4. Diéma</b>
<i>Superficie:</i>	22.118 km2	5.762 km2	20.120 km2	9.920 km2
<i>Population:</i>	298.115	108.722	160.277	131.303
<i>Zone Agro-Ecologique et Pluviom:</i>	Sahel 500-900 mm	Sahel 400-500 mm	Soudan 600-1000 mm	Sahel 500-700 mm
<i>Ethnie dominante:</i>	Soninké, Bamba	Soniké, Maures	Malinké/Khasso	Soniké
<i>Syst. de Production</i>	Sylvo-Pastoral	Agro-Sylvo-Past.	Agro Pastoral	Agro Pastoral
<i>Nombre de Villages</i>	21	10	10	23
<i>Population couv.</i>		7.900	6.600	
<i>Problèmes principaux</i>	- Manque d'Eau - Déprédateurs - Insuffisance de pâturage	- Manque d'Eau - Déprédateurs - Insuffisance de pâturage	- Manque d'Eau - Fertilité des sols - Manque de matériel agricole	- Manque d'Eau - Fertilité des sols - Manque de matériel agricole
<b>Zones:</b>	<b>5. Kita</b>	<b>6. Kolokani</b>	<b>7. Kati</b>	<b>8. Dioila</b>
<i>Superficie:</i>	36.337 km2	11.640 km2	16.300 km2	13.032 km2
<i>Population:</i>	280.225	180.759	405.577	302.448
<i>Zone Agro-Ecologique et Pluviom:</i>	Soudan 600-1300 mm	Soudan 600-1200 mm	Soudan 600-1200 mm	Soudan 900 - 1.100mm
<i>Ethnie dominante:</i>	Malinke, Peulh	Bambara	Bambara	Bambara
<i>Syst. de Production</i>	Agricole	Agricole, Pâturage	Agricole	Agricole
<i>Nombre de Villages</i>	7	12 + 5	15	6
<i>Population couv.</i>		4300		
<i>Problèmes principaux</i>	- Manque d'Eau Appauvrissement des Terres - Criquets	- Manque d'Eau - Appauvrissement des Terres - Criquets	- Manque d'Eau - Manque des Terres - Enclavement	- Manque d'Eau - Déprédateurs - Insuffisance de pâturage
<b>Zones:</b>	<b>9. Nara</b>	<b>10. Tenenkou</b>	<b>11. Djenné</b>	<b>12. Bankass</b>
<i>Superficie:</i>	30.746 km2	11.110 km2	4.467 km2	9.000 km2
<i>Population:</i>	178.189	133.873	145.663	176.520
<i>Zone Agro-Ecologique et Pluviom:</i>	Sahel 600-1200 mm	Sahel 500 - 600 mm	Sahel 550-650 mm	Sud-Sahel 600 mm
<i>Ethnie dominante:</i>	Soninké	Peulh, Bambara	Bozo, Peulh	Dogon, Peulh
<i>Syst. de Production</i>	Agro-pastoral	Agro-Pastoral	Agro-Pastoral	Agro-Sylvo-Past.
<i>Nombre de Villages</i>	6	6	12	10
<i>Population couv.</i>			6.400	
<i>Problèmes principaux</i>	- Manque d'Eau - Manque des Terres - Enclavement	- Manque d'Eau - Fertilité des sols - Manque de matériel agricole	- Manque d'Eau - Fertilité des sols - Manque de matériel agricole	- Manque d'Eau - Manque des Terres - Enclavement

**Domaines d'Activités au niveau**



**CONTRIBUTION DES DIFFERENTS BAILLEURS DE FOND:**

**IDA:** 30,9 Mio US\$ = 16 Mrd F CFA (1993 - 1997)

**RFA:** 20 mio DM = 7 Mrd F CFA (1991 - 1998)

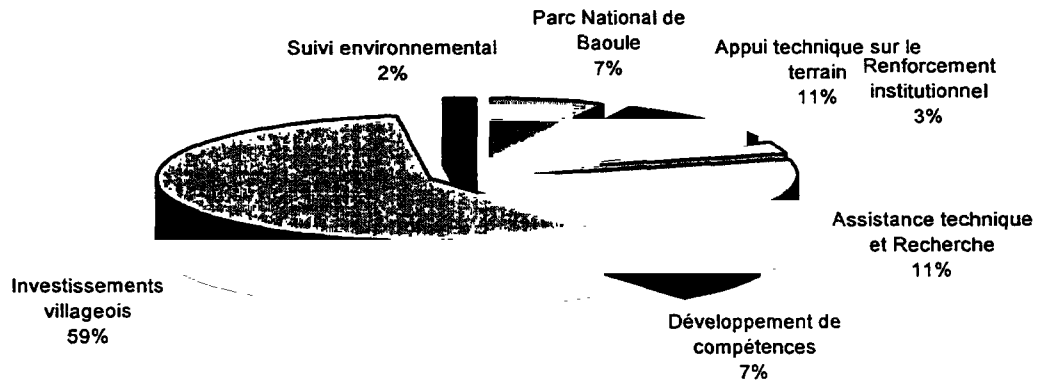
<ul style="list-style-type: none"> <li>- Renforcement institutionnel</li> <li>- Boucle de Baoulé</li> <li>- Suivi Environnement</li> <li>- Expertise à courte durée</li> <li>- Equipement et fonctionnement</li> <li>- Investissements au niveau des villages (58% du budget)</li> <li>- Développement des compétences et sensibilisation du public (7% du budget)</li> </ul>	<ul style="list-style-type: none"> <li>- 2 Experts à longue durée 1 Conseiller en Aménagement 1 Conseiller en Formation</li> <li>- Expertise à courte durée</li> <li>- Equipement et fonctionnement</li> <li>- Subventions locales (5.0 Mio DM) pour les réalisations au niveau villageois</li> <li>- Formation des Cadres de l'UCMO</li> </ul>
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*dont:*      4,0 Mio US\$ Bénéficiaires  
             20,4 Mio US\$ Crédit IDA  
             5,0 Mio US\$ Norvège  
             1,5 Mio US\$ PNUD

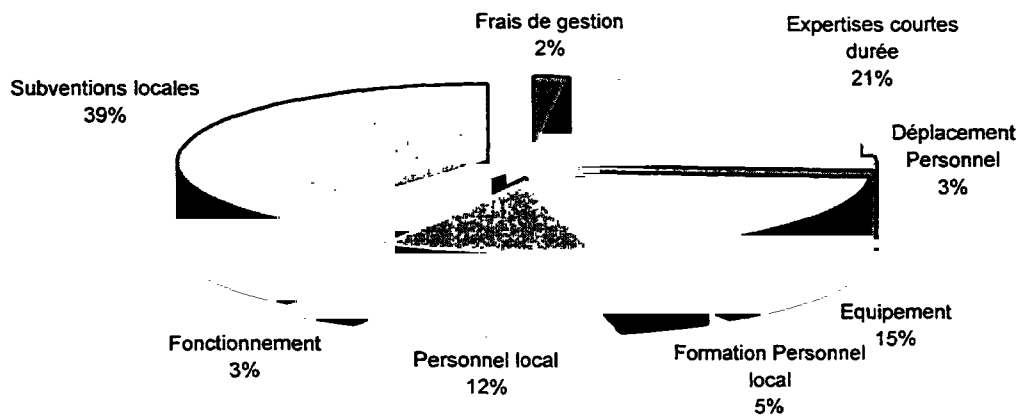
**Contribution des différents partenaires**



**Budget par composante (PGRN/IDA)**



**Budget local par composante (PGRN/GTZ)**





## African Forest Policy Forum--Proceedings

### Tableau Synoptique de Planification de Projet

**Titre:**  
**Numéro du Projet:**

**Projet de Gestion des Ressources Naturelles PGRN**  
**2370 ML (IDA) 94.2238.7-001.00)**

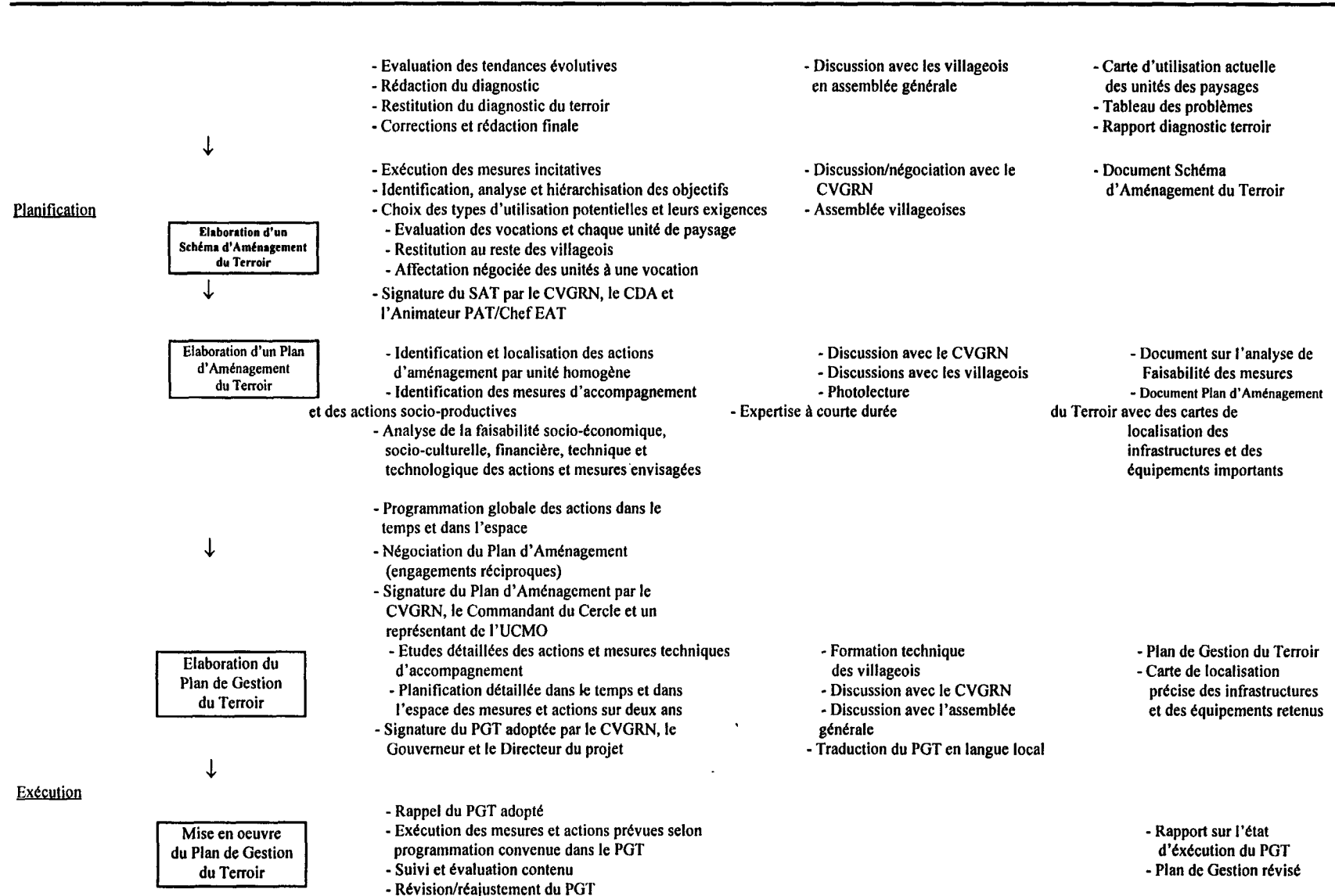
**Durée du Projet: 01.01.95 31.12.98**  
**Pays: Mali**

**Date:09.06.94**

<i>Description sommaire</i>	<i>Indicateurs objectivement vérifiable</i>	<i>Sources de Vérification</i>	<i>Hypothèses importantes</i>
<i>Objectif Global</i> OG: La gestion durable des ressources naturelles est assurée par les communautés rurales	Les mesures mises en oeuvre par les populations dans le cadre des PGT présentent un effet stabilisateur sur les ressources naturelles des terroirs concernés	Conclusions du Volet Suivi-Environnemental	Les communautés villageoises continuent à exécuter Les programmes de Gestion des Ressources Naturelles en utilisant leurs propres ressources
<i>Objectif Global</i> OP: Un système rationnel d'utilisation des terres est introduit dans des sites sélectionnés	<i>Indicateur objectif du projet</i> Les activités de production des populations sont réalisées sur la base des Plans de Gestion des Terroirs élaborés de façon participative	Rapports du Suivi-Evaluation	1. Un cadre juridique adéquat est élaboré et appliqué ( loi-foncière, textes forestiers, code de l'eau, etc.) 2. Croissance démographique est maîtrisée 3. GRN reste l'objectif prioritaire des autorités maliennes et des bailleurs de fonds 4. Les politiques de décentralisation adéquate est maintenue
<i>Résultats / sous objectifs</i>	<i>Indicateurs résultats</i>		
R1 Les organes du projet sont fonctionnels	1.1 Le personnel contractuel recruté correspond aux effectifs, aux profils et aux qualifications requis 1.2 Les organes du projet ont pris fonction selon la composition les attributions et la périodicité prévues 1.3 Des programmes de travail et des PETF sont élaborés et révisés selon l'échéancier prévue et la qualité requise	Plan d'opération, description de postes Rapports d'activités, PV de réunions Programmes et PETF	1.1 Les CACP sont créés 3 mois après le choix des villages 1.2 La stabilité du personnel est assurée 1.3 La collaboration entre les différentes structures impliquées est effective 1.4 Les conditions de travail offertes par les différents programmes et projets sont harmonieuses
R2 Un système de formation/information et sensibilisation est mis en-oeuvre	2.1 Les programmes de formation sont exécutés selon l'échéancier prévue et la qualité requise 2.2 L'emploi des compétences extérieures a augmenté 2.3 Une journée de sensibilisation du public est organisé à différents niveaux chaque année 2.4 Au moins 3 thèmes/an sur la GRN sont identifiés et développés à travers divers supports d'ici 1997	Rapport d'évaluation sur les activités de formation " "	2.1 Les compétences sous-traitantes sont disponibles
R3 Le suivi et l'évaluation de la mise en oeuvre du projet sont assurés	3.1 Le cadre de Suivi-Evaluation est révisé et disponible avant 1/1995 3.2 Les bases d'informations nécessaires au Suivi-Evaluation sont disponibles à travers la banque de données villageoises d'ici 1995 3.3 Les résultats du Suivi-Evaluation sont connus et pris en considération aux différents niveaux	Document de S/E Echantillon de listing  PV de réunions tenues aux différents niveaux, Document de travail révisé	
R4 La compétence en GRN des structures techniques chargées du développement rural est renforcée	4.1 Les dossiers villageois et les fiches de projet sont fournis selon la qualité requise	Documentation UCMO	4.1 Les structures techniques chargées du développement rural restent stables 4.2 Le programme sectoriel des services déconcentrés ne constituent pas un handicap au bon déroulement du projet 4.3 Les structures de recherche sont aptes et disponibles à mener les programmes de recherche d'accompagnement
R5 La capacité des communautés rurales à gérer leurs ressources naturelles est renforcée	5.1 Les CVGRN sont mis en place et fonctionnent selon leurs attributions 5.2 Les communautés rurales mettent en oeuvre les techniques GRN apprises	Rapports de mission sur le terrain, PV de réunions Rapports de mission sur le terrain, PV de réunions	5.1 Le cadre juridique de la réglementation élaboré au niveau local est garanti 5.2 Les responsables politiques et techniques acceptent le transfert du pouvoir, du savoir et de l'avoir aux populations
R6 Des Plans de GRN sont élaborés et mis en oeuvre sur des terroirs villageois et espaces pastoraux sélectionnés	6.1 190 Plans de Gestion sont disponibles fin 1997 6.2 Les mesures prévues dans les PGT sont réalisées en conformité avec le calendrier	Rapports Suivi-Evaluation Rapports Suivi-Evaluation	6.1 La collaboration des populations est effective 6.2 Des arrangements fonciers locaux sont possibles

## Elaboration d'un Plan de Gestion du Terroir

PHASES	ETAPES	ACTIVITÉS	METHODES	DOCUMENTS d'aménagement et Gestion attendus
Préparation	Prise en contact et échange d'idées entre techniciens et villageois	<ul style="list-style-type: none"> <li>- Visite du village</li> <li>- Sensibilisation initiale</li> <li>- Discussions techniciens &amp; villageois</li> <li>- Explication de la démarche PGT</li> </ul>	<ul style="list-style-type: none"> <li>- Assemblée villageoise</li> <li>- GRAAP</li> </ul>	<ul style="list-style-type: none"> <li>- Rapport de mission</li> <li>- PV des réunions villageoises</li> </ul>
	Création d'un Comité Villageois de GRN (CVGRN)	<ul style="list-style-type: none"> <li>- Formation, information et sensibilisation</li> </ul>	<ul style="list-style-type: none"> <li>- Assemblée villageoise</li> </ul>	
Diagnostic	Diagnostic Socio-économique	<ul style="list-style-type: none"> <li>- Formation, sensibilisation et information</li> <li>- Etude de la documentation existante</li> <li>- Préparation de la méthodologie</li> <li>- Collecte des informations sur               <ul style="list-style-type: none"> <li>- le milieu humain et l'habitat</li> <li>- le budget et la consommation</li> </ul> </li> <li>- Formation, information, sensibilisation</li> <li>- Analyse               <ul style="list-style-type: none"> <li>- du milieu physique et des ressources naturelles</li> <li>- des systèmes de production</li> </ul> </li> <li>- Identification et hiérarchisation des problèmes généraux</li> <li>- Identification des mesures incitatives et étude sur la faisabilité</li> </ul>	<ul style="list-style-type: none"> <li>- Exploitation de la documentation existante (monographies villageoises existantes, registres de recensement, statistiques agricoles</li> <li>- Assemblée villageoise</li> <li>- Enquête participative</li> <li>- MARP</li> <li>- Interview</li> <li>- Visite de terrain</li> <li>- Discussions avec les villageois</li> <li>- Discussions avec les villageois</li> </ul>	<ul style="list-style-type: none"> <li>- Rapport MARP</li> <li>- Fiche de projet mesures incitatives</li> </ul>
	Diagnostic physique détaillé	<ul style="list-style-type: none"> <li>- Délimitation du terroir               <ul style="list-style-type: none"> <li>- Identification et description des unités de paysage et unités homogènes</li> <li>- Identification et description des types d'utilisation actuelles de terre</li> </ul> </li> <li>- Analyse et hiérarchisation des problèmes généraux et spécifiques à chaque unité de paysage</li> </ul>	<ul style="list-style-type: none"> <li>- Photolecture               <ul style="list-style-type: none"> <li>- Discussions avec CVGRN et personnes ressources</li> <li>- Visite de terrain</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Carte du terroir               <ul style="list-style-type: none"> <li>- Carte des Unités des paysage et des unités homogènes</li> <li>- Tableau descriptif des unités</li> <li>- Tableau des types d'utilisation actuel</li> </ul> </li> </ul>



MINISTERE DU DEVELOPPEMENT RURAL  
ET DE L'ENVIRONNEMENT

REPUBLIQUE DU MALI  
UN PEUPLE UN BUT UNE FOI

PROJET DE GESTION  
DES RESSOURCES NATURELLES  
(PGRN)

CONVENTION DE COFINANCEMENT

MODELE "TRAVAUX PUBLICS"

ENTRE : LE PROJET DE GESTION DES RESSOURCES NATURELLES (PGRN)  
LE COMITE REGIONAL DE DEVELOPPEMENT DE : .....  
LE COMITE LOCAL DE DEVELOPPEMENT DE : .....  
LE COMITE D'ARRONDISSEMENT DE DEVELOPPEMENT DE : .....  
ET: LE COMITE VILLAGEOIS DE GESTION DES RESSOURCES  
NATURELLES (CVGRN)

DE: ..... CERCLE DE : .....

INTITULE DU PROJET :

No. DE PROJET :

SIGNEE LE :

ENTREE EN VIGUEUR LE :

ENTREE:

Le Projet de Gestion des Ressources Naturelles ci-après dénommé “le PRGN”, représenté par Monsieur .....

Le Comité Régional de Développement ci-après dénommé “CRD” de: ..... représenté par son Président .....

Le Comité Local de Développement ci-après dénommé “CLD” de: ..... représenté par son Président .....

Le Comité d’Arrondissement de Développement ci-après dénommé “CDA” de: ..... représenté par son Président .....

ET

Le Comité Villageois de Gestion des Ressources Naturelles de .....(Cercle de .....) ci-après dénommé “le CVGRN” représenté par son Président, Monsieur .....

Il a été convenu et arrêté ce qui suit:

ARTICLE 1: OBJET DE LA CONVENTION

Le cofinancement du projet par une contrepartie CVGRN et par une contribution PGRN fait l’objet de la présente convention.

Le PGRN fournira une contribution au financement du projet suivant les termes et conditions de la présente convention de cofinancement.

ARTICLE 2: CONSISTANCE DU PROJET

Le CVGRN s’engage à réaliser le projet de ..... situé à ..... Il s’agit notamment de ..... (description sommaire).

Les autres spécifications du projet sont décrites en détail dans le dossier technique faisant partie intégrante de la présente convention.

ARTICLE 3: COUT DU PROJET

Le coût de l’ensemble du projet est estimé à ..... (.....) Francs CFA.

---

**ARTICLE 4: LE MONTANT DE LA CONTRIBUTION PGRN**

Le montant de la contribution PGRN est arrêté à .....  
.....  
.....(.....) Francs CFA, soit .....% du montant total.

**ARTICLE 5: LE MONTANT DE LA CONTREPARTIE A FOURNIR PAR LE CVGRN**

Toute la partie du coût du projet hormis l'encadrement technique, et qui n'est pas financée par la contribution PGRN, constitue la contrepartie à fournir par le CVGRN. Le montant total de cette contrepartie, qui sera fournie sous forme de ..... est estimé à .....( .....) Francs CFA.

La valeur de chaque tranche de travaux réalisés est précisée dans le contrat de travail conclu entre le CVGRN et l'exécutant des travaux.

**ARTICLE 6: CONDITIONS DE DEBOURSEMENT DES FONDS**

Les fonds du PGRN, pour la réalisation du projet, sont exclusivement réservés aux opérations prévues dans la présente convention.

Les travaux seront réalisés sous l'entière responsabilité du CVGRN, quelque soit la personne qui les exécute. Les représentants du PGRN et du CLD apporteront un appui de conseils et contrôleront la bonne exécution des travaux selon les normes.

Le déblocage de chaque tranche ultérieure de la contribution PGRN est conditionné par la constatation par le PGRN que:

- l'état d'avancement des travaux l'autorise,
- les travaux sont bien exécutés, conformément aux dispositions contractuelles.

**ARTICLE 7: DE L'UTILISATION DES FONDS DE CONTRIBUTION DU PGRN**

Toute utilisation des fonds de contribution, autre que pour le projet ci-dessus cité et en dehors des termes de cette convention, est interdite.

Tout reliquat de fonds sera reversé au PGRN.

Le Directeur du PGRN est l'ordonnateur du projet.

Les tranches de la contribution sont délivrées par chèques bancaires, libellés au nom du maître d'oeuvre par le PGRN.

**ARTICLE 8: LES JUSTIFICATIONS DES DEPENSES SUR LES FONDS DE CONTRIBUTION**

Une copie des pièces justificatives des paiements effectués sera adressée par le PGRN au CVGRN.

**ARTICLE 9: DELAI DE REALISATION DU PROJET**

Le CVGRN s'engage à achever la totalité du projet dans un délai de .....(.....) mois à compter de la date de mise en vigueur de cette convention de cofinancement.

**ARTICLE 10: OBLIGATION DU CVGRN**

A la signature de la présente convention, le Président du CVGRN doit établir une attestation du Directeur du PGRN prouvant que la contrepartie villageoise est disponible et mobilisable immédiatement.

Le CVGRN s'engage à assurer l'entretien et les répartitions régulières des bâtiments construits ou réparés, l'entretien de l'équipement et du mobilier fournies, ainsi que la création et le maintien d'un environnement sain et agréable.

**ARTICLE 11: CONTROLE DES DEPENSES SUR LA CONTREPARTIE CVGRN**

Les situations des contreparties du CVGRN peuvent à tout moment être vérifiées par le Représentant du PGRN.

Toute utilisation de la contrepartie PGRN autre que celle définie par la présente convention constitue de facto un acte qui justifie l'annulation de cette convention de cofinancement.

Le cas échéant, la totalité des fonds déjà versés dans le cadre de la convention de cofinancement devra être remboursée au PGRN.

**ARTICLE 12: CONTRIBUTION DES COMITES DE DEVELOPPEMENT**

Les Comités Régionaux, Locaux et d'Arrondissement de Développement concernés contribueront à la réalisation de l'objet de cette convention par leur appui technique et le suivi des actions.

**ARTICLE 13: ACHEVEMENT DES TRAVAUX**

L'UTILISATION des ouvrages n'est autorisée qu'après la réception provisoire des installations. A cette fin, le PGRN, le CLD et le CVGRN procéderont à la réception provisoire des travaux en présence de l'exécutant, et cosigneront avec lui un procès verbal de réception provisoire.

La dernière tranche constituant la retenue de garantie ne sera réglée qu'après un délai de douze mois à compter de la date de réception provisoire. Cette retenue peut faire l'objet d'un cautionnement à 100% dont la main-levée sera délivrée à la réception définitive des ouvrages, sanctionnée par un procès verbal.

**ARTICLE 14: LA CLOTURE DU PROJET**

Au terme du délai de garantie, le PGRN, le CLD et le CVGRN procéderont à la réception définitive en présence de l'exécutant.

Le procès verbal de réception définitive alors établi vaudra acte de notification de clôture du projet.

**ARTICLE 15: ENTREE EN VIGUEUR DE LA CONVENTION DE COFINANCEMENT**

La présente convention de cofinancement entre en vigueur à compter de .....

Pour le CVGRN  
Le Président

Pour le PGRN  
Le Directeur

A ....., le .....199.....

A ....., le .....199.....

Pour le CRD  
Le Président

Pour le CLD  
Le Président

A ....., le .....199.....

A ....., le .....199.....

Pour le CDA  
Le Président

A..... le.....199...

**/- ) /) PLIATIONS :**

Président CDA ..... 1  
Coord. d'Arrondt du PGRN ..... 1  
Président CLD ..... 1  
Coord. Local du PGRN ..... 1  
Président CRD ..... 1  
Coord. Régional du PGRN ..... 1  
Directeur du PGRN ..... 1



REGION DE .....

REPUBLIQUE DU MALI  
UN PEUPLE UN BUT UNE FOI

CERCLE DE .....

Projet de Gestion des Ressources Naturelles  
(PGRN)

COMITE VILLAGEOIS DE GESTION DES  
RESSOURCES NATURELLES (CVGRN)

DE .....

**CONTRAT DE TRAVAIL**

(Modèle pour Marché Public)

**OBJET:** .....

**Montant** :

**Délai d'Exécution** :

**Entreprise** :

**Financement** :

LETTRE DE MARCHÉ No. .... PGRN

ENTRE

- LE COMITE VILLAGEOIS DE GESTION DES RESSOURCES NATURELLES (CVGR) DE..... représenté aux fins du présent contrat par le Président du CVGRN de ..... du NOM DE ..... et désigné dans ce qui suit sous le vocable "MAITRE D'OUVRAGE".
- LE PROJET DE GESTION DES RESSOURCES NATURELLES (PGRN) représenté par son directeur.

ET

L'ENTREPRISE ..... désigné dans ce qui suit sous le vocable "l'ENTREPRENEUR" et représenté aux fins du présent contrat par Mr. ....

Les parties ont convenu et arrêté ce qui suit:

**CHAPITRE I : DISPOSITIONS GENERALES**

**ARTICLE 1 : OBJET DU MARCHÉ**

Le présent marché a pour objet l'exécution des travaux de CONSTRUCTION DE

-----  
Ces travaux sont situés dans le village de ..... (Cercle de .....) et consisteront en la construction complète selon les normes de l'art, de l'ensemble du lot : No.----- à savoir :

- 
- 
- 
- 

Il s'agit entre autres : des travaux de terrassement, de fondation-soubassement, des travaux en élévation, de la toiture, des menuiseries et des travaux de finition.

**ARTICLE 2 : PIECES CONTRACTUELLES**

Les pièces énumérées ci-dessous par ordre de priorité constituent le marché:

1. la présente lettre du marché,
2. la soumission et ses annexes (liste du personnel de maîtrise, liste du matériel, planning etc.),
3. le cahier de prescriptions techniques et particulières, (CPTP)
4. le modèle de la lettre de marché initialement appelé “contract de travail”,
5. le devis descriptif,
6. le bordereau des prix unitaires, (BPU)
7. les devis estimatifs des travaux,
8. les plans d’exécution.

**ARTICLE 3: TEXTES GENERAUX**

Le présent marché est préparé, passé et exécuté selon les règles et procédures définies par les textes en vigueur au Mali, plus loin appelés ensemble “cahier général” qui fixent les clauses et conditions applicables aux marchés publics, notamment le Décret No. 92-059/P-CTSP du 14 février 1992 portant réglementation des marchés publics.

**CHAPITRE II : EXECUTION ET CONTROLE DES TRAVAUX**

**ARTICLE 4 : ATTRIBUTIONS**

Pour l’application des dispositions du présent marché et des textes généraux auxquels celui-ci se réfère, il est précisé que :

- les attributions de maître d’ouvrage sont dévolues au CVGRN de .....
- les attributions de maître d’oeuvre sont dévolues au Bureau de Contrôle commis par la Direction du PGRN pour le contrôle de la qualité des travaux.
- les attributions de l’Ingénieur chargé du contrôle des travaux et des fournitures à pied d’oeuvre sont dévolues au représentant du maître d’oeuvre sur le chantier.

---

ARTICLE 5 : DELAI D'EXECUTION

La durée des travaux est de Un (1) mois et démarre à compter de la date de signature du contrat.

Il est expressément stipulé que ce délai tient compte des interruptions des travaux dues aux conditions climatiques normales et les installations.

ARTICLE 6 : RECEPTION PROVISOIRE

Dès que, de l'avis de la commission de réception les travaux d'un chantier seront terminés, et auront subi avec succès les essais finaux prescrits dans le marché, la commission établira un procès verbal de réception provisoire des travaux.

La période de garantie commencera à compter de la date de délivrance du procès-verbal de réception provisoire.

En tout cas l'Entreprise est tenue pendant la durée de garantie à une obligation dite "obligation de parfait achèvement".

ARTICLE 7 : RECEPTION DEFINITIVE

La réception définitive des travaux aura lieu à l'échéance du délai visé l'article 20 du modèle de "contrat de travail" pour autant que l'Entrepreneur ait satisfait l'ensemble des obligations résultant du marché à la réparation des malfaçons éventuelles et à la finition totale des travaux.

ARTICLE 8 : DELAI DE GARANTIE

Le délai de garantie est fixé à douze (12) mois de calendrier à compter de la dernière date de réception provisoire.

ARTICLE 9 : PENALITES POUR RETARD

Si les travaux ne sont pas terminés dans le délai prévu, l'Entrepreneur subira une pénalité pour chaque jour calendaire de retard. Cette pénalité sera égale à 1/2 000è du montant des travaux restants. De même les frais supplémentaires du maître d'oeuvre seront imputés directement à l'Entrepreneur sur les décomptes relatifs aux travaux non exécutés.

ARTICLE 10 : MODE D'EXECUTION

Les travaux seront conduits et exécutés conformément aux dispositions et spécifications du cahier des prescriptions techniques particulières (CPTP) et des devis descriptifs.

**CHAPITRE III:**

**DISPOSITIONS FINANCIERES**

**ARTICLE 11: MONTANT DU MARCHÉ ET MODE DE FINANCEMENT**

Le montant des travaux, objet du présent marché est évalué .....FCFA repartis entre le PGRN et les CVGRN concernés. Les prix indiqués dans le cadre du devis estimatif sont évalués en tenant compte du coût de revient de la main d'oeuvre, y compris les charges sociales, du coût total des fournitures rendues sur le chantier, du coût de revient du matériel de chantier, y compris les provisions pour amortissement ainsi que les frais d'installation du chantier, des frais généraux et divers de l'Entrepreneur, des sujétions d'exécution, des aléas et bénéfices.

**ARTICLE 12: AVANCE DE DEMARRAGE DES TRAVAUX**

Une avance au démarrage des travaux est accordée à l'Entrepreneur, au moment de l'établissement de l'ordre de service, sur la base d'un pourcentage de 5% du montant total du marché initial. Elle est égale à .....FCFA et sera cautionnée à 100%.

**ARTICLE 13 : MODALITES DE PAIEMENT DE L'ENTREPRISE ET RETENUE DE GARANTIE**

L'Entreprise sera payée selon les modalités suivantes:

	PGRN	CVGRN
- Avance de démarrage : 5% du montant des travaux à la signature du contrat après constitution d'une caution bancaire équivalente sur demande écrite de l'Entrepreneur	-	5%
- 20% du montant quand les travaux auront atteints 25%	20%	-
- 20% du montant quand les travaux auront atteints 50%	20%	-
- 20% du montant quand les travaux auront atteints 75%	20%	-
- 20% du montant après la réception provisoire des travaux et main levée de la caution d'avance de démarrage	20%	-
- 10% du montant un mois après la réception provisoire	10%	-
- 5 % du montant à la réception définitive des travaux qui interviendra un (1) an après la réception provisoire	-	5%
<b>Total par source de financement</b>	<b>90%</b>	<b>10%</b>

Soit montant PGRN = ..... FCFA  
 montant CVGRN = ..... FCFA

**ARTICLE 14 : DROITS, TAXES ET IMPOTS**

Les prix du présent contrat sont établis en exonération de droit de timbre et d'enregistrement de la patente due sur le marché et de tous droits et taxes d'effet équivalent.

**ARTICLE 15 : REGLEMENT DE LITIGE**

Si au cours des travaux des difficultés apparaissent entre le Maître d'Ouvrage ou ses représentants et l'Entrepreneur et qu'aucune solution amiable ne soit trouvée, les deux parties s'obligent à solliciter un arbitre.

En cas de désaccord, le différend sera soumis au tribunal compétent qui tranchera suivant les règles en vigueur au Mali.

Vu

Le Directeur du PGRN

Conclu par

Le Comité Villageois de  
Gestion des Ressources  
Naturelles  
de .....

Lu et Accepté par

L'Entrepreneur

Le Président

Approuvé par  
Le Directeur Général  
des Marchés Publics  
Le .....

Vu  
Le Directeur National  
du Contrôle Financier  
Le .....

Enregistré aux Domaines

Le .....

Enregistré au Secrétariat Général  
du Gouvernement

Le .....



**RESTORATION OF  
HIGHLY DEGRADED AND THREATENED  
NATIVE FOREST  
IN MAURITIUS**

*By*  
*Yousoof Mungroo*  
*Director*  
*National Parks and Conservation Service*  
*Reeduit, Mauritius*



## **Restoration of Highly Degraded and Threatened Native Forest in Mauritius**

### **Abstract**

Mauritius provides a striking example of how an island ecosystem which was rich in endemism, the animal and plant species evolving in isolation for millions of years, has been biologically impoverished in some 350 years of colonisation as a consequence of indiscriminate exploitation of its forests, land clearing for agriculture and introduction of alien plant and animal species. Mauritius better known as the home of the Dodo, a large flightless bird which became extinct due to the actions of Man. However small remnants of the original flora and fauna still survive, but these are under great threat by introduced, aggressive species.

This paper describes some of the measures taken to protect and prevent the remnants of our natural heritage, especially the native forests with its rich plant diversity from disappearing. The measures have proved to be effective but costly and labour intensive and therefore cannot be applied to larger areas.

The paper also focuses on a restoration ecology project "*Restoration of highly degraded and threatened native forest*" funded under GEF through UNDP. Government who is responsible for the execution of the project has delegated some of its powers to a Non Government Organization for the implementation of the project. The project also gives the opportunity for Government, NGOs and the University of Mauritius to collaborate to save our threatened native forest by controlling the invasive weeds.

### **Introduction**

Mauritius is situated just north of the Tropic of Capricorn, at latitude 20° south and longitude 58° east, some 900 Kms east of Madagascar. Mauritius together with Reunion and Rodrigues form the Mascarene Islands. Mauritius is a volcanic island and covers an area of 1865 Km<sup>2</sup> with the highest peak attaining 828m in altitude. It has a tropical to subtropical climate influenced by frequent cyclones during the summer months (November to April) and gets a rainfall of between 1m to 8m annually.

Mauritius was uninhabited when discovered by the Portuguese early in the 16th century (1507), though it had almost certainly been visited by Arab sailors before that. The first to settle were the Dutch, after numerous visits, in 1638. They vigorously exploited the timber, especially the ebony (*Diospyros* spp) and the other hardwoods, the large land tortoises and the flightless Dodo which became extinct by 1670. The Dutch abandoned Mauritius in 1710. The French occupied the island in 1715 but lost it to the British in 1810. The population grew from 800 in 1735 to 75,000 in 1810. Mauritius has now over one million people, making it one of the most densely populated places in the world.

The Dutch East India Company started the process of clearing the forests which was later accelerated markedly during the French and British administrations to make room primarily for agriculture and also for infrastructure like roads and settlements. The cleared forest areas have been planted with sugarcane, tea, eucalyptus and pine. Nowadays the indigenous forests which represent less than one percent (1%) of the pristine native vegetation are restricted to the south west escarpment which is the most inaccessible or least economically exploitable part of the island. These indigenous forest remnants possess one of the most diverse floras in the world in

terms of number of species per unit area of forest land. The flora is composed of some 700 species of indigenous plants of which about 250 are endemics. A high proportion (about 50%) of the endemics are threatened or endangered.

### Threats to endemic flora

This floral diversity is being highly threatened through degradation as a result of invasion by aggressive introduced plant species. The exotic plants which are faster growing than the endemics are more of a direct threat to native species. They outcompete the endemics for space, light and nutrients and they colonise any open gap in the forest floor. The two most proliferous exotic plant species in the upland wet forest are Chinese guava (*Psidium Cattleianum*) of South American origin and introduced by the French (Grant 1801) and the privet (*Ligustrum robustum var. walkeri*), a native of Asia; both plants can form thicket so dense that they hinder the regeneration of the native plants. Lowland forests are invaded by "liane cerf" (*Hiptage benghalensis*), aloe (*Furcraea foetida*) and "poivre marron" (*Schinus terebinthifolius*). A list of some of the weeds is given in table 1.

Introduced animals also contribute significantly to the degradation of the native vegetation. The herbivorous mammals such as deer (*Cervus timorensis*), introduced by the Dutch in 1639, and hare (*Lepus nigricollis*) cause the most obvious damage by browsing through young plants and tender shoots. Monkeys (*Macaca fascicularis*) selectively pull out flowers, fruits as well as foliage, while the wild pigs (*Sus scrofa*) cause extensive damage by eating roots of plants and uprooting seedlings. Other animals like black rats (*Rattus rattus*), brown rat (*Rattus norvegicus*), invertebrates specially the Giant African snails (*Achantia fulica*) and (*A. panthera*) physically damage the native plants. Exotic birds such as the red-whiskered bulbul (*Pycnonotus jocosus*) are also a problem as they act as seed dispersal agents for the exotic plants.

Another factor which constitutes a constant threat to the endemic plant communities is the cyclone. It is true that, Mauritius being in the cyclonic belt, cyclones have played an important part in the evolution of the Mauritian flora. The root system which spreads as wide as the crown, the buttresses and thick leaves render the endemic plants more cyclone resistant than the exotics. But the fact is that many of the endemic are getting old and are not being naturally replaced as their regeneration is being hindered by the combined effects of

### Objectives of intervention actions

Native forest which still persists is often a broken canopy of increasing old and non-regenerating trees is the preferred habitat of the native fauna. The native forest is invaded to different degree by aggressive exotics and if nothing is done to halt the invasion of the native forest by the alien plant species, the remaining indigenous flora and fauna will be wiped out, resulting into massive loss of biodiversity. The ideal solution to the problems of conservation of the native forest ecosystem would be to completely eradicate all the pests from the forest but this is an impossible task.

The natural heritage and scenic beauty of the area would be maintained by preserving the native forest. Native forest besides being an asset for the tourism sector can be used for developing public awareness and education purposes. It can provide recreation to both the local people and foreigners.

## **Conservation Measures (Main Activities)**

### **Creation of Nature Reserves**

One of the first steps taken towards the preservation of the natural vegetation was the declaration of these areas as Nature Reserves. The basic philosophy of declaring Nature Reserves has been to safeguard as far as possible representative samples of the original plant formation. The first Nature Reserve was declared in 1951 and by 1974 there was a total of 20. In 1980, 6 of these, which are adjacent to each other, were made into one large block, Macchabee/Bel Ombre Nature Reserve (3,611 ha.), which has been proclaimed a Biosphere Reserve under the Man and Biosphere Program of UNESCO. This became the nucleus of the Black River Gorges National Park (6,574ha.) proclaimed on 15 June 1994.

It was a fallacious concept that the Nature Reserve if left undisturbed will take care of itself. The equilibrium in these areas is disturbed to such an extent that active management is required to restore the equilibrium of the ecosystem.

### **In-situ Conservation**

The extent of invasion by exotics is now too far advanced that complete eradication of exotics does not appear possible. However, in certain areas the density of exotics is relatively low and hence the possibility of keeping them under control. Several areas of native forest representing major plant communities and different forest types have thus been selected. These areas, Conservation Management Areas (CAMs) as they are called, are being intensively managed. There are 10 CMAs and eight of those are found within the Black River Gorges National Park. They vary in size from 0.4 hectare to 18 hectares.

These CAMs have been fenced to keep the deer (*Cervus timorensis*) out and a low stone wall has been erected at the base of the fence to prevent the pigs (*Sus scrofa*) digging underneath the fence. All the exotic plants have then been manually uprooted. Maintenance weeding at intervals of three months is carried out to control regeneration of exotics. The results have been very promising because in the absence of the exotics the endemics are regenerating vigorously. These managed plots have been elected as preferred habitat by the endemic pink pigeons (*Columba mayeri*) and echo parakeets (*Psittacula echo*). However this type of management is very expensive and labour intensive and cannot be undertaken on a large scale. At least 90 percent of the endemic plant species have been protected in these CAMs.

The fencing and initial weeding, that is first weeding, especially for the 18 hectare plot at Brise Fer, have been contracted out to private companies as the cost for these works was included the Black River Gorges National Park project, funded by loan money from the World Bank. The Ministry of Agriculture and Natural Resources is contracting out the maintenance weeding work to ensure that each plot is regularly weeded every three months.

The use of different herbicides to control the exotics has been tried, but no conclusive result has been obtained.

Unfortunately it is not possible to exclude the monkeys (*Macaca fascicularis*) from the fenced plots, but control of rats (*Rattus rattus*) by poisoning and trapping is being carried in the native

forests, especially where captive bred birds are being released to restock the bird population in the wild.

### **Ex-situ Conservation**

Another approach to the conservation of the flora is the ex-situ propagation of species which are very rare or have difficulty regenerating in the wild. A list of 50 such plants has been prepared by a Plant Committee and these priority plant species are being propagated in the Government Endemic Plant Propagation Centre (PPC) from cuttings and seeds. The PPC has an important role in the restoration of the native vegetation in the forests. Plants raised in the nursery are being planted back in the CMA from where plant materials for propagation have been collected. These plants therefore not only restock the CMAs but also help to fill in any open space resulting from the removal of the exotics.

In 1994, only some 1,781 plants of 58 plant species have been raised from over 5,000 plant materials (about 80% seeds and 20% cuttings ) of 75 plant species collected. Less than 40% of the collected plant materials have successfully been raised, this percentage is considered a honorable performance considering that the seeds of many of the species sown could be described as recalcitrant. More than 50% of the plants raised have been replanted in the wild.

A new Plant Propagation Centre is being built to increase our propagation capacity and to provide facilities for the propagation of endemic, endangered ferns. The Royal Botanic Garden of Edinburgh will provide training in fern propagation techniques to two members of the staff of the National Parks and Conservation Service under the Darwin Initiative programme.

### **UNDP/GEF Project**

The project aims at the restoration of a plot of highly degraded native forest in the Black River Gorges National Park. In consultation with national and international pests control experts and restoration ecologists who will be convened for a 5-day workshop, an effective means of controlling the invasive exotic weeds especially the Chinese guava (*Psidium cattleianum*) and the privet (*Ligustrum robustum var walkerii*) which are threatening native forests will be developed. Different treatments (manual elimination, chemical treatment, biological control or any other method identified by the workshop) will be applied to the experimental area. This weed control method, if successful, could then be applied to larger areas of degraded native forest. It could even be applied regionally or elsewhere to tackle similar invasive problems by exotics.

The second component of the project is to make an assessment of the biodiversity of the area to be restored. This will be undertaken by experts employed by the NGO in collaboration with University students and officers of the National Parks and Conservation Service of the Ministry of Agriculture and Natural Resources.

The third component will be the restoration activity itself. The biodiversity of the degraded native ecosystem will be restored to the extent possible. This will consist of applying the results of the experimentation to an area of at least 5 Ha. In-situ growing of seeds and enrichment planting from nursery-grown would be considered as possible restoration techniques to be applied.

Three years for a project on eco-restoration is a brief period of time. It is a pilot project which gives the opportunity to the Mauritian University students to undertake ecological research. It also provides opportunities to foster and strengthen cooperation between the Government and Non Government Organizations, and with the University of Mauritius. It is one of the smallest GEF grants (US\$200,000) and therefore provides an opportunity to demonstrate the cost effectiveness of this initiative.

#### **Implementation Arrangements**

The Government and the NGO, the Mauritian Wildlife Appeal Fund (MWAF), have entered into an agreement whereby the NGO, as Project Management, has agreed to provide certain services to the Ministry of Agriculture and Natural Resources. The NGO is paid a fee of....

#### **Responsibilities of the Project Management**

- (i) Report to the National Project Director appointed by the Government;
- (ii) Be responsible for the day to day management of the project inclusive of the procurement of equipment and allocation of fencing contract in accordance with UNDP procedures and financial practices;
- (iii) Carry out the tasks of the Zoologist and Botanist as spelt out in the Project Document;
- (iv) Recruit and appoint other consultants (Plant Taxonomist, Entemologist, Malacologist and Statistician) in accordance with UNDP procedures and subject to the approval of the Technical Advisory Committee;
- (v) Provide technical guidance for the project activities and monitor performance of all project staff;
- (vi) Complete the tasks in the set time frame.

#### **Contribution of University of Mauritius**

The University of Mauritius will develop course modules in biodiversity and assign lecturers and technicians for the training of students, staff of National Parks and Conservation Service and members of NGOs and other interested Ministries. The University will also provide laboratory facilities for biodiversity studies. The contribution of the University is around US\$25,000.

#### **Role and Contribution of Government**

The Government as the Executing Agency is responsible through its Project Director to UNDP and has to submit regular progress report to UNDP. The Government is also responsible for organising the Workshop. The Government has to assign the Staff of National Parks and Conservation Service to run the operations. The Government also provides lodging facilities for fieldworkers and other administrative support for the project. The total contribution of the Government has been estimated at around US\$70,000.

#### **Technical Advisory Committee (TAC)**

A TAC composing of members of the National Parks and Conservation Service, Ministry of Economic Planning, Ministry of Environment and Quality of Life, Ministry of Arts, Culture and Youth Development, Mauritian Wildlife Appeal Fund, Faculty of Science University of

---

Mauritius and the Mauritius Sugar Industry Research Institute chaired by the Project Director has been set up to ensure the smooth running of the project. The Committee has been entrusted with the following tasks:

- (i) Hold meetings at least once every three months, to discuss issues relating to implementation of the project;
- (ii) Approve project staff;
- (iii) Ensure that the implementation of the project conforms to the project document;
- (iv) Monitor the progress of the project on a regular basis.

### **Results**

The project has officially started since June 1996. The NGO (MwAF) has already taken possession of some equipment (one 4-wheel drive double cab, computer unit and ladders) earmarked for the project. The NGO has carried out the recruiting exercise for the filling of the positions and the TAC has already approved the selection of the candidates. The NGO has now been requested by TAC to sign the contract, which has first to be approved by the Committee, with the respective experts.

Ministry of Agriculture and Natural Resources has already initiated action for the holding of the Workshop. Letters have been sent to international pest control experts and restoration ecologists inviting their participation in the Workshop scheduled for November 1996. On the request of the NGO the workshop has been postponed for September 1997 to enable MwAF to carry out a comprehensive survey of the biodiversity.

The University of Mauritius has already submitted details of the one-week Biodiversity Course to be held in December 1996.

### **Conclusion**

The participation of NGOs in the implementation of biodiversity conservation projects should be encouraged provided that the NGOs have the technical knowhow and Government Institution ensures the monitoring and coordination.

Mauritius has a long tradition of commitment and cooperation with international organizations in the field of conservation. The Jersey Wildlife Preservation Trust (JWPT), has been active in Mauritius since 1976 together with several other conservation organizations. The Red Data Book on the plants of Mauritius has been compiled and the one on the plants in Rodrigues has been published thanks to the World Wild Fund for Nature (WWF) sponsoring a plant person.

The Mauritian Wildlife Appeal Fund was established in 1984 as an arm of JWPT in the Indian Ocean and where funds raised internationally or locally for implementation of conservation projects in Mauritius were channelled. MwAF manages volunteers and experts who are mainly expatriates working on conservation projects in Mauritius.

MwAF has a good working relation with Government. It is party to a Memorandum of Agreement, signed between the Ministry of Agriculture and Natural Resources, Jersey Wildlife Preservation Trust, the Royal Botanic Gardens, Kew and the Flora and Fauna Preservation Society, for a partnership in the conservation activities in Mauritius.

**Acknowledgments**

I thank the World Bank for providing me with the opportunity to participate in the Forum.

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Table 1. The 18 most invasive species on Mauritius and/or Rodrigues

<b>Agavaceae</b>	
<i>Furcraea foetida</i> (L.) Haw.	Very invasive on Mauritius and Reunion, only one record from Rodrigues
<b>Amacarcricaceae</b>	
<i>Schinus terebinthifolius</i> Radch	Invasive on Mauritius and Rodrigues, unknown if introduced to Reunion.
<b>Bignornaceae</b>	
* <i>Tabebuia pallida</i> (Lindl.) Miers	Very invasive on Mauritius, must not be introduced to Reunion or Rodrigues.
<b>Euphorbiaceae</b>	
* <i>Homalanthus populifolius</i> Graham	Very invasive on Mauritius, invasive on Reunion and naturalised on Rodrigues
<b>Flacourtiaceae</b>	
<i>Flacourtia indica</i> (Burm.f.) Merrill	Very invasive on all three islands
<b>Lauraceae</b>	
<i>Litsea glutinosa</i> (Lour.) C.B. Robinson	Very invasive on Mauritius, invasive on Reunion and not on Rodrigues
<i>Litsea monopetala</i> (Ro)b.) Pers.	Very invasive on Mauritius and Reunion, not on Rodrigues
<b>Malpighiaceae</b>	
<i>Hiptage benghalensis</i> (L.) Kurz	Very irivasive on Mauritius, not on Reunion or Rodrigues
<b>Melastomataceae</b>	
* <i>Ossaea marginate</i> (Desr.) Triana	
<b>Mimosoideae</b>	
<i>Leucaena leucocephala</i> (Lam.) De Wit	Very invasive on all three islands
<b>Musaceae</b>	
<i>Ravenala madagascariensis</i> Sonnerat	Very kmsive on Mauritius, invasive on Reunion and Rodrigues
<b>Myrsinaceae</b>	
<i>Ardisia rrenata</i> Sims.	Very invasive on Mauritius and Reunion, not on Rodrigues
<b>Myrtaceae</b>	
<i>Psidium cattleianum</i> Sabine	Very invasive on all three islands
<i>Syzygiumjambos</i> (L.) Alston	Very invasive on all three islands
<b>Oleaceae</b>	
<i>Ligustrum robustum</i> Blume var. <i>walkeri</i> (Decaisne) Mansf.	Very invasive on Mauritius and Reunion, recently found on Rodrigues
<b>Rosaceae</b>	
<i>Rubus alceffolius</i> Poirret	Very invasive on Mauritius and Reunion, not on Rodrigues
<b>Thymelaeaceae</b>	
* <i>Wikstroemia indica</i> (L.) C.A. Meyer	Very invasive on Mauritius and Roddgues, not on Reunion
<b>Verbenaceae</b>	
<i>Lantana camara</i> L.	Very invasive on all three islands

\* Species not yet introduced to Reunion

Very invasive on all three islands in dry areas





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**NIGER**

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**Household Energy Strategy: One Element of the  
Overall Forestry Policy**

**DOMESTIC ENERGY STRATEGY:**

**AN ELEMENT OF OVERALL  
FORESTRY POLICY**

*By*

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***Household Energy Strategy:  
One Element of the Overall Forestry Policy***

**1. INTRODUCTION**

Niger is a country of the Sahelian region where 98% of households use wood as an energy source for cooking. In 1994, the fuelwood demand in the city of Niamey (600,000 inhabitants) is evaluated at 150,000 tons per year. Most of this wood is dead wood by drought but we can find more and more green wood. This trend is being increased.

The problem is that the annual increase of trees grows in low due to severe climatic conditions. Other problems are agricultural activities which are constantly of growing and extensively land pasture. So, there is sort of rings of deforestation around urban centers.

Actually, the woodcutting activities has become much more economically advantageous than agriculture or livestock production. However, these activities are controlled essentially by urban trader-transporters who make considerable profits from non-sustainable harvesting of wooded areas.

It is in this context that the Domestic Energy Strategy project in Niger became his activities in 1989 with a socio-economic approach and not only with a technical approach others projects used to do.

The principal aim was to have a reappropriation of natural resources (notably wood resource) by rural people in a sustainable long-term management with a regular fuelwood supply and local rural development.

We are going to explain in a three parts paper the focus points of this development strategy actually recognized as one of the main possibility to manage natural resources in the Sahel specially forests resources.

It is clear that the urbanization process in Africa change socio-economic and ecologic conditions. Old solutions don't more operate: we must find innovatives solutions. More, it is true that the woodfuel consumption of urban population will continue in the future neither what we are able to do to increase the production (for instance in reforestation effort).

**2. SOME INITIAL REMARKS ON "COMMONS" AND "RURAL DEVELOPMENT"**

In the first part, we try to give a response to the three following questions:

- first: in a context of growing urbanization in Africa, does development necessarily have to favour the town at the expense of the country? The town-country opposition? The decentralization processes raise the question of the "competence" of the different power levels and of the "nature" of links between town and country; in brief, the principle of subsidiarity.

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- faced with a situation of free access in practice (but not in law) to renewable resources, are there any alternatives to privatization?
  - to what extent can fuelwood be considered as a “common resource”?

GG Tevenson (1991) has defined 7 necessary and sufficient criteria (1991) characterizing a common property resource? Does fuelwood satisfy those criterias? Theoretically, in the situation preceding the creation of rural markets in Niger, most of these criteria were met.

Criteria two (there is a well-delineated group of users, who are distinct from persons excluded from resource use) was not met, in practice, to the extent that it was impossible to exert the controls required to reserve exclusive access to certain users.

The creation of rural markets (which is the principal skill of our action) does not simply aim to recreate common property resources according to a “customary” model. Its main purpose is to form an institution responsible for establishing negotiations between the various parties (from local to national levels) involved in the management of forest resources on the basis of long-term common objectives.

Property is not transferred to local communities, but a mutual contract is concluded between the community and the owner, i.e., the State in the present case. Fuelwood is thus subject to local, jointly negotiated management. This process bears a certain resemblance to the notion of “gestion patrimoniale” (Ollagnon, 1990).

### **3. THE EXPERIMENT IN NIGER**

#### **3.1. Objectives**

Basically, the aim is to involve local populations in the fuelwood commodity chain by legitimizing their roles through the creation of rural fuelwood markets. They set up THEIR OWN market, supplied with wood from forests under THEIR OWN responsibility, produced by woodcutters from THEIR OWN villages.

The basic idea behind rural market development is that rural populations must necessarily be granted legitimate rights to manage wood resources in order to ensure their ecological, economic and social sustainability. The income they obtain gives them responsibility for their management of the resource. If they experience positive benefits at the community or individual level, they may take the necessary action to ensure sustainable management of this source of wealth.

In short, the aim is to give standing trees a value which enables rural people, by gaining awareness of this value, to protect them, grow them and harvest them for their own benefit. The legal framework must promote and amplify this awareness.

#### **3.2. The legal framework**

The legal framework has become truly functional in 1994. He gives a number of rules to enable rural populations to appropriate resources and take control of woodcutting zones.

At the end of the process, the old two-way trader-transporter/forest warden relationship become into a three-way relationship including villagers living around the wooded areas. A particular aspect of this new fiscal system is that it allows local producers to collect tax as soon as the selling act. This is fundamental to understand all the system. A part of this tax is handed over to the State (central and local authorities) to enable it to perform its supervisory role and to provide resources for the financing of rural development projects at village level.

### **3.3. Implementation**

Basically, this strategy is based around the following points:

- establishment of wood supply plans for the cities of Niamey, Maradi and Zinder, in order to direct and plan forest exploitation, in both spatial and quantitative terms, towards priority intervention zones;
- transfer of responsibility for forest resource management to the populations living around the forests (rural markets);

### **3.4. Results**

At present, the network of established and functional rural markets covers around forty villages and five regions with a large production potential which were previously subject to uncontrolled harvesting by trader-transporters.

They operate on a satisfactory commercial basis, i.e., the markets cut and sell their wood according to predefined criteria (quotas, cutting methods, etc.). They levy the necessary taxes and hand over the appropriate fraction to the State (local authorities and public revenue department). They supply 10% of urban fuelwood demand, i.e., around 16,000 tonnes of fuelwood per year, producing a turnover of around CFA 60 million for producers.

The rural market has thus increased the “value of standing wood”. The sales price of transporters has risen from 1 or 2 CFA francs/kg to 5 CFA francs/kg, sometimes up to 8 CFA francs/kg. For the consumer, the fuelwood price has only risen from 3 to 5 CFA francs/kg from 20 to 25 CFA francs/kg.

Substantial income is generated by the current rural market system, both as regards pre-tax income (shared between woodcutters, managers and village funds) and tax income (shared between the villages, local authorities and the public revenue department). The income of associations, villages and woodcutters has already been used for both collective and individual investments. However, for the moment, these initiatives are few in number. The unallocated tax income has been invested by the populations in the different sectors.

### **3.5. Difficulties**

The current operation of rural markets shows that though rural populations have understood perfectly the advantages of this “revolution”, such is not the case for the trader-transporters and the forest wardens.

Firstly, the trader-transporters are finding it difficult to forget their former role; they are waiting for the village production systems to fail so that they can re-establish total control over wood supply and restore their power to impose low wood purchase price at the point of cutting.

The forest wardens, for their part, have lost the privileged relationship they had with traders and hence, for some, the opportunity for illicit gains.

### **3.6. Prospects**

Responsibility for forest management has been effectively transferred from the State to the population in operational rural markets. The aim now is to develop the production system spatially in order to give these populations permanent control over the upstream end of the fuelwood commodity chain.

With an estimated installation cost of around 4 to 5,000 CFA francs per hectare (less than 10\$US/ha), rural markets probably constitute the least cost solution for rational management of forestry resources. Under similar soil and climatic conditions, the mean costs for rural forests are 50 to 100 \$US/ha and between 500 and 1,000 \$US/ha for plantations operated under concession (Madon et al., 1994).

## **4. THE SPECIFIC CHARACTERISTICS AND BROADER LESSONS OF THE NIGER EXPERIENCE**

Some consider that the experiment under way in Niger is worthwhile, but very specific, inapplicable outside the Sahelian zone or for resources other than fuelwood (firewood and/or charcoal). How should we react to this objection ?

### **4.1. Features specific to the agricultural context in Niger?**

#### ***The lack of cash crops prevents escape from subsistence farming***

The severe climatic conditions (drought) set drastic limits on agriculture. Rain-fed millet and sorghum cultivation is almost exclusively devoted to satisfying local rural population needs, making any accumulation and agricultural investment required for intensification impossible (Milleville, 1991).

In this context, the development of fuelwood trading activities to supply spiralling urban populations appears to be one of the rare and sole opportunities for the rural world to obtain the income needed for agricultural intensification. The forest thus constitutes a key rural development factor in Niger.

We can observe that forest income is also essential for the simple reproduction of agrarian systems in countries and regions as different as southern Benin (Bertrand et al. 1991) or the Madagascan highlands (Bertrand, 1992).

#### ***Drought, rural exodus, urban growth and the impact of development projects***

After the droughts in 1972-1974 and 1984, the large-scale emergency programs and development projects initiated in the Sahel, and in Niger in particular, had a number of adverse effects. Rural

populations were placed in a passive role, and expected to wait for outside aid and development projects to be brought to them. The new legitimacy of local natural wood resource management instituted by the creation of rural markets has established the conditions required to return responsibility to rural populations.

Here again, the case of Niger is not exceptional, though it appears more marked than elsewhere due to the severe climate and natural environment.

*Relations between town and country and the structure of commercial commodity chains*

The structure of the fuelwood commodity chain clearly demonstrates that until the recent legal reform and up to the creation of rural fuelwood markets, rural populations had lost effective control over the wood resources on their land and were therefore unable to negotiate harvesting rights under any sort of favorable conditions.

Nothing here is truly specific to Niger.

**4.2. Solutions limited to the case of fuelwood or applicable to all renewable resources?**

*Fuelwood, timber, dry forests or dense humid forests?*

The experience of rural fuelwood markets in Niger shows that by initiating independent local development, local community management of renewable resources results in improved management of wood resources and makes long-term sustainable management a realistic objective.

But does this mean that local management of forestry resources and the creation of new commons, restoring, in new forms, the customary legitimate rights of populations over the resources in their environment, should be seen as a universal panacea?

Can what is valid in the context of fuelwood harvesting in Niger also apply to a timber forest in Côte d'Ivoire? Should there be a distinction between what lies in the domain of management, often requiring in-depth technical knowledge, from what lies in the domain of profit redistribution?

*A problem of type of resources of local management of renewable resources ?*

It should not be forgotten forest operators come and go, operating over variable periods of time. Local communities remain the same place.

No viable solution guaranteeing the long-term existence of the forest cover can be found without an agreement on new resource management and harvesting methods between all three parties. This calls for "negotiation patrimoniale" (which lies at the intra-village discussions prior to the creation of rural markets).

It is clear, therefore, that the justification for the creation of new commons, taking account of all social constraints at the various national, regional and local levels, is not based on the type of

forest to be managed, but on other considerations which bring to light the advantages of local, community management of resources.

One of the outstanding comparative advantages of local management is the fact that diversity is taken into account; the diversity of land use, natural environments, human and social groups, the variety of social practices and strategies, their wide-ranging effects on resources, etc.

**4.3. Rural income, effective economic use and sustainable management of renewable resources?**

*The commercial income obtained from renewable resources provides opportunities for their effective economic use and for local development through exclusive local management by rural populations.*

The transfer of legitimacy for local management to rural communities is clearly an advantage which gives meaningful content to state policy. It provides the necessary means for local development, previously held back by a lack of resources and a low accumulation and investment capacity.

Local management of renewable resources is based on the restoration by the State of exclusive local rights of access to renewable resources. But does local management automatically guarantee sustainable long-term management of renewable resources?

*Does essential income guarantee sustainable management?*

For many years, the income drawn from wood and forestry activities, though small and limited in amount (due to the free access enjoyed in practice by trader-transporters), was considered by rural populations as essential to the survival of rural households. However, this did not prevent a variety of practices which deteriorated forest resources.

Without an overall legal and economic framework, it is illusory to assume that the State can take responsibility for instituting local sustainable management of renewable resources. The first measure required to establish this framework is, of course, to legitimize the local community management monopoly. But the example of Niger shows clearly that other measures must be implemented simultaneously.



**FIGURE 1: les principales étapes de la création des marchés ruraux de bois-énergie au Niger**

**1) Information :**

campagne nationale d'information: TV, radio, brochure en trois langues ...  
au niveau local (villageois) : tournée d'un animateur du projet  
"présentation du nouveau cadre législatif permettant aux villages  
de gérer leurs formations ligneuses (maîtrise de la brousse)"  
résultat: candidature de villages

**2) Contact avec les villages candidats**

approfondissement de l'information sur les marchés ruraux et  
sur la structure de gestion  
évaluation grossière des ressources, enquête sociologique  
résultat : premier choix de villages

**3) Du diagnostic villageois au ...**

enquêtes bûcheron / exploitation du bois / foncière/ pastorale  
négociations inter et intravillageoises sur la délimitation de la forêt  
inventaire des ressources et productivité  
résultat : choix de villages prioritaires

**4)...soutien à l'élaboration d'une structure marché rural**

préparation du statut et du règlement intérieur  
élection des membres de la structure de gestion et  
formation des responsables : gestionnaire, trésorier, président  
négociation du quota annuel d'exploitation-commercialisation  
résultat : création de la structure locale de gestion  
constitution du dossier d'agrément et démarrage des activités

**5) Officialisation**

agrément du marché  
délimitation légale de la forêt  
promulgation de l'acte de concession rurale  
information des professionnels locaux et nationaux de la filière bois-énergie  
remise des coupons à la structure locale de gestion

**6) Appuis à l'augmentation / suivi-contrôle ...**

appuis organisationnel / administratif / technique / commercial / compatible / financier  
suivi et contrôle à posteriori, perception des taxes par l'administration  
réévaluation annuelle du quota

**CALCUL DES TAXES SUR UN STÈRE DE 1000 F EN MARCHÉ RURAL  
CONTRÔLE DE CATÉGORIE 2 (cas de Tientiergou)**

<b>Prix payé par transporteur 1 315 F/stère T.T.C</b>	<b>Taxes 315 F</b>	<b>10% = 31,5 F au trésor public</b>	<hr/> <b>60% = 75,6 F autres affectations</b> <hr/> <b>40% + 50,4 F entretiens aménagement</b> <hr/> <b>40% = 63F fonds investissement forestier</b> <hr/> <b>60% = 94,5 F autres affectations villageoises</b> <hr/>	<b>31,5 F - Etat</b>
		<b>40% - 126 F à la collectivité</b>		<b>75,6 F - Collectivité</b>
		<b>50% = 157,5 à la structure locale</b>		<b>113,4 F- Forêt</b>
				<b>294,5F- Village</b>
	<b>Prix du stère H.T. 1000F</b>	<b>200 F caisses villageoises (remboursements avances puis affectations diverses)</b> <hr/> <b>Reste 75F au au gestionnaire</b> <hr/> <b>100F au gestionnaire Parfoisversement 25F président</b> <hr/> <b>350F avance au bûcheron à la livraison au marché rural</b> <hr/> <b>350F complément au bûcheron à la vente</b>		<b>800F Privés village</b>

Prix en ville au détail environ 9 000 F /stère

**TAON 12**

**Taux de taxe**

**Décret no. 92-279 du Premier Ministre/Ministère de l'Hydraulique et de l'Environnement, du 21 août 92:**

**Article 1**

**Les MR sont classés en 3 catégories :**

- **1ère catégorie : moins de 40 km d'un grand centre de consommation**
- **2ème catégorie : plus de 80 km**
- **3ème catégorie : plus de 80 km**

**Article 4**

**Taux de taxe par stère de bois de chauffe :**

Nification par catégorie de NR				
	Base	1ère < 40 km 0 %	2ème 40 << 80 km - 10 %	3ème > 80 km - 20 %
MR orientés (coupons jaunes)	375	375	337,5	300
MR contrôlés (aménagement, coupons bleus)	350	350	315	260
zone incontrôlée (coupons rouges)		600		

**PARTICIPATRY FOREST LAND USE PLANNING  
--CROSS RIVER STATE--**

**NIGERIA**

**PARTICIPATORY FOREST LAND USE PLANNING  
IN CROSS RIVER STATE, NIGERIA:  
THE JOURNEY SO FAR**

*Presented By*

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## **PARTICIPATORY FOREST LAND USE PLANNING IN CROSS RIVER STATE, NIGERIA: THE JOURNEY SO FAR**

### **INTRODUCTION:**

The Southern part of Nigeria was a highly forested region before and immediately after independence in 1960. It was a region of pristine Tropical High Forests (THF). However, from late sixties to date much of these forests have been and are still being destroyed by loggers and farmers. Only about 10% of the original forests remain. (See Appendix: Fig. 1 - 6)

The Cross River State with an area of about 21,265 km<sup>2</sup> and located at the extreme south eastern corner is one of Nigeria's thirty (30) states. It has the largest areas of Tropical High Forests (THF) left in present day Nigeria (about 32%). This, however is disappearing fast. (See Appendix: Fig. 6)

About 2000 communities exist in rural Cross River State and over 70% of the state population live in these areas. Their main occupations include mostly farming, hunting, Non-timber Forest Product gathering and harvesting. Consequently then, the reality of the importance of the forest to the social, economic, political and environmental needs of the state and people cannot be overstated.

Given the level of complete or total dependence of the local communities on the forest resources, any management approach that does not involve the local people who live on, by and for the forest is not likely to succeed. This understanding informed our decision to involve the local communities /stakeholders in a participatory Land use Management Process that will empower them to have a greater say in the management of the only resource upon which their very existence depends; the forest, the land.

### **THE PREVAILING CIRCUMSTANCES AND WHAT NEEDED TO BE CORRECTED**

To understand the process and the need for the process, it is useful to consider the following factors:

- Size of the Forest Estate and the Management problems it posed;
- Types of forests under management in Cross River State;
- Land tenure systems;
- Government perceptions of the forests;
- Community perceptions of the forests;
- Relationship between the Forestry Department and the Communities;
- The taungya system of farming;
- Ineffectiveness of the Forest law and the problem of enforcement;
- Encroachment by farmers;
- Illegal logging and trading practices
- Irregular letting of concessions to large companies by Government;
- Creation of the Cross River National Park in 1991 - both a blessing and a problem;

- Condition of the Forestry Department and its ability to control and administer the forest estate;
- The interplay of the economic, social and cultural activities on this Natural Resource Capital Stock .

***SIZE OF THE FOREST ESTATE VIS-À-VIS STAFF COMPONENT  
AND THE MANAGEMENT PROBLEM IT POSED:***

The Forest Estate based on 1994 reconnaissance inventory is about 8966 km<sup>2</sup> made up of 7290 km<sup>2</sup> of Tropical High Forest, including the Cross River National Park; Swamp Forests 520 km<sup>2</sup> ; Mangroves 480 km<sup>2</sup> ; plantations 460 km<sup>2</sup>; and other forests 216 km<sup>2</sup>. This is a considerable area to be managed and would need adequate, well trained and committed staff which has been lacking. (See Appendix: Fig. 6)

***TYPES OF FORESTS UNDER MANAGEMENT IN CROSS RIVER STATE:***

Forest land in Cross River State is classified into two types for management purposes. Thus, we have the Forest Reserves which are completely controlled by the Cross River State Government, and the community forests which are controlled by the communities. The Forest Reserves are all lands which had earlier belonged to the communities but constituted into Forest Reserves by law. In it, the communities have very minimal rights and a very small portion of royalties paid to them when any major forest produce (timber) was extracted. The communities on the other hand have almost absolute control of the community forests except that they are not allowed by law to fell and convert any tree to timber without getting clearance from the Government. However, they could destroy their community forest and convert them to farms without any legal implications. (See Appendix: Fig. 7)

***ENCROACHMENT BY ILLEGAL FARMERS:***

The Forest Reserves were constituted in the early twenties and communities in the past never tampered with the reserves as they obeyed and respected the law that forbade them any form of encroachment into the reserves. This was partly due to low population density. But with increased local population, immigrant population, land hunger, rationalization exercise by governments, cash squeeze, food scarcity and awareness, peoples attention turned to the forests (both Forest Reserves and Community forests), hence the rapid rate of degradation/ deforestation. It must be mentioned here that it is the government forest reserves that is much affected in this deforestation exercise because the communities in particular feel cheated and frustrated by Government action for keeping their forests for these many years without their benefiting sufficiently and in some cases at all from their naturally endowed resources.

***LAND TENURE SYSTEMS:***

The land tenure system in most of the communities favor deforestation. The more, community virgin forest a man clears the more he is respected in the community and the more land he has to bequeath to his children as inheritance. This is the practice by the communities in community forests and could also have applied to the forest reserves but for the fact that these are protected by law.

**GOVERNMENT PERCEPTION OF THE FORESTS:**

To Cross River State Government, the forests were/are seen only as a source of revenue and not as a natural resource capital stock that should attract investment for proper management and better economic returns. The result was the total coercive encouragement of the Forestry institution to give permit for more trees to be taken so as to continue to provide the much needed revenue.

**COMMUNITY PERCEPTION OF THE FORESTS:**

The Community has no regards for the trees and a good number of NTFPs, except the very commonly used ones. To them, because they are not gaining much from the trees and because they are mostly farmers, they preferred to clear the forests, burnt the trees and farm the land. To them, timber or logging was not their line of business.

**TAUNGYA SYSTEM:**

In the early seventies, the Taungya System of plantation establishment in Government Forest Reserves was introduced. The intention was to reduce plantation establishment cost. This brought a lot of migrant labour force into farming in the Forest Reserves. However, when the Government had no more funds to raise seedlings to establish plantations, the migrant labourers in their numbers, turned full time farmers, got settled, and had since then continued in the process of converting the THF to farmlands (especially the Forest Reserves). The Ekinta Forest Reserve is a case in point. About 108 km<sup>2</sup> of the Forest Reserve is presently without any form of trees. It is now complete cassava farms.

**RELATIONSHIP BETWEEN THE FORESTRY DEPARTMENT AND THE STAKEHOLDERS/COMMUNITIES ETC:**

Over the years, the relationship between the communities and the forest authority had become strained. The communities are aggrieved that though, by birth right they own the forest they are not part-takers of the proceeds from the Forest due to government legislation that restricts their rights to the forest. Thus they regard Forestry Development Department (FDD) as implementors of this unwholesome legislation. They see the Forestry Department as being high handed and their enemies, while the Forestry Department on the other hand sees them as people who do not want her to perform its legitimate duties effectively. The result has been a complete mistrust. But because these people are more in number, own and know the forests better, their attack on Forestry Department Staff became very hostile and effective; thus most staff felt unsafe to patrol the forests as usual and so the encroachment continued unabated. The communities also from time to time concede government Forest Reserves to farmers to spite the government and its agent.

**MANAGEMENT CAPACITY/ABILITY OF FORESTRY DEVELOPMENT DEPARTMENT:**

The Forestry Department is the institution responsible for the professional, technical and administrative management of the forests; but it had not the capacity to do so effectively. The Forestry Department is very poorly funded, and understaffed. Staff promotions are not forthcoming. Staff moral was low. Staff lacked exposure to modern forestry practices. There was

complete lack of training to update skills and improve performance. There were no tools and equipment. Office space was poor and inadequate (it still is). It was a period of near total stagnation.

#### **INEFFECTIVENESS OF THE FOREST LAW AND THE PROBLEM OF ENCROACHMENT:**

The Forest Law which is in operation in the Cross River State is completely derived from the National Forest Law which came into operation at the very early part of this century. It has not been amended since then except the Regulations which have seen some amendments recently. Maximum fines as prescribed in this law for any offence still stands at N200.00 or a maximum period of 2 years imprisonment. Neither the fines nor the period of imprisonment offers enough deterrent to would-be illegal operators. With this laws Megal operators prefer taking produce or committing other forest offenses than taking permits which cost more.

#### ***ILLEGAL LOGGING AND TRADING PRACTICES:***

In the early seventies, the power chainsaws were introduced into the country and by about late seventies or early eighties it had found its way into the then Cross River State. This machine is meant for felling, but is being used for wood conversion in situ. It is portable, easy to operate and so illegal operators move with it into the forests, fell and convert even at night with lanterns. The wood is conveyed on the head by carriers to a standby vehicle and moved away to the timber markets or outside the state and immediately split into smaller dimensions. However, collusion between some officials and these illegal dealers is not ruled out. Stiff penalties are now regulated to deal with the situation by way of bigger fines and disciplinary action on erring staff.

#### **IRREGULAR LETTING OF CONCESSIONS TO COMPANIES BY GOVERNMENT:**

Concessions were let to companies without consideration for alternative or other better land uses which would consider the environment and conservation principles. At times this is done in complete disregard to professional advice. However, for now, a standing committee has been formed to examine each application on a set of criteria and make recommendations to the Honourable Commissioner for Agriculture for approval.

#### ***CREATION OF THE CROSS RIVER NATIONAL PARK IN 1991 - BOTH A BLESSING AND A PROBLEM***

The Cross River National Park of over 3000 km<sup>2</sup> was excised from the Forest Reserves of the Cross River State by a Federal Decree in 1991. It is a blessing because it reduced the former large size of the Cross River State Forest Estate to a manageable proportion considering the staff strength of the Forestry Department. It is also a blessing because it is poised to conserve and protect a good chunk of the Tropical High Forest of the State along with its rich biodiversity. It is a problem because it increased the pressure on the forests outside the National Park. This problems are being tackled through the joint management of the Support Zone of the National Park by the Forestry Department and the park authorities.

It was the negative interplay of the human, economic, social and cultural activities on this natural resource capital stock and on the Forestry Department which is the government institution charged with the responsibility of forest resource land use, planning and management



that necessitated the intervention. The Forestry Department could not cope with the new stand of the communities . Their confrontational approach/attitude to Forestry Department Staff brought the realization that for the Forestry Department to succeed, it must find a way to be friendly with stockholders, particularly the farmers/communities, hence the participatory forest land use planning in the Cross River State.

**THE OBJECTIVE OF THE INTERVENTION:**

The overall aim is to identify the problems, suggest appropriate approach/method for arresting/solving the problems that will enhance better land use planning for Sustainable Development, Conservation and Management of the forest estate in the best interest of all stakeholders.

**THE MAIN OBJECTIVES INCLUDE THE FOLLOWING AND AIM TO:**

- Provide better and acceptable alternatives to present rural land use practices;
- Support programmes that will improve rural income and alleviate rural poverty;
- Improve FD and local skills through training;
- Encourage and entrench the formation of institutions at urban levels that will form the nucleus of proper land use planning and management;
- To build consensus and confidence between the Government (FD) and the stakeholders;
- Encourage the participation of foreign NGOs and the formation of local ones in land use planning and resource management;
- Increase and improve resource stock through afforestation;
- Encourage the establishment of Wood/NTFP based cottage industries;
- Assist and source for better markets locally and abroad for goods produced in these industries.

**THE PROCESS:**

An ODA joint Mid-Term Review Mission to the Cross River State Forestry project (ODA Assisted) in October, 1992, recommended a policy and institutional reforms for the Cross River State Forestry Sector.

As a follow up to this recommendation, ODA commissioned the International Institute for Environment and Development (IIED) U.K to work in collaboration with the CRS Forestry project/Development Department. In order to coincide with the first visit of the IIED consultants, the Forestry Department organised a Policy and Institutions workshop in which the visiting team attended.

After an initial fact findings, it was obvious that the issue of policy reforms was above the mandate of a State Forestry Service or Government but exclusive for the Federal Government. However, instead of a policy reforms, it was agreed that a strategy for Sustainable Development, Conservation and Management of the Forest of Cross River State be formulated .

The first step towards this was to identify existing legislation, policy guidelines, ordinances, laws and regulations, etc. as it affected natural resource conservation particularly the forestry sector. Considering the wide range of interest groups (stakeholders) involved in the forestry sector, the task of identifying them and their level of involvement was to be addressed.

Enormous data, for instance, the state of the forest, socio-economic land use etc. were needed. A Task Force committee was set up to co-ordinate, source for, further identify additional key stakeholders and organize workshops for data building blocks towards the formulation of the envisaged strategy. The Task force was also responsible for identifying the types of data to be collected, when, where, how and by who.

The Task Force, and its functions was the beginning of the Participatory approach to Forest Resource Management in Cross River State. It resulted in participatory decision making and confidence building.

The activities of the Task force was winded-up with a Strategic Planning Workshop in which the data collected was evaluated against the background of the set objectives and information gaps was identified and actions set in motion to obtain them. In place of the Task Force, a Steering Council was formed.

#### **THE STEERING COUNCIL:**

The main function of the Steering Council (SC) was to guide the preparation, Presentation and Acceptance of the Strategic Plan for the Cross River State Forest Estate. Membership was invited from all Cross River State Government Ministries and Parastatals with relevance to land use; Forest Concessionaires, Timber producers and dealers Association, Timber Sawyers; the Farmers Councils, other non-governmental organizations also and those which functions impact in one way or the other on the forest estate.

The most important members of this council were those from the forest and non-forest villages and communities. For the purpose of participatory and equitable representation and selection of these group of members, the already existing zones of southern, central and northern senatorial system in the state became handy. Before members were selected or voted into the council, a sensitization tour was undertaken to raise the awareness of the local people on what the process and the new initiative to forest management was all about. Local communities having been recognized and sensitized, democratically in each of the various zones, at the end of what appears to be rural peoples' convention agreed and voted three representatives from each zone to the Steering Council. They voted men and women of honour and integrity and those whom they have confident on. The Forestry Department was merely an observer in the whole process of selecting their representatives. In all, the local communities had nine (9) representatives in the Steering Council.

At the inaugural meeting of the Steering Council, a technical arm of the council caused Steering Committee was formed.

#### **THE STEERING COMMITTEE:**

Representatives of the local communities from the three senatorial zones in the steering council, elected amongst themselves three representatives into the steering committee Other key stakeholders and government were represented in the committee making a total of 13 member committee. The committee was the technical arm of the whole process, gathering necessary data, collating and production of discussion papers which were presented to the Steering Council from time to time for fine tuning.

A key feature of the entire process was the inbuilt feed back system whereby representatives of the local communities were provided with inputs to enable them reach out to their various villages to inform them of the progress in the council and to come up with their views. At the end of various consultations held by the representatives of the local communities with their people, position papers were presented which became a vital document for the preparation of the strategy. Various interest groups like Forest Concessionaires, Timber Producer and Dealer Associations, and other non-governmental organizations also had similar consultations with their enlarged members and presented position papers which were used in preparing the strategy document. Thus consultations were broad based, employing sufficient feed back system in eliciting the views of the local people.

**MAIN ACTIVITIES:**

Most government programs fail not because they are badly conceived, planned and executed, but because a very important element for success is usually left out or considered unimportant. That single, and critical element is collective responsibility and collective decision on making involving would be beneficiaries. In anticipation of the contribution to the success of community based projects using Participatory Rural Appraisal and Participatory Planning and Learning Methodology, the following activities for empowerment of the communities/stakeholders were undertaken:

- Extensive and intensive consultations with the rural forest communities, made up of chiefs, men and men leaders, women and women leaders, youths and youth leaders, children etc.
- Series of workshops within the Forestry Department Staff and between the Forestry Department and the communities.
- Series of meetings/workshops with other stakeholder groups - large forest concessionaires, power-chain saw operators, weekend farmers, NTFP gatherers, secondary and tertiary wood workers (carpenters etc.).
- Participatory Rural Appraisal (PRA) training for staff.
- Commission of studies for data collection etc. to enable proper planning.
- Capacity building through training and re-training both locally and overseas for Forestry Department staff and locally for stakeholders/communities.
- Establishment of community Agro-forestry initiatives and provision of tools, equipment and seedlings etc.
- Sensitization of stakeholders, particularly at the rural level by the Forest Charge Officers on the new approach to forest land use management. The responsibilities and benefits likely to accrue to would-be beneficiaries from this new approach were well defined and clarified.
- Revision of the Cross River State Forest Produce tariff was undertaken to review upwards the pricing of forest produce and royalty which had been very low so as to provide greater financial benefits to the stakeholders, particularly the rural communities in-order to change their perception of the forests. This singular act has been very effective.
- NTFP surveys was primarily done at the rural level with the full participation of the local people who we discovered had a better knowledge of plants and their uses than most, if not all of us. They educated us on medicinal plants, edible leaves, mushrooms, nuts, herbs etc. The continued impact of this exercise on the relationship between the Forestry Department and the rural communities had been remarkable and thought provoking.
- Establishment of the Community Development/Forest Management initiative in Ekuri is intended as a model and the flagship of the Cross River State Forestry Strategy. The

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locals were trained in perimeter survey, stock survey (SS), power-chain saw operation and maintenance as well as encouraged to form a Co-operative Society to help sustain the initiative. To further encourage the Ekuri Community to manage their forest themselves, assistance in the form of physical cash, materials and equipment, personnel and other logistical support were given to them by FDD and Overseas Development Administration (ODA), the British High Commission (BHC) other local donors like Strabag, Eagle Cement and Crush Rock etc. in an effort to open up access road to the community and the forest to the nearest highway. Often, logging companies use the provision of access road to communities as a bait to obtain forest concessions from the communities. Our action and support is to stop this baiting and in doing so the forest can be sustained. This has been achieved so far, but the future is pregnant.

- Empowerment of the local communities through the formation of the Community Forest Management Committees. These CFMCs are to handle and represent the communities on all forestry related matters, working in close collaboration with the Forestry Department Staff. The resident forest officer in that area is an executive member of the FMC and always available at their service for expert advice. Our extensive discussions with the communities and other stakeholder groups had assisted us much in the building of confidence and trust and also informed us that there was need to devolve some responsibilities, especially those that their present skill could carry. Most of these CFMCs are functioning well while others are still in the process of taking off.
- State-wide Public Awareness Campaigns using the TV, Radio, Video tapes and Public Address Systems from time to time has helped in no small way to change the public perception of the forests and the new forest land use planning approach.
- The formation of the Inter-Agency Committee (IAC) was to provide a forum for all agencies and organizations whose functions impact on the land in one way or the other the opportunity to identify areas of collaboration, overlaps, and where there is conflict as between the Forestry Development Department and Cross River National Park in the Support Zone, and thus proffer solutions. This committee met several times but had to halt temporarily for reasons beyond its control.

#### **SUSTAINABILITY OF THE PROCESS:**

Some of the ways planned to sustain the process had been to make the Forestry Development Department a Commission or an Authority whereby it could be self accounting, plans its programmes, executes, hires and fires labour with the main aim of keeping only quality and conscientious staff. This has not been done.

The formation of a forestry Trust Fund has also been proposed but is not in place yet. It will add to sustainability as funds would always be available. The revision of the Forest Product Tariff from time to time is also meant to make the Forestry Development Department and the Forestry Strategy self sustaining.

Proper planning, control of illegal activities and monitoring of logging operations to ensure that appropriate fees are paid are other means to sustain the process. However, these are usually difficult for logistic reasons and other reasons outside the control of FD. That

notwithstanding, the highest revenue was made in 1995 because of some of the measures adopted by the Forestry Development Department based on the strategic process.

It is my opinion, based on my experience that financial sustainability of the strategy based on the present administrative set up of the Forestry Development Department and Government response to Forestry Department requests does not encourage sustainability. However, if the Forestry Development Department function in the future is decisively for monitoring, evaluation and supervision of actions/functions which have been devolved to the CFMCs and NGOs using few skilled staff (thus cutting down on wage bills and overheads etc.) but with little government support (if no Commission) it will be sustainable.

#### **RESULTS:**

Some of the main activities mentioned above have been implemented fully, others partially and yet others are to start. The 'little' success so far achieved has been through constant dialogues, the use of the "Top down and bottom up" approaches as well as the use of incentives by way of improved royalties payments resulting from the improved new Forestry Tariff, as well as informant fees (IF) paid when a stakeholder reports an offence of illegal activities to the Forestry Development Department. The strategy document was completed presented to and accepted by the Cross River State Government (CRSG). About eleven CFMC were established and inaugurated; Tariff was revised and is operational; Inter-Agency Committee (IAC) formed but not very operational; two Agro-forestry initiatives established at Igwo in Obudu and Odukpani; many forestry staff received various trainings; public awareness campaigns held and very successful and is continuous. Substantial confidence has been built up between the FD and stakeholders.

It should be understood that the whole process is a novelty to those of us from FDD who took part in this strategy preparation. That it is a process means that there is always room to add and subtract to improve and make the process better and workable.

The experience has been very useful and rewarding. It has helped us to know the stakeholders better and to be able to deal effectively with them. The Government has its perception of the Forestry Strategy, the Stakeholders/communities also have their perceptions. They have all been used to a particular attitude of seeing the forest and the land, using the forest and the land so the new approach would take time to be adopted fully.

The following conditions should be understood and followed if the process is to be effective and successful.

- There is need for continuous consultations and dialogues.
- Efforts should be made to complete all participatory projects started so as to consolidate confidence already built.
- The communities/stakeholders know what they want.
- We should listen to their demands and assist where possible.
- Never say yes to the communities on an issue or promise what you know you would not fulfill.
- There should be sustained public awareness campaigns using electronic and print media.
- Use the stick and carrot method.
- Social habits are very difficult to change; it takes time.

- The opportunities can slip off our hands if the momentum is not maintained. This seems to be the case now since the ODA termination of their support due to the EU common position on Nigeria.

#### **IMPLEMENTATION PROBLEMS AND HOW THEY WERE DEALT WITH:**

The whole process has been a novelty from inception; so was the planning and implementation. Thus, solutions to identified problems arising from or during the implementation needed a novel approach, possibly gleaned during the planning/learning process. I shall now consider some of the activities which during implementation posed problems and how these were/are being dealt with.

#### **MISUNDERSTANDING OF THE CONCEPT AND MISINTERPRETATION OF SECTIONS OF THE STRATEGY**

In spite of the elaborate and democratic process of selection of community representatives into the Steering Council and Steering Committee and the intensive and extensive sensitization campaigns carried out before, during and after the completion of the Strategy, some representatives present wrong (possibly self-centered) information to their communities. For example, some representatives for personal reasons had told their communities that the Forest Reserves have all been returned to them; some others told their communities that their enclaves shall soon be extended and large farm lands cut out for the use. The result has been the communities wanting to have the same tenure rights as allowed by government in the community forests. Why do some members do this? They want to score, political points (advantage) that they fought and were responsible for pressurizing the government to return the Forest Reserves to them. This is still a on-going problem and is being addressed through more dialogues/explanations with the communities involved. In addition, reference is made to the Forest Laws and the sanctions the law imposes on any breach.

#### **SUSTAINABLE MANAGEMENT OF COMMUNITY FORESTS**

There is still the problem of convincing most communities to see the need to manage their community forests sustainably. The present land tenure system which provides for permanent ownership of a deforested virgin forest is deep rooted and has a very strong local acceptance. It poses more problems as it now involves wealthy urban dwellers with substantive financial power to finance deforestation in their communities. There have been discussions between village communities on this issue. We hope it will be successful as time goes on. Also there is a proposal in the making whereby the government shall treat some aspects of community forest management as if these are Forest Reserve. The land tenure is one of such cases. It will be discussed in the Inter-Agency Committee in the future as part of the needed amendments.

#### **TRADITIONAL FARMING SYSTEM**

The slash and burn/shifting method of agriculture is inimical to sustainable forest land use management. But this is the general practice in the Cross River State. Intensified agriculture is new and needs inputs such as fertilizer and better farming implements which the rural people can ill-afford. In addition, they would need some trainings to be able to make proper and effective use of these implements. This is likely to remain a problem for some time to come except the government decides to take up this very important responsibility.

- Perception of Foreign Assisted projects by participants. From the on-set, some participants came up with demands i.e. financial remunerations that was outrageous in some cases. However, we had to strike a balance between their demands (honorarium) and what we could comfortably afford to enable the process move forward. This was achieved through dialogues.
- Formation of Community Forest Management Committees (CFMCS) also posed some problems. Communities initially viewed this innovation with suspicion. This was so because relationship between the Forestry Department and the communities had not been cordial. The situation was taken care of by intensive discussions, devolution of some responsibilities which went along with the promise to and actual sharing of some funds resulting from their activities with the government e.g.. Farmers Registration Fees attracts N200. 00 per person and is shared in the ratio of 50:50.
- Encroachment into the Forest Reserve, cutting and burning of trees for farming. Intensive discussion and the use of the CFMCs to sanction community members who refuse to obey the order. For the burning of trees, this has been taken care of by letting the people know and appreciate the value of trees and also through the royalties paid to the communities for community development projects and to individual tree owners for their private use.
- The Overseas Development Administration (ODA) employed some staff into the project such as drivers, personnel staff, security etc. These employees were better rated (paid) than their counterparts in the government. With the exit of ODA and the absorption of these staff into the government to enable the process move forward, there is an observed fall in their moral and loss enthusiasm on the job. I feel they are only waiting for better opportunities elsewhere.
- There is the question of suspicion by the rural village people about the genuineness of their elite urban dwellers who meet to discuss with Forestry Department from time to time outside the village. There is the feeling that certain things are being compromised.
- Also there is suspicion from visage CFMC members from different villages e.g. between Old and New Ekuri who had had a long standing disagreement. This is being taken care of by constant dialogues.

#### **FUNDING:**

This has been a major problem. It is fundamental to the success or otherwise of any endeavor. No matter how well conceived and planned a project is, it cannot succeed without appropriate, sustained and timely funding. Since the departure of ODA, funding has been a major problem. Government reluctance and irregular release of funds for capital projects as well as lack of incentives for Forestry Department staff and other inputs have not been in the interest of the process. The sudden withdrawal of ODA assistance owing to EU Common position on Nigeria did not provide opportunity for gradual adaptation. There is no solution to this problem yet. However a proposal has been made to the government to allow the retention of 30% of all revenue collected by the Forestry Department for the services of the department to enable the project move forward.

**CONCLUSION:**

This paper will be incomplete if my sincere appreciation is not given to the ODA, the British High Commission, Lagos Nigeria and the International Institute for Environment and Development for their technical input, funding, cooperation, understanding and patience with us. This appreciation is also extended to IRED West Africa.

We have together labored and successfully developed a model of participatory approach to solving our long standing problem - Forest and Land use Management. We have come a long way, we also have a long way to go. Implementation of the strategy is also as challenging as its formulation. Forestry Development Department for now can not go it alone. Hence the sudden withdrawal of ODA support to the project has kept it in a dangerous position which could undermined all the effort put together in arriving at the stage we are. We are confident that ODA in no distant time would come back as the political situation in Nigeria becomes clearer. The thrust of the strategy is local community participation and involves skills development, training, provision of inputs and a do it yourself approach which enhances poverty alleviation. I am aware there are other NGOs involved in helping to improve the living standard of local peoples. The Cross River State Forestry Strategy has a place for you and we are prepared to welcome you in partnership. Let us work together to improve the people and the environment.

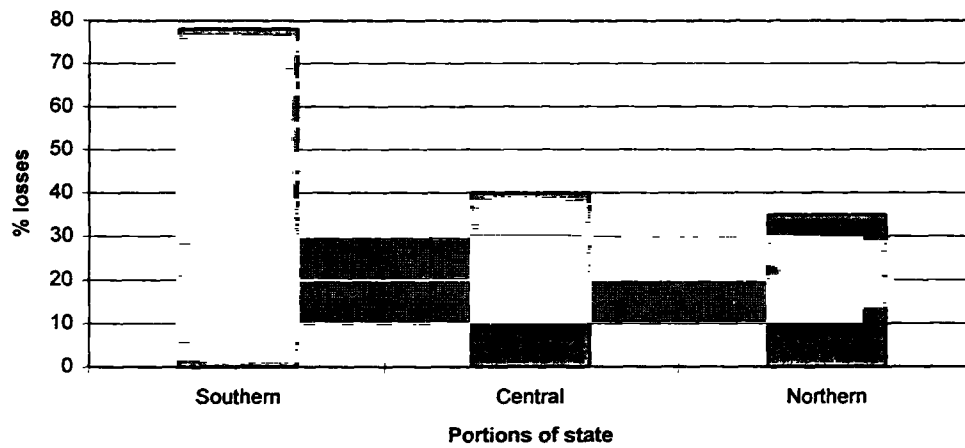
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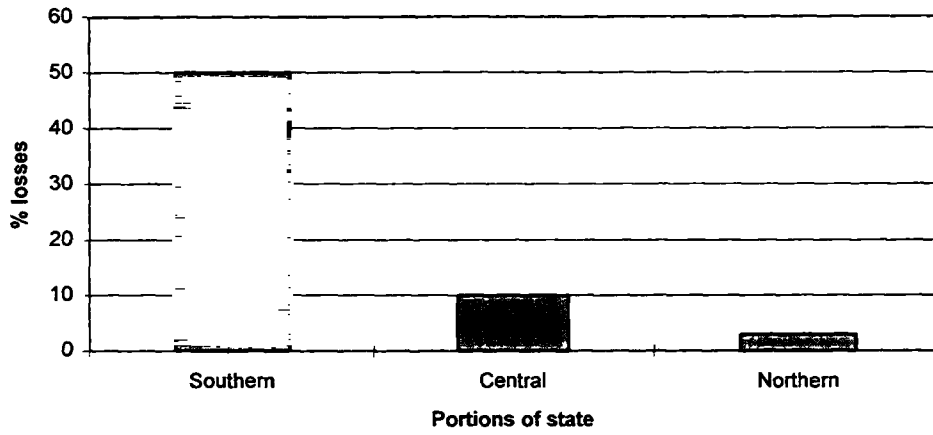


**6A THE LOSSES OF TROPICAL HIGH FOREST IN C.R.S. 1972-1991**

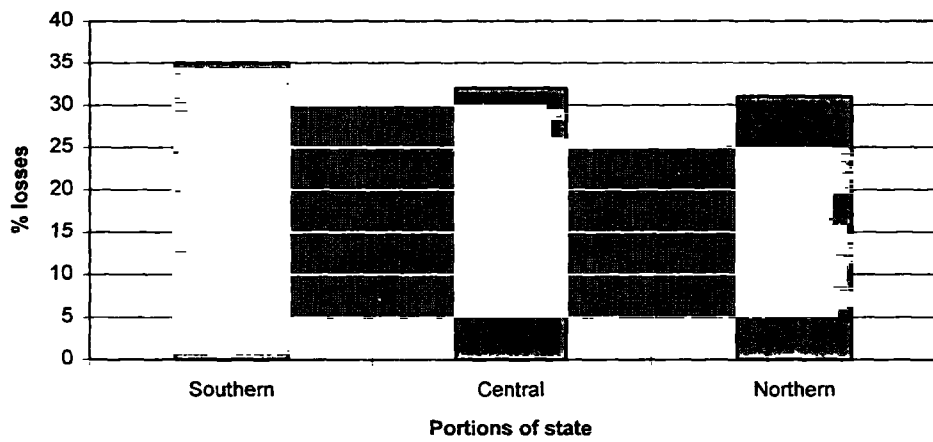
**Change (loss) between 1972-1991**



Forest Reserve



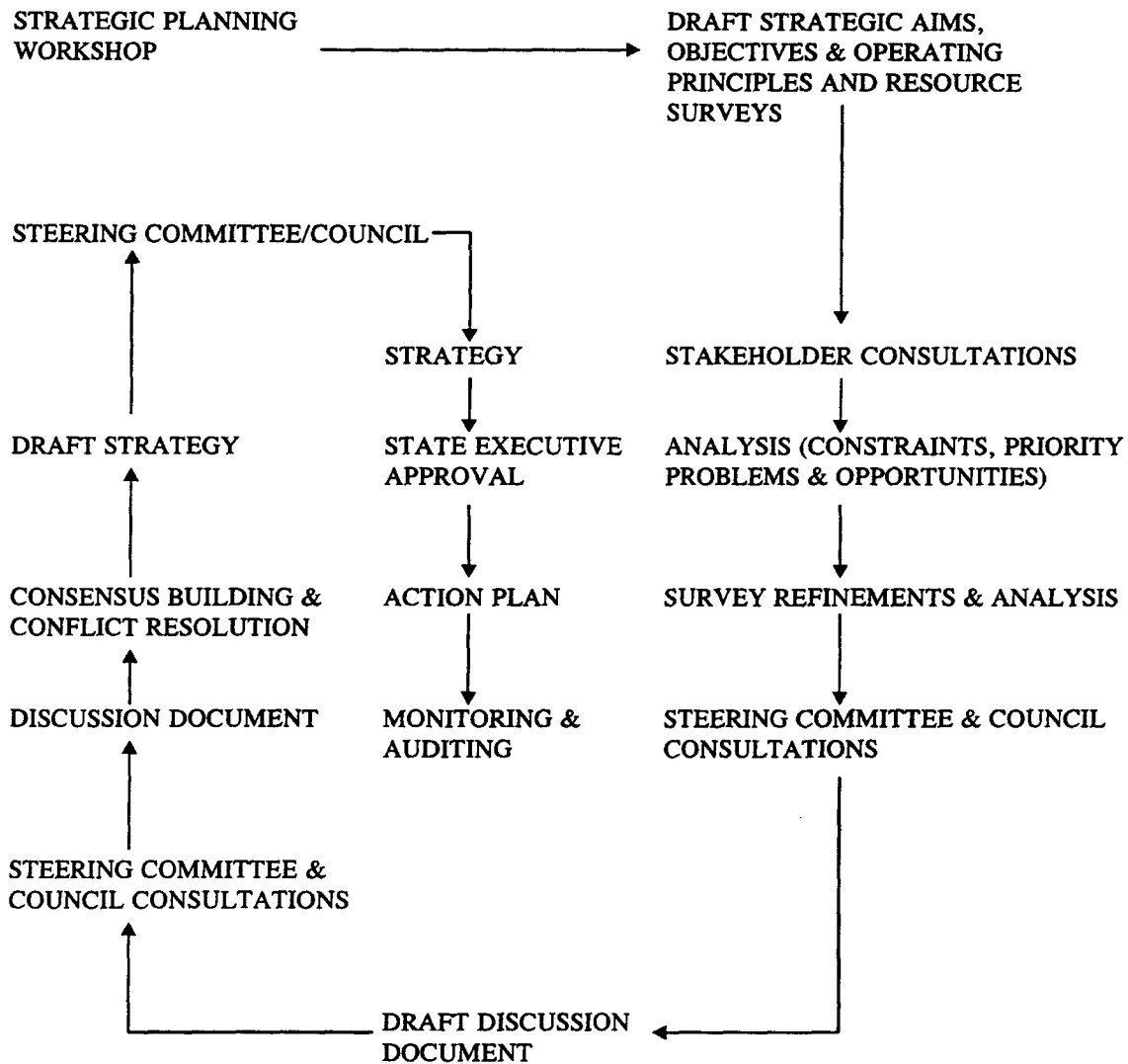
Community Forest



SOURCE: Dun and Otu.

(1994), FOREST DEV. DEPT.

**DIAGRAMMATIC STRUCTURE OF THE STRATEGIC PLANNING AND IMPLEMENTATION PROCESS ADOPTED**



SOURCE: C.R.S.F.P. Technical Report  
 Overview of a Planning Process for Sustainable  
 Management of the Forest of Cross R. State,  
 Nigeria

**PARTICIPATORY FOREST POLICY REFORM**

**SENEGAL**

***GESTION DURABLE ET PARTICIPATIVE DES ENERGIES  
TRADITIONNELLES ET DE SUBSTITUTION  
SENEGAL***

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- I INTRODUCTION**
  
- II L'EXPERIENCE DU SENEGAL DANS LES DOMAINES DE LA  
RESPONSABILISATION DES POPULATIONS ET DE LEUR PARTICIPATION  
AUX ACTIVITES FORESTIERES**
  
- III CONTEXTE**
  
- IV OBJECTIF**
  
- V STRATEGIES**
  
- VI PROBLEMES DU SOUS SECTEUR DES COMBUSTIBLES DOMESTIQUES  
ET STRATEGIES**
  
- VII PROGRAMME POUR LA GESTION DURABLE ET PARTICIPATIVE DES  
ENERGIES TRADITIONNELLES ET DE SUBSTITUTION**

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**GESTION DURABLE ET PARTICIPATIVE DES ENERGIES  
TRADITIONNELLES ET DE SUBSTITUTION  
—SENEGAL—**

**I. INTRODUCTION**

Ce document présenté à l'occasion du forum organisé par le Banque mondiale à NAIROBI du 28-08-1996 au 30-08-1996, introduit toute la problématique de gestion forestière au Sénégal. Il s'articule autour de plusieurs points. Il s'agit entre autres d'une analyse sur l'expérience du Sénégal dans les domaines de la responsabilisation des populations et de leur participation aux activités forestières. Loin de l'exhaustivité, cette partie permet d'évoquer l'historique de la foresterie au Sénégal et l'évolution des différentes approches utilisées pour conduire les différentes politiques de 1930 à nos jours.

Après ce bref rappel des différentes approches utilisées pour conduire les politiques forestières au Sénégal, des éléments du contexte ont été développés. Ainsi, l'analyse de la situation générale permet de rappeler le cadre macro-économique du Sénégal qui est soumis à plusieurs contraintes structurelles. Dans cette partie, des éléments de conclusion sur la politique forestière permettent de placer la problématique de gestion forestière dans son véritable contexte dynamique.

Après la présentation du contexte, le document propose des objectifs et stratégies macro-économiques qui s'appuient en priorité sur le plan d'action forestier du Sénégal, lequel s'associe au plan d'action environnementale et au plan de lutte contre la Désertification pour soutenir l'essentiel de la politique forestière du pays.

Compte tenu de l'importance des combustibles domestiques dans la politique énergétique du pays et du bois énergie dans la consommation finale des ménages, le document évoque les problèmes du sous secteur des combustibles domestiques et stratégies et dégage l'ambivalence qui est relevée sur la structure des formations forestières caractéristiques d'un environnement sahélien, qui outre leur rôle de protection et de maintien de la fertilité des sols, fournissent l'essentiel de l'énergie consommée en milieu rural ainsi qu'une part importante du fourrage constituant la base indispensable de l'économie pastorale du pays.

Le programme pour la gestion durable et participative des énergies traditionnelles et de substitution, qui découle d'un programme sous-régional avec l'appui de la Banque mondiale est présentée comme élément de politique innovatrice pour renverser la tendance à la dégradation des écosystèmes forestiers dans un contexte de croissance de la demande en combustibles domestiques.

**II L'EXPERIENCE DU SENEGAL DANS LE DOMAINE DE LA  
RESPONSABILISATION DES POPULATIONS ET DE LEUR PARTICIPATION  
AUX ACTIVITES FORESTIERES**

**2.1 - Aperçu historique**

Le Sénégal a une longue et riche expérience en matière de participation des populations dans les activités forestières. Elle remonte à la période précoloniale et se poursuit jusqu'à nos jours. Si l'on veut faire de l'histoire, on peut remonter jusqu'à l'époque du royaume du Baol dans le Bassin

arachidier où l'abattage d'un *Acacia albida* était un acte passible de mort et sa protection était rentrée dans les moeurs. Ce fut une forme de responsabilisation des populations, fort efficace et concluante d'ailleurs puisqu'elle a légué à la postérité d'impressionnants parcs, malheureusement fortement compromis aujourd'hui par l'extension de la culture arachidière.

Les administrations coloniales et post-coloniales ont pendant les premières années de leur existence, utilisé une forme autoritaire de plantations pour réaliser les premières plantations en régie.

### **2.1.1 -La régie forestière**

Les premières expériences de l'administration forestière en matière de reboisement et d'enrichissement des forêts remontent aux années 1930 avec les plantations de *Khaya senegalensis* dans le Centre-Est et de *Tectona grandis* (Teck) en Casamance.

Ce programme s'est poursuivi de 1947 à l'Indépendance et s'est étendu au Bassin arachidier par des plantations d'*Acacia albida* et la plantation de *Casuarina equisetifolia* (Filao) sur le littoral nord, pour protéger les cuvettes maraichères.

Ces actions se poursuivent et se renforcent après 1960 avec des actions d'émergence comme les grands chantiers de reboisement initiés au cours des années 1970 en vue de répondre au processus de dégradation des écosystèmes, consécutif à l'installation de la sécheresse.

Celle-ci, d'ailleurs, devenue endémique, a vite montré les limites de l'option régie tant au niveau de l'approche adoptée, des techniques utilisées, que des moyens mis en oeuvre par ces projets de première génération.

Face au coût élevé des reboisements en régie, à la persistance et à la rapidité de la régénération des ressources forestières, il a fallu progressivement s'orienter vers une approche impliquant davantage les populations rurales.

### **2.1.2 Des plantations communautaires à l'aménagement intégré des terroirs villageois**

La participation des populations est de plus en plus ressentie comme une priorité incontournable pour juguler le processus de dégradation des potentiels de production. Une seconde génération de projets a vu le jour au début des années 1980 et se propose de concevoir et de mettre en oeuvre des activités répondant le mieux aux besoins et priorités des paysans dans les limites des conditions du milieu. Ces projets mettent en oeuvre des actions type "bois de villages" et plantations communautaires et évoluent ensuite vers des formes plus diversifiées comme les brise-vent, les bosquets familiaux et les haies vives. L'approche était cependant trop sectorielle et les populations n'étaient pas suffisamment préparées et impliquées réellement pour des raisons liées à la nature même de l'approche.

Dans une approche de type "Top-Down", l'ensemble du processus de mise en oeuvre des activités (conception, décision, élaboration, mise en oeuvre et suivi) est accaparé par la structure du projet, les communautés rurales étant considérées simplement comme une réserve de main-d'oeuvre.

Face à ce constat d'échec, l'on est passé au concept de "foresterie villageoise" ou "foresterie rurale". Cette stratégie d'action a été élaborée par le plan de développement forestier du Sénégal en 1981 et a revêtu plusieurs aspects.

Au départ, il y avait beaucoup de participation impérative, les actions étaient toujours conçues et mises en oeuvre de manière unilatérale par le service forestier. Le quantitatif (réalisations physiques) l'emportait toujours sur le qualitatif (l'auto-promotion rurale). Cela s'est traduit par la difficulté de convaincre des populations préoccupées par la recherche de l'autosuffisance alimentaire et l'amélioration de leurs conditions matérielles de vie, à s'investir dans des actions à long terme. D'où l'introduction de mesures d'accompagnement ou incitatives diverses: distribution de vivres PAM, micro-réalisations, achat d'une partie de la production des plants, etc...

Les mesures incitatives n'ont pas donné les résultats escomptés. La participation s'est limitée à une simple implication des populations dans l'exécution, dans la plupart des cas. Cette stratégie d'intervention fut abandonnée au profit d'une approche participative qui a permis d'évoluer vers l'aménagement intégré des terroirs villageois.

Désormais, les activités ne se limitent plus à la plantation d'arbres mais englobent la protection des cultures, la restauration des sols et la réhabilitation de l'environnement.

Les activités d'aménagement des forêts naturelles n'ont pas encore été développées en raison de la méconnaissance des potentialités forestières.

La phase actuelle est dominée par une importante réflexion accompagnée déjà par quelques prises de décisions politiques et administratives, sur le transfert des responsabilités de gestion des ressources forestières au niveau des collectivités locales. Ce projet a donné naissance à une dynamique de concertation et de consultation à tous les niveaux avec la tenue de nombreux séminaires et forums nationaux. Parmi les plus récents, on peut citer:

- l'atelier national sur la gestion forestière et participation villageoise tenue à Kolda du 4 au 8 Mai 1992;
- le séminaire national sur l'exploitation forestière tenu à Dakar, du 14 au 15 Octobre 1993;
- le séminaire organisé par l'Ecole Nationale d'Economie Appliquée (ENEA) de Dakar sur la "Mise en place de la Régionalisation au Sénégal", du 2 au 4 Mai 1994;
- le Forum national sur "la Gestion des Ressources naturelles" tenu à Agnam Thiodaye, du 5 au 7 Août 1994 avec les représentants des communautés rurales de tout le pays;
- le forum national sur la régionalisation et la gestion des ressources naturelles et de l'environnement, organisé à Diouloulou du 13 au 14 Août 1996.

Tout ceci témoigne de la volonté du politique et des techniciens de rendre effective la prise en charge par les collectivités locales de la gestion de leurs forêts.

### III CONTEXTE

Le Sénégal couvre une superficie de 196 192 km<sup>2</sup> pour environ 8 millions d'habitants (estimation 1995) dont plus de 50 % vivent en milieu rural. Le pays dispose d'un important potentiel agro-sylvo-pastoral qui occupe plus de 70 % de la population active et engendre une valeur ajoutée de 20 % du produit intérieur brut (PIB).



L'économie nationale est essentiellement basée sur le secteur primaire. La culture de l'arachide occupe 20 % des terres emblavées et représente entre 800 000 et 1 000 000 de tonnes en 1981. Les productions céréalières, mil et sorgho (8000 000 t en 1985), riz 136 000 tonnes en 1984 sont insuffisantes pour couvrir les besoins du pays et le Sénégal doit toujours continuer à importer 200 000 tonnes de riz et 100 000 tonnes de blé.

Egalement, l'économie sénégalaise est soumise à de fortes contraintes structurelles parmi lesquelles une demande galopante, une baisse considérable de la pluviométrie et une accélération du processus de désertification.

Au cours des dernières années, le Sénégal s'est attaché à réaliser une stratégie de réforme dans le but d'éliminer les rigidités structurelles de son économie, dans une étape de stabilisation d'abord, d'ajustement structurel ensuite. Elles ont transformé en profondeur la dynamique de l'économie nationale, en particulier depuis le changement de parité du franc CFA intervenu en janvier 1994.

Depuis cette date, une impulsion nouvelle a été donnée à la stratégie d'ajustement qui met désormais l'accent sur une gestion macro-économique rigoureuse et sur le renforcement des ressources nécessaires à une croissance soutenue. La réalisation de cette croissance soutenue ainsi que la lutte contre la pauvreté et la protection de l'environnement s'imposent comme des conditions sine qua non pour un développement durable.

Par ailleurs, le Sénégal s'est engagé résolument à opérationnaliser l'approche participative dans le processus de formulation et de mise en oeuvre des stratégies nationales. C'est ainsi qu'à travers une série de réformes juridiques et institutionnelles le Gouvernement est en train de transférer davantage de responsabilités aux collectivités locales, comme en témoignent les mesures de 1990 et de février 1996 sur la décentralisation, dans le cadre de leur auto-développement, contribuant de la sorte à répondre à l'aspiration des populations concernées à prendre part au processus de prise de décision.

Le Sénégal, à l'instar des autres pays sahéliens a été confronté, au cours des deux dernières décennies, à une série de sécheresses chroniques qui ont eu comme conséquence la destruction du couvert végétal avec ses effets sur la protection des sols, le niveau de production forestière et animale, la conservation de la diversité biologique, la dégradation des systèmes traditionnels de production, la crise énergétique, l'appauvrissement des populations rurales, et l'exode rural. La conjonction des facteurs de dégradation naturelles et anthropiques ont ainsi engendré un phénomène de surexploitation des terres marquée par des prélèvements incontrôlés des ressources ligneuses.

Les ressources forestières du Sénégal qui s'étendent sur environ 25% du territoire, sont constituées essentiellement de savanes arbustives et arborées correspondant aux zones bioclimatiques des domaines sahéliens et soudaniens. Les forêts claires et les reliques de forêts denses ne se rencontrent qu'au sud, avec une production modeste de bois d'oeuvre.

La récession climatique, les feux de brousse et la compétition des terrains agricoles sont sans conteste parmi les causes du recul des formations forestières. Cependant, la pression exercée par l'exploitation forestière pour l'approvisionnement en combustibles ligneux des agglomérations urbaines est de plus en plus reconnue comme une cause majeure de dégradation des ressources naturelles au Sénégal.

En effet, les formations forestières naturelles fournissent aujourd'hui plus de 90% de l'énergie consommée par les ménages. La consommation domestique de bois et charbon de bois constitue un élément important du phénomène de raréfaction des ressources ligneuses, faisant ainsi courir un risque grave à l'environnement et compromettant à terme l'approvisionnement des ménages en énergie de cuisson.

L'état des ressources forestières dénote ainsi, une nécessité de résoudre la contradiction entre le processus de déboisement en cours et la demande toujours croissante de combustibles ligneux de la population, et propose comme alternative l'aménagement des forêts naturelles. La régionalisation aidant, la participation des populations rurales devient aujourd'hui, un outil de gestion stratégique de nos ressources.

Le diagnostic a été établi avec l'appui du Plan d'Action Forestier du Sénégal dans le cadre d'une étude réalisée en Août 1994 par SOTO FLANDEZ, sur la base de l'analyse de la situation des ressources forestières, de la politique forestière énoncée depuis 1981, de la législation foncière et forestière, et sur le constat de leur gestion réelle sur le terrain.

Les conclusions principales sont les suivantes:

- i) La destruction et la dégradation des formations forestières vont s'accroître dans les prochaines années, à cause de la course aux nouvelles terres, dans un cadre d'exode des populations rurales du bassin arachidier en direction des zones encore boisées du pays;
- ii) La substitution des combustibles ligneux par le gaz ne pourra plus progresser de façon significative tant que le niveau des revenus des ménages ne s'améliore pas.

En attendant, la demande des combustibles ligneux restera prédominante, au moins pendant quelques décennies, surtout parmi les couches les plus défavorisées de la population qui y trouvent une source d'énergie qu'on peut se payer au jour le jour et qui n'exige pas d'investissements additionnels pour l'utiliser;

- iii) La stratégie suivie jusqu'à ce jour par le Service Forestier dans le domaine de l'aménagement et l'exploitation forestière s'avère incomplète. D'après le bilan de réalisations, le Service Forestier a concentré ses efforts sur la réduction progressive de l'offre pour forcer la substitution des combustibles ligneux par du gaz.

Les résultats de la substitution sont satisfaisants mais l'exploitation forestière reste purement extractive et pratiquée par des commerçants étrangers aux terroirs villageois, jusqu'au point de provoquer une contestation qui se généralise parmi les Communautés Rurales.

Par ailleurs, le Service ne dispose pas des moyens humains et matériels pour exécuter un contrôle efficace des règlements d'exploitation, transfert et commercialisation de produits forestiers. Les projets d'aménagement n'ont pas fourni jusqu'à maintenant des méthodes ou des techniques qu'on pourrait généraliser dans leurs zones d'intervention;

- iv) Les Communautés Rurales et le Gouvernement vont exiger du Service Forestier une application rapide du transfert de la gestion des ressources forestières aux populations riveraines, conformément au Code Forestier promulgué depuis Janvier 1993.

Par conséquent, le Service Forestier devra au préalable adopter un modèle d'intervention pour orienter, limiter et contrôler ce transfert de responsabilisation dans la gestion forestière.

Ce diagnostic s'appuie sur des réalités, qui hélas marquent encore la foresterie au Sénégal. Il s'agit entre autre d'une absence d'une cartographie actualisée des ressources forestières. Aujourd'hui, il est encore difficile de savoir avec précision les limites des forêts, de les localiser dans l'espace et dans le temps, d'évoquer les différentes interventions, définir quelles sont les réserves disponibles.

Les rapports élaborés sur le potentiel forestier du Sénégal affirment une certaine connaissance de la surface boisée, de la productivité des formations ligneuses, du volume sur pied et même du volume de bois qui serait actuellement accessible. Cependant, les chiffres de deux sources différentes qui semblent faire autorité se remarquent par leur très grande différence (voir tableau ci-après).

#### **Les Ressources Forestières**

Rubriques	Unité de mesure	Projet SEN/89/002 (Piot J. 91)	PAFS Vol. II (PDDF, 1981)
Surfaces forestières	ha	19,200,000	11,964,000
Bois sur pied	m3	318,780,000	331,300,000
Production potentielle	m3/an	13,353,000	8,600,000
Volume accessible	m3	10,000,000	3,100,000

Ces différences d'appréciation qui caractérisent la connaissance des ressources forestières nous amènent à faire le constat suivant:

Les connaissances disponibles sur les ressources forestières sont insuffisantes pour essayer de rationaliser leur gestion. Les chiffres indicatifs dont on dispose, établis sur des images prises au début des années 80, ne reflètent plus l'occupation actuelle des sols.

En outre, il est également accepté que la politique de désengagement de l'Etat, du secteur agricole appliquée à partir de la Campagne 84/85, a provoqué parmi d'autres effets négatifs, une dynamique d'appropriation de nouvelles terres qui se déplace du Nord et du Bassin Arachidier vers les terres encore boisées et à faible occupation humaine du Sud et du Sud Est du pays.

Pour la Banque Mondiale, la tendance à long terme est préoccupante étant donné les risques d'un désastre écologique en perspective. (Banque Mondiale, 1993). Ce point de vue est partagé aussi par le Ministère de l'Agriculture qui souligne que la contribution du Secteur agricole au PIB a chuté de 18,75% pour la période 1960 - 1966 à 11% pour la période 1987 - 1993. La

faiblesse de la productivité du Secteur, les fortes variations de production, la tendance à la baisse des cours mondiaux du coton et de l'arachide, la dégradation des revenus monétaires et le fort exode rural constituent une situation préoccupante. Le déficit alimentaire s'aggrave du fait de la forte croissance démographique de l'urbanisation accélérée et de la divergence du système de production agricole et du système de consommation. Tout ceci a provoqué une extensification de cultures et accéléré la dégradation des ressources naturelles (Déclaration de politique de développement agricole - Ministère de l'Agriculture, 1994).

A cela, s'ajoute le fait que le paysage des régions encore boisées du Sud et du Sud-Est du pays se trouve en pleine transformation. L'effet combiné de l'exploitation forestière purement extractive, les défrichements agricoles, le surpâturage, les feux de brousse et les cycles de sécheresse, menacent effectivement de provoquer la dégradation des formations forestières.

Fort de celà, le Sénégal doit aujourd'hui chercher à optimiser l'utilisation de ses ressources forestières par le biais d'une politique de conservation durable. L'aménagement des ressources forestières doit ainsi être un levier stratégique sur lequel doit s'appuyer le service forestier pour alimenter tous ses processus de décision. Cet aménagement doit prendre ses racines du plan d'action forestier pour garder une certaine linéarité avec une option politique du Gouvernement.

#### **IV OBJECTIFS**

Dans le but d'assurer une gestion plus précise, rationnelle, et contrôlée des ressources ligneuses avec une participation effective des populations riveraines des forêts à la gestion et au contrôle de l'exploitation des ressources ligneuses de leur terroir; le plan d'action forestier a bien tracé les grandes lignes, dans l'optique d'une prise en compte rationnelle de la situation dans sa globalité.

L'objectif du plan vise d'une part la conservation du potentiel forestier et des équilibres socio-écologiques, et d'autre part la satisfaction des besoins des populations en produits forestiers ligneux et non ligneux. Elle se base sur la responsabilisation des populations rurales dans la gestion des ressources forestières de leurs terroirs.

Les actions qui doivent être menées auront pour objet:

- d'assurer une protection efficace des écosystèmes forestiers menacés de dégradation ou de disparition ou utiles à la conservation de la faune et de la flore;
- de restaurer les formations forestières dégradées, et
- de gérer rationnellement les ressources pour une production soutenue (produit ligneux et non ligneux).

#### **V STRATEGIES**

Les actions entreprises pour la conservation des équilibres socio-écologiques ont pour objet de:

- susciter l'adoption de modèles de gestion des terroirs favorables à l'intégration des systèmes de production;
- assurer une productivité optimale et viable des systèmes, et

- de maintenir un équilibre stable entre les spéculations agro-pastorales et la couverture boisée.

## **VI PROBLEMES DU SOUS SECTEUR DES COMBUSTIBLES DOMESTIQUES ET STRATEGIES**

Les formations forestières, caractéristiques d'un environnement sahélien, outre leur rôle de protection et de maintien de la fertilité des sols, fournissent l'essentiel de l'énergie consommée en milieu rural ainsi qu'une part importante du fourrage constituant la base indispensable de l'économie pastorale dans tout le pays. Elles se sont fortement dégradées à cause de la pression agricole et des sécheresses endémiques qui ont prévalu pendant plus de deux décennies. Ces formations sont cependant menacées et on estime à 80 000 ha les superficies déboisées annuellement.

Ce phénomène est aggravé par le prélèvement pour les besoins de bois-énergie. On estime aujourd'hui que la disparition annuelle de 30 000 ha de formations ligneuses seraient dus à la carbonisation du bois.

Les ménages dépendent en effet fortement des combustibles ligneux pour la satisfaction de leurs besoins en énergie. La consommation finale d'énergie du Sénégal est estimée en 1992 à 1,5 million de tonnes équivalent pétrole. Les combustibles ligneux (bois et charbon de bois), essentiellement utilisés par les ménages, représentent en effet en 1992 près de 60% de la consommation d'énergie du Sénégal (estimée à 1,5 million de tep), loin devant les produits pétroliers (37%), l'électricité (5%) et les résidus agricoles (1%). Le secteur domestique est le principal consommateur (58% de la consommation totale) et il dépend à 90% des combustibles ligneux pour son approvisionnement en énergie.

La consommation totale de charbon de bois, utilisé principalement en ville, est estimée à plus de 300.000 tonnes par an, et Dakar, la capitale, en représente plus du tiers. La consommation de bois, essentiellement due aux ménages ruraux, est estimée quant à elle à 1,5 millions de tonnes, aboutissant à un prélèvement total annuel de l'ordre de 4 millions de m<sup>3</sup> de bois sur les formations ligneuses.

La production de charbon de bois pour approvisionner les villes, dont la population est en très forte croissance, est aujourd'hui assurée de manière intensive et concentrée sur les régions forestières de Tambacounda et de Kolda, situées à plus de 400 km de la capitale. La filière d'approvisionnement représente une activité très rémunératrice (le chiffre d'affaires est estimé à 20 milliards de FCFA) qui profite essentiellement à quelques acteurs économiquement et politiquement puissant, les exploitants forestiers. Une très faible part des revenus de l'exploitation revient aux populations rurales.

Les services forestiers, compte tenu de leurs faibles moyens et de la structuration actuelle de la filière, ne peuvent contrôler que de manière partielle l'exploitation forestière, qui dépasse aujourd'hui la productivité des forêts. Les risques pour l'environnement sont donc graves et menacent à la fois les systèmes de production et l'approvisionnement des ménages en énergie de cuisson.

Ces observations ont amené une équipe interministérielle pluridisciplinaire à procéder, de 1993 à 1995, à une revue du secteur des énergies traditionnelles, avec l'appui de la Banque

Mondiale dans le cadre du programme "Revue des politiques, stratégies et programmes dans le secteur des énergies traditionnelles" (RPTES) mené dans cinq pays subsahariens (Burkina Faso, Mali, Gambie, Niger et Sénégal). Cette équipe était conduite par la Direction de l'Energie (DE) du Ministère de l'Energie, des Mines et de l'Industrie (MEMI) et par la Direction des Eaux, Forêts, Chasse et de la Conservation des Sols (DEFCCS) du Ministère de l'Environnement et de la Protection de la Nature (MEPN).

Cette étude a conclu que, compte tenu des conditions macro-économiques et socio-économiques, le Sénégal continuera pendant longtemps encore à dépendre des ressources forestières pour satisfaire les besoins énergétiques des ménages urbains et ruraux. Bien que les efforts de maîtrise de la demande et de substitution des combustibles ligneux déjà entrepris doivent être poursuivis et améliorés, le principal défi à relever dans ce secteur réside dans la capacité de mettre en place un système d'exploitation forestière durable tenant compte des ressources disponibles et de leur productivité. Il s'agit ainsi d'opérer une transition entre le système actuel, basé sur une exploitation minière des ressources forestières par des acteurs étrangers au terroir, et un nouveau schéma responsabilisant les populations rurales concernées, capable d'approvisionner de manière durable les consommateurs urbains, dans le souci de préserver l'environnement.

Cependant, de sérieux efforts pour renverser les tendances actuelles ont été consentis. Une nouvelle législation et réglementation forestière a été mise en place (décret 95.357 d'avril 1995). Elle prévoit la participation des communautés locales à l'exploitation forestière, dans le cadre d'une politique globale d'aménagement qui tient compte des ressources et des disponibilités. Mais son application effective passe par une évolution des rôles respectifs des différents acteurs : populations rurales, exploitants actuels, services forestiers et comporte des risques sociaux et politiques importants. Depuis de nombreuses années, les pouvoirs publics mènent également une politique volontariste de maîtrise de la demande en combustibles ligneux grâce à un effort important en matière de butanisation, qui porte aujourd'hui ces fruits, et à un appui au développement de l'utilisation de fourneaux économes. Enfin, de sérieux progrès ont été fait en matière de coordination des politiques énergétique et forestière ainsi que de système de suivi et d'évaluation du secteur. Tous ces efforts doivent être encouragés.

Compte tenu des résultats mitigés obtenus jusqu'à présent, le Gouvernement a redéfini ses priorités en matière de combustibles domestiques et a défini une stratégie adoptée lors du Comité Interministériel sur l'Energie d'août 1993. Les objectifs assignés à la politique et aux programmes mis en oeuvre sont les suivants :

- assurer une gestion plus précise, rationnelle, et contrôlée des ressources ligneuses grâce à la rationalisation de l'exploitation forestière et à une participation effective des populations riveraines des forêts à la gestion et au contrôle de l'exploitation des ressources ligneuses de leur terroir;
- limiter la demande en combustibles ligneux à travers des mesures d'économie de la consommation de bois-énergie et de substitution, tout en valorisant les sources d'énergie nationales pour limiter le recours aux combustibles importés;
- fournir aux pouvoirs publics les capacités nécessaires en matière d'orientation, de coordination et d'intervention en ce qui concerne l'organisation et le contrôle du prélèvement et de la distribution, la réglementation et la politique des prix, la communication.

La réalisation de ses objectifs passe par :

- la mise en place d'un cadre institutionnel, législatif et réglementaire qui favorise l'implication et la responsabilisation des populations dans la gestion rationnelle de leur patrimoine forestier;
- la mise en cohérence des politiques dans les autres secteurs, en vue notamment d'alléger la pression démographique et d'accroître le revenu et le pouvoir des ruraux;
- une politique des prix qui incite à l'économie des combustibles ligneux et qui favorise l'investissement dans des équipements ou des combustibles de substitution au charbon de bois;
- le renforcement de la capacité publique d'orientation, de programmation et de suivi de la stratégie des combustibles domestiques.

Partant de l'analyse de la situation et des priorités dégagées, le Gouvernement envisage de mettre en oeuvre, avec l'assistance de la Banque mondiale, un programme de gestion durable et participative des énergies traditionnelles et de substitution, basé sur la participation active des populations, des organisations de base et de tout autres instances locales pertinentes pour rendre effectif ce programme. Les populations sont considérées comme acteurs et bénéficiaires du programme dont l'objectif majeur est leur promotion économique.

### **2.3. Présentation du programme**

Le programme pour la gestion durable et participative des énergies traditionnelles et de substitution a pour objectif de contribuer à l'approvisionnement des ménages en combustibles domestiques, de manière régulière et durable, en assurant la sauvegarde des ressources forestières du pays et en offrant des possibilités élargies de choix et de confort aux consommateurs. Il privilégie dans sa mise en oeuvre :

- l'aménagement et l'exploitation durable de 300.000 ha de formations forestières naturelles, pris en charge et profitant aux populations rurales concernées dans le cadre d'un aménagement intégré des ressources naturelles ;
- le soutien à la reconversion des acteurs actuels de la filière charbon de bois vers d'autres activités économiques;
- l'appui aux initiatives du secteur privé\_ pour le développement de l'utilisation des combustibles et des équipements de substitution;
- le renforcement des institutions concernées par la planification de ce secteur et la promotion de la participation des acteurs publics et privés.

Ce programme comprend deux composantes étroitement liées:

La composante Offre, intitulée "Aménagement durable des formations naturelles pour la production de bois-énergie" vise à mettre en place une production de bois-énergie sur des bases durables, en impliquant directement les populations rurales dans la gestion des ressources forestières. Les aménagements porteront sur une superficie de 300.000 ha dans les régions de Tambacounda et de Kolda et 250 villages seront impliqués dans le processus. Les principales activités prévues concernent :

- un inventaire forestier dans les régions de Tambacounda et de Kolda pour disposer des données techniques nécessaires à la définition des modalités d'aménagement et à la sélection des zones géographiques concernées par le projet;
- un dialogue et des études de terrain avec les communautés locales pour définir les schémas d'aménagement en fonction des données démographiques et socio-économiques;
- un appui aux collectivités locales pour la mise en oeuvre des opérations d'aménagement, d'exploitation et de commercialisation;
- un appui à la lutte contre les feux de brousse pour limiter la dégradation des forêts et préserver les intérêts des populations;
- la mise en place d'un système d'observation de l'exploitation pour évaluer les impacts des opérations d'aménagement communautaire.

La composante Demande, dénommée "Programme de gestion de la demande et de promotion des énergies de substitution" a pour objectif de contribuer à satisfaire les besoins énergétiques des populations de manière régulière, efficace et au moindre coût, en offrant des possibilités élargies de choix et de confort. Elle prévoit les principales activités suivantes :

- la mise au point d'un système d'information et d'évaluation permanent qui permet une quantification correcte des besoins du marché, un suivi des différentes mesures prises sur le secteur et la préparation des stratégies à long terme au niveau national;
- un soutien au processus de transfert des activités d'exploitation forestière vers les communautés rurales en mettant en place les conditions de reconversion des exploitants actuels et en assurant un écoulement correct et modernisé du charbon de bois produits dans les zones sous aménagement.
- un appui au secteur privé pour le développement de la pénétration du gaz butane et des foyers équipements et combustibles proposés aux consommateurs et réduire la demande en améliorés et pour la mise sur le marché de réchauds à kérosène, afin de diversifier les combustibles ligneux.

### **2.3.1 Objectifs immédiats du programme**

#### **A Volet Offre**

Pour contribuer à l'atteinte des objectifs de développement, le programme se fixe les buts suivants:

- 1- Mettre en oeuvre un système de gestion durable de la production de bioénergie pour l'approvisionnement des principaux centres urbains du Sénégal par l'aménagement de 300 000 ha dans les régions de Tamba et de Kolda.
- 2- Contribuer au rétablissement écologique des zones dégradées par l'exploitation du charbon et réaliser la gestion intégrée et participative de l'espace rural au niveau des villages encadrés par le projet pour appuyer la mise en oeuvre du système de gestion durable de la bio-énergie.
- 3- Renforcer les capacités nationales de formulation, de suivi et d'exécution des actions d'aménagement des formations naturelles avec la participation des populations rurales dans la zone d'intervention.



**Les principaux extraits sont les suivants :**

- 1.1 Réalisation de l'inventaire du potentiel forestier et agro-pastoral sur 600 000 ha de formations naturelles dans les régions de Tambacounda et de Kolda.
  - 1.2 Elaboration et mise en oeuvre des plans d'aménagement et de gestion avec la participation des populations rurales dans une superficie de 300 000 Ha dans les régions de Tamba et de Kolda.
  - 1.3 Mise en place d'un réseau de 300 Km de pistes forestières pour augmenter l'accessibilité dans les formations naturelles en vue d'une meilleure production de bois-énergie.
  - 1.4 Appui à la production de près de 860 000 tonnes de bois de feu pendant la durée du projet et établissement d'un système durable de production de 300 000 tonnes de bois par an, à partir de la septième année.
  - 1.5 Développement d'un système de suivi et de contrôle des flux de commercialisation du charbon et du bois de chauffe (poste de contrôle, balance etc..).
  - 1.6 Mise en place d'un système permanent de suivi de la biomasse ligneuse et de l'exploitation des produits ligneux dans les régions de Tamba et de Kolda.
  - 1.7 Evaluation sommaire du potentiel de bois mort sur le plan national avec l'appui des structures forestières décentralisées.
  - 1.8 Réalisation de plans d'aménagement intégrés des terroirs villageois par la promotion de la participation des populations rurales et du développement villageois.
- 
- 2.1 Développement d'un modèle d'intervention technique pour la restauration des systèmes dégradés avec la participation des populations rurales.
  - 2.2 Reconstitution de systèmes écologiques dégradés dans la zone d'intervention du projet avec la participation paysanne.
  - 2.3 Création de 250 comités de lutte contre les feux de brousse, encadrés et équipés en moyens de lutte contre les feux de brousse.
  - 2.4 Appui au développement économique et social des communautés de base pour la gestion intégrée de leur terroir par la création de 15 centres d'animation rurale et par l'éducation environnementale de 1000 personnes dans la zone encadrée.
  - 2.5 Conservation de la diversité biologique dans les formations forestières naturelles aménagées dans les régions de Tamba et de Kolda pour une utilisation durable des ressources forestières et animales.
  - 2.6 Réduction de l'émission des gaz à effet de serre dans les zones mises en aménagement dans les régions de Tamba et de Kolda .
- 
- 3.1 Formation de 10 cadres nationaux et 20 agents techniques du projet dans les domaines de l'inventaire, de l'aménagement des formations naturelles et de la planification dendro-énergétique.
  - 3.2 Réalisation de travaux de recherche dans les domaines de l'aménagement des formations naturelles, de la sylviculture, de la valorisation de la bio-énergie en rapport avec des structures spécialisées.

**B. Volet Demande**

La seconde composante du programme, intitulée "Gestion de la demande et de promotion des énergies de substitution" s'articule autour de plusieurs volets complémentaires et a pour objectifs :

- de contribuer à la réussite de la mise en place du processus de transfert de la responsabilité de la gestion forestière aux populations rurales en facilitant la reconversion et la modernisation de la filière traditionnelle du charbon de bois.
- de maîtriser la demande en combustibles domestiques en favorisant les économies de bois-énergie et en assurant la promotion d'énergies de substitution.

Il est ainsi prévu :

#### **Développement institutionnel**

Le développement institutionnel est une condition indispensable à la réalisation des différents volets prévus. Il permettra, grâce à un renforcement des compétences et des moyens de la Direction de l'Energie, de disposer d'un véritable outil de pilotage des actions et mesures sur le secteur. Il permettra aussi, par le biais d'actions de communication diversifiées, d'accompagner leur mise en oeuvre et de créer les conditions de leur réussite.

#### **Appui à la modernisation et à la reconversion de la filière charbon de bois**

Ce volet vise à soutenir le processus de transfert des activités d'exploitation forestière vers les communautés rurales en mettant en place des conditions de reconversion des exploitants actuels et en assurant un écoulement correct et modernisé du charbon de bois produits dans les zones sous aménagement. Il interviendra sous forme d'un appui financier à la mise en oeuvre de projets de démonstration, mobilisé en fonction de projets présentés par le secteur privé.

#### **Opération pilote de promotion de réchauds à kérosène.**

Ce financement, dont la mobilisation est conditionnée par les résultats d'une étude de pré-faisabilité qui sera réalisée au cours du premier trimestre 1996 (projet "combustibles domestiques" GTZ), servira à appuyer la mise en place d'une filière de distribution de réchauds à kérosène, combustible de substitution complémentaire du gaz butane déjà largement utilisé dans les grandes villes.

#### **2.3.2 Résultats attendus**

- Création d'un système de partenariat plus équitable entre le service forestier et les populations rurales qui participeront activement dans le processus de gestion de leur forêt;
- Création d'un cadre législatif permettant une exploitation économiquement et socialement équitable de la ressource forestière;
- Développement auprès des populations rurales d'un fort sentiment d'appartenance des formations naturelles. Celles-ci seront aptes à prendre en charge leurs problèmes en matière d'exécution d'un aménagement en vue d'une production de bois-énergie;
- Amélioration des capacités des services techniques en matière d'analyse et de mise en oeuvre des plans d'aménagements pour une bonne maîtrise de l'offre en bois-énergie;
- Diminution de la pression exercée par l'exploitation forestière sur le domaine forestier dans les Régions d'exploitation, en vue de la maintenir à un niveau compatible à la productivité des formations naturelles;

- Conservation de la diversité biologique et réduction de l'émission des gaz à effet de serre dans les zones mises en aménagement gérées par les populations rurales dans les régions de Tamba et de Kolda.
- Participation de 250 villages dans le processus d'aménagement des ressources naturelles et de 15.000 adhérents dans les organisations socio-économiques rurales pour la mise en oeuvre du plan d'aménagement.

### **2.3.3. Bénéficiaires cibles**

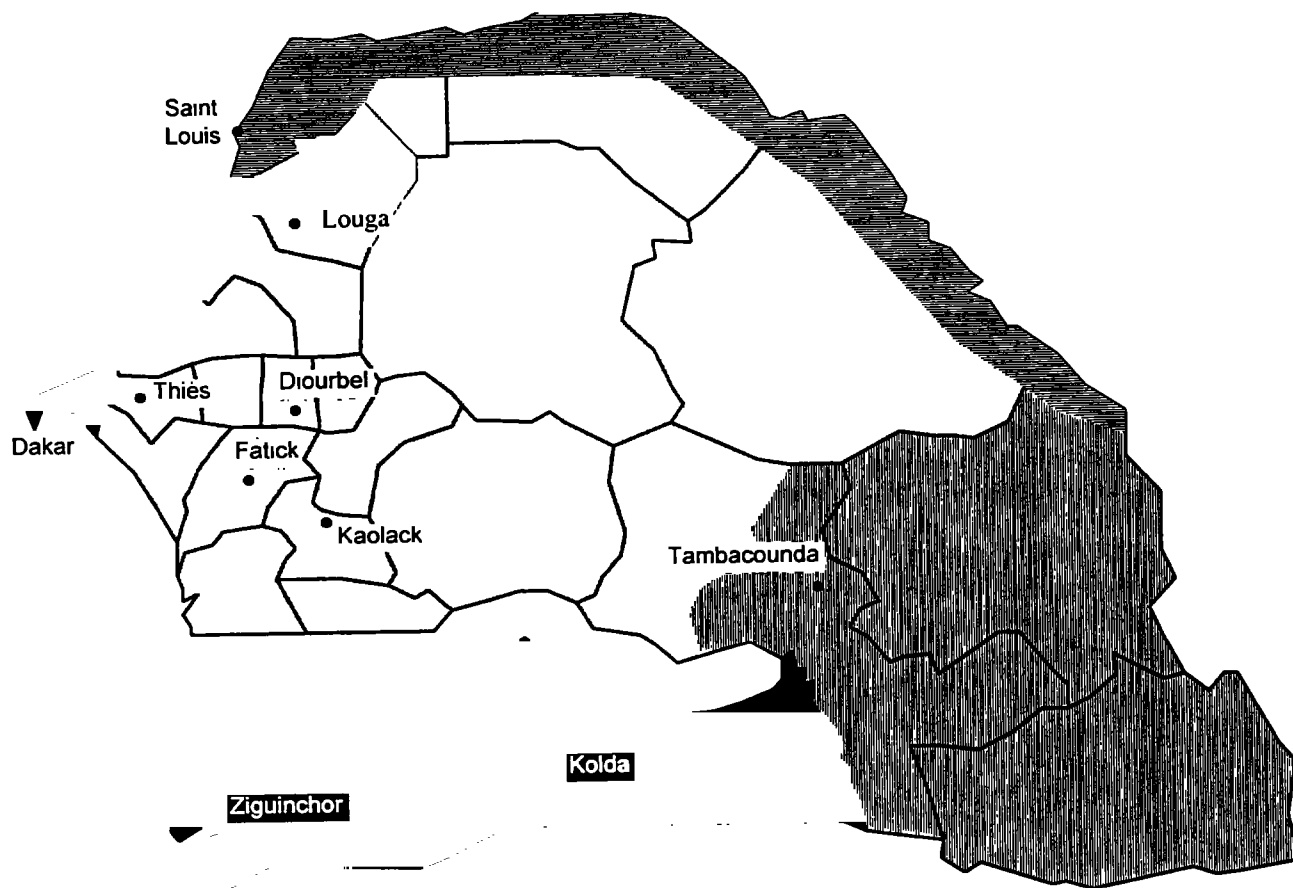
Les principaux bénéficiaires directs des activités du projet sont les populations rurales des régions de Tambacounda et Kolda, particulièrement celles des villages limitrophes des formations naturelles. Les actions directes développées par le projet feront d'elles de véritables artisans de leur environnement, sur la base d'un aménagement forestier à grande échelle, intégrant toutes les dimensions socio-économiques des terroirs.









Les services techniques des Directions des Eaux, Forêts, Chasse et de la Conservation des sols et de l'Energie, ainsi que les agents des services associés à la réalisation de certaines activités sur le terrain vont bénéficier directement et indirectement des activités du projet.

Le renforcement de leurs moyens d'intervention, par l'expérience acquise dans la nouvelle pratique de l'aménagement à grande échelle des formations naturelles, l'acquisition de moyens matériels et humains vont augmenter de façon significative la capacité des agents forestiers à aider les populations rurales à gérer de façon efficiente la ressource forestière de façon intégrale.

Les consommateurs de bois-énergie urbains profiteront d'un marché de combustible stable et soutenable.

Carte des zones éco-géographiques DU SENEGAL



- |   |   |   |                       |
|---|---|---|-----------------------|
|  | Zone des aménagements hydro-agricoles de la vallée et du delta du fleuve sénégal. 11.500 km <sup>2</sup> (6%) |  | Chef lieu de région   |
|  | Zone sylvo-pastorale du ferlo<br>56.269 km <sup>2</sup> (29%)   |  | Limite de département |
|  | Zone du littoral et des Niayes<br>2.130 km <sup>2</sup> (1%)  |   |                       |
|  | Zone agricole du bassin arachidier<br>47.611 km <sup>2</sup> (24%)  |   |                       |
|  | Zone agro-sylvo-pastorale du Centre et du Sud-Est<br>51.210 km <sup>2</sup> (26%)                             |   |                       |
|  | Zone forestière du Sud<br>28.000 km <sup>2</sup> (14%)  |   |                       |

Source : d'après Cellule Aménagement des Terroirs Villageois/DEFCCS.

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**INTEGRATED INDUSTRIAL FORESTRY:  
THE CASE OF USUTU PULP LTD.**

**SWAZILAND**

**A SUCCESSFUL INTEGRATED INDUSTRIAL FORESTRY  
PROJECT USUTU PULP COMPANY LIMITED**

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## INTEGRATED INDUSTRIAL FORESTRY: THE CASE OF THE USUTU PULP COMPANY Ltd., SWAZILAND

### Summary

The Usutu Pulp Company Limited is often cited as an example of a successful integrated industrial forestry project. 70,000 ha of pine plantation supply the total requirement for a kraft pulp mill situated in the Centre of the forest on the Great Usutu River. Since its origins in the early 1950s the forest has expanded to meet the mill's increasing requirements. In 1996 the mill was upgraded to a annual capacity of some 225,000t of air dried pulp. The success of the project has largely been due to its single focus on producing one product and the successful research and silvicultural practices associated with this. Usutu has always had a competitive edge through having a wrap around forest for its mill with very short average lead distances to transport timber. In addition good growth rates are enhanced by high quality sites and a high annual rainfall of around 1,100 mm. Sustainability is a key issue for the company and has always been an element in the formulation of policies and practices implemented on the project.

### History

The Usutu Forestry Project was commenced in 1948 by the Colonial Development Corporation, now CDC, following on from a feasibility study commissioned by the then High Commissioner for Swaziland Sir Evelyn Baring. The report surveyed an area of some 60,000 ha in the Highveld of western Swaziland around the Great Usutu River. The first plantings commenced in 1950 and over a ten year period 45,000 ha of *P. patula*, *P. elliottii* and to a lesser extent *P. taeda* was established. With the excellent prevailing growing conditions the trees grew exceptionally well with productivities typically around 15 - 25 m<sup>3</sup> par hectare per year (Evans et al. 1993).

By 1959 the forest was maturing into a valuable wood resource. The UK based group Courtaulds joined forces with CDC to establish the Usutu Pulp Company. A unbleached kraft pulp (UBK) mill was constructed on the banks of the Great Usutu River at Bhunya near the center of the developing forest. In 1961 the mill produced its first bales of pulp. Initially the mill was designed to produce 90,000 tonnes of pulp per annum and has expanded since then in steps to its current capacity of 225 000 tonnes of UBK per annum (Anon).

The pulp was, and continues to be, marketed through Hong Kong by Speciality Pulp Services. Around 75% of the annual production is marketed overseas whilst the remainder is sold ' within the southern African region. Through the intervening years the forest has expanded to meet the Mill's increased outputs and now covers some 70,000 ha.

In 1990 Sappi, the largest forest products company on the African continent bought a major stake in the Usutu Pulp Company. This made them the largest shareholder in the company. Sappi has since expanded further, into both Europe and the USA, to become one of the top twenty forest product companies world wide.

### Management structure

The company is structured such that the Managing Director has Divisional Managers responsible for specific functional areas reporting to him. The overall management of the company is Sippi

(SA)'s responsibility and there is a Sappi (SA) Main Board Director responsible for Usutu. The Managing Director along with the Divisional Managers form the Executive Committee of the Company. The benefits of this structure are that it keeps the customer and supplier links within the Company immediate and considerable synergy is derived from the close interaction of a multi-disciplinary team.

The Forest Division is structured along functional lines with the purpose of providing the necessary technical and operational focus to achieve the Division's mission. Staff functions have the specific objectives of assisting the operational departments and providing the necessary inputs into the longer term strategy of yield improvement.

Usutu has a long history of promoting manpower development to provide the necessary skills for the local workforce to meet the Company's needs for skilled and qualified employees. The majority of the Forest's staff are Swazi nationals also who have been trained both in the region and overseas. The workforce is largely unionized and all company employees within the bargaining unit are represented by a single union. Usutu was one of the first large employers in Swaziland to formally recognise union representation in 1988.

The Company accepts the safety of its employees as one of its primary concerns. To this end it adopted the National Occupational Safety Association (NOSA) of South Africa's management by objective (MBO) system in 1989. Currently the Mill has a five star safety rating and the Forest a four star safety rating.

#### **Economic Impacts and costs**

Usutu is a significant contributor to the Swaziland economy and a major earner of foreign currency. In its profitable years the company generates considerable tax revenues for the government. It is estimated that Usutu contributes some 15% to Swaziland's GNP.

The Company employs some 2,000 people directly. Of these 98% are Swazi Nationals. Usutu employs many contractors involved in both forest and mill operations. It is estimated that in total some 20,000 people are dependent on Usutu's continued profitable existence. In association with the provision of employment in the forest and mill, Usutu has had to create and maintain a complete social infrastructure. The Company, has built two major villages as well as numerous smaller communities around the forest. Along with these settlements the Company has provided medical and social facilities and provided for the associates development of schools and shops. Originally, in the 1950's and 1960's this support was a necessity, but more recently as Swaziland has developed, the government and local entrepreneurs have taken on some of the roles in these areas.

Historically the Company's operations have been labor intensive. This is now changing due to technological trends and financial constraints. Increasingly non core business is contracted out. Where possible this work is put out to local entrepreneurs. Currently about 40 % of forest operations in silviculture and harvesting and 60% of timber transport operations are contracted out.

Self-sufficiency in pulpwood is a major competitive advantage for the Company. Growth rates in the Forest are amongst the highest in the world for softwoods. The proximity of the plantations to the pulpmill results in a average lead distance of only 23 km. These two factors

contribute to Usutu having one of the lowest delivered cost of pine pulpwood anywhere in the world (Jaakko Poyry, 1992). The Company has always maintained a balance between wood supply and processing capability in developing the production capacity of the business.

### **Sustainability**

Sustainability is a key issue for the forest with special regard to the need to supply the total ongoing fibre needs for the mill. Usutu is unique among plantation forests in having had yield monitoring of three successive rotations of crops on the same sites. Professor Julian Evans has been monitoring these plots since 1968 and states "There is no general evidence of declining yields resulting from intensive plantation forestry of cultivation of three crops of the same species on the same site. The prospects for this continuing are good. With good husbandry Usutu's plantation forestry is demonstrably and wholly sustainable" (Evans 1995). In keeping with the current world trend towards promoting sustainable the development, Usutu Forest's management policy has been to include the promoting sustained use and management of the entire land base and not just the stands of pine. (Masson 1996).

The holistic approach to sustainability has been embodied in the Forest's environmental policy and is being management system. It is intended that that this system will conform to ISO 14001 environmental standards and once in place will ensure a certifiable end product is produced from the mill. The reason for considering adopting the ISO approach is that it provides for a structured management system and will serve as a solid foundation promoting good management as well as satisfying Forest Stewardship Counsel criteria for certification (Masson 1996). The major impact of complying with the system will be the need to introduce adequate record keeping on environmental matters and the need to manage conservation areas more actively with particular regard to water and indigenous flora. This is already taking place on a limited scale as Usutu has been participating in Sappi Forests environmental audits since 1995. Clearly there will be impacts on operating costs. For the coming year the forest has budgeted to spend the equivalent of \$155,000 on environmental related work . This amounts to an expenditure of \$2.20 per hectare per annum.

### **Research**

Without question a key success factor for the forest has been its long-term commitment to and investment in its world class research department. The opportunity for expansion of plantation areas is limited by lack of suitable land and -competing land uses. Hence to remain self-sufficient in wood and expand production capacity .The company has been committed to long term forestry research. Usutu invests more per hectare in research than any other forestry company in southern Africa. This illustrates the company's long sighted view of business development. The research programme has been conducted since 1969. Its research work is internationally published and recognized. One of the major benefits of the Usutu forest research programme is that it has always been focused on yield gains for the forest and is closely integrated with the operational side of the business.

The research effort is concentrated on two issues. Firstly on ensuring that our forestry practices enable a sustainable end product to be produced in perpetuity. Secondly on increasing forest yields through tree breeding, and improved silviculture practices. The tree breeding programme was initiated in 1985, with a strategy for species and provenance selection and the genetic improvement of pine species for the forest (Barnes 1985). Seed orchards established over the

past 6 years will make the company self sufficient in improved seed by the year 2000. Silviculture research has been focused on addressing second rotation yield declines due to phosphate deficiencies on about 15% of the forest (Morris 1983). More recently the issue of organic matter accumulation on the forest floor and subsequent potential yield declines has been addressed through the application of nitrogen fertiliser. The entire forest has been mapped using a site classification system that allows for site specific prescriptions for fertilizer application, weed control, slanting density and species choice to be applied. Research experiments indicate an expected 30% yield improvement for the fourth rotation.

### **Silviculture and fire protection**

Usutu practices one of the most intensive forms of plantation forestry anywhere in the world (Evans 1988). It intensive in terms of short rotations (15 to 18 years) and its focus on growing with no thinning and only a tow pruning on *P. patuia* to allow access for fire protection. These factors along with high quality sites having deep soils and 1100 mm average annual rainfall have contributed significantly to the success of the project.

The objective of silviculture operation has always been to achieve full Stocking. This is stated as without full stocking yield is sacrificed. Stocking is prescribed as 1,330 stems per hectare for all species. The majority of silviculture operations are now concerned with re-establishment and comprise of soil preparation, planting, and where appropriate weeding to relieve competition: Planting only takes place in the wet summer months, however the hottest months of December and January are excluded because of the likelihood of high mortality on re-establishment sites due to heat stress. Weeding prescriptions have been developed from research results in order to apply the most appropriate practices to specific sites. Weeding will normally continue up to the time of canopy closure at between 3 and 5 years.

Fire protection is a very important aspect of the silviculture operations. The region has very high fire hazard for the winter months of July through to October. The plantation was designed with a network of fire breaks following key physical features such as ridges and roads to divide the plantation into compartments of an average size of about 300 ha. Fire breaks account for 7% of the gross forest area and provide valuable conservation areas as well as fulfilling their function for fire protection. These breaks are burnt annually in June and July to provide a clean belt around the compartments. A extensive road network has also been developed, both for fire protection and harvesting, resulting in some 4,000 km of forest roads. Thirteen fire watchtowers are located at strategic points in the forest and there is an extensive radio and telephone system for communications. Resources for fire fighting are based around 7 fire stations and comprise of personnel carrying and water carrying vehicles as well as hand tools.. Since 1989 Usutu has employed aircraft for fire bombing and fire spotting. In 1995 Usutu became a member of the Forest Fire Association (FFA) in South Africa and has access to their resources and expertise for aerial fire fighting. Public relations and communications with the Company's neighbours plays an important role in fire prevention.

### **Harvesting and transport**

Usutu harvests and transports almost 1 million tonnes per annum from its own forests to supply the pulp mill. Trees are clear felled when they reach their maximum mean annual increment (MAI) at between 15 and 18 years of age. The average tree size is 0.3M3. Timber is felled, debranched infield and extracted to roadside where it is stacked in lengths of 4.5m to 8.0m to

await collection by timber trucks. All felling is done by chainsaws and trees are debranched either by axe or, increasingly, by chainsaw. A range of resources are utilized in the extraction of timber ranging from grapple skidders through to mules. The different methods are dictated by terrain conditions and road density as well as by cost and productivity. All operations have had workstudy applied to them and have set productivity standards and production bonus incentives attached to them. Performance indices are continually measured and a strong focus is applied to unit costs.

Timber is aged at roadside for an average of 3 weeks to reduce moisture content to meet the Mill's requirement of 53%. This entails carrying roadside stocks of around 65,000t. Timber is transported in cut lengths on rigid trucks carrying average payloads of 16t.

### **The Mill**

Usutu's mill is the source of about 12% of the World's supply of market UKP. When the mill came into operation in 1961 it had a capacity of 90,000t of UKP per annum. Usutu is currently nearing the completion of an expansion programme, which commenced in 1995, that will take the mill's capacity to 225,000t of UKP per annum. At the centre of the expansion is a new Kaeverner continuous digester incorporating isothermal cooking technology. The digester will produce pulp of a higher quality with higher, viscosity, increased strength and increased brightness. In addition other areas of the plant have been replaced or upgraded at the same time. This includes a new screening room and upgrading of the recovery boilers, causticiser, drying lines and baling press. This will add to Usutu's drive to becoming a world class manufacturer which was enhanced in 1993 when Usutu was certified as an EN ISO 9002 company.

### **Conclusion**

The key success factors for Usutu are self sufficiency in low cost wood, a single continuous objective of growing and producing a low cost end product for a defined market and its commitment to manpower development to support world class technology and practices.

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**ADOPTING A FARMING SYSTEM APPROACH TO  
FACILITATE PARTICIPATORY FORESTRY**

**TANZANIA**

**THE HIMA PROJECT: ADOPTING A FARMING SYSTEMS  
PERSPECTIVE IN ORDER TO DO SUCCESSFUL  
PARTICIPATORY FORESTRY**

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**THE HIMA PROJECT: ADOPTING A FARMING SYSTEMS  
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**TANZANIA**

**1.0 INTRODUCTION**

HIMA ("Hifadhi ya Mazingira" in Swahili) is a land-use management and natural resource conservation programme in Iringa Region of the Southern Highlands of Tanzania. The programme was originally part of DANIDA's (Danish International Development Assistance) environmental sector support portfolio in Tanzania. Recent changes in DANIDA policies have placed HIMA under agricultural sector support.

As the HIMA Programme shifts its emphasis towards supporting the agricultural sector, it is appropriate to recall that woody vegetation comprises a significant component of the agricultural landscape in Iringa Region and is actively managed as part of the farming systems of the region (Wardell, 1991; HIMA/MARTI-Uyole, 1994; 1995). There may be both traditional as well as recently experienced economic reasons why farmers in high potential areas of the Region choose to establish/maintain trees on large expanses of land which could potentially generate more income from other crops (Deweese, 1994). Whatever the case, it is of paramount importance that forest resources be managed within the context of overall land use and natural resource management plans and for continued integration of the forestry sector with other pertinent sectors (DANIDA, 1995).

**2.0 BACKGROUND**

During the past decade, Iringa Region used to play a key role in agricultural production and natural resources productivity. Historically, Iringa Region was among the 4 major maize producing regions of the country. The estimated 300,000 hectares of natural forest land comprises part of the renowned Eastern Arc Forests which are characterized by a high level of biodiversity.

As a result of population increase, which is estimated to be 2.7% annually (Bureau of Statistics, 1988) more demand for forest produce, arable land for cultivation and other development activities has been created. Shifting cultivation, which is associated with use of fire, has become rampant. Uncontrolled grazing, which has led to devegetation and soil erosion, has continued unchecked. Wildfires, coupled with legal and illegal over-exploitation of forest products, have also been subsequent phenomena which have reached an alarming stage (Rodgers & Homewood 1983).

Consequently, both the viable forest ecosystems and potential agricultural land have been impaired or severely depleted to the extent of threatening the disappearance of rare and endemic plant and animal species (Rodgers and Homewood 1983; Lovett 1992; Mmari, 1996). This situation has, to a great extent, disturbed the equilibrium of rural livelihoods and their relationship with the natural resource base. For example, women in Mazombe and Wanging'ombe Divisions have to walk longer distances in search of firewood, thus undermining their roles in agricultural production and child care.

This has serious nation-wide implications considering that more than 90% of the rural population depend on firewood and charcoal as their major source of energy (TFAP, 1990) while at the same time an estimated 0.7% of the existing woodland/bushland within the country is cleared annually (McNeely, 1990). A notable contributing factor to woodland destruction around Mazombe, Idodi, Pawaga and Ismani areas has been tobacco farming/curing operations (CONCERN, 1989) which have also created conflicts of interest between household woodfuel needs and tobacco-curing uses.

A consequence of this overall increasing land pressure has been decreasing fallow periods on some agricultural land from the usual 5 years down to 2-3 years as observed in Kilolo and Bulongwa Divisions of the Region. Concurrently, it has become increasingly difficult to support agricultural production without using inorganic fertilizers. According to UAC/DANIDA (1992), during the period of 1989 to 1992, 113,507 tonnes of fertilizers were distributed in Iringa Region.

During the 1970's and 1980's, encroachment into government controlled forest reserves increased at an alarming rate (Wardell, 1991). Uncontrolled tree felling and cultivation around water sources and within important watersheds has resulted in reduced dry season flow. Since 1991, a notable manifestation of this problem within the Region has been insufficient electrical output from the 80-megawatt Mtera Hydroelectric Dam along The Great Ruaha River which supplies 70.3% of the installed hydropower to the national grid. This problem has culminated in intermittent power supply to the national grid up to the present day, resulting in decreased industrial output and insufficient services to the social sector.

In 1989, HIMA-Iringa was inceptioned to arrest and remedy the severely degrading situation in Iringa District. The HIMA Programme started Region-wide operations by including Njombe and Makete Districts in 1993.

### **3.0 OBJECTIVES**

The immediate objectives of the HIMA Programme are exemplified by those of HIMA-Iringa:

1. Improve the productivity and sustainability of agriculture and natural resource management, so as to increase the level and security of incomes, including poorer households, by 2005.
2. Improve catchment protection, reduce soil erosion and improve moisture retention in priority catchments.
3. Strengthen local institutions to enable them to support local communities in achieving viable and sustainable agricultural, natural resources management and catchment protection.

In order to achieve the above objectives, people's participation, institutional development and capacity building have been adopted as major strategies of each District project (HIMA/DANIDA, 1995). Much assistance is provided to grassroots level institutions to promote their capacity in implementing project activities, including forestry, while minimizing dependency on external material and financial input assistance.



These institutions include:

- Informal groups - e.g. traditional village leaders
- Schools - Mainly primary schools
- Village governments - Including existing committees
- Religious institutions - Congregations & individuals

Other strategies include bolstering nongovernmental organisations (NGOs) to practice innovative and participatory forestry technologies, such as fully utilizing locally available planting materials. The programme also assists NGOs to develop cost-effective information systems e.g. brochures, leaflets, music tapes.

Additionally, the programme encourages promotion of cost-effective and modern technologies in enhancing land-use (including forestry) practices in the Region. An example is the intended use of the "taungya" system in reclaiming encroached areas inside selected forest reserves rather than rushing to prosecute offenders, who are often the landless poor (Boonkird et. al., 1985). It is anticipated that strategies of this nature will become part of Tanzanian national forest policy which is currently under review.

#### **4.0 MAIN ACTIVITIES**

The programme operates in an integrated manner through Community Development, Agriculture/Livestock and Forestry Departments within each District Council. A "catchment approach" was used to select priority pilot villages using criteria of i) position within the catchment, ii) severity of environmental degradation and iii) responsiveness in accepting the programme activities. This has facilitated localized testing of programme approaches and strategies before expansion into other areas. HIMA-Iringa, as the pilot project within the programme, started with 9 villages in 1989 and later expanded to 15 villagers in 1994. At Regional level, HIMA is expanding into Ludewa and Mufindi Districts.

**Forestry activities promoted by the programme include:**

**A) Farmers' and extension staff training/study excursions:** These trainings have included soil and water conservation techniques, agroforestry, organic farming, community-based forest management, on-farm techniques of raising bare-root/potted seedlings and household/village woodlot management. An element of these trainings has included production of brochures and booklets in Swahili and local languages.

**B) Integrating forestry with crops and soil and water conservation measures:** In order to maximize benefits from agricultural practices, integration of multipurpose trees with food crops is being promoted. The trees provide products and/or services to farmers in terms of fodder, firewood, timber and soil fertility improvement. Commonly promoted species include *Leucaena spp.*, *Grevillea robusta* and the indigenous trees *Faitherbria albida* and *Albizia spp.*

The use of natural regeneration to reclaim degraded areas is being encouraged, including the use of *Ocotea usambarensis* and *Hagenia abyssinica* wildings where appropriate.

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**C) Research activities:**

The major first steps which have been taken in this area include farming systems surveys which have included quantification of current agroforestry outputs with a view of interfacing HIMA interventions with stable, indigenous systems. Subsequently, appropriate indigenous and exotic multipurpose trees have been included in on-farm trials to supplement/complement existing systems. As a result, several species have been increasingly adopted by farmers in the project area (Minja & Mchomvu, 1995). These include:

*Dodonea viscosa* (Iuhahi)  
*Croton macrostachys* (Mhvulungu)  
*Acacia sieberana* (Migunga)  
*Faidherbia albida* (Mipogoro)  
*Dombeya rotundifolia* (Mkiwu)  
*Erythrina abyssinica* (Mhemi)

Some other on-going basic research includes appropriate techniques to combat termite problems in tree nurseries and in the field (e.g. Mexican merigold). Other areas include identification of suitable trees for direct seeding/vegetative propagation and appropriate seed collection and processing techniques. Some species have already proven promising for direct seeding or vegetative propagation, including *Leucaena leucocephala*, *Faidherbia albida* and *Syzigium cordatum*.

**D) Local institutional capacity building:**

Through appropriate and judicious on-farm input support, HIMA Programme has concentrated on assisting the farmers in carrying out forestry practices starting at nursery level by provision of Polythene tubes, improved tree seeds and development of local nursery tools and materials. However, emphasis is placed on assisting farmers/institutions interested in diversifying their tree crops. Bare-root nurseries are being encouraged in the middle-to-upper potential zones while containerized seedlings are promoted in lower potential zones (Polythene and suitable localized containers). The current levels of inputs may differ between District projects, depending on climatic, cultural and economic differences. However, the HIMA Programme as a whole is seeking to strengthen the private sector's ability to provide these inputs by means of dissemination of marketing information and transport assistance.

In addition, HIMA has given technical assistance in management of selected District Council softwood plantations as well as marketing options for the forest produce.

**E) Awareness raising:**

The strategies used in this area include mass village meetings, radio broadcasts, World/HIMA Environmental Days and focus group meetings i.e. livestock keepers, farmers cultivating within a particular sub-catchment, pitsawyers.

Major thrusts include promoting the establishment of woodlots closer to homesteads, promoting the development and enforcement of appropriate bye-laws, conservation of natural forest remnants within the villages, and wildfire prevention.

A key area of HIMA policy is in awareness raising on gender issues as related to equity in sharing the benefits of natural resources, including forest products. In some areas of the Region (e.g. Kilolo Division), women farmers have no equal access to benefits accrued from woodlot harvests as do their husbands, particularly timber sales. (Minja et. al., 1996).

**F) Support to natural forest management and appropriate land-use:**

The HIMA Programme places much emphasis on assisting villagers to manage their own forest resources as common property. This has been achieved through boundary identification, followed by demarcation using tree seedlings. As part of its overall management, targeted villages are assisted by project staff to formulate their own bye-laws so that the village forest resources are adequately conserved. In Iringa District, 4,440 ha of public-land forests have been earmarked for village controlled management whereby villagers will have full ownership and much of the management initiatives and efforts will come from themselves.

A proposed "Moratorium Fund" for HIMA-Makete and HIMA-Njombe is intended to assist District Councils in improving revenue collection from natural resources while better equipping them to protect natural forests e.g. fire-fighting equipment. Increasing efforts by particular villages in the Region to stop movements of illegally gained forest products underscore the weaknesses within the existing system.

The HIMA Programme has also facilitated the surveying, boundary maintenance and mapping of selected Central Government Forest Reserves within the Eastern Arc Forest range. The programme has sought to fully involve villagers in these exercises with some successes have been achieved e.g. traditional village leaders in Makete indicating where their sacrificial forests lie within the reserves.

Other efforts to involve farmers in developing policies for land-use practices surrounding forest reserves has been the attempted establishment of "buffer zones" around selected natural forests. In 1995, a total of 854 farmers surrounding the New Kidabaga-Ulong'ambi (3400 ha), Yising'a-Lugalo (14,000 ha) and Image Forest Reserves (8,000 ha) of Iringa District raised a total of 342,000 tree seedlings for this purpose. However, the seedlings were planted ineffectively far from the forest as farmers feared loss of ownership since the existing forest ordinance does not clearly indicate the rights of surrounding communities in regard to this approach. If successfully integrated into national forest policy, it is anticipated that the buffer zone approach will alleviate many problems and satisfy the needs of the surrounding communities (FAO, 1978).

The HIMA Programme has strived, through continuous discussions and awareness raising, to encourage people to cease encroachment into forest reserves for crop cultivation. During the villagization program in 1974, about 110 farmers surrounding the 2,620 ha Numbe Valley Forest Reserve in Makete District encroached into the forest for pyrethrum cultivation. In 1995, HIMA-Makete successfully managed to halt this encroachment after long, focused dialogue and awareness raising campaigns.

**4.0 IMPLEMENTATION PROBLEMS AND HOW THEY WERE DEALT WITH:**

Customary land tenure systems do not allow free access for marginal farmers (especially women) to land for tree planting/agroforestry activities thus hindering their active participation in tree planting which is widely accepted as part of farming systems. Inequitable access to arable

land, coupled with environmental extremes existing within certain parts of the Region (e.g. unreliable rainfall, prohibitively steep slopes, acid soils) has further lowered the agroforestry potential.

Additionally, as mentioned above, women do not have equitable access to the benefits accrued from natural resource management. These problems are being addressed through awareness raising campaigns, gender issues trainings for staff and villagers and the implementation of a "Women's Participation Fund" for small income-generating projects.

The obsolete 1953 Forest Policy which was an inheritance from the old colonial era does not sufficiently address how, at local level, participatory forest management of state controlled forests can be pursued. If policies are enacted in a fair way, local communities should be able to see the direct benefits of their participation in managing the resources. At least, the forest ordinance should have guaranteed them free access to some forest produce in gazetted forest reserves without having a license or permit. However, this policy is currently under review, involving dialogue between the major stakeholders on how best to cater for everyone's interests.

The existing forest product needs of farmers within the Region are not being adequately met, thus efforts to improve available germplasm are being pursued. Drought and disease resistant tree species, which are compatible with existing farming systems, are being introduced in some project areas. In Iringa region, *Cupressus lusitanica* trees have been attacked by *Cinara cupressi* aphid to the extent of having been wiped out in the field. Suitable species of *Casuarina* and other timber/pole species are being introduced to compensate for these losses. Drought resistant species such as *Melia azadrach* and *Faidherbia albida* have been encouraged in semi-arid areas of the Region.

## 5.0 RESULTS:

To date, HIMA has made significant progress, although a number of issues remain:

- Farmers' awareness has been raised sufficiently on agroforestry and natural forest conservation, for example hazards of bush fires. In Iringa District target villages, 63% of people are aware of the importance of agroforestry and have been enabled to practice the integration of trees and agricultural crops (Mdoe & Mvena, 1995).
- Approximately 13,000 villagers in Iringa District have been provided with short trainings, including study tours to different on-going environmental projects in Tanzania. Table 1 shows the number of villagers trained in Iringa District on agroforestry and soil conservation techniques.

**Table 1: Number of farmers trained on agroforestry & soil conservation techniques (91-95)**

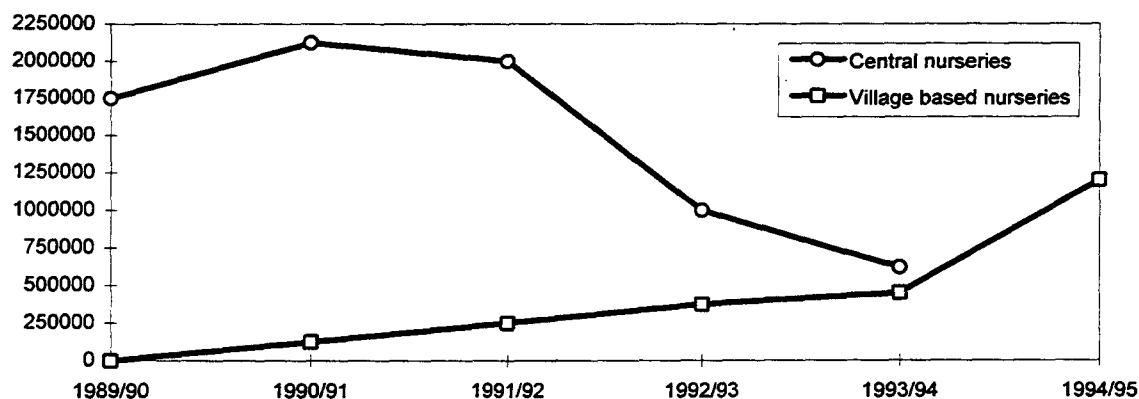
<u>Year</u>	<u>Women</u>	<u>Men</u>	<u>Total</u>
1991	849	1171	2020
1992	920	1147	2067
1993	758	1220	197
1994	1253	1633	2886
1995	1757	1921	36
Total	5537	7092	12639

Source: Minja & Mchomvu (1995).

Participatory planning and implementation is now an accepted procedure within HIMA. It has been shown that, after 2-3 years of project implementation, villagers can produce their own simple workplans, incorporating their own activities with those introduced by HIMA (HIMA/DANIDA 1994). This kind of bottom-up planning has helped ensure that the villagers' perspectives are fully taken into account in the project activities.

HIMA support in Iringa Region has completely shifted from large, central nurseries towards small, sustainable individual and group nurseries. In Iringa District, central nursery production was scaled down from 2.1 million seedlings in 1991 to 0.6 million in 1994 when they were totally abandoned. Consequently, individual nursery production was boosted to a level of 1.6 million seedlings in 1995/96. In contrast to 4 central nurseries which were formerly located in regional/district/divisional centres far away from the target groups, 890 on-farm nurseries exist today in Iringa District. Suffice it to say that individual nurseries are more sustainable, cost-effective and reduce mortality losses from nursery to planting site. Figure 1 shows central and individual nursery production in Iringa District.

**Figure1: Individual vs central nursery seedling production in Iringa District (1989/90-1994/5)**



*Source: Minja et al 1995*

HIMA has significantly assisted and cooperated with the central government in managing forest reserves. Between 1989 and 1992, about 146 km of boundary length was re-surveyed and demarcated with tree seedlings in Iringa District and about 30,000 ha of natural forests were inventoried. Likewise, in Makete District from 1993 to 1996, 36 km of forest reserve boundaries were (re) established and maintained. This support has helped resolve some conflicts/confusion between village government and central government-controlled catchment areas and has facilitated participatory land-use planning. Consequently, agricultural encroachment into the catchment forests has been virtually halted.

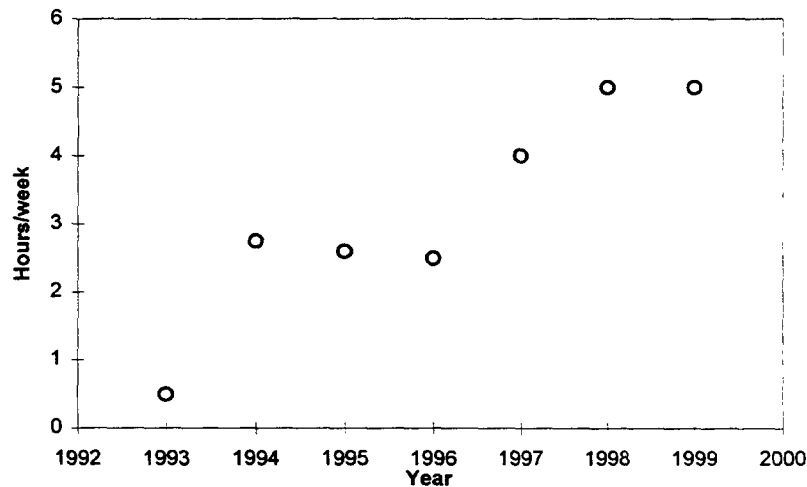
The Udzungwa Forest Management Project was initiated in 1994 as a component of the HIMA Programme and is also centred on participatory approaches and joint management among the stakeholders. Some preliminary socio-economic and biophysical studies have been undertaken within the project area. The findings have provided important information necessary in decision

making and preparation of management plans. Promising discussions are currently on-going between the project and The Forest Division concerning implementation of this unique project.

Some successes have been achieved in alleviation of village women's workload, primarily through promotion of woodlots close to households. During the period 1993-96 within Kising'a village of Iringa District, an estimated weekly average of 2.85 women household hours have been/will be saved as a result of tree planting, or 5.1 hours/week as from 1998 onwards (Minja et al., 1995) (Figure 2). Figure 2.

Establishment of woodlot in villages has contributed in reduction of wood extraction from natural forest for timber, poles and firewood purposes.

**Figure 2: Household hours saved by farm forestry in Kising'a village**



*Source: Minja et al 1995*

## 6.0 LESSONS LEARNT AND HOW THEY ARE SHAPING HIMA:

Woody vegetation constitutes an important component of the agricultural landscape in Iringa region and is actively managed as a perennial component of farming systems. It is thus appropriate that the programme has accorded farm forestry its due importance within agricultural sector support. The potential for agroforestry output appears to be great if issues of 1) socio-economics, 2) land tenure and rights (including gender issues) and 3) environmental amelioration (including biodiversity) are addressed by HIMA interventions.

The challenge for HIMA is to continue to introduce forestry/agroforestry technologies in an integrated, holistic manner as part of its "catchment approach", utilizing the farmers as true partners in on-farm trials. Their own criteria, including economic circumstances, must be taken into account to augment on-farm experiments (East, 1986; Pinney, 1991).

Individual tree nurseries have proven to be more economically viable, easily adoptable and sustainable relative to central nurseries. On-farm nurseries encourage farmers' initiatives and put the planting materials closer to where they are needed, thus ensuring healthier planting stock and lower mortality.

In order to forge ahead successfully in promoting sustainable and participatory forest resource management, it is vital that the existing forest policy be reviewed in order to fully accommodate the stakeholders' interests. Concurrently, existing national policies on land-use rights should be re-examined and ultimately up-dated to accommodate societal changes.

Judicious provision of appropriate, small-scale nursery support such as seeds, Polythene tubing and training has led to significant tree planting achievements within an environment of active peoples' participation. At the same time, HIMA has to strengthen support to the private sector (including NGOs) to achieve any measure of sustainability.

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**THE ROLE OF NGOs IN FACILITATING  
COMMUNITY PARTICIPATION IN FOREST  
CONSERVATION**

**INSTITUTIONS AND FOREST POLICY REFORM  
IN TANZANIA**

**A CASE STUDY OF THE ROLE OF NGOs**

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## THE ROLE OF NGOs IN FACILITATING COMMUNITY PARTICIPATION IN FOREST CONSERVATION

### Introduction - What are Institutions in a Policy Context?

Institutions are the key to successful policy processes. It is the institutions within Government that make policy (increasingly we hope with greater inputs from non-governmental organisations!). It is the institutions that implement these policies, and institutions that review the adequacy and effectiveness of policy.

Recent policy analysis has shown that the many sectors of government are no longer discrete self contained entities with their own internally functioning policies. Forestry is inextricably entwined with the energy, water, agricultural, rural development and environmental sectors. The Tanzania Tropical Forestry Action Plan (1989) highlighted such linkages.

Policies from one sector therefore affect those of other sectors (see FAO 1994, Sharma et al 1994, for more detailed review). These interactions are shown in Figure 1. Dominant sectors and national macro-policies (eg population and employment policies) will have correspondingly greater effects. However in practice there is little interaction and little policy analysis. Government is still separate boxes with vertical loyalties within sectors, and horizontal hostilities across the sectors.

The resource institutions such as Forestry and Wildlife Departments have limited mechanisms and skills necessary to make modern, interactive, socially equitable, and economically sustainable policies! Rarely do Forestry Departments realise those gaps, and seek expertise from outside the profession. Indeed the forestry profession is more insular than most, with their economists and planners coming from within the ranks of forestry (Rodgers 1995a).

In Eastern Africa we are not dealing with a forestry vacuum, there have been forestry policies since early colonial days (Hamilton 1984, Rodgers 1993). We are looking at evaluating existing policies and proposing amendments, rather than writing a policy *de novo* - in a way perhaps, an easier task:

- .. What is not working with the present policy?
- .. Why is the present policy not working?
- .. What can one do about it? What would be a better policy?
- .. Why are amendments not incorporated? What is the optimum process for policy development itself?

Recent literature talks about analysing policy failure (Sharma et al 1994, Rodgers 1996). It is not the FOREST policy of Tanzania to lose forest resources at 400,000 ha per annum, but it is apparently happening (see Presidential Statement, WCST et al 1996).<sup>1</sup>

Is it Tanzania AGRICULTURAL POLICY to convert 400,000 ha of land per year for cultivation? What does one do with contradictory policies? Much evidence points to the root causes of forest

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<sup>1</sup>Note that the figure of 400,000 ha per annum is a guesstimate based on FAO extrapolations. Deforestation is poorly defined. Tanzania has little factual material on which to base policy analysis (Rodgers 1996a).

loss coming from outside the forest sector (population growth, poverty, no alternative income opportunities, perverse incentives, etc).

Sectoral institutions set their own sectoral policies. It is the relationship and level of interactions between the institutions, and the value sets that the institutions represent, that determine the type of policies that emerge. Policies in turn define the Institutional parameters and the way that Institutions inter-act and coordinate. These are capital I institutions - the organisations, to be distinguished from small i institutions such as the institution of law. It is policy again that determines the role of law and other such institutions.

Institutions are complex beings, and their interactions are equally complex. Institutions within modern society can be likened to the species present within a community, with a host of dependent and independent relationships. Understanding their functioning requires special skills, but all too often the resource practitioners with skills in forestry or biology believe that they can plan institutional activity! Perhaps that accounts for that morass of complexity and uncertain functioning that we all too often see today.

#### **NGOs as Interacting Institutions : The Role of NGOs in Natural Resource Conservation in Africa.**

Rodgers (1995) outlined potential roles of NGOs in conservation activities. These include:

**Research, Innovation, Technology.** This can be scientific documentation, eg The East African Natural History Society. Or the role can be more complex as in the advocacy for greater involvement of third world interests in global research, such as that from the African Centre for Technology Studies (ACTS).

**Funding on a Small Scale,** eg the East African Wildlife Society. Funding can be umbrella support, or in kind through training or provision of capacity building inputs, administrative backup etc.

**Community Mobilization and Support.** eg CARE. Support can be in eg health, sustainable agricultural development, or natural resources. Joint Forest Management capability, developing alternative resources, eg woodlots, are all examples.

**Information Gathering and Dissemination.** eg JET (Journalists for Environment Tanzania). Assisting the flow of information is a key activity. News-letters are an example. This can be a two-way process. Decision makers are often out of touch with grass-roots issues. Villagers often are not aware of new legislation, or their rights. Both parties need information!

**Policy and Advocacy.** eg WCST (Wildlife Conservation Society of Tanzania) NGOs can act as 'public watchdogs', providing increased levels of accountability and transparency on the part of the Government and private sector. Such NGOs act as champions for the common man. Governments may see this as opposition politics, and NGOs may in fact be created or funded by the political opposition.

Advocacy uses more forceful techniques than simple awareness: stronger messages, messages passed to people with influence, etc. Advocacy relies on other activities of the

NGOs. For example advocacy is based on the use of facts. Facts are obtained from grass roots issues or from research activities.

**Networking.** eg KENGO in Kenya. This is a less charged term than coordination, networks facilitate or coordinate in a gentle manner. Networks can be umbrellas from a larger NGO supporting smaller organisations, or they can be groups of smaller NGOs of similar status.

### **Why are NGOs so Increasingly Popular?**

Globally there is concern for the plight of the rural poor. This is not totally altruistic, there are realizations that extreme poverty has implications for peace and environmental sustainability. Governments and "large donor projects" have failed to cope with such poverty at the village level. NGOs are seen to function well in the development field for four main reasons:

- .. NGOs can base themselves at community grass-roots levels,
- .. Many NGOs are specifically concerned with empowerment of rural poor, and alleviation of poverty.
- .. The community development ethic often has environmental benefits, bringing a greener development than big government.
- .. NGOs can cut across Government's typical sectoral approach, combining for example agriculture, forest conservation and mobilizing women's inputs, all in one campaign!

Growing donor concern with Government's reduced capability (loss of equity and lowered accountability) has led to greater donor involvement with NGOs, hoping perhaps for greater democracy and accountability. This has been referred to as "NGO infatuation". But as NGOs grow to absorb these tasks, they become fat bureaucracies!

This interest in NGOs will lead global funding support to grow from 7 to 13 billion US dollars in the coming 5 years! NGOs themselves, and the inter-relationships between NGOs, local communities, governments and donors are continuing to evolve operating mechanisms; works well and what doesn't? What works well for the donor may be different for the government or the villager!

This paper discusses institutional capacity building around a specific case history example with coastal forests, villagers, an NGO and Central and District Governments in coastal Tanzania. The issues involve a conservation NGO attempting sustainable conservation initiatives between government and villagers on the edge of fragmented coastal evergreen forests of high biodiversity conservation value (Howell, 1978; Rodgers 1992c, Frontier 1985).

### **A Case History : The Conservation of Coastal Forests in Tanzania, the Role of the NGO Community.**

I highlight here the continuing conservation controversy around Pugu (2200 ha) and Kazimzumbwi Forest Reserves (3500 ha) outside Dar es Salaam. The reserves are 3 km apart, just inside Kisarawe District of Coast Region. The reserve boundaries form the border with the much more densely settled Ilala District of Dar es Salaam Region (see figure 1). The Reserves are of global conservation significance for their high levels of strict localised endemism, mainly plants but including vertebrates. There are some 12 strict plant endemics - eg *Millettia puguensis* a distinctive

liane. The reserves have little timber or large scale watershed value, they are used by local people for poles, fuelwood and Non-Timber Forest Products (NTFP).

Recognition of the biodiversity significance led to the Reserves being the centre of a Priority Investment Profile within the Tanzania Forest Action Plan (TFAP 1989). TFAP indicated such support would be suitable for funding via an NGO. Accordingly the developing Global Environment Facility (GEF) biodiversity project, supported the Wildlife Conservation Society of Tanzania to conserve Coastal Forests.

The Society had already started assistance, through the Regional Natural Resources Officer (Coast), by supporting 12 Forest Guards (salaries cycles etc). WWF (Tz) supported the District Forest Office. The two NGOs, with Government Forestry, have monthly management planning meetings.

Concern is over the continuing practice of illegal encroachment for cultivation, mostly in Kazimzumbwi FR. by people from Chanika village in Ilala District. Charcoaling, from the clearing and elsewhere in the forest, is also of concern. This concern by the Society has been raised with Government at many levels within the past three years, without any real sign of success! (However recent initiatives with new Central and District staff indicate that a lasting solution could be found.

#### **A brief history of encroachment and conservation activity; the NGO role.**

Annex describes the history of encroachment and attempted resource conservation. Villagers are heterogenous, and include the wealthy from the adjacent city of Dar es Salaam. Years of neglect of reserve boundaries (typical of all Tanzanian forest reserves) meant that people were able to query the reserve borders. Villagers complain of land shortages (forest land is better than flatter empty land to the south). There is money to be made from charcoal supply to the city. Vacillation on the part of the authorities, inadequate fines etc gave signals that encroachment would not be stopped. The villagers gained a persuasive leader (M. Mtitimkavu) who openly advocated encroachment and sold land in the reserve. his securing a stay of eviction from the courts gave credibility to his claims.

Conservation activity hinged around empowering the weak forest department of Coast Region to deal with the powerful villagers of Dar es Salaam Region. The role of the Central Government Forest Division was unclear - did they have an operational role or were they purely advisory? We note that the Reserves are Central Government Reserves but are "managed" by the Districts "on behalf of" Central Government - with NO guidelines governing such management. Policy issues on land allocation, central versus district responsibility, court jurisdiction, adequacy of fines, sustainable fuelwood supply were all vague and inadequate.

The Wildlife Society took on several roles:

- “ it became a conduit for donor funding for conservation and education, funds going to District and the Society,
- “ it became a conservation organisation, convening planning meetings with villagers, training field staff, demarcating boundaries, planting boundaries, running village nurseries etc.
- “ it became an information organisation convening press releases and news sheets documenting issues,

- “ as normal policing cum extension methodologies failed the WCST it became an advocacy organisation, increasingly openly pushing Government to seek a solution.
- “ it became a facilitator or networking organisation, bringing together central district administrations with the villagers and the press.

The Wildlife Conservation Society of Tanzania has grown in stature and capability during this forest conservation activity. There are now specialist project staff, specialist committee members, a more focused and greater advocacy role, and in general more credibility within the public and within government.

During this transition the Society (and many other conservation agencies) has changed its emphasis and mode of operating. Conservation is not merely benign policing - providing sympathetic guards to catch the bad guys and help the good guys with simple alternatives such as tree seedlings. Conservation of natural resources is part of politics, part of overall land-use practices and so part of people making money or not making money. Conservation thus becomes a dirty business, with corruption and deceit at several levels.

Conservation is now outside the purview of District based field staff. The list of institutional players is enormous (see figure 2). Part of this complexity is the three way split in Forestry decision making processes in Tanzania (see TFAP 1989 documentation). The Director of Forestry is the policy and advisory body. Actual implementation is the responsibility of District Foresters, who report to the District NOT the Director of Forestry. District forestry is supervised by the Regional Officers, who also approve financial flows. Regional foresters are responsible to Regional staff, NOT to central forestry! (NOTE as of July 1996, Tanzania has reduced the powers of the Regions, who take on a reduced advisory role without natural resources expertise).

This separation of powers resulted from decentralisation in 1967 to 1971. Foresters realised that major NATIONAL forest assets could not easily be left to the tender mercies of District authorities (who were driven by the needs of their local populations and the need for revenue!). Forestry authorities then separated Regional and District CATCHMENT forestry to be responsible to the Director of Forests at national level for the montane forests of the four Regions - Arusha, Kilimanjaro, Morogoro and Tanga. In other regions Districts implement all forest activities. National officers say that Districts are to implement on BEHALF of the Director - to his specifications. But this is theoretical and nowhere clearly spelled out.

Similar problems have arisen in western Tanzania, with miombo woodland (*Brachystegia - Julbernardia*) reserves see Box 1.

**BOX 1 : MIOMBO RESERVE DEFORESTATION IN WESTERN TANZANIA**

Western Tanzania (Tabora, Kigoma and Rukwa Regions) has extensive areas of miombo (*Brachystegia - Julbernardia*) woodland Forest Reserve, with past utilisation for timber, honey and wildlife hunting (see Rodgers 1996b). Recent land and agricultural policies have allowed a mass movement of semi-pastoralist Wa-Sukuma people through the miombo woodlands. This was followed by plans for increased tobacco production which required huge amounts of fuelwood. The Forest Reserves are openly encroached for cattle, for tobacco and for fuelwood cutting. Despite the presence of a major World Bank supported forest project this encroachment has not been stopped, yet alone reversed. Rational land-use plans are not in place, the rule of law is flouted.

(Pers Comm : P Ryan, Nairobi; and Tanzania Forest Department).

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Note that this scenario of uncertain decentralisation has already taken place in Ethiopia and in Uganda in the past two years as Governments vacillated over how to give control of national assets to local organisations!

A second part of the conservation complexity is the separation of territorial functions - the difficulty of Coast Regional staff operating in Dar es Salaam Region. When Coast forest guards impound cycles of illegal charcoal transporters, the Dar es Salaam district authorities facilitate their release!

**The "new social forestry" - Is there an over-dependence on local needs?**

The new conservation paradigm is to work with local people, seeing them as part of the solution instead of the problem. This is based on the premise that local people can see (and derive) benefit in the forest. Where local people are not a homogenous forest dependent or forest supportive society, then involving local people becomes harder. When local people are recent immigrants, looking for opportunities to make money through converting forests, then people centred conservation methodologies will not work!

These coastal forests are small, perhaps too small to permit a realistic buffer zone providing meaningful resources to a sufficiently large proportion of the population. Land is in short supply on the Dar es Salaam side and the demand is for degazettement for cultivation (and eventually for high value plots on the outskirts of the capital city).

The presence of the capital city provides an ever-increasing demand for charcoal. Charcoal manufacture provides an income for landless poor - especially the youth. Land is in such demand that it is not worth putting under a tree crop for fuelwood near the city. It is noteworthy here that there IS NO ENERGY POLICY FOR DAR ES SALAAM. recent increases in electricity prices led to greater demand for fuelwood. An Africa Development Bank project to attempt sustainable fuelwood supply has been three years in the planning; but the loan proposal was turned down by Ministry in September 1996 as not a priority!

It is difficult to see a scenario where local people can derive benefit until the forest can attract a sufficient throughput of middle-class people demanding forest recreation possibilities - we are looking at another 20 years! Therefore in the short and medium term we require command and control policing - offset perhaps by the provision of increased extension services to an improved agriculture. However the breakdown in extension capability in the past decade, and the lack of interest in coastal agriculture by government and donors, means that this is unlikely to prove a major success.

**A harder advocacy role**

In the past two years the Society has attempted to take the conservation issues to the political level:

- " A seminar in 1994 for MPs chaired by the Minister for Natural Resources on the importance of coastal forests. MPs were interested, but we lacked a coordinated follow-on programme, and the stimulation died.
- " The involvement of the Minister and local MPs in the specific Kisarawe case in January 1995. The Deputy Minister, visited the site with the District Commissioners and MP. Statements were made in villages saying "deforestation must stop within reserve " but this

was approaching election time, and no-one wanted hard attitudes to the electorate. These initiatives again died down!

The Kiserawe debacle led to an Editorial in the Society magazine, "Who controls Forests In Tanzania". The answer was "No-one!", (see box 2)

This led to an involvement with a "Political Manifesto on the Environment", presented to Presidential candidates at the time of elections (October 1995). This was followed by a national workshop "Putting Environment on the National Agenda", organised by the NGOs at which the President participated and made a strong statement on the Environment. This statement (see box 3) we hope will act as the foundation of future conservation effort.

**BOX 2 EXTRACTS FROM WILDLIFE SOCIETY MAGAZINE EDITORIAL  
"WHO CONTROLS FORESTS IN TANZANIA"**

In July 1995 the Wildlife Conservation Society of Tanzania published *Miombo Magazine* No 13 with an editorial featuring the forest encroachment crisis in Kazimzumbwi Forest Reserve. The editorial ended with a documentation of the inability of Government at Central, Regional and District levels to take action:

- Deputy Minister Natural Resources states encroachment must stop
- Director Forestry instructs DFO to stop encroachment
- DFO asks District Commissioner for Police support in evictions
- DC instructs District Police to provide assistance
- District Police Chief says he needs authorisation from Region
- Regional Police Chief says this is Forest not Police matter
- Regional Forestry unable to persuade Region to instruct Police
- Region says the Courts must authorise the Police to take action
- Courts say their job is to try existing offences, not find new ones
- Wildlife Society appeals to Forest Division for action.
- Director Forestry suggested WCST approach the Prime Minister!

*We therefore repeat our question "WHO controls Forest Resources in Tanzania"? The Answer we are afraid is "NO ONE", especially in the face of problems!*

**BOX 3 PRESIDENTIAL PLEDGE ON ENVIRONMENT : JULY 1996**

My illustrious predecessor, Mwalimu Julius Nyerere, signed the Arusha Manifesto in 1961. I recognize that this has formed an important benchmark statement for Wildlife Conservation - both nationally and internationally in the past 35 years. Perhaps we should move in the same direction for the now broader goals of environment and sustainable development.

I would therefore like to take this opportunity to pledge, on behalf of Myself, my Government, and my People, the following:

- "That Tanzania is fully committed to the principles of Sustainable Development, principles which we signed at the Earth Summit at Rio in 1992.
- "That Tanzania recognizes the fundamental role of her environment and natural resource base in underpinning sustainable development. The environment in its totality must therefore receive greater attention and greater priority from the Government and the People of Tanzania.
- "That Government will strengthen her environmental institutions - developing compatible and environmentally friendly sectoral policies that are founded on social equity.
- "That Tanzania realises that people - people in their rural and urban communities, people in businesses in the private and parastatal sectors, people in Government must be empowered to be environmentally conscious and to accept greater responsibility for safeguarding the environment.

**His Excellency Benjamin Mkapa. President of the United Republic of Tanzania. 24 July 1996. Statement made at Workshop on the Environment co-organised by The Wildlife Conservation Society of Tanzania.**

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**vi Is There a Way Forwards?**

The way forwards must involve political inputs. Conservation will not be achieved through local policing efforts alone. Senior District officials must be directed that the forest has significant value and that its destruction will not be tolerated. That in itself involves political decisions:

- “ DOES Tanzania want to maintain these forests, or should they be converted to city plots?
- “ Which institution is given the mandate to translate that decision into practice? This will involve:
  - .. an improved basic policing activity, coupled with:
  - .. agricultural extension support to local people, and
  - .. an alternative fuelwood supply for Dar es Salaam.

There is need for realistic planning to control Dar es Salaam city expansion. Urban policy must link with forest policy. Guidelines as to the responsibility of District and Central forest functions are needed. Does the Director have an overall monitoring function? How will that work? How do neighbouring Districts and Regions cooperate?

The society has considered a management planning process for these reserves, but fundamental questions are not answered:

- “ How does forestry develop a management plan which involves people in the districts?
- “ Who approves the plan, and what legislative status will the plan provisions carry?
- “ How does a reserve management plan link with needed sustainable development plans for neighbouring villages?

We are looking here at the need for much larger rural development inputs, perhaps involving the more experienced international agencies such as CARE, World Vision etc.

Government is preparing a new forest policy process now. These issues must be incorporated into the policy process. Policy is too important to be entrusted to Government alone. The NGOS, especially those with experience in forest conservation and in forest use, as well as those with experience in rural development have a major role to play!

**vii) The Role of NGOs - Has it Helped?**

We believe so. We also in the past two months have begun to see the signs of success in that the new District leadership have accepted the need to restore law and order as a precursor to further inputs to extension support. The new Director of Forestry has agreed that this is a serious test case of national conservation interest, and is taking measures to reverse past damage!

We do not believe that ANY of this would have happened without the inputs from the Wildlife Conservation Society of Tanzania. The Society has had a broad range of roles, all of which have contributed to the developing success story - advocacy, information and field conservation activity.



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Figure 2 Schematic Diagram of Institutional Complexity Around the Kazimzumbwi Forest Reserve in Coast Region

Coast Region	Around the Forest Itself		Dar es Salaam Region	Capital City	
<b>Region</b> Reg Commissioner Reg Forestry Reg Planning Reg Police Reg Agric Exten  <b>District</b> Dist Commissioner Dist Forestry Dist Planning Dist Police Dist Agric Exten Dist Magistrates  Member Parliament Party Leadership	<b>COAST</b>  <b>Village Govts</b>  Leadership Forest Guards Agric Extension NGO persons	<b>FOREST</b>	<b>DSM</b>  <b>Village Govts</b>  Leadership NO Forest Guards Agric Extension NGO persons  <b>Sub-Villages</b>  <i>LAND DEVELOPERS</i> <i>CHARCOAL</i> <i>SELLERS</i> <i>"THE RICH"</i>	<b>Region</b> Reg Commissioner Reg Forestry* Reg Planning Reg Police Reg Agric Exten  <b>District</b> Dist Commissioner Dist Forestry* Dist Planning Dist Police Dist Agric Exten  Member Parliament Party Leadership	<b>Government</b>  <b>Ministry NR</b> Minister Prin Sec  <b>Dept Forest</b> <b>Director</b>  <b>Prime Minister</b> <b>Police HQ</b> <b>Courts HQ</b>  <b>NGO HQ</b>  <b>Media</b>  <b>The Public</b>  <b>Donors</b>
Pro Forest ?	Pro Forest	Anti Forest	???? Unclear ????	No Decision	

The forest is shaded, and the thick line shows that the forest boundary to the East forms the Regional boundary.

The final row is an indication of stated or apparent feelings to the forest resource.

Note : control of the forest is vested in Coast Region, but the problem originates from Dar es Salaam Region.

\* Note, staff often not in place as not a priority in basically a city administration.

**ANNEXURE 1 TIMETABLE OF CONFLICT AT KAZIMZUMBWI FOREST RESERVE, TANZANIA.**

The Coastal Forest Project of the Wildlife Conservation Society of Tanzania began 1991. Pugu and Kazimzumbwi Forest Reserves had encroachment and excessive resource exploitation. Clearing within the forest reserve for cultivation became a serious issue in the subvillage of Nzasa which is part of Chanika Village.

The initial problem at Nzasa was an alleged difficulty in identifying the Forest Reserve boundary, last cleared in 1984. In July 1991 people invaded the forest, pitsawing, clearing for crops, and making charcoal. The Coast Region Administration, with WCST funding, took culprits to court. Some were convicted with small fines.

**1993 Activity:**

March : Coast Forest Department, WCST and Police met at Nzasa, parties agreed the need for clear reserve boundaries. Clearing started in July following GPS and ground survey.

\* Nzasa villagers halted the exercise and a Nzasa villager Mohammed Mtimkavu led local people in demarcating and felling over 200 plots totalling 150 ha inside the reserve.

\* District Commissioners Ilala & Kisarawe met with Nzasa people. The villagers allowed the border clearing to continue for a few days but again stopped the survey crew, more people illegally cleared reserve forest.

\* The Ilala District Administration were shown the reserve boundaries. Patrols restarted and 12 people arrested, including Mtimkavu. One day later Nzasa people halted the patrol and held the Regional Natural Resources Officer for seven hours

\* District Police Commanders for Kisarawe and Ilala held discussions with the villagers who agreed to leave the reserve.

**1994 Activities**

April : Villagers wrote to the Director of Forestry asking for a strip of land from the reserve. This was refused.

July : Coast Region staff arrested 15 people who were in the reserve illegally.

Mohammed Mtimkavu later appealed successfully against 1993 conviction for illegally clearing land inside the Forest Reserve. He stated that District Officials had not presented the full documentation to prove that the area was a gazetted forest reserve! This successful appeal was used by Mtimkavu to show that the subvillage of Nzasa could distribute land within the Reserve.

September : Boundary clearing started again. Four days later the clearing team and full village Chairman were stopped by some Nzasa people referring to their request for land. Local labour were threatened at their homes. Boundary trees were uprooted. Eleven days later District Forest Officer with police arrested a villager.

October : RNRO and a film-maker went to the forest to film clearing problem, one man found occupying forest land arrested. RNRO, WCST, Journalists and Police went to look at the situation. The villagers were aggressive and one farmer (a retired soldier) tried to grab a police rifle, but the villager was shot in the leg and arrested.

**1995 Activities:**

January : WCST held seminar at Kisarawe for regional leaders from Dar and Coast Regions to explain the importance of Kazimzumbwi Forest Reserve. Ministry staff, including the Deputy Minister and Director Forestry attended the seminar.

\* Deputy Minister, Director of Forestry, leaders of Coast Region and Kisarawe District visited the destroyed area of Kazimzumbwi Forest Reserve. They also met Mr Mtimkavu on site. Two days later they held a meeting with Nzasa people and agreed:

- “ Kazimzumbwi Forest is a Reserve, and must continue to be reserved.
- “ Villagers must not fell trees nor clear the forest.
- “ Dar Region and Ministry would find a way of solving the Nzasa problem.

\* Three days later the 'Mtimkavu committee' started to sell land inside the reserve at a price of 5,000 T Shs (\$10) per acre.

\* The RNRO and WCST informed Director Forestry but he said he had instructed the DNRO that the culprits should be caught and taken to the court. Government leaders now started passing around the responsibility to solve the problem between each other.

March : Mtimkavu again taken to court for clearing new land in Forest Reserve. The magistrate found that there was a case to answer but gave him 28 days to appeal. The case was heard in the Appeal Court, but we still await the judgement.

\* High Court Judge confirmed to the Principal Secretary, Ministry of Natural Resources that the 1994 judgement he made earlier holds only for Mtimkavu and his plot. If others clear Forest Reserve then legal action can be taken against him/her.

April : The Director of Forestry writes to the RNRO Coast stating District Foresters in Kisarawe had to solve the problem of Kazimzumbwi immediately or should resign their jobs. NO ASSISTANCE OFFERED TO LOCAL FORESTERS.

July : Charcoal burning greatly increases in Kazimzumbwi.

Sept : DFO Kisarawe wrote to all village and subvillage chairmen saying that the information spread by Mtimkavu that the court had allowed people to cultivate inside the reserve is not true. Any one illegally in the forest will be arrested.

**1996 Activities**

January : The new RNRO, and District staff camped in Nzasa area to discuss issues with villagers and solve the problem in a friendly manner. Mtimkavu warned them of their safety and they returned.

February : The RNRO, instructed by Director of Forestry, wrote to Forestry Kisarawe giving them one month to evict all illegal encroachment.

\* RNRO and District staff arrested 8 people, who were remanded in custody for 14 days. They were then bailed by local MP asking that they be allowed to return to harvest their crops in forest! This, although illegal, was allowed by court.

March : Foresters arrested 61 people over 10 days. Most were fined 3000 TShs (6\$) and told not to return to the forest. Some were given to the 31st July to harvest crops.

\* An encroachment party led by a man claiming to be a Bishop was found in the reserve. He said he had paid the village 12,000 TShs (25\$) per acre for 70 acres of land inside the reserve. Bail was arranged for his followers. During the arrest in the reserve villagers were summoned using whistles, threatening the forestry staff who were forced to leave. A retired policeman visited Forestry Department HQ to complain about actions being taken, suggesting that senior people had bought land in the reserve including retired police and army officers.

\* Foresters were told by Regional Police Commander that no police should assist forestry. He advised forest staff to keep away for their own safety.

April/May : Kiserawe Magistrate visited Reserve checking if boundaries were clear. Those charged were convicted and fined, two people were imprisoned.

April : RNRO Coast requested DSM to stop issuing charcoal licences for Chanika.

May : Charcoal bicycles confiscated by Coast forest staff were returned following requests from Dar authorities. Subsequently the charcoal burners returned to the forest. Of 11 people identified, 8 had had bicycles returned after earlier arrest.

June : The Ilala Dar es Salaam court summonsed the DFO Kisarawe to answer charges that he had illegally removed people of Ilala from land in Ilala District!

August : New DC Kiserawe writes to new counterpart in Dar es Salaam expressing concern of continued destruction of the Reserve by Dar es Salaam people.

September: Renewed initiatives by WCST bring the two new DCs and new Director of Forests into a joint meeting in the forest, at which again it is decided that encroachers must leave immediately. DC asked to provide support through local police.

October : New Regional Commissioner for Dar es Salaam visits forest and states in meeting with villagers and press that in two days time all goods, buildings crops in the Forest Reserve will be confiscated as Government Property. He categorically states that the Reserve will be maintained. This announced on Radio. He directs that Forestry clearly mark the boundary. WCST funds Government to clear the boundary.

**COMMUNITY-BASED  
NATURAL FOREST MANAGEMENT**

**THE CASE OF DURU-HAITEMBA & MGORI FORESTS**

**TANZANIA**

*by*  
*Liz Wily*  
*International Development Consultant on Forest Management*

COMMUNITY-BASED  
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INTRODUCTION

This case study relates to two miombo woodlands in Tanzania, Duru-Haitemba Forest in Babati District, Arusha Region, and Mgori Forest in Singida District, Singida Region. The former comprises an area of nearly 9,000 ha, now under the full ownership and active management of eight registered and incorporated village communities. The latter is a larger and more intact woodland of 40,000 ha, currently managed by five villages, but in legal and institutional collaboration with the local District Council.

Two years ago both woodlands, under government control and management, were in a state of acute decline, with loss of area and species. In the case of Duru-Haitemba this resulted from boundary encroachment and in-forest settlement, excessive wood extraction and livestock grazing, mainly by forest-local communities. In the case of Mgori, the forest was afflicted by uncontrolled clearing for shifting cultivation of commercial finger millet, excessive hunting of the abundant wildlife including elephant, and timber extraction, mainly by outsiders. Today, boundaries are intact, incursion limited, flora and fauna recovering, and both forests protected by a total of more than 200 young Village Forest Guards - and all at no cost to government. These developments have occurred under the auspices of a Swedish-funded *Regional Forestry Programme* (since ended), and later, *Land Management Programme* with which the author is associated.<sup>1</sup>

The need for new approaches to natural forest management in Africa is no longer a matter of debate. Whilst tree-planting on private farms is visibly increasing in sub-Saharan agriculture,<sup>2</sup> it is as clear that natural forests dwindle apace. This is arguably as much the case for those forests under direct state jurisdiction and management (generally categorised as Forest Reserves) as for those public land or community forests outside direct state control. All forest types are effected, from the moist montane to the open miombo woodlands of east and southern Africa. There is widespread agreement that new, more effective, cheaper and more sustainable ways of retaining and managing natural forests not only need to be found, but tried out on the ground.

A steady trend in this direction is towards regimes which share responsibility with those who live next to forests, and who often have the most immediate vested interest in the forests, both for product use and for catchment purposes. It is well known that such strategies are most advanced in

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<sup>1</sup> The author, an international development consultant based in Nairobi, has acted from the outset as main facilitator of these developments, on behalf of *Orgut Consulting AB*, a Swedish-based consulting group which has been providing technical assistance to natural resource and land management programmes in Tanzania on behalf of SIDA and in conjunction with the Tanzanian Government.

<sup>2</sup> For example, see 'Not All African Land is Being Degraded: A Recent Survey of Trees on Farms in Kenya Reveals Rapidly Increasing Forest Resources' by Holmgren, Masakha & Sjöholm, in *Ambio* Vol. 23 (7) November 1994.

South and South East Asia and a growing body of critical literature is available. Community involvement in natural forest management in Africa is more recent and practice still largely confined to isolated instances. Although Governments have for some time been stating in national forestry policies that communities should be involved, agreement as to what constitutes community involvement in natural forest management has been diverse and confused. For the most part community participation has stopped well short of sharing power or control, remaining at the level of 'consultation', or of 'allowing' forest local communities to use certain forest products more freely, in return for improved respect of Forest Reserve boundaries. In the sister natural resource sector of wildlife management, revenue-sharing schemes have become the hall-stone of much so-called 'community resource management'.

This case study describes a more fulsome scenario of community participation, in which there has been a marked degree of power-sharing - to the extent of communities taking over full responsibility and control of the resource. Accordingly the function of government, previously the formal manager, becomes one of technical adviser and watchdog. In the more advanced case described, the eight communities involved actually now legally own the forest in question.

There is considerable documentation on the story of Duru-Haitemba and Mgori,<sup>3</sup> and rather than describe the process in detail, a brief overview is provided followed by a discussion which draws out significant features and lessons.

#### THE CASE STUDY: THE FORESTS OF DURU-HAITEMBA & MGORI

Strictly speaking, neither Duru-Haitemba nor Mgori are typologically 'forests' but dry woodlands of the common *miombo* type which spreads over eight states in southern and eastern Africa.<sup>4</sup> In Tanzania alone there are possibly more than fifteen million hectares of this kind of 'forest', which although not always of a notably high or closed canopy type, normally contains high timber volumes and supports a wide range of catchment and utilitarian functions, including wildlife. In Tanzania as elsewhere a good proportion of miombo woodlands are managed today within the institutional framework of state-owned Forest Reserves, along with the fewer moist montane forests which are generally accorded the highest protection status. Most of the remainder falls within public land, a loose tenurial category, which in Tanzania predominately includes land customarily held by communities but over which they have not yet established statutory ownership, and other lands, over which the state exercises main jurisdiction if not ownership, in default of tangible bundles of rights having been declared.

Neither Duru-Haitemba Forest nor Mgori Forest were at any time state-owned and gazetted Forest Reserves. They were however by the 1980's fully intended as Forest Reserves and to this end had

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<sup>3</sup> See in particular: 'Finding a Way Forward in Natural Forest Management in Tanzania' by H. Sjöholm & Liz Wily in *IRDC Currents* June 1995; *Good News From Tanzania The First Village Forest Reserves* by Liz Wily in *FAO Forest Trees and People Newsletter* Vol. 29 November 1995; *Collaborative Forest Management Villagers & Government The Case of Mgori in Tanzania* by Liz Wily [forthcoming] Working Paper of FTTP/FAO.

<sup>4</sup> See upcoming CIFOR publication on *Management of Miombo Woodlands* (ed. B. Campbell) which describes all aspects of this forest type in detail. A review on the institutional frameworks within which miombo woodlands are, and could be managed is found therein (Ch 8: Matose & Wily).



been fully surveyed and demarcated, and all but the publication of Reservation was complete. Indeed, there is no doubt that the process of withdrawing these forests from the public sphere into the hands of the state was the catalyst to both local concern and to the ultimate decision to find a more acceptable - and also more workable - regime of management.

### **Duru-Haitemba**

The earlier, Duru-Haitemba initiative began in September 1994, when the author was invited by the SIDA-funded *Regional Forestry Programme* to work with villagers in and around the Forest to encourage them to support its gazettement and management as a Forest Reserve. Beacons were already on the ground.

It was clear however, that local people did not support the withdrawal of what they regarded as 'their' individual, but adjoining village forests into the hands of the state - indeed, since the posting of Forest Guards to the area some years previously as part of the process, local people had more or less adopted a deliberate policy of 'getting what they could' out of the forest in terms of land and products as fast as they were able, prior to their anticipated exclusion from the area. The forest, basically a series of linked ridges of high woodland, was by 1994, heavily degraded and encroached in many places. Even were certain use rights to be guaranteed, local response to the situation did not suggest that Reservation would lead to effective conservation.

With informal support from the local authorities (Babati District Council), the author and local Forestry Officer thus began a process of exploring with first three, and then all eight villages adjacent to Duru-Haitemba if and how they could conserve and manage the forests themselves. This was to prove a politicising and empowering process for neither villagers nor village leaders had countenanced the possibility that they might be 'allowed' by Government actually manage the forest themselves. Government itself had not envisaged that level of 'participation', but whilst officials were dubious and continued to argue for a trade-off of certain [minor] use rights in return for promised 'cooperation', they did agree that the gazettement process would be suspended pending demonstration by the villages that they could halt the degradation of the forest. It was informally agreed that they would have day-to-day management responsibility - and by implication, 'control' over how the forest would be managed.

With a degree of broad interpretation towards a *carte blanche* right to control, advisers and interested village leaders used this tentative go-ahead [*"we will have no one to blame but ourselves if we fail to save our forest"*], to launch a highly dynamic (and argumentative) process of reviewing each and every aspect of the forest to determine just what was required to restore the forest and to keep it intact for potential future use. Simple but effective management plans were drawn up by each village, prominently including 'rules' for using the forest. A most interesting feature of this process was that, whilst prior to knowledge that they might control the forest themselves, villagers cited virtually all uses from timber to grazing as 'indispensable', once it was known that the forest is 'ours', the same leaders and ordinary villagers swiftly argued for discontinuation of any use which they considered damaging. Charcoal burning, tree felling and even grazing in some parts of their forests were immediately banned, and other uses to be controlled through regimes which verged upon the ultra-conservative and protectionist.

Village assemblies were held in which the entire community of each village debated and refined the 'plan'. Most of the eight villages were to adopt a management strategy based upon geographical and political divisions in the village, each registered sub-village looking after that part of the forest to

which it was adjacent. Demarcation of those areas was undertaken, not always without dispute. The forest was also zoned in its entirety, indicating precisely where cattle could be grazed, which areas could not be used at all by the villagers, and which areas would be available for sustainable use (Sustainable Use Zones, Grazing Zones, Protection Zones).

From the outset, villagers considered guarding of their discreet village forests against both non-villagers and offenders from within the village, would be essential. *Walinzi*, or Village Forest Guards, were duly selected by each sub-village and patrolling and reporting regimes devised. These *Walinzi* patrol the forest up until the present. Encroachment, pitsawing, charcoal burning and a range of lesser destructive activities have largely ceased and a main function of the *Walinzi* today is to prevent the forest being used by non-villager cattle, entering from adjacent villages, or using the forest as a conduit for long distance trekking of cattle to markets to and from other Districts.

Each village maintains a Village Forest Committee, the composition of which has steadily shifted from village leaders to ordinary villagers, a 'democratization' at the local level which has both arisen from and led to, a growing need for accountability as practical management and control gets under way. As the months pass, more, rather than fewer, villagers are practically involved in the commitment to conserve and manage their forest.

Once villages began actively managing their forests (preventing activities they had declared illegal, issuing a limited number of permits for sustainable uses, patrolling, rehabilitating forest springs, etc), it became clear that they needed not just the administrative support they had secured from the local District Council, but legal backing. Accordingly each village was assisted to rephrase their management plans and rules as Village By-Laws. In mid 1995, these were formally approved under the District Authorities Act by the full District Council. Each village is thus by law, the legal authority and manager of that part of Duru-Haitemba Forest which is adjacent to its own settled village area and specified in the relevant Village By-Law as falling under their jurisdiction.

#### *The Villages of Duru-Haitemba Forest*

VILLAGES	AYA-SANDA	ENDA-NACHAN	HOSHAN	ENDAGWE	BUBU	GIDAS	RIRODA	DURU	ALL
Number of Households (1994)	356	400	325	470	260	340	950	481	3,582
Entitled Village Area (Ha)	1,660	2,130	2,290	4,300	4,690	4,250	4,610	3,720	27,650
Est. % still forested	30	21	17	28	49	21	38	35	32
Est. Ha Village Forest Reserve	500	400	400	1,220	2,300	875	1,800	1,500	8,995
Est. Ha Forest/HH	1.4	1.1	1.2	2.6	8.8	2.6	1.8	2.7	2.4
No. Sub-villages	5	4	3	6	4	5	9	5	41
No. Sub-Villages with Forest	5	3	3	6	3	4	8	5	37
No. <i>Walinzi</i> [Sept 1995]	10	4	6	12	14	12	34	15	108

**Usual Categories of Village Forest 'Rules' (*Masharti*)  
that must be complied with by all village members\***

<b>Free Uses</b>	<b><i>Matumizi Buru</i></b> Forest uses which may continue unimpeded because of their non-destructive nature; e.g: collection of dry fuelwood for cooking, wild fruits, mushrooms, grinding stones
<b>Notifiable Uses</b>	<b><i>Kutoa Taarifa kwa Mwenyekiti wa Kitongoji</i></b> Forest uses which are to be reported to the Sub-Village Chairman (or Village Forest Committee Chairman) prior to implementation e.g: placement of new beehives, harvesting hives, collection of withies, medicinal plants for use outside the household
<b>Uses by Permit</b>	<b><i>Kibali cha Maandishi</i></b> Forest uses which are rationed (quotas) or controlled through a permits, some uses requiring a fee, others free; e.g: polewood collection, the use of fallen timber, collection of wood for beer-brewing, felling of a certain tree for strictly communal use (e.g. village school desks); or by season [collection of dry wood for brick burning]; or by area [grazing zones]
<b>Banned Uses</b>	<b><i>Matumizi Marufuku</i></b> Forest uses which are not permitted under any circumstances; e.g: charcoal burning, pitsawing, shifting cultivation or clearing, encroachment over boundaries, hunting, bark-stripping.

\* With the exception of one or two Villages where members of neighbouring villages are able to keep hives, any forest use by a non-member of the village is generally forbidden.

An important fact arose through the process of legal review; unlike many other countries, villages in Tanzania possess the capacity to be registered as the most local level of 'government' within the decentralised system, and in addition exist as legal corporate entities, able - *inter alia* - to sue and be sued and to own businesses and property as a community. Entitlement, the process of a community securing statutory ownership over their local land area, is a fundamental development policy and programme within Tanzania, although one which has in the event only slowly been implemented.<sup>5</sup> It transpired that all eight villages in the vicinity of Duru-Haitemba had in fact applied for such ownership and that the areas they specified as their own and which were agreed as such, *included* their traditional woodland areas. Thus the legality of state gazettelement in the first place came into question. Village Title Deeds have since been awarded. Thus, both through statutory local government regulation and through statutory entitlement, the eight villages of Duru-Haitemba are in the unusual situation of being both the legal owners and managers of what they have come to call their Village Forest Reserves (*Hifadhi ya Msitu ya Kijiji*).

Since this event a year or more ago, there have been a series of related important developments both on the ground and as affecting wider forest management policy and practice in Tanzania.

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<sup>5</sup> A full discussion of the legal framework for village-based natural resource management and land tenure is provided in *The Law and the Village in Tanzania An Exploration of the Legal Framework for Community Management of Natural Resources* Liz Wily, 1995, Orgut Consulting AB, Dar es Salaam.

Locally, the eight forest-managing villages have gone from strength to strength, gaining not only from experience but from the rigours of facing problems and having to solve them. They have done this with remarkably little supporting input from technical advisers or local District Forestry Officers, who face the normal transport constraints. Today, two years since they were given the chance to manage Duru-Haitemba themselves, they are proud of their efforts and the visible improvement in the condition of the forest [*"the bees have returned! soon we will be able to collect honey again"*].

The villagers have also, not surprisingly, been much-empowered by the process, and this has had an effect on the overall level of community involvement in village management and in natural resource management matters in particular. Thus, for example, grazing management even outside the Village Forests is firmly on the agenda and two cases is leading slowly but surely towards stock reduction. Low-lying swamp-lands [*mbuga*] have become a follow-up target of attention in several villages, and important if difficult decisions have been made by the Village Forest Committees and Village Councillors as to how these must now be rehabilitated and protected for general village use [water and thatching grasses]. And where on-farm tree-planting was half-hearted in the past, and effected largely only in response to constant nagging from officials, these same villagers cannot secure enough seeds and seedlings to meet their new-found needs, prompted by the consensus to limit timber and polewood extraction in the degraded upland woodlands until it has recovered. Water sources within and outside the forest have been rehabilitated and grazing in their vicinity forbidden.

On the socio-political side, there have been shifts in roles of village leaders and management committees with an overall demand that all activities carried out in the village, not only Village Forest Reserve management, be more directly accountable to the village community at large. Sub-village management has taken on a new, and practical lease of life, bringing decision-making even closer to the farming household. Sub-villages may include between 20 and 50 households. As noted above, significant shifts have taken place in the composition of managing committees to reflect this 'democratization' within the village. Whilst the number of *Walinsi* has declined as the need for patrolling has declined, and there are fewer patrols per week, there has been remarkably stability in this volunteer cadre which serve the community, in return for exemption from other communal labour contributions (road and school building), and occasional 'rewards' when they apprehend offenders. All eight villages retain their original insistence that vigilance is core to their success and none propose to eliminate patrolling despite the decline in offences. Perhaps no better illustration of the urgency for Government to look to communities as forest guardians is available than in the fact that these eight communities field around 100 Village Forest Guards in a forest which was previously 'managed' and 'guarded' by only two Government Forest Guards.

### **Mgori**

Although the Duru-Haitemba initiative is a mere two years old, it is bearing fruit more widely, with the approach beginning to be replicated elsewhere - most prominently in Singida Region, where the vast Mgori Forest is now actively and successfully managed by the five adjacent communities. Like Duru-Haitemba villages, these five Mgori villages manage through the institution of Village Forest Committees, and similarly deploy village youth as patrolmen of their respective woodlands, whom are known as *Sungusungu* and who patrol in larger groups and in a more para-military fashion than the *Walinsi* of Duru-Haitemba, where the forest is less dense and less vulnerable to invasion. Again, clear rules for all to abide by, have been formulated by each community, and although

government approval of these has proceeded through a slightly different route, they carry the force of Village By-Laws, uphold-able in any court in the land.

Unlike Duru-Haitemba, these villages do not yet have legal ownership of their respective parts of Mgori Forest which they have agreed among themselves and with government, as respectively their own 'Village Forest Reserves'. This is because those villages, although registered as legal entities are yet to have their village areas surveyed, demarcated and gazetted, a socio-spatial and legal framework within which those Village Forest Reserves will fall.

Even in that event, the five villages will continue to manage Mgori in close collaboration not only with each other but with the District Council, which has provided a full-time Mgori Forest Liaison Officer, and which will almost certainly be manifest in a precisely-worded Joint Management Agreement between each village and (local) government.

The need for a more active collaboration between villages and government arises from the different circumstances of Mgori, which has been subject in the past and is still vulnerable to a range of complex and considerable incursion by outsiders. This includes illegal commercial timber extraction, illegal commercial wildlife hunting of the diverse fauna (including elephants), and the appeal the vast and remote area holds for bands of commercial shifting cultivators producing finger millet for the urban markets or clearing equally large swathes of forest for charcoal production. Moreover, Mgori Forest, sharing boundaries with two other Regions, continues to endure administrative boundary dispute with neighbouring Dodoma Region in particular.

*The Five Mgori Forest Villages*

VILLAGE	POP.	# HOUSE-HOLDS	# SUB-VILLAGES	# IN-FOREST HAMLETS	# IN-FOREST HOUSE-HOLDS
POHAMA	2,544	380	7	2	55
NGIMU	4,351	550	7	2	8
UNYAMPANDA	1,191	208	4	1	10
MUGHUUNGA	1,135	146	3	3	9
DUAMGHANGA	4,240	310	6	4	48
<b>TOTAL</b>	<b>13,461</b>	<b>1,594</b>	<b>27</b>	<b>12</b>	<b>130</b>

*Mgori Village Forests [Woodlands] and Guards*

VILLAGES	Est. Village Forest Area (Ha)	Est. Ha per Household	No Forest Patrol Groups	Total No Guards [Sungu-sungu]
POHAMA	13,000	34	7	49
NGIMU	3,000	5.4	7	42
UNYAMPANDA	4,000	19	4	12
MUGHUUNGU	7,500	51	5	21
DUAMGHANGA	13,500	43.5	6	42
<b>TOTAL</b>	<b>41,000</b>	<b>25.7</b>	<b>29</b>	<b>166</b>

There is also recognition that Mgori holds marked potential for regulated timber extraction in the future, and could also generate revenue from game viewing and some hunting. Local government is ready to concede management and even ownership of the resource to the traditional local community when the correct tenorial framework is in place, if only in recognition of government's own incapacity to manage and guard the vast forest - which, it might be noted, currently requires the patrolmen service of more than 160 *Sungusungu*. However, local government will, at the same time, want to secure agreements whereby significant revenue from the forest in the future is shared with the wider district community through taxation. All these conditions have led to close collaborative management by government and village, an arrangement within which the onus of control, responsibility and day to day effort, none-the-less falls fully to the forest-local communities.

Their respective village woodlands (future VFR) are extremely large; two of the five villages manage and gain from thicket and woodlands or more than 100 square kilometres, not all of which can be satisfactorily protected by the *Sungusungu* patrols. Two in-forest hamlets play a more continuous role in protecting the remoter corners from encroachment. This presents an interesting handling of the in-forest dweller issue that so frequently afflicts forest management; rather than evicting the forest dwellers from these two hamlets, as government had intended, the communities decided they should remain for the time-being, providing active forest protection support in return for permission to remain, and bound by several clear rules which forbid expansion of existing fields, introduction of livestock or new households. To date this has worked well, their role as guardians of the remote forest area indispensable in the face of continuing pressure from more over-crowded regions. The arrangement will, in due course, be reviewed as circumstances change.

Village-based management of Mgori is less than eighteen months old. Incursions and offences have been dramatically reduced in that period but do still occur; several of the villages have in fact earned considerable revenue through the levy of fines upon offenders, who include mainly outsiders from Dodoma Region helping themselves to the forest for commercial cultivation and charcoal burning. All five village have established Forest Management Bank Accounts.

In two of the five villages, local leadership has been shaky and in especially one case, corrupt, and given the position of the corrupt leader as not only Village Chairman but elected Councillor of the area, this has posed a serious problem that is only slowly being resolved. Corruption did also arise initially in two of the Duru villages but in a more dilute form. Like those incidents, these events are prompting a strong move on the part of the village membership as a whole towards more accountable and less-leader driven and controlled systems of village forest management. In turn, participation in active decision-making by so-called 'ordinary villagers' is similarly growing, and with it, local commitment.

The Mgori initiative falls under the same SIDA-funded *Land Management Programme* mentioned above, and under the operations of that programme in the two Masai Districts of Arusha Region, ten or more Masai communities have begun to take control of their considerable and highly threatened natural forests, following the same strategy they have seen in Duru-Haitemba and Mgori. Adoption of the process, is occurring even further afield, partly through wide dissemination of reports but mainly through the steady stream of visits to especially Duru-Haitemba by foresters and project personnel from within Tanzania and from further afield. The opportunity to see if and how community-based forest management works on the ground, and recognition that what is seen is simple and common-sensical, low-cost and effective, is proving a small but powerful catalyst to change in this sector. Moreover, the strategy is reaching into the very heart of gazetted Forest Reserve management, in that following a review of management of some 100 large Reserves and familiarization with the Duru and Mgori cases, senior forestry officers are looking more constructively to communities, not just as 'cooperative' parties, or even partners, but as actual managers of Forest Reserves, to be supported by their own technical advice.

## DISCUSSION

### **Making Change from Below and the Need to Try Out New Approaches on the Ground**

After many years of East African governments hesitating on the brink of involving local forest users in natural forest conservation in more than consultative ways (see later), the Duru/Mgori experiences are significant not only in their own right but, as implied above, in the way the part they are playing in prompting a change more widely in natural forest management - and one that in salient respects goes further than is generally the case in the now well-known community forestry policies of South and South East Asian states, where devolution of control to communities has been in practice more hesitant and limited.<sup>6</sup> It is as pertinent to note that this change has not come about through the importation of community forestry models from such areas, nor from the formulation and then implementation of new policies by central government; on the contrary, the movement has begun *at the village*, albeit with much facilitatory guidance and carried through with the support of involved local authorities increasingly convinced of the 'correctness' of the approach. This provides a potential basis of experiential pragmatism that is rarely afforded new policy-making, quite aside from the considerable 'prompt' to action that the power of tangible example has been able to

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<sup>6</sup> See for example, '*Grassroots Forest Protection: Eastern Indian Experiences*' Poffenberger et al. [Asia Forestry Network Research Network Report No. 7 of 1996], and '*What Future for Community Forestry in Nepal?*' Wily in *ODA Social Development Newsletter*, August 1995, both of which note the limitation of power-sharing and the constraints this poses to success in those areas.

provide. Arguably, the experience of Duru and Mgori show that progress may only be made when some concrete attempts are made on the ground.

### **Process not Programme**

This is doubly important because of the self-evident nature of community-based natural resource management as process rather than a finite programme. Already, after only two years, elements of the Duru and Mgori initiatives have changed, and are expected to continue to change, interspersed with plateaux in decision-making and practice. The very act of a community establishing its role is a process of trial and error, give and take, that finds its form and force only through implementation. A main part of the process is in the form of adjustments in socio-political relations, both in regard to its own constituency, the village community, and how representation and authority is internally delivered, and in terms of the outside world, which variously includes neighbouring villages which find themselves no longer free to use that area of forest as freely as they did in the past, local officialdom, and in particular, the government Foresters, the Primary Courts who find themselves in a new relationship with the villages as far as forest use matters are concerned, local politicians and even central government officials and 'experts'. There is additionally, inevitable shift in the manner of actual forest management practice that occurs, as consultation, decision-making and patrolling regimes refine in response to need. Overall, the trend in both Duru and Mgori has been towards a steadily more 'nuanced' management approach in terms of rules and management, and towards more locally-accountable decision-making and implementation.

Thus, in Duru-Haitemba, a main sphere of change has been in the detail and implementation of forest use rules, ranging from the minor additional requirement that women collecting dry fuelwood carry their own string to the forest to bind the head-load to limit the temptation to strip bark for that purpose, to a major change in grazing regulations in some of the villages - in several cases, the communities have ultimately found it necessary to ban forest grazing altogether, whilst in two others, the range of area in which grazing may take place has been extended but the season during which this may take place, has been reduced. In two other villages, concern that polewood extraction was excessive led to the introduction of a quota system based on ranked needs and widespread adoption of a rule that only one branch may be taken from any one tree for this purpose.

In Mgori, one village has amended the rates of fines to penalise village leaders more harshly than others, and local offenders as a whole, more harshly than outsiders. Another village has found it necessary to establish a Beehive Register to keep track of hive placement in the village forest. The same village now also requires hive-owners to report to the Committee prior to hive harvesting, and has let it be known that they will be held first-line accountable for any fires started in the forest during the period. In Mgori Forest (unlike Duru-Haitemba where ground cover is still poor), the risk of fire is considerable, and recently new measures, including controlled burning, have been introduced to reduce the risk - not yet, entirely successfully. Faced with continuing entry by young Barabaig elephant hunters from the north, one village in Mgori has initiated a series of 'good neighbourly' meetings with elders of those communities, initially using its own few Barabaig pastoralist householders as the go-between.

The five Mgori villages in general are tending to involve the local administration more and more as the means through which information about their management is disseminated to even quite distant villages, in order to widen co-operation. The Mgori Coordinating Committee of the five villages - an institution which the eight Duru villages have not yet seen the need to establish - has become steadily more influential in terms of ironing out local issues and in learning from and supporting



each other, and in one case, bringing one village where conservation management was being undermined by a corrupt village leader, into line. In contrast, a main sphere of emerging consultation and cooperation on the part of the Duru-Haitemba villages is with the local Primary Court, where Village Forest Committees are anxious that the Magistrate handles cases brought to him that are both consistent with their rules and do not undermine their authority.

All thirteen forest-managing villages have found it necessary, through trial and error and some heated disputes, to improve record-keeping and in particular financial accounting and accountability of fines levied, paid and used by the Village Forest Committees. And similarly, five of the thirteen villages have endured varying degrees of corruption on the part of key village leaders (usually Chairmen), resulting in widespread revision of decision-making procedures and controls towards greater accountability to the village as a whole, manifest mainly in the inclusion of more non-leaders in the operating Village Forest Committees, the establishment of Forest Management Bank Accounts distinct from the Village Council coffers, and so on. Needless to say the relationship of these committees with the elected village governments (Village Council) has in some cases arisen as a point of conflict and led to clarification of roles and rights of each body. This has been particularly important where Village Forest Committees are gradually taken on a function as a forum for discussion and decision-making on use and management of resources more generally in the village, not just in relation to the community's declared *Hifadhi* ('Forest Reserve'). Similarly, there have been adjustments not just in the numbers and patrolling regimes of the village forest guards, but in their own accountability, lines of reporting, the way in which they handle offenders, and their remuneration - which generally remains at the level of percentage of whatever fine is collected and exemption from other communal tasks. There has been a recent demand by the Sungusungu of Mgori for Identity Cards to bolster their credibility and the procurement of boots from fine revenue to ease their duty. On the other hand, there has been extremely little change in the core group of persons serving as Walinzi or Sungusungu, who in both forests demonstrate growing pride in their position as forest guardians. One village in Mgori is using the *Sungusungu* additionally as forest monitors, requiring them to report all game seen in the forest, building up a quite substantial record of patterns and change in this area.

Overall, the needs, problems and challenges at first faced by each village as it established management have changed, and will continue to change, as they individually move forward in their task. In due course, as their forests recover and as their capacity to permit and manage sustainable timber harvesting, a main item of their agenda will be devising sustainable, fair and accountable harvesting regimes.

### **The 'Ripple' Effect of Acting in One Sphere upon Other Spheres**

As practitioners, the forest-managing villages have learnt to recognise and deal with problems, and for the mostpart do so increasingly ably, and with not so much less reference to government and other advisers available, as with more precise requests for guidance or support. The point has been made earlier that a secondary effect of this growth in self-reliance and confidence has been an increase in capacity to make and follow-through on decisions, and a growth in confidence within the village more generally that it can, after all, manage its own affairs satisfactorily. As remarked upon earlier, this confidence combines with pride in their forest conservation and management achievements to date, and a heightened awareness of natural resource issues, to prompt attention to other issues of concern - issues which have usually laid unaddressed for a decade or more.

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### **Foresters, not Policemen**

Needless to say - and contrary to the fears of some forestry officials - the local Government Forester has also gained. In the first instance, the experience of both Duru-Haitemba and Mgori show that he is liberated from the exhaustion and failure of trying to protect forests under pressure, with inadequate resources, and in conflict with forest-local communities. Moreover, he has the chance - often for the first time in his long career - of being in a position to provide what he can provide best - technical guidance. Moreover, his experience and skills broaden; in both Forests the District Forestry staff have found themselves sought out by villages to advise on issues that have not been in a position to advise upon before - even including a mediating role in certain disputes or problems which the actors have themselves found difficult to resolve, such as involving inter-village boundary disputes. More generally, government Foresters enjoy a new found respect and find themselves at the forefront of rural development; the delights of what in Nepal is routinely referred to as 'taking off the uniform' is as keenly experienced in this circumstance. Foresters also clearly appreciate the impact of these developments upon natural forest conservation; the Mgori Forest Liaison Officer, for example, frequently refers to the strategy as 'conservation, not reservation'. Certainly conventional wisdom that the establishment of government Forest Reserves is a prerequisite framework for conservation has lost currency in informed quarters.

### **Conflict and Collaboration**

Change and process rarely occurs without the prompting of a problem or conflict, large or small, and this has proven to be the case in Duru-Haitemba and Mgori. Arguably, dynamic change is a chain of conflict and conflict resolution to one degree or another. Indeed, as this case study has shown, the very impetus of establishing community-based forest authority may arise out of a conflict between government and community in the first instance, and that relationship will almost certainly oscillate backwards and forwards from one of partnership and collaboration to one of constraint.

Thus Village Forest Committees in both Duru-Haitemba and Mgori have not only 'done battle' to some extent with administrations, and if not administrations, local law courts - both of which led to resolutions in the form of important decisions - they have faced conflicts with outsiders seeking to exploit the village's resources through fair means or foul; with sectors of their own community who feel they have been deprived of a past advantage - losing, for example, the unbridled right to graze any number of stock in the forest, or to collect water from a now protected upland forest spring - and with individual village members who have deliberately ignored the 'Rules' - such as a renowned elephant ivory hunter resident in one of the Mgori villages, or a corrupt village leader, a local pit-sawer. In these circumstances, forums or frameworks for conflict resolution tend to evolve and consolidate around such needs.

### **The Need for Legal Backing, not just Administrative Support**

Moreover, as the Duru-Haitemba Villages found very quickly, administrative support, such as was forthcoming from local government (Babati District Council) proved inadequate; it was not long before one offender queried in the local Primary Court the legality of the Village levying fines; it was this that led directly to the securing of village forest management 'Rules' as legally-bound Village By-Laws. In recent months, Village Forest Committees are finding themselves communicating directly with the local courts, informing the Magistrate of key decisions, who in

turn has guided the Villages as to what kind of record-keeping of offences and offenders, and what system of receipting for payment of fines, he needs to see to support their case.

The need to clarify in law, all levels of rights and responsibilities grows more pressing as a village undertakes active management. This extends, as this case study shows, right into the heart of property rights and the existence of communities as legal entities. Reliance upon the goodwill of current officers has on at least two occasions proved illusory security. Given the newness of the approach, involved Villages and advisers are 'feeling their way' in this area, learning by trial and error - and in the process laying down a basis of experience and record upon which other communities, and other interested officials may proceed.

### **The Advantages of the Tanzanian Socio-Legal Environment**

In this respect, the unique benefits of the socio-political evolution of rural land tenure in Tanzania are brought into play. Unlike most sub-Saharan African states (or indeed most developing countries), rural communities exist in Tanzanian law not only as social formations, but as *legal persons*, with all the powers of a legal person or corporate entity. Moreover, as also touched upon earlier, the capacity of a rural community to own property as a legal person is not only available in legislation, but has long been a declared objective of the state, and with programmes and procedures well-established to promote this.<sup>7</sup> The concept and legal construct to enable full legal ownership by communities is provided for in the Village Title Deed, recently confirmed in the new National Land Policy, as the main vehicle for rural land security.<sup>8</sup> Once awarded, this secures the same and equal rights of full private ownership by the community of the stated land area, attainable by individual entitlement.

Such a situation is far removed to the socio-legal situation in most other states, where rural communities exist only as open-ended social groups, and whose traditional communal landholding has not been transduced into modern law. Developments described in this case study have made full use of this unusual situation, and arguably, the level of progress that has been made in this case, owes much to the unusual situation in this regard in Tanzania.

By the same token, Tanzania has less excuse than many other states, not to proceed rapidly in this area; whilst other Forestry Departments may battle with the need to establish new socio-legal institutions to carry decentralised management strategies, in a very real sense, such an institution is already available in this East African state.

### **The Heart of the Matter: Empowerment not Participation**

Those who have worked with the Duru-Haitemba and Mgori initiatives share a conviction that *meaningful* community participation has little to do with the dilute forms of community involvement which have for so long permeated natural resource management, and that sustainable natural forest utilization cannot be achieved at this level. Establishing buffer zones around forests to deflect forest use, promoting alternative sources of income to discourage forest product

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<sup>7</sup> See footnote 6.

<sup>8</sup> Approved by the Cabinet of the Government, November 1994, revised by the Ministry of Lands, Housing and urban Development, June 1995, and to be presented to Parliament late 1996.

dependence, 'raising awareness' of villagers as to the biodiversity value of forests, establishing regulated Use Zones in which local people are 'permitted' to use one or other specified product in one or other specified way, to meet at least certain forest product 'needs', or the sharing of revenue earned by one arm or another of the state with local people - may be 'helpful' to forest conservation, and may secure, for a period at least, the passive *co-operation* of a forest-local community, and even their involvement in some practical management duties.

Ultimately however, such 'displacement', 'substitution', 'reward', or 'zoning' strategies are a circuitous and inadequate basis for sustainable success, for none of these strategies tackle the core issue, which is the separation and conflict between manager and user, state and community, and divergence in perception of rights. The more fundamental need is to remove forest management from the conflict in authority, to bring local communities into the management sphere in such a way that their vested interests as forest users is conjoined to the vested interests of responsible conservators. In short, the ideal situation is one in which the forest users are the forest managers, or, to put it another way, where the fundamental right of the traditional forest-local community - not so much to *use* the forest as to determine how it shall be used and conserved - is central to the management process. Only with this right, with this power-sharing, will derive the responsibility that is currently missing in a situation where local people use the forest at the whim of another authority, generally 'the state'.

Thus, the key, first and prime task is simply to address the issue of control and authority and to restructure these to provide the most fundamental of incentives for full and proper guardianship - the right to make decisions and to be responsible for the consequences. This of course requires a degree of 'letting go' on the part of Governments, long used to regarding forest-local communities as the enemy and the cause of degradation, and whilst willing to 'work with' the people, rarely willing to take the critical step of sharing or devolving power.

Where this case study has made unusual progress is that it has been able to show the advantages of doing precisely this, even to the extent of acknowledging the ownership of the forest in the hands of local user communities - and has been able to show the gains made by Government itself in securing a new relationship with the very people against whom it thought it had to protect the forest. In this way, the forest management moves out of conflict, and the way is free to move forward. As one villager observed when queried as to the intense seriousness of the village in its conservation effort:

*Of course we stopped the encroachment and charcoal burning when we were given the forest to look after for ourselves! Now it is ours, we only have ourselves to blame if the forest gets used up. That is why you find us serious.*

### **The Issue of Open Access**

An underlying fear of many officials is that a shift in the locus of control towards communities is synonymous with a shift into a situation of free-loader open access, with all the chaos and degradation these imply. It is ironical that it is, on the contrary, state forest management that today represents the very kind of open access dangers that many so rightly fear. As suggested above, a common operating principle today is arguably '*if it's Government's it is there to use and abuse*' and this includes even the most protected of national Forest Reserves.

Moreover, this case study shows quite clearly that a shift in the locus of control to a community is not a shift towards open access, but a shift towards a much more closed property regime, than the diffuse and vaguely-located responsibility of Government tenure, can possibly generate. In fact, in the case study, decentralization of management has not been far removed from a process of privatization, but in this case, towards *communal private property*, which, it has been explained, is an unusually well-developed construct in Tanzania.

### **Understanding the Basis of Stake-holding**

Much emphasis has been given above to the question of authority and control and a further comment on this offered. One of the salient shifts in forest management thinking over the last decade has been growing awareness of the value of forests to local people and the extent to which local socio-economies depend upon forest product utilization. From a situation in which there was under-attention to use values, the sector has, however, moved rapidly to a sometimes mis-placed assumption that forest-local communities are only interested in conserving a forest for as long as they are able to get products from it. It is therefore frequently concluded that firstly, only a community which has direct economic dependence upon a forest will have the incentive to be involved in management, and secondly, that unless their use needs can be met, the community will not have any incentive to be involved. Accordingly, most initiatives seeking to involve communities, do so solely on this basis and in the process proscribe the level of local responsibility attainable.

This case study suggests however, that stake-holding is potentially more nuanced than such economic determinism suggests. This was made clear when, as observed earlier, prior to attaining rights to control forest use themselves, the Duru-Haitemba villagers consistently claimed that they would not be able to survive without burning charcoal in the forest, felling timber for sale, etc - all forest uses which they promptly eschewed as 'damaging' when they themselves, rather than government, became the owner-managers.

What this experience suggests is that forest use values may undergo significant shifts as the political relations of the community to the forest changes. To some extent at least, forest utilization is 'a moveable feast'. A user community may fore-go use of a certain product if it conflicts with a superior stake-holding - such as attaining the right to control how the forest is used or even to own the resource. These rights are superior to attaining simple use rights, and as such a more effective basis of conservation management. They enable a community to take a longer-term view of the forest resource, removing the pressure to 'get what it can from the forest as fast possible'. Longer-term conservation and catchment functions of the forest can be considered. It is the conclusion of this area, that for these and related practicalities of management, recognition of forest-local communities as owners of the resource may well represent the optimal framework upon which to negotiate sound management. It is also concluded that over-attention to (current) local forest use is an imperfect basis for negotiating the cooperation of the forest local-community and may indeed unnecessarily proscribe it.

### **Applicability**

Duru-Haitemba and Mgori are both dry miombo woodlands with no special biodiversity or endemism. It has been opined by some observers that the extent of community involvement now existing there, could not, or should not be attempted in areas of high biodiversity value, or where population pressure is extremely high, such as in the case of Bwindi and Mgahinga Forests in south-western Uganda, Mount Meru and Kilimanjaro Forest Reserves in Tanzania, or Mount Kenya

and Kakamega Forests in Kenya. Others are concerned that community-based management should only be promoted in relation to public land forests, not 'valuable' Forest Reserves.

Such opinions miss the point of the principles that these initiatives embody; that successful forest management has less to do with the forest itself than to do with the locus of authority and the need to vest it in the entity which has most chance and incentive to be effective.

As community-based forest management in the Indian sub-continent amply illustrates, extreme pressure upon a forest resource by forest-local populations of a density that no African state may compare, may actually serve as the catalyst, and also the watchdog upon fair practice and active control of utilization. It is arguably the case that the greater the pressure, the greater the need for the community to devise workable and accountable regimes of management, and the greater the vigilance over these by individual members, ever-watchful of mal-distribution of limited rights.

In the case of those forests of high biodiversity value, such as is commonly the case with moist montane, island forests in sub-Saharan Africa, the same principle applies. If they are so valuable, then, in this author's view, it is even more important that they are conserved and managed wisely and in a sustainable manner. For as long as forest-adjacent communities are not directly involved in that process, their guardianship of the Forest - such as in the natural role they play as a buffer to illegal use by outsiders - is not provoked and harnessed. This is nowhere more apparent than in those Forests where governments currently deploy unusual numbers of Guards and invest unusually heavily - but are still rewarded with continuing abuse and degradation - and all the while, the forest-adjacent community stands passively by, knowing very well precisely who is illegally felling the forest, when and how, but lacking the incentive to do anything about it. Indeed, their deliberate exclusion and denial of rights in relation to the same forest may induce them to support such incursions, and contribute to the degradation themselves.

#### **No Process or Strategy is Entirely Failsafe**

A final cautionary word is offered; despite the progress and hopes, the process of facilitating community-based natural forest management is *clearly not inviolable*. It may be corrupted on the one hand, or diluted through ever-accelerating replication, on the other. In the cases provided, it has not been uncommon at some point or another, for one or two more powerful individuals to attempt to reconstruct control of the forest to their own ends. In the event, villagers themselves have so far shown themselves able to deal with these problems. The need for forest managing villages to construct systems to accountability at the most local and democratic level within the village is one of many early lessons of the initiatives described.

Danger also lies in the tendency of enthusiastic Foresters, anxious to move forward as quickly as possible, to slide away from facilitation back to the directive modes of their traditional relations with village. At one point a keen Forester in another District, who had visited Duru-Haitemba returned hurriedly to his own District and 'ordered' a village to take over full responsibility for a Forest that he had himself previously directly managed with his staff on behalf of Government.

Top-down approaches are integral to officialdom, and often to the 'keen' aid worker, but need to be avoided, for as these day-to-day management in both Duru-Haitemba and Mgori repeatedly suggest, the power of a decision is directly proportionate to the extent to which it derived from the community itself. The two initiatives represent this principle as a whole. This is not to say that the

aid worker or official need be passive; on the contrary, it is unproductive for such persons not to act as catalysts to change. Again, in the words of a villager:

*It never occurred to us that Government might give us back our forest. But when you suggested it, we couldn't get that idea out of our minds and since then we have not looked back.*

Those words embody the two faces of the approach; if the establishment of successful community involvement in forest management ultimately means empowerment, so also does it mean governments learning 'to let go.'

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**CARA**

**Coordinated  
Development**

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**REFORESTATION OF REFUGEE CAMPS  
--WEST NILE--  
LESSONS LEARNED FROM IMPLEMENTATION**

**REAFFORESTATION IN KOBOKO AND RHINO CAMP,  
WEST NILE, N. UGANDA**

**Lessons learned from Implementation**

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**REFORESTATION OF REFUGEE CAMPS--WEST NILE--  
LESSONS LEARNED FROM IMPLEMENTATION  
KOBOKO AND RHINO CAMP**

*At Rhino Camp refugee settlement and in Koboko County area, CARA has successfully run two forestry programmes.*

*In both programmes large centralized nurseries have operated successfully, though other NGOs favour numerous small scattered nurseries.*

**1) Project Objectives**

Though basically the same in both areas, have varied slightly in differing sets of circumstances. Original objectives are to:

- a) **Rhino Camp** - enrich present forest and reforest clear felled areas where appropriate among refugee settlement activities.
- b) **Koboko County** - reforest areas that were refugee transit camps (where virtually all trees were felled) and replant surrounding areas devastated by massive refugee presence, while enriching other forest areas where necessary.

**2) Main activities being undertaken**

**A)** In Rhino Camp where daily operational control of the whole area lies in the hands of UNHCR and its implementing partners, a large central nursery with two million seedlings was quickly established. From this nursery ox carts were used for short range dissemination of seedlings. Where as most of the nursery output was asset trees, ox drawn ploughs were used in direct seeding of fuelwood species.

**B)** In Koboko County circumstances were somewhat different. The area of operations was widely spread and not under authority of UNHCR or its implementing partners. At strategic places we established five large Cooperative Tree Nurseries.

**C)** To handle seedling dissemination we drew in a local NGO, local community leaders and groups, and the local farmers. In fact from the start of the Koboko Project we realised the need for the local farmer participation from the beginning.

**D)** We started operations with seminars for community leaders, farmers groups, church members, school groups etc. While foresters gave advice and instruction on the tree husbandry, we held talks on the extensive financial benefits that can be expected from agroforestry.

**E)** While environmental issues were not forgotten, much stress was laid upon the commercial benefits accruing from forestry activities. You cannot talk environment to a man at the subsistence level, a man struggling on a day to day basis to feed, clothe and educate growing numbers of children. However he is greatly interested in any activity which goes a long way to solving his problems, even paying for higher education when the time comes. So at this stage we

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need salesmen amongst our foresters. Already at Koboko we have found demand much in excess of our production capacity. With new finding production will match demand.

F) Supporting forestry activities are a Blacksmithing and Toolmaking Resource Centre where ploughs are maintained and can even be made if necessary. The carpentry and building component erects and maintains our buildings. A storemaking section trains more people and manufactures fuel efficient stoves.

G) These are all income generation activities which we encourage local NGOs to engage in to support the basic structure of their organisations.

H) It is our belief that only large nurseries will survive when present NGO support is withdrawn. With sale of large numbers of high value forestry trees, higher quality fruit trees, contract ploughing, trained oxen and hire of short distance ox/donkey carts, large nurseries will be viable and able to provide expert advice. There will also be the capacity of food plant multiplication programmes under guidance of local NGOs.

I) While we provide limited direct support in the early stages, we aim for seedling sales to support the nurseries before Project Hand-over Period.

### 3) Implementation Problems

A) While planting of high value tree seedlings is enthusiastically undertaken by farmers, we find few interested enough in the fuel wood propagation and direct seeding by plough remains the most reliable and cost effective. We need a regular on going programme and perhaps local authority could arrange for suitable areas to be seeded and tended by the Cooperative Tree Nursery direct seeding teams. A cheaper method than undertaking such a programme themselves.

B) Women's Organizations are already much involved in planting and growing *moringa oliefera* for its high calcium/iron content leaf vegetables. However they could play a greater part in forestry operations, e.g. seed collection and perhaps run small animal banks to provide family income and higher protein content in their diet. An activity fitting well into forestry activities because access to the bank depends on the member planting trees as an entry qualification.

C) We will face difficulties in maintaining efficient monitoring services, a particularly difficult task among widespread farmer/forestry workers.

### 4) Results to date

A) At Rhino Camp our early direct seedling programme was most successful, but unfortunately due to insufficient fire breaks and continuous husbandry, large numbers of seedlings were lost. Our direct seeding is now arranged, wherever possible, in conjunction with farmers own crop programmes.

B) Our outstanding success story is a farmer who has taken to agroforestry with great enthusiasm and understanding. He now has around 80,000 trees. Furthermore, he appreciates the forestry capitalization potential using current forestry areas to bank roll purchase of more land for tree planting.

C) Another successful effort has been strengthening of the local NGO, Koboko Rural Development Trust Fund. With a target of 5,000 members to be achieved before the end of our current project, they are already more than half way there. In addition the NGO already owns several substantial wood lots and plans long term asset plantations as well as shorter term fuel wood and pole lots. Present plantings total some 50 hectares with another hundred to come.

D) With local authorities wanting to participate directly in agroforestry programmes and increasing numbers of farmers mounting ever more quickly, agroforestry is firmly established in Koboko County.

**5) Lessons learned and worthy of stressing**

1. Our methodologies work well, more so than anticipated. The talks and discussions have generated interest more quickly than originally expected. As pointed out on these occasions, even small-scale farmers can plant a variety of high value trees to demarcate boundaries, even if they lack room for whole plantations or small stands of timber.

2. More and more local people are becoming aware of the benefits to come from forestry. Even NGOs realise the potential in forestry, with established forest areas providing bankable assets to support further development.

3. Two new periods of increased participation in agroforestry are expected.

- a) When the first sale from early planting comes in, and
- b) When improved and grafted fruit tree seedlings become widely available from the nurseries.

4. While the agroforestry field may not provide the concentrated commercial plantations offered by the Forestry Department, 10,000 farmers can make a notable increase in Koboko County's forest cover.

5. As much as anything, success is due to close communication with the people down to village level and is something local NGOs and achieve most effectively with support from International bodies.

6. During Project Implementation, CARA repeatedly ran up against the problem of over exploitation, both of the resource and the owners. Although owning quite valuable trees, the farmers often sold them for a goat (\$10.00) to pit sawyers. They in turn wastefully converted the timber to sell to traders (basically owners of transport) at such exploited prices that they themselves made little profit. The traders then dumped this badly sawn timber on the market to be bought by carpenters, who discarded large quantities as being full of drying checks and flaws.

7. Government Forest policy can give further stimulation by changes in control legislation affecting certain high value species e.g. Mvule (*milicia excelsa*), African Blackwood (*dalbergia malanoxylon*). The best way to ensure survival and increase in such species is to encourage growth and trade with built in protective legislation.

8. Even the large Government owned plantations suffer from poor exploitation and unsound ecological inputs.

9. In view of this CARA has decided that in an effort to improve both the product and marketing, CARA will form a Trust to begin exploiting the resource on an ecologically sound ethical basis.

10. Such a Trust will be self-supporting from profits and put back into the local community and forests as much as is possible. The presence of this type of organization will enable the people of Uganda not only to benefit to the maximum, but its presence and operation should act as an example for others.

6) **Conclusion**

Increased reforestation is best assured by stimulating but also protective legislation, while at the same time allowing expanding timber trade, provided the sellers are able to show more than equivalent plantings prior to any sale.

The way forward is best served by the fullest use of the self interest principal guided by protective and also stimulating legislation, improved ethical marketing activities and a fund to stimulate further development through well monitored private enterprise. It is also a more reliable way of ensuring collection of Government Revenue.



**LOCAL PARTICIPATION  
FOR THE CONSERVATION AND MANAGEMENT  
OF NATURAL FORESTS**

**UGANDA**

**COLLABORATION BETWEEN PUBLIC AGENCIES  
AND ADJACENT COMMUNITIES  
IN MANAGING AND CONSERVING NATURAL FORESTS**

*(A Case of Mt. Elgon National Park)*

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## LOCAL PARTICIPATION FOR THE CONSERVATION AND MANAGEMENT OF NATURAL FORESTS

### INTRODUCTION

Uganda's forests cover an approximate area of 3.5 million hectares of which 43% are under gazetted ownership and managed by government agencies mainly the Forest Department but most recently from early 1990s Uganda National Parks (*Now Uganda Wildlife Authority*) took over the management of some of the montane Tropical High Forests whose conservation status had been upgraded to protect rare habitats of fauna and flora and to promote non-consumptive uses through eco-tourism and mountain climbing.

All the Forest Reserves and National Parks occur as islands surrounded by rapidly increasing populations who have always depended on resources from these protected areas (PAs). Under the Forests Act use of non-timber products from forest reserves for domestic purposes by surrounding communities is recognised and is respected. What has to be understood is the fact that this clause in the Act notwithstanding, certain uses of the reserve are subject to a permit issued by the department for a fee or free of charge but regulated. Under the National Parks Act removal of any produce from the park is prohibited.

Both the Forest Department and Uganda Wildlife Authority have been drastically affected by the IMF imposed Structural Adjustment Programme to the extent that their manpower has been reduced a bare minimum. The two organisations cannot therefore manage the PAs under their jurisdiction purely through the policing mechanisms. The demands of populations surrounding these PAs for produce from these areas will have to be met by any means since to them it is a matter of necessity and not a luxury. The penalties which the Forests Act and the National Parks Act impose on offenses are not deterrent enough in today's circumstances. Even if they were, the staff to implement them are too thin on the ground to be of any effect. The two institutions have of late realised that the continued survival of their estates will to a large extent depend on the goodwill and co-operation of the local communities surrounding them.

Involving local communities in the management and conservation of the PAs has become an acceptable concept and is being applied at different levels of participation depending on the type of resource and how organised the local communities are. The meagre resources which the two organisations receive from the Government for the protection and management of these PAs are best used in improving public relations between managing authorities and the local communities and extension work to provide possible alternatives on farmers lands to reduce their dependence on the resources from PAs.

### MT. ELGON NATIONAL PARK

Mt. Elgon is a solitary extinct volcano of the Miocene era lying astride the border between Uganda and Kenya. The international boundary more or less divides the mountain in two roughly equal parts with the Uganda side occupying an area of 1.145 sq.km. while the Kenya side is approximately 900 sq.km. in area. The crater which is 8 km. across (**and rated as one of the largest in the world**) and the peak is on the Uganda side of the border.

Mt. Elgon was first gazetted as Crown Forest in 1938 and as a Central Forest Reserve in 1948 purposely as a protection forest for water catchment. From the time of gazettelement the local communities have never had any rights over the forest. However, provisions in the Forest Act as in the case of all other forest reserves, allows them the privilege of taking and using for domestic purposes "reasonable" quantities of non-timber or reserved forest produce. The privilege of living and grazing livestock in the reserve without individual licences was allowed to the Ndorobo (Berets) an ethnic forest dwelling community in the northeastern part of the moorland vegetation belt. At that time their number was small and it was not anticipated that they would pose any threat to this vegetation if their pre-occupation of keeping mainly sheep and a few cows remained the same. Unfortunately with time these people started engaging in agriculture—growing mainly Irish potatoes and vegetables around old homesteads. Their numbers and that of their livestock have increased with time. Despite previous forecasts they started becoming a threat to the continued survival of this fragile eco-system. A decision was therefore made by the Forest Department in 1983 to relocate them to lower slopes of the mountain and an area of 6000 hectares of the forest belt next to the forest boundary was excised off for their resettlement without consulting them first. Whatever good intentions this resettlement was supposed to achieve failed to materialize since to date some of these Berets still live within the boundaries of the National Park.

The communities living around Mt. Elgon National Park have for ages had close rapport with the forest as a source of food, medicine, fuel, etc. One problem which exists now is the high population density of over 500 persons per sq.km. declining soil fertility of the over fragmented land holdings, abject poverty just to mention a few. This was recognised by the Forest Department before the government turned the forest into a National Park. Around 1988, the World Conservation Union (IUCN) in collaboration with the then Ministry of Environment Protection (MEP) identified Mt. Elgon Forest, Kibale and Semliki Forests as of high conservation importance due to their unique biodiversity and hence the need to address the restoration of the ecosystem which had been heavily degraded by agricultural encroachments from around 1974 to 1988. Mt. Elgon alone had more than 20% of the natural forest completely destroyed. Due to the general breakdown of law and order which characterized those years, the forest department with its meagre resources was not in position to contain the situation. So IUCN and the Ministry of Environment Protection (MEP) through NORAD funding started the Mt. Elgon Conservation and Development Project.

This is an Integrated Conservation and Development Project (ICDP) whose main objective was to conserve the Mt. Elgon ecosystem for present and future generations through sustainable utilization while at the same time promoting sustainable activities in parishes immediately adjacent to the park. By the help of the project the forest boundary was re-opened and a ten meter strip of *Eucalyptus grandis* was planted as a live marker and as a future source of fuelwood and poles. Encroachment planting using indigenous species was also carried out in previously encroached areas. This followed the eviction of encroachers arising from a government policy pronouncement of 1989. The majority of the people living adjacent to the forest had encroached on it to varying scales. They were still hostile to the forest department and originally viewed the initiative to involve them in any forestry related activities with suspicion. The project initiated its activities in 15 pilot parishes out of the 58 surrounding the reserve. Willing individuals or groups were facilitated with nursery input and seed to raise seedlings for both boundary and encroachment planting. The project bought these seedlings from the farmers at a reasonable price for planting activities. Some of the local people were employed in some of



the project activities around and within the forest service. The initial skepticism gave rise to curiosity then interest in project activities because of financial gains.

The project later in 1990 expanded its activities to incorporate a large component of education awareness programmes using local drama groups which were helped by project personnel to develop plays and songs in local languages about the value of conserving the forest and staged road shows at a variety of venues. This did not only promote the image of the project as an arbitrator between local communities and the forest department but helped to change the attitude of the communities towards careful use of the resources of the forest and the need to have the forest conserved.

The other component of the project was known as the “**Sustainable Development Unit**”. This concentrated on promotion of income generating activities in the pilot parishes or farmers land holdings starting with soil conservation measures in these hilly areas by constructing contour bunds across the slopes and planting them with napier grass which was later used for stall feeding animals. Other activities were fish farming, bee-keeping, zero-grazing, promotion of fuel efficient cook stoves made from locally available materials, agro-forestry and improved crop husbandry. These activities became very popular with the local communities because a good number of them were able to earn better income from the fragmented land holdings than before the project intervention. By the time the forest was turned into a National Park, the forest department’s image among the local communities had improved a lot. It was easier to use the grassroots administrative structures to implement many activities outside the forest to create alternative sources of income.

When in 1993 the area was turned into a National Park (again without the consultation of the local people) the hitherto forgotten dislike of the managing authority was resurrected. This was mainly through misinformation of the reason for turning the area into a National Park. This was compounded by the restrictive nature of the National Parks Act which totally forbids removal of any resources from the park and the militaristic functioning of Parks Administration. Despite the assurances of the Director of Uganda National Parks that local communities will still be allowed access to collect bamboo shoots (which is a delicacy among some of the local communities) vegetables and other non-timber products Park Rangers went ahead to enforce the Parks Act to the letter. This began to erode the good work which the project had done among the local communities with Forest Department because it became apparent that the project and Mt. Elgon National Park (MENP) were giving contradicting messages.

However, it did not take long for the Park authorities to realize that there was need to change their style of management to one which is less confrontational. Although a bigger portion of project support of MENP has been channeled to law enforcement activities, initiatives were started to change the role of Park Rangers from being policemen to being extension workers. From the various studies which had been carried out by both local and international consultants and financed by the project it became evident that there was a high dependence of the local people on many resources from the Park. Mt. Elgon although designated a National Park is yet to become one of the popular tourist attractions in the country. Income from tourism to finance park operations is still a dream for the future.

The Park continues to rely heavily on project financing for most of its operations with Park Headquarters footing the bill for overhead costs and sundry expenses. With the expansion of its estate through the acquisition of six forested parks and in recognition of the changing policies of

managing PAs as advocated for in International Conventions a number of which Uganda has acceded to and even ratified. Uganda National Parks (UNP) had to "loosen-up" to accommodate provisions for non-destructive sustainable use of some of the resources (especially from the forested parks) by surrounding communities, benefits sharing schemes and involving communities in the management of Parks through the formation of Park Management Advisory Committees (PMAC's) comprising of representatives of local communities from each sub-county a particular Park. Some district officials and NGOs are ex-officials to PMAC's. The PMAC's are fora in which local communities views, wishes and aspirations can be openly discussed with park officials to reach a consensus. Excesses from either party are corrected through amicable negotiations.

Mt. Elgon Conservation and Development Project (MECDP) was quite instrumental in the formation of the Elgon Park PMAC. It provided funds for initial consultations between Park officials and local administrators during which views of local communities were aired and Park policy explained. Project Technical Advisers provided by IUCN played leading roles as facilitators of the consultations. Having worked longer with local communities than Park officials and being knowledgeable about the emphasis being put on local community participation in the management of PAs globally they provided a conducive platform to initiate a dialogue between the two parties aimed at active involvement of communities in the management of the Park. Recognition was taken of current initiatives in other parts of East Africa where different forms of community involvement or participation in the management of PAs have been tried.

Mt. Elgon National Park offers a unique environment for community involvement in its management. First and foremost is the fact that communities surrounding or still living in the Park have a long history of dependence on the resources of the Park and a recognition that the managing authority makes the final decision as to the most sustainable use of any of the resources. Save for the short spell of lawlessness in the whole country during the 70s and early 80s, this is the reason for continued existence of the Park this long despite the high population density around it. The formulation of new and flexible policies by authorities managing PAs offer good opportunities for collaborative management which allow piloting of new approaches to conservation. However, there is still a lot of uncertainty about the processes and methodologies of collaborative management. Given the past history of total authority by the managing agency with communities being passive actors whose opinions or views on any management decision were rarely sought, the present situation can only be looked at as an exploratory stage in collaborative management activities which will develop through a process of continuous internal evaluation and subsequent adjustment.

Collaborative management activities on Mt. Elgon have so far concentrated on exploring the opportunities for making local communities active managers of the forest belt of the Elgon ecosystem and promotion of sustainable development activities for substitutes of currently unsustainable forest uses. Involving local communities in the management of the national park is the umbrella activity to which the other activities should contribute in one way or another. The main threat to the Elgon ecosystem and the main source of conflict will continue to be the demand for land for cultivation. The major challenge for MENP is to convince the local communities that keeping the area a forest is essential and to a large extent it can compete with agriculture as a land use.

### **Experiences of Piloting Collaborative Management on Mt. Elgon**

As mentioned in the earlier section of this paper, the starting up of Mt. Elgon Conservation and Development Project was to help reverse the degradation which had taken place in the 70s and 80s. One of the activities which the project undertook was an assessment of forest use by local communities and their perception of the forest and the need for its conservation so as to get a better understanding of the people/forest relationship and of the conservation and development issues at stake. The assessment was to lay the basis for future negotiations between local communities and park authorities.

The assessment identified two categories of user community which was mostly confined to a distance of 2-3 km. from the park boundary which somehow coincided with administrative parish boundaries of parishes bordering the park. A distinction was also made of the “collector” community and the “Buyer” community. The “collector” community are the ones actually engaged in collecting resources from the park and are largely confined to a radius of one kilometer from the park boundary while the “buyer” community stretched further away from the park, up to 3 km. from the boundary. It includes individuals who use forest resources but are rarely involved in their collection. The user community is also very homogenous.

A large variety of over 20 different resources are collected from the park, the most important being bamboo shoots, bamboo stems, medicinal plants, polewood, firewood, crop stakes, vegetables, mushrooms, honey, etc. with households spending as much as 20% of their productive labor time collecting forest resources mainly for subsistence purposes. The collection of the non-timber products was found to be within sustainable limits at current harvesting levels. The area from which resources are collected stretches across the whole forest belt comprising some 60% of the total National Park area. The bulk of resources are collected in the periphery of the park except bamboo for which people go further up the mountain.

### **Principles for Collaborative Management**

The basis for piloting collaborative management on Mt. Elgon focused on the following key issues:

- ★ addressing the major threats of destruction to the Elgon ecosystem on the assumption that by addressing threats of agricultural encroachments, harvesting of mature trees, hunting and to a lesser extent grazing, the ecosystem as a whole will be conserved.
- ★ providing a long-term solution to the people park conflicts arising from harsh law enforcement on one side and destructive uses on the other.
- ★ providing unrestricted access to agreed forest resources for local communities in parishes bordering the park as these are the main users of such resources.
- ★ exchanging right of access to resources for responsibilities for conservation and management by the local communities as a long-term objective requiring the different partners involved to reach consensus after successful pilot phases.
- ★ changing the role of Park staff from law enforcement to one of facilitation and monitoring of activities in the forest zone and keeping the whole process simple and easy to implement.

For most forms of collaborative management to work out there is a need for compromise, to just on sharing of authority but to some extent on conservation objectives, especially biodiversity. Management must accept people as part of the ecosystem and that the ecosystem is bound to be modified through use.

**Identifying the relevant institution within the parish.**

After permission had been granted by the Director of UNP to pilot collaborative management in two parishes, the first move was to identify a relevant representative institution within the parish community to be the link between resource collective and Park Authorities. Under the decentralization in Uganda there are five tiers of the administrative hierarchy known as Local Councils (LCs). These are:

- LC 1 (Village level) with an average of 60 households.
- LC 2 (Parish level) with an average of 1000 households
- LC 3 (Sub-County level) consisting of up to 5 parishes.
- LC 4 (County level)
- LC 5 (District level)

For purposes of starting the process of collaborative management in the two pilot parishes the emphasis was to involve village councils in the discussions with an aim of forming a committee at parish level comprising of representatives of primary resource collectors including councilors in their individual capacities.

**Awareness raising and start-up activities.**

Two parishes out of the six in which resource use assessment had been carried out were chosen. Since the process was new to everybody with neither the Park officials nor the communities being sure of what the outcome would be, the project led the process by playing the role of an intermediary involving both parties with some of the government extension staff attached to the project facilitating most of the meetings and discussions in which Park Wardens and community representatives took part. The first meeting was at parish level aimed at introducing the concept to administrative, political and opinion leaders. The next meetings were held in each village so as to involve the actual resources collectors in the discussions. These were held separately for men and women. Attendance was very high due to the curiosity the concept arose in the local communities with of course, some individuals having high expectations.

Through the discussions it became quite clear that the communities felt they needed to elect a committee to represent them in subsequent discussions and negotiations with Park authorities. It was agreed that each village in the parish was to elect its representatives catering for the main resource use interests with some gender balance. Specialist interest groups like herbalists, bee-keepers and pitsawers were requested to elect one or two representatives. The process of awareness-raising and the election of the committees took a few months.

**Criteria for the choice of parishes.**

The two parishes chosen were Ulukusi Parish in southern Mbale and Mutushet in eastern Kapchorwa (see attached map).

Ulukusi Parish was chosen because of the people of the Sub-county in which it is located had a long history of conflict with the Forest Department over agricultural encroachments and illegal pitsawing. The people of this area were found to have a strongly rooted historical and cultural attachment to the forest. Between the 1930s and the 1970s most families in this area were licensed by the Forest Department to cultivate and graze in part of the reserve adjoining their land holdings. The area is very inaccessible and difficult to patrol. It was felt that if collaborative management succeeded in this area then it could succeed anywhere.

Mutushet Parish was chosen because it was the only parish around the whole Park where people had resisted encroachment on the forest and where the forest is still intact right from the park boundary. The pressure for resources from the park was not seen to be very high. There was a history of grazing cattle deep inside the forest on open grasslands. It was felt that people of this parish needed to be rewarded for their protection efforts. This parish was also going to contrast sharply with Ulukusi.

#### **Negotiations with the elected Committees.**

The actual discussions and negotiations took place over a period of five months. It had to be a slow process to allow both parties to fully understand the new concept. Right from the beginning, both parties agreed that the main objective of collaborative management was to allow the encroached forest to regenerate and to ensure the protection of the forest which was still intact. Activities such as cultivation, pitsawing and hunting were not negotiable and would be totally banned.

Different categories of uses which were identified right from the beginning of the negotiations were:

- 1) uses on which there should be a total ban.
- 2) uses of special nature and which should be a preserve of specialized users.
- 3) uses which were seasonal in nature and should be open to the whole parish community during the season.
- 4) uses which should be open to the whole parish community in restricted amounts.
- 5) uses which should have no restrictions and should be free for the whole parish community throughout the year.

The interesting feature of the negotiations is that the committees accorded much importance of uses which were of value to the whole community even if they seemed minor in outlook. Activities which had a high economic value and were important to only few community members were negotiable and depending on their destructiveness to the ecosystem were either allowed or banned.

After the many negotiations which took place there followed prolonged discussions to chart out roles and responsibilities of both parties. Park authorities had agreed to work through the committees. The committees were to monitor and control the resource use by parish communities in accordance with agreed use categories. They had also to carry out awareness raising activities, persuasion but at no cost were they to be involved in apprehending offenders. They had to continue being accountable to the communities they represent.

### **The agreement signing phase**

After all discussions and consultations had been concluded the first draft agreements were drawn up and forwarded to UNP headquarters for comments. It took quite sometime to get a response from headquarters because having not been involved in the discussions and negotiations and still having the hangover of the traditional park management procedures, certain aspects of the agreements did not at first go down well in some officers guts. Being pilot activities, the project and MENP felt that there was need to go ahead and implement the agreements while the good will from the local authorities and communities was still high. Focus was on activities which were banned apart from the smoking of bamboo shoots, within the park whose banning was bound to open conflict which the park authorities were not in position to contain considering that even people beyond the pilot parishes were engaged in this activity and which was of the highest cultural value to the Bagisu.

Signing the agreements was no easy matter because many of the committee members who were instrumental in their drafting chickened out at the last minute for fear of giving away their rights to the forest to the government. The whole essence of agreements was a new phenomenon to the local people and it took the facilitator a lot of patience and persuasion to have the agreements eventually signed.

### **After signing agreements what next?**

First and foremost the implications of the signed agreements had to be explained to the whole parish community who did not actively participate in the negotiations. Due to the fear of distorting the facts by the elected committee members, the facilitators of the negotiations had again to take the lead. The identification of weak spots in the process and means of addressing them was the next step. It has been suggested that a research unit be set up to permanently monitor people's activities in the forest and user trends over time as an independent activity divorced from the implementation of the collaborative agreement.

The roles and responsibilities of the park staff and management committees in monitoring forest use must be clearly spelled out so that each party knows what it is supposed to monitor and control.

Weak links exist between the forest management committees and the local councils. This complicates the former's power to resolving conflicts. The Local Council II at Parish level who were involved in the whole process right from the beginning have been found to be ineffective as they are not always in contact with user communities at village level. It has therefore been decided to fully concentrate on the Local Councils I which will have a direct representation at Local Council III the lowest supreme administrative link of Local Government. They are also close to the people, the primary resource collectors.

A review of the progress made so far by the park staff, management committee, some members form PMAC from both parishes showed that collaborative management had generated positive support for the park and most of the banned and illegal activities in both parishes were under control. However, park officials were still concerned about sustainable levels of off-take from park resources. The committees were concerned that the issues of bamboo smoking (Ulukusi Parish) and polewood collection (Mutushet Parish) were not resolved. If these issues are not

resolved soon they will continue to recur and may pose a threat to the implementation of the agreements.

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**LOCAL PARTICIPATION AND  
BENEFIT-SHARING IN WILDLIFE  
MANAGEMENT:  
THE CAMPIRE EXPERIENCE**

**ZIMBABWE**

**LOCAL PARTICIPATION AND BENEFIT SHARING IN WILDLIFE  
MANAGEMENT: THE ZIMBABWE CAMPFIRE PROGRAMME**

*Presented by*

*T N MAVENEKE  
DIRECTOR  
CAMPFIRE ASSOCIATION OF ZIMBABWE*



**LOCAL PARTICIPATION AND  
BENEFIT-SHARING IN WILDLIFE MANAGEMENT:  
THE CAMPIRE EXPERIENCE  
ZIMBABWE**

One of the Forestry Policy Forum's main objective is sharing experiences in sustainable management of forestry resources through local initiatives. My paper will focus mainly on wildlife resources utilisation in Zimbabwe and hopefully my analysis will have greater bearing on forestry resources as well since wildlife survival depends largely on forestry habitat. I will briefly analyze the centralised management of wildlife resources before and after Zimbabwean independence and then explore the process and rationale for the Communal Areas Management Programme for Indigenous resources (CAMPFIRE), its main activities throughout Zimbabwe, the implementation, constraints and the main achievements of the initiatives. Hopefully at the end of my paper, we might be able to draw useful lessons that could be applied in other spheres of natural resources management.

During colonialism, the management of wildlife resources was removed from the local community and invested in central government. Professor Murphree (1995) said "British colonialists brought with them concepts evolved over a thousand years earlier in a different context: the concept of the King's game, the idea that wildlife did not belong to people or communities, but to the crown or state". This alienation of natural resources from the landowner meant that the landowner lost appreciation of the wildlife resource; a situation that led to over exploitation of the resource and opening up of new land for crops and other non-viable land use options.

Linked to the above, the state machinery that managed wildlife, the Department of National Parks and Wildlife Management adopted a law and order approach whose main focus was the deployment of Parks employees to arrest any locals who harvested game. This approach created conflict between the state officials and local people. The officials forfeited the vital support of local people in a situation where both financial and manpower resources within government were limited.

Russell Taylor (1995) aptly described the approach of the Department of National Parks and Wildlife Management in Nyaminyami district when he said "Furthermore wildlife Department personnel saw their role principally as one of animal protection and therefore minimised efforts to deal with local villagers' problems".

In the early 1970s the Department of National Parks and Wildlife Management attempted to solve the legitimacy crisis of the department through the Wildlife Industry For All (WINDFALL) whose main emphasis was to return incomes from problem animals to district councils who will have designed development projects approved by the Department of National Parks and Wildlife Management. The approach was paternalistic as it did not answer the vital question of local accountability and local ownership of natural resources including wildlife. The WINDFALL experiment failed because the locals never related incomes from problem animals with any local natural resources. The money was viewed as just one of government's Public Sector Investment Programme.

The resultant developmental problems led government to promulgate the 1975 amendment of Parks and Wildlife Act to allow large commercial farmers to utilise game on their farms.

The farmers could now invite tourists and hunters and realise income from wildlife. The commercial farmers started to positively appreciate wildlife through this decentralised management of wildlife. The 1975 legislative reforms created positive incentives for these farmers and many of them began to invest in game farming which has now become a big economic venture. It must be noted that while the amendment of the 1975 Parks and Wildlife Act made significant strides within the large commercial farming sector, nothing was done to cover the communal areas which constitute 42% of the country. In 1982 and 1990 the Parks and Wildlife Act was further amended to allow Rural District Councils to embark on the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) (see fig 1). Key principles of CAMPFIRE according to Rowan Martin (1996) were summarised as follows:

- (a) For rural communities to appreciate wildlife, benefits and appropriate incentives had to be established.
- (b) Exploitation of natural resources must involve local communities through effective participatory mechanisms.
- (c) Appropriate democratic institutions must be put in place through which locals participate.
- (d) Capacity building through appropriate demand driven training should be pursued to enhance local empowerment.
- (e) A decentralised approach to management had to be pursued and this required a friendly policy environment.

CAMPFIRE's principle of sustainable utilisation of wildlife depends on quota setting where local communities participate. Quotas on various species are set by local people with technical inputs from the Department of National Parks and Wildlife Management and World Wide Fund for nature (WWF). The communities utilise their knowledge on movement of wildlife, their habitat in order to determine numbers. Technical officers assist rural communities with information on wildlife breeding rates, male/female ratios and quality of trophies. The breakdown of Hurungwe Rural District Council Quota for 1995 (Fig. 2) illustrates the range of species that are hunted. Elephants fetch up to US\$8 000 (Z\$80 000) in trophy hunting, while civet cats can fetch up to US\$40,00 (Z\$320,00).

In terms of marketing, CAMPFIRE Rural District Councils have improved their marketing skills. At the start of CAMPFIRE in 1989 districts such as Guruve and Nyaminyami earned ten times less than they currently earn.

There has been no radical change in quotas, but the locals have been able to improve their marketing and hence increasing earnings from trophy hunting. Chiredzi Rural District Council for example earned Z\$100 000 in 1990, but due to improved skills in marketing, the same quota earned Z\$1 200 000. The district took advantage of the tendering system to push up prices for its quotas (see fig 3).

By increasing revenues without drastically increasing quotas, the local communities are improving their economic returns while ensuring conservation of various species. This is the very basis of sustainable development.

The CAMPFIRE Programme emphasises the formation and development of democratic institutions from the household level to the village, the ward and district levels. In the Zimbabwean context a village has up to one hundred households while a ward formed of six villages has about six hundred

households. A district will have any number of wards and population varies. Local people elect their CAMPFIRE or Natural resources committees at the various levels. These committees are a fusion of civic and traditional structures which makes them very inclusive. The committees represent the interests of the local community and to ensure that they perform their tasks efficiently, they are given training in leadership skills, bookkeeping and project management. The facilitators are from both government and non-governmental organisations.

These include Department of National Parks and Wildlife Management, Ministry of Local Government, Rural and Urban Development, Zimbabwe Trust, Centre for Applied Social Sciences (CASS), World Wide Fund for nature (WWF) and CAMPFIRE Association.

The importance of democratic institutions is that decision making becomes legitimate and locals are free to change their leadership.

Since the inception of the CAMPFIRE Programme, the Rural District Councils which have increased from two in 1989 to twenty six in 1996, there have been various investments from CAMPFIRE funds. Fig. 4 to fig. 10 which cover Nyaminyami, Hurungwe, Chiredzi and Gokwe South indicate that benefits to communities fall into the following categories:

**(a) Local Manpower Development**

In all the districts there is a process of training local manpower as game guards, scouts, problem animal reporters and bookkeepers. This is to ensure that the locals will look after their own resources. Skills also ensures sustainability when donor support is withdrawn. There has also been strengthening of women's clubs and youths' projects.

**(b) Infrastructural Development**

All CAMPFIRE districts have embarked on construction of schools, clinics, water points and roads. These projects are selected by the rural communities themselves on a demand driven basis. The projects have other spin-off benefits in the form of local employment.

This paper can only summarise the investments from CAMPFIRE funds, but the important point to make is that the investment projects represent choices that the local people make in order to improve their living standards. The chosen projects also represent a firm commitment by locals that can take their destiny in their own hands.

The areas where these projects are located are remote and central government extension services would not adequately cover these areas. In terms of capacity building, the training that communities receive reinforces local empowerment which is crucial to sustainable communities. It is training they demand and which is relevant to their daily routing work.

**(c) Co-Management**

This allows for benefit sharing between the Rural District Councils and local communities. Rural District Councils levy 15% of the CAMPFIRE revenues and up to 10% as Resource Management for capital costs and other recurrent expenditures. The rest of 75% - 80% of incomes reverts to locals. This allows for mutual reinforcements and improves the power relationship between Rural District Councils and their lower level constituents - the local people.

In implementing the CAMPFIRE Programme there are developmental problems that are encountered. There is need for a comprehensive environmental policy reform that would allow for a holistic approach to decentralisation in the management of all natural resources. While great strides have been achieved within the wildlife sector, more needs to be done in the forestry, fisheries and minerals. There is, however, a process of environmental law reform which one hopes will integrate environmental laws in the country.

The CAMPFIRE Programme extension service is being undertaken by government and non-governmental organisations as facilitators on behalf of communities. With the increase in the number of CAMPFIRE districts from two in 1989 to the present twenty six, there is need to train more trainers within the community. This demands more financial and manpower resources. There has been injection of capital from USAID, Netherlands Embassy, Overseas Development Administration (ODA), GTZ, NORAD, WISDOM and the government of Zimbabwe to strengthen rural communities. This will be an ongoing exercise, but the strain of extension is being felt.

In thirteen CAMPFIRE districts, there is the constant issue of Problem Animal Control. Elephants, buffaloes, hyenas, lions, leopards and crocodiles destroy people's crops, predate on their livestock and in extreme cases kill human beings. In Hurungwe five people were trampled by elephants in 1995 while in Guruve Dande area seven people were killed. In Gokwe North villagers reported loss of forty livestock while in Chiredzi lions from Gonarezhou Park killed twenty reported livestock. In terms of crop damage some villagers have lost entire potential yields. It is important that Problem Animal Control strategy be formulated and at present some areas such as Gokwe, Binga, Tsholotsho and Guruve have put up fences which are being maintained by local people. More research is being carried out in this regard.

One of the greatest problems we face in implementing CAMPFIRE is the ban on ivory trade. Trophy hunting contributes 90% of revenue from CAMPFIRE and elephants products account for 64%. Continued Convention on International Trade in Endangered Species (CITES) ban on ivory trade would undermine community initiatives and a way must be found to allow legitimate trade in elephant products.

A continuing problem is the growing human population that will continue to encroach on wildlife areas. This has been the case in Guruve and Nyaminyami and the Rural District Councils with the support of the local communities are working out strategies to properly settle land hungry locals.

There is need to embark upon a comprehensive land tenure arrangement as recommended in the 1994 Report of the Commission of Inquiry into Appropriate Agricultural Land Tenure Systems. Despite the developmental problems discussed earlier, CAMPFIRE has achieved phenomenal results in terms of capacity building and environmental management. Public environmental awareness among local people has improved as evidenced by the Masoka people of Guruve referring to wildlife as "our cattle". This positive association is a result of the net benefits that local people are deriving from CAMPFIRE. The major lesson we have learnt is that for sustainable environmental management in developing countries to succeed, there is need for both tangible and non tangible incentives.

The issue of power to make binding decisions is at the heart of rural development. For better management, there is need to keep the benefiting and management units small. This facilitates easier communication and more returns to communities.

In terms of poaching there has been a reduction in illegal hunting. This is attributed to increased public awareness as well as the flow of benefits. The whole essence of ownership/custodianship assists in anti-poaching activities.

Earlier on in this paper, I referred to a number of development projects which communities embarked upon utilising CAMPFIRE funds. In some cases, communities have received cash dividends as illustrated in the Chiredzi and Nyaminyami cases. This has helped communities to meet households needs and to plan appropriately for intervention strategies in say times of drought. Some other key lessons learned from CAMPFIRE are that traditional knowledge systems such as belief in totems, respect for traditional holidays and respect for uses of certain plants are key to conservation in rural areas. Traditional values give legitimacy to local environmental management through bestowing protection on species such as lions, pythons and pangolins.

We have also learnt that community initiatives are adaptive and those facilitators involved must exercise patience and be prepared to unlearn their own prejudice. When we talk of sustainability we must also ensure we talk of community institutions. Without viable local institutions, it is difficult to sustain projects.

In conclusion CAMPFIRE as an initiative is one that accepts that the centralist method of environmental management does not work. The centralist approach is doomed in the face of people struggling to survive. CAMPFIRE practice is wildlife is a bold move, but there is need to broaden it to cover other natural resources and such initiatives are beginning to take off.

CAMPFIRE DISTRICTS

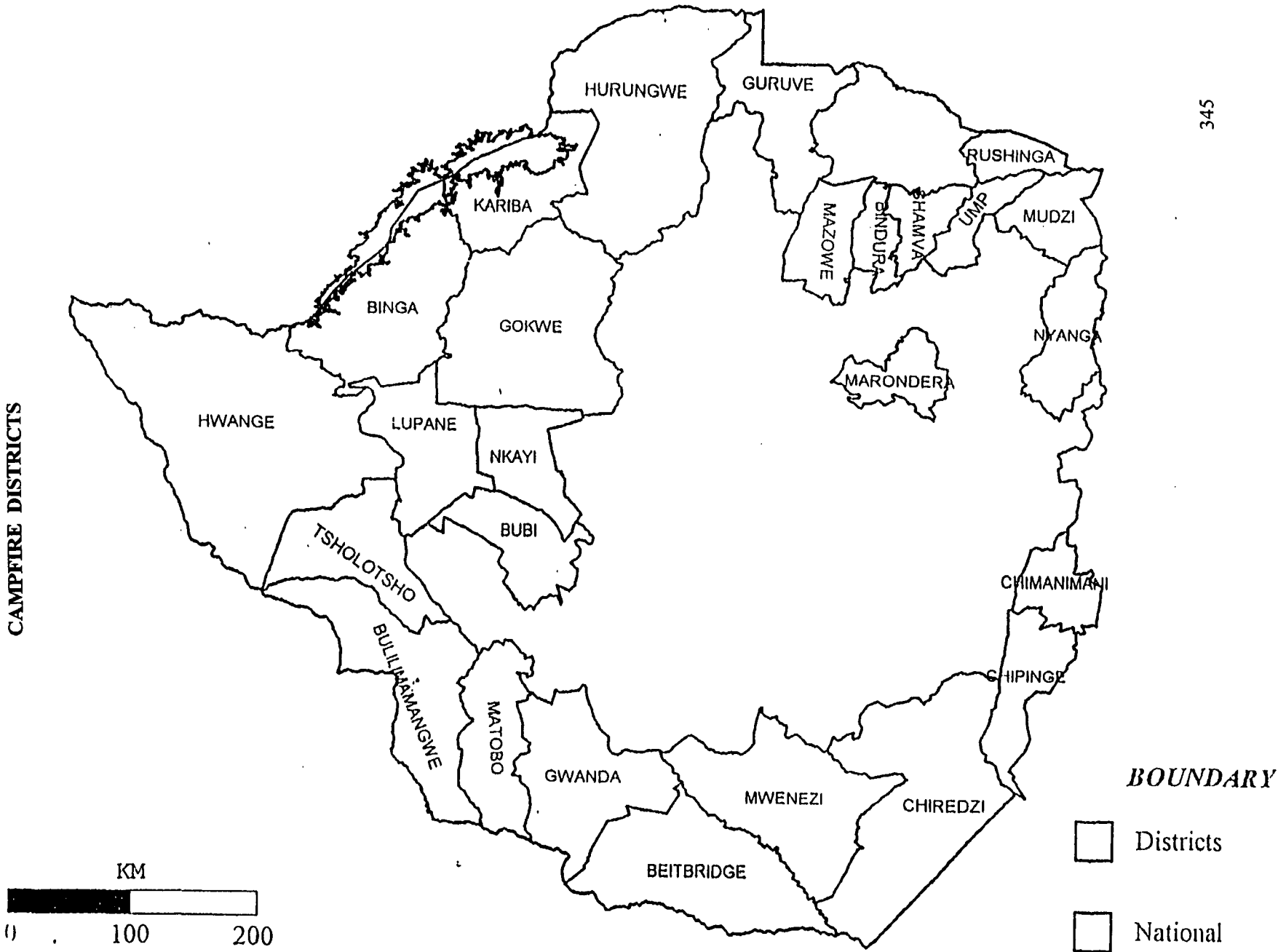


Figure 1.

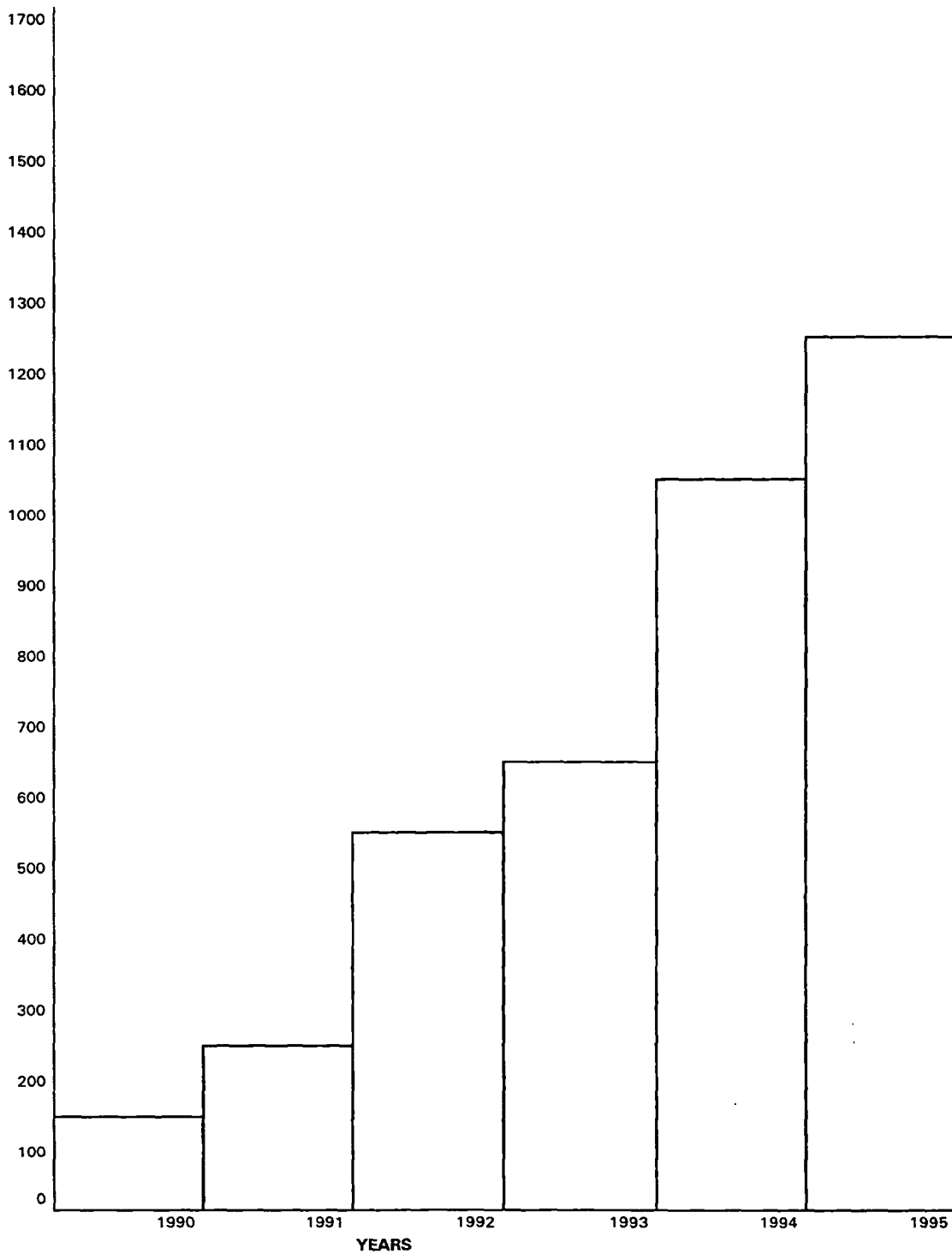
**HURUNGWE RURAL DISTRICT COUNCIL****SUMMARY OF QUOTA AND HUNTING OPERATIONS FOR 1995**

<u>ANIMAL</u>	<u>QUOTA</u>	<u>NUMBER SHOT</u>	<u>BALANCE</u>
Elephant (Male)	13	11	2
Buffalo (Male)	39	38	1
Buffalo (Female)	15	15	0
Lion (Male)	2	2	0
Leopard	19	10	9
Sable	13	12	1
Bushbuck	21	14	7
Bushpig	28	4	24
Baboon	56	9	47
Duiker	13	2	11
Eland (Male)	6	4	2
Grysbok	12	1	11
Hippo	7	1	6
Hyaena	6	3	3
Klipspringer	11	6	5
Kudu (Male)	6	5	1
Waterbuck (Male)	7	3	4
Warthog	20	5	15
Zebra	9	4	5
Crocodile	7	5	2
Crocodile (PAC)	0	1	0
Civet	5	1	4

**Source:** Hurungwe Rural District Council 1995 Wildlife Report.

CHIREDZI RURAL DISTRICT COUNCIL  
COMPARISON OF MARKETING EFFICIENCY  
1990 - 1995

Fig.3 Annex 111



SOURCE: 1995 Chiredzi Rural District Council CAMPFIRE Report.



NYAMINYAMI RURAL DISTRICT COUNCIL

Fig. 4

Annex IV

SUMMARY FOR CAMPFIRE PROJECTS AND IMPACT ON PRODUCER COMMUNITIES 1989-95

WARD	INCOME	PROJECTS/ACTIVITIES	CASH DISTRIBUTED	PROJECT/ACTIVITY IMPACT TO PRODUCER COMMUNITIES
Ward 1	\$ 41 583.00	- Classroom Blocks x 2 - Blair Toilet x 1	Nil	The school is now serving a kapenta fishing industrial community which before the inception of CAMPFIRE had no school to cater for children of fishermen.
Gache-gache	\$ 24 739.04	- P/School Blocks x 2 - Sales Depot x 1 - Mola electric game fence - Funding of water system	Nil	<p>- The community managed to replace the classroom block which was about to collapse with a new block. In addition they managed to construct another classroom block. Fishermen are now making use of school which now boosts three classroom blocks.</p> <p>- The sola electric game fence to which the community spent their CAMPFIRE revenue on labour force has brought a relief to fishermen who used to have some conflicts with wildlife. They are now also able to grow some vegetable on their residential stands to supplement their diet.</p> <p>- Through income raised from the sales depot the ward is able to meet the running costs of the engine which supply water to the community, school and clinic.</p>
Mola Ward 4	\$921 193.37	- Maintenance of P/Schools x 2 - Grinding Mills x 3 - Water reticulation repairs - Employment of village Game scouts and B/keeper	\$225 978.09	<p>- As the responsibility of maintaining schools rest with the community after construction, incomes from CAMPFIRE was used to maintain the two primary schools in the ward.</p> <p>- The area had no grinding mill before. The service being provided by the grinding mills is considered as a great relief.</p> <p>- A piped water scheme which was implemented by DDF had its pipes repaired through CAMPFIRE funds and to date the community and the schools are benefiting from the scheme.</p> <p>- The ward employed six game guard and a bookkeeper all being paid from CAMPFIRE revenue.</p>
Ward 5	\$107 624.70	Sola Electric Fence	\$ 83 172.75	- Conflict between the community and wildlife was reduced after the two wards, with assistance of a donor pulled the CAMPFIRE funds together and paid labour during the installation of the game fence. People are now carrying out their agricultural activities without much disturbance from wildlife.
Ward 6	\$129 899.70	"	\$ 40 000.00	

WARD	INCOME	PROJECTS/ACTIVITIES	CASH DISTRIBUTED	PROJECT/ACTIVITY IMPACT TO PRODUCER COMMUNITIES
Nebiri (Ward 7)	\$286 762.15	<ul style="list-style-type: none"> <li>- Warehouse</li> <li>- Grinding Mill</li> <li>- Ward CAMPFIRE Office</li> <li>- Pre-school centre</li> <li>- Water reticulation repairs</li> <li>- Primary school classroom block x 1</li> <li>- Primary school steel doors</li> </ul>	\$109 418.40	<ul style="list-style-type: none"> <li>- The ward has benefited much from CAMPFIRE as reflected by the number of projects implemented. Its primary school now has 3 classroom block, a pre-school centre with a blair toilet was constructed to cater for children. Also a CAMPFIRE office which included a small board room for committee meetings was constructed.</li> <li>- The ward also bought a grinding through the CAMPFIRE revenue which is providing a great service to the community.</li> <li>- The warehouse is also a potential facility to the ward as it provides storage to a number of materials and agricultural inputs meant to benefit the community.</li> </ul>
Sampakaruma (Ward 8)	\$250 831.71	<ul style="list-style-type: none"> <li>- Primary School furniture</li> <li>- Secondary School construction</li> <li>- Grinding mill</li> </ul>	\$ 27 719.40	<ul style="list-style-type: none"> <li>- The ward purchased primary school furniture, replacing the old one. Also paid money towards hiring transport to ferry local material for the construction of the secondary school. The ward also bought a grinding mill from CAMPFIRE income.</li> </ul>
Kanyati (Ward 11)	\$175 160.00	<ul style="list-style-type: none"> <li>- Primary School teachers' houses &amp; Blair toilet</li> <li>- Secondary School</li> <li>- Grinding mill</li> </ul>	\$ 30 000.00	<ul style="list-style-type: none"> <li>- CAMPFIRE funds have contributed much towards school projects. One teachers' house and a blair toilet were constructed at the primary school. A teachers' house was constructed at the Secondary School.</li> </ul>
Kanyati (Ward 10)	\$175 160.00	<ul style="list-style-type: none"> <li>- Primary Schools</li> </ul>		<ul style="list-style-type: none"> <li>- Most of the CAMPFIRE funds were spent on school projects covering two primary schools.</li> </ul>

NOTE: Amount indicated under cash distribution column was received from Problem Animal Control income with the exception of other wards which once distributed cash from dividends. Most dividends were channelled towards projects indicated under projects column.

## HURUNGWE RURAL DISTRICT COUNCIL

## SUMMARY OF COMMUNITY DISBURSEMENT FUNDS

TOTAL INCOME		\$ 650 684.00
<u>LESS: CAPITAL EXPENDITURE:</u>		
2 x Ford Tractors	\$ 399 680.00	
Equipments (2 x Dam Scoopers & 1 x Reversible Plough)	\$ 109 800.00	
Salaries (\$ 729 x 2 Drivers x 2 mths)	\$ 2 916.00	
Fuels, Oils & Maintenance	<u>\$ 8 152.00</u>	
		<u>\$ 520 548.00</u>
Balance (To be shared by wards)		<u>\$ 130 136.00</u>

NB: The total Capital Expenditure of \$520 548.00 is 80% of the Total Income.

Therefore, the balance of \$130 136.00 is 20% of the Total Income and hence to be shared to wards as follows:

<u>WARD</u>	<u>AMOUNT (Z\$)</u>
7	43 407.00
8(i)	40 205.00
8(ii)	7 790.00
9(v17)	14 169.00
9(v18)	4 681.00
13	500.00
15	10 351.00
16	<u>9 033.00</u>
	<u>130 136.00</u>

## CHIREZI RURAL DISTRICT COUNCIL

Fig.7.

Annex VII

## APPROPRIATION OF CAMPFIRE REVENUE TO VARIOUS USES/PROJECTS

## SUMMARY

Date of distribution 1996	Communal Land	Ward	Village	No. of Hseholds	Amount accrued in Z\$	Management	Engine Maintenance	Grinding Mill Contribution	Contribution to Chiefs	Contribution to Schools	Purchasing Cement	Amount shared by the community
2.4.96	Matibi 2	Chibwedziva	Chehondo	126	240 094,69	1 260,00	2 520,00	99 999,90				136 314,79
1.4.96	Matibi 2	Chibwedziva	Chipinda	108	84 415,03	1 080,00		49 999,68	216,00			33 119,35
3.4.96	Matibi 2	Twananani	Chingele	261	38 462,97	1 305,00		5 220,00	130,50	522,00		31 285,47
4.4.96	Matibi 2	Twananani	Machindu	285	38 462,97			5 700,00				32 762,97
4.4.96	Matibi 2	Batanai	Gondweni	108	38 462,97	540,00		5 400,00	54,00			32 468,97
4.4.96	Matibi 2	Batanai	Zamani	91	28 817,88	455,00			91,00			28 271,88
4.4.96	Matibi 2	Batanai	Zamani	212	9 645,09			4 240,00				5 405,09
15.4.96	Sengwe	Xibavalengwe	Malifumuni	324	141 843,02	1 620,00	6 480,00	16 200,00				117 543,02
16.4.96	Sengwe	Xibabalengwe	Phahlela	331	101 254,78			13 240,00				88 014,78
24.4.96	Sangwe	Mupinga	Sibizapasi		10 118,39				100,00		10 018,39	
29.4.96	Sengwe	Sengwe	Kotswi	185	45 433,28					22 716,15		22 717,13
29.4.96	Sengwe	Sengwe	Muphandle	148	25 863,63					4 440,00		21 423,63
29.4.96	Sengwe	Sengwe	Sengwe	204	39 875,99					19 877,76		19 998,23
24.4.96	Sangwe	Chitsa	Machinzu		7 764,40	7 764,40						
24.4.96	Sangwe	Chitsa	Chitsanzeni		7 845,08	7 845,08						
	Sengwe	Xini	Malipati	249	101,254,78					12 450,00		88 804,78
					959 614,95	21 869,48	9 000,00	199 999,58	591,50	60 005,91	10 018,39	658 130,09

CHIREZI RURAL DISTRICT COUNCIL

Fig.8

Annex VIII

APPROPRIATE OF REVENUE TO VARIOUS USES/PROJECTS

Date of distribution 1996	Communal Land	Ward	Village	No. of House holds	Amount accrued in Z\$	PROJECT							
						Amount each Hsehold gets	Management	Engine Maite-nance	Grinding Mill contribution	Contribution to chiefs	Contribution to schools	Purchasing Cement	Amount Pockete
2.4.96	Matibi 2	Chibwedzi va	Chehondo	126	240 094,69	1 905,51	10,00	20,00	793,65		2		1 081,86
1.4.96	Matibi 2	Chibwedzi va	Chipinda	108	84 415,03	781,62	10,00		462,96	2			306,66
3.4.96	Matibi 2	Twananani	Chingele	261	38 462,97	147,36	5,00		20	0,5			119,86
4.4.96	Matibi 2	Twananani	Machindu	285	38 462,97	132,95			20				114,95
4.4.96	Matibi 2	Batanai	Gondweni	108	38 462,97	356,13	5,00		50	0,5			300,63
4.4.96	Matibi 2	Batanai	Zamani	91	28 817,88	316,68	5,00						310,68
4.4.96	Matibi 2	Batanai	Zamani	212	9 645,09	45,49			20	1			25,49
15.4.96	Sengwe	Xibhavalen gwe	Malifumuni	324	141 843,02	437,78	5,00	20,00	50				362,78
16.4.96	Sengwe	Xibhavalen gwe	Pahlela	331	101 254,78	305,90			40				265,90
24.4.96	Sangwe	Mupinga	Sibizapasi		10 118,39					100		10 018,39	
29.4.96	Sengwe	Sengwe	Kotswi	185	45 433,28	245,58					122,79		122,79
29.4.96	Sengwe	Sengwe	Mupandle	148	25 863,63	174,75					30		144,75
29.4.96	Sengwe	Sengwe	Sengwe	204	39 875,99	195,47					97,44		98,03
24.4.96	Sangwe	Chitsa	Chitsanzeni		7 845,08		7 845,08						
24.4.96	Sangwe	Chitsa	Machinzu		7 764,40		7 764,40						
	Sengwe	Xini	Malipati	249	101 254,78	406,64					50		356,64

Fig. 9

Annex IX

**SUMMARY****NAVASHA-MALIPATI-SENGWE CONCESSION**

	<u>VALUE OF ANIMALS HUNTED</u>	<u>CONCESSION FEE</u>	<u>TOTAL</u>
Navasha Section	\$ 64 612.00	\$132 634.00	\$197 246.00
Malipati Section	\$342 002.16	\$ 99 475.50	\$441 447.66
Sengwe Section	<u>\$ 43 053.86</u>	<u>\$ 99 475.50</u>	<u>\$142 529.36</u>
	<u>\$449 668.02</u>	<u>\$331 585.00</u>	<u>\$781 253.02</u>

**CHIBWEDZIVA CONCESSION**

Chitsa Section	\$ 32 984.46	\$ 32 984.46
Chibwedziva Section	<u>\$416 038.10</u>	<u>\$449 022.56</u>
	<u>\$449 022.56</u>	<u>\$ 49 022.56</u>

**TOTAL** \$ 1 230 275.58

**Source:** Chiredzi Rural District Council 1995 CAMPFIRE Report

**Fig. 10**

**Annex X**

**GOKWE SOUTH RURAL DISTRICT COUNCIL 1995/96**

<u>WARD</u>	<u>PROJECT</u>	<u>AMOUNT</u>	<u>BENEFICIARIES</u>
JAHANA	BRICKS FOR CLINIC	Z\$33 758-00	LOCAL WARD MEMBERS
JIRI 11	TWO DEEP WATER WELLS	Z\$117 895-02	VILLAGE MEMBERS
MASUKA	SCHOOLS PROJECT	Z\$14 525-36	LOCAL PUPILS
NEMANGWE 5	PUBLIC TOILET	Z\$1 735-84	PROBLEM ANIMAL REPORTERS USE TOILET
SAI 4	DEEP WATER WELL	Z\$1 925-46	LOCAL VILLAGERS
SAI 2	ROAD MAINTENANCE	Z\$23 000-00	TRANSPORTER AND LOCAL COMMUTERS
"	TRANSPORT GRAIN	Z\$9 000-00	DROUGHT RELIEF RECIPIENTS

**NOTE:** THERE IS PROVISION FOR ACCESSORIES SUCH AS UNIFORMS, TORCHES, STATIONERY AND RAINCOATS REQUIRED FOR VARIOUS PROJECTS. LOCAL EMPLOYMENT IS PART OF THE PROJECT.

**SOURCE:** GOKWE SOUTH RURAL DISTRICT COUNCIL CAMFIRE REPORT 1995/6.

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**INSTITUTIONAL REFORMS AND ACTIVITIES TO  
ALLOW LOCAL PARTICIPATION IN  
FOREST MANAGEMENT**

**ZIMBABWE'S EXPERIENCE**

**INSTITUTIONAL REFORMS FOR  
LOCAL LEVEL  
FORESTRY MANAGEMENT**

*by*  
*C. Phiri*  
*Project Coordinator*  
*Forestry Commission, Zimbabwe*

**INSTITUTIONAL REFORMS AND ACTIVITIES TO ALLOW  
LOCAL PARTICIPATION IN FOREST MANAGEMENT**

**ZIMBABWE'S EXPERIENCE**

**1.0 INTRODUCTION**

**Main Land Features**

Zimbabwe has a total land area of 390 000 km<sup>2</sup> of which 23million hectares or 59% of the total area is categorized as forest with a canopy cover of 20% or more.

The main land tenure categories are listed below:

**State Owned Land**

**Communal Areas (CA):** Land allocated to the Africa population by the colonial administration.

**Resettlement Areas (RA):** Land allocated to landless Africans or people from over populated Cas by the post colonial administration.

**Forest Area and Parks:** Commercial forest, protection forest and parks under FC administration.

**Lease Tenure**

Small Scale Commercial Farms (SSCF).

**Freehold**

Large Scale Commercial Farms (LSCF)

Land allocated to settlers of mainly European origin by the colonial administration.

The formal ownership of Cas and Ras is vested in the presidency and administered by the District Councils allocating land to the communities in the Cas and individuals in the Ras. User rights are allocated to individuals by the village chiefs and the headmen which, during colonial time, held considerable official power. Most power in the village affairs are now vested in the official institutions. Individual arable land holdings are inherited and sometimes sold although this is illegal. The exclusive rights of homestead residents to trees planted around homesteads are in general recognized and honoured. This is not always the case for trees on allocated arable land where rights are more complex. User rights to allocated land will normally only be honoured if the land is developed (I.E. crops and or trees planted, fence erected). User rights to natural forest products on allocated land are difficult to claim.

The land mass (390 000km<sup>2</sup>) of Zimbabwe falls into five Natural Regions (NR). The agro-ecological features of the NRs are presented in Table 1.

Table 1: Agro-ecological Regions

Natural Regions	Area Cover KM2	Distribution per Province	Rainfall pattern	Characteristics and Farming Activities
NR 1	5 835	Eastern Highlands, Manicaland	Reliable rainfall and cool temperature. Rainfall 1000mm	Intensively used for dairy farming, forest, tea, coffee, tree, fruit.
NR 2	72 745	Northern Mashonaland	Reliable rainfall 700-1000mm	Intensively, cropped. Predominantly
NR 3	67 690	Mashonaland Midlands	Rainfall 650 - 800mm	Semi-intensive cultivation. Rain-fed cropping of drought resistant cotton, soya beans and sorghum. High proportion of CA
NR 4	128 370	North and South Matebeleland	Rainfall 450 - 650mm	Semi intensive cultivation. Area subject to seasonal drought suitable for cattle, ranching and rain-fed maize cultivation. High proportion of CA
NR 5	112 810	South Eastern Lowveld Masvingo	Rainfall below 450mm	Suitable for intensive cattle ranching and extensive irrigation of sugar cane, wheat in South and Eastern Lowveld.

### 1.1 Environmental Degradation in Zimbabwe

Zimbabwe, perched on top of the Central African Plateau is beset with numerous problems of environmental conservation and management, especially catchment management. Environmental degradation in form of soil degradation and erosion, siltation of rivers and reservoirs, deforestation and desiccation of wetland ecosystems, characterise many catchments in the country. This is due to a variety of causes such as unfair land distribution, poverty and unsustainable uses of natural resources.

Most communal lands are characterised by poor soils, poor rainfall and very high population densities. The problems environmental degradation is largely caused by the agricultural and survival practices in these areas. In many communal lands, farmers are more interested (short term) agricultural productivity than in (long term) sustainable, environmental sound, agricultural methods. This means that the answers to successful and sustainable environmental rehabilitation can be found in an improved ecologically sound agricultural system.

Efforts to conserve and manage catchments dates as far back as the 1950s. However, a lot of these efforts have been piecemeal, sectoral and treating the wrong symptoms. Catchment rehabilitation was/and is often treated as a pure physical environmental problem which was/is not linked to sustainable development. As a result, the catchments of Zimbabwe's drainage system have, for several; years, been experiencing excessive environmental degradation and this has been very severe in the Save Catchment.

**(a) Forestry Legislation & Strategies Developed to Address Land Degradation:**

The Forest Act (Chapter 125) and the Communal Lands Forests Produce act have been the main guide lines the Forestry Commission has been working within to bring communities into the main stream of forest management and utilization.

However, in 1983, the Forestry Commission began to implement a Rural Afforestation project to redress the environmental degradation caused by deforestation mainly in the Communal Areas. In the process the Forestry Commission noted the highly restrictive legislation to involve communities into forest management and utilization.

In recognition of the gaps to be filled before national reforms for forestry management and utilization can be implemented, the Forestry Commission has been going through a process of internal reforms and implementation of programmes that lead to policy and legislative change. This document is an attempt to review the internal reforms and some of the programmes it has initiated, or is implementing.

**(b) Internal Reforms:**

In 1982, the Forestry Commission created a new Division called Rural Afforestation to implement a programme conceived in the late 1970's. The project was conceived on the concept of traditional forestry. That is the foresters' are the only ones that can implement forestry programmes. The communities were to receive forest products (firewood) produced by the foresters. By providing them with firewood through the planting and distribution of seedlings of eucalyptus seedlings the communities would give the natural vegetation a chance to grow up.

The concept did not work as expected as:

- o the large block plantations the Forestry Commission established did not appeal to appeal to communities as a substitute for firewood.
- o the seedlings the Forestry Commission produced and gave away free and almost free were not all cared for by the communities.

The experience of the foresters' working with the communities began to raise debate and the issue of reform the institution to address the community aspirations were raised and the policy instruments of the organisation began to make initiate changes in the organisation structure and strategies.

The Forestry Commission began to make a deliberate effort to separate its communal activities and these that were needed to support community participation in management and utilization of forests and forests products. This separation has led to the creation of what is now the State activities and the Commercial Forestry.

Within the State activities the need for multi disciplinary teams and holistic approaches is constant by being developed. To date the state Activities have created a specialist services Unit within its Forest extension services (former Rural Afforestation Division) and a Social Forestry Research Unit within its research and Development Unit.

The above mentioned units act as stimulus and moderators in the development of appropriate programmes and policies to support participation of communities in forest management and utilization.

### **DECENTRALIZATION OF SEEDLING PRODUCTION**

As already indicated in the text above the design of the Rural Afforestation project was based on the perceived fuelwood crisis of the 1970's and early 1980's. Rural Afforestation I implemented between 1983 and 1989 was based on a strategy to develop 49 central nurseries in 16 of the 65 districts perceived to be suffering from severe firewood shortage and the establishment of 500 ha of block plantations in the clay areas and urban areas to act as reserves for fuelwood in order to reduce the demand on indigenous woodlands.

At initiation of Rural Afforestation Project I the foresters went out in full force to implement the project activities as stated in the project appraisal. As stated in the section on internal reforms the debate on the strategies developed led to changes in strategies. The seedling production and distribution strategy went through a rapid not only because of the reasons originally stated but several issues like:

- If the project came to an end would the programme be able to sustain itself?
- How access able were the central nurseries as seedling distribution points.
- were the seedlings (eucalyptus) satisfying the community needs were also raised.

A deliberate policy to move away from the put in place. Satellite nurseries to support the central nurseries was put in place. The success of the satellite nurseries effective as seedling production centres and the observations of a diversity of seedling species being produced then gave impetus for the Forestry Commission to move away from the central nurseries. Table 2 below gives a summary of seedling production by the different nurseries over the last five years.

**Table 2--Seedling Production For The Period 1990 - 1995**

<b>TYPE OF NURSERY</b>	<b>1990-91</b>	<b>1991-92</b>	<b>1992-93</b>	<b>1993-94</b>	<b>1994-95</b>
Forestry Commission Central Nursery	1 231 000	619 000	176 906	229 787	80 153
Handed over nursery (former Forestry Commission nursery)	1 135 000	1 493 000	828 717	1 090 356	1 098 752
Satellite nursery	543 000	918 000	3 478 307	5 648 921	6 476 417
<b>TOTALS</b>	<b>2 909 000</b>	<b>3 030 000</b>	<b>4 481 930</b>	<b>6 968 064</b>	<b>7 655 322</b>

**Note:**

The number of seedlings reflected are only those that the staff recorded from established nurseries and did not include small quantities produced at individual level.

The land distribution pattern and the land use per category are shown in Table 3.2 according to various tenurial arrangements in Zimbabwe.

**Table 3: Present Land distribution by sector and Natural regions**

Sector	Units	1	2	3	4	5	Total
CA	,000ha	140	1 270	2 820	7 340	4 780	16 350
	%	0.9	7.8	17.2	44.9	29.3	100
RA	,000ha	30	590	1 240	810	620	3 290
	%	0.9	17.9	37.7	24.6	18.9	100
STATE	,000ha	10	10	160	60	260	500
	%	2	2	32	12	52	100
SSCF	,00HA	10	240	530	500	100	1 380
	%	0.7	17.4	38.4	36.2	7.3	100
LSCF	'000ha	200	3 690	2 410	2 430	2 490	11 220
	%	1.8	32.8	21.5	21.7	22.2	100

Source: Mapopsa, 1995 p. 9

Table 3 shows the uneven distribution of land with the commercial forms occupying 41 % of the total area of agricultural land and 35 % of the total area. NRs 4 and 5 are holding 74 % of the CA. Thus, the project target area is the marginal parts of Zimbabwe with approximately 1,000,000 households.

Zimbabwe's forest area is in the order of 23 million ha or 59 % of the area of the country. Of the total forest area, 11 million ha are forest with 10 % or more canopy cover. The forest areas in the CAs are continuously being depleted as a result of clearing for agriculture, overgrazing and fuel-wood cutting. The depletion rate is, of approximately 10,000 ha per year according to the FC RAP 11 proposal.

The major portion of the national stock of woodland is found in area not available for general use (national parks and forests, game reserves, the LSCF area, etc.). The CAs contain only 21 % of woodland, but 44 % of total rural land area and 60 % of the population. Since 1960, loss of wood cover has also begun to badly affect NR 4 and 5. In all cases, deforestation is most acute in those areas experiencing rapid population growth and immigration. Estimates of fuel-wood consumption in rural areas range from 2.7 to 6.5 tones/household/year. Latest estimates of national demand are 8-10 million tones/year.

There are some 102,000 ha of commercial plantations of which 66 % are privately owned (1990). Approximately 60,000 ha of the plantation forest is pine, the remainder being mainly

eucalyptus species. The forest industry is based on the plantation timber for 95 % of its input. Zimbabwe is self sufficient in sawn timber and produces a:

**State owned land**

**Communal Areas (CA):** Land allocated to the African population by the colonial administration.

**Resettlement Areas (RA):** Land allocated to landless Africans or people from populated CAs by the post colonial administration.

**Forest Areas and Parks:** Commercial forest, protection forest and parks under FC administration.

**Less Tenure**

**Small Scale Commercial Farms (SSCF)**

**Freehold**

**Large Scale Commercial Farms (LSC)**

Land allocated to settlers of mainly European origin by the colonial administration.

The formal ownership of CAs and RAs is vested in the presidency and administered by the District Councils allocating land to the communities in the CAs and individual in the RAs. User rights are allocated to individuals by the village chiefs and the headmen which during colonial time, held considerable official power. Most power in the village affairs are now vested in the official institution. Individual arable land holdings are inherited and sometimes sold although this is illegal. The exclusive rights of homestead residence to trees planted around homesteads are in general recognized and honored. This is not always the case for trees on allocated arable land where rights are more complex. User rights to allocated land will normally only be honored if the land is developed (i.e. crops and all trees planted, fence erected). User rights to natural forest products on allocated land are difficult to claim.

Almost 2/3 of the rural households are female headed. It is common that the men have paid work in the industrial centers or on the commercial farms and are absent from the farms most of the year. The females in general are responsible for 85 % of all farm activities although the land is owned by the men. The fuel wood collection and use is the responsibility of the females.

The social and legal position of the women in the rural areas do not match their involvement in the management of the farms. Legally they do not have the same rights to own land as men have nor the same access to credit. These circumstances do not create a good environment for long time horizon in connection with use of resources and must be taken into account in the project strategy in order to achieve the project objectives.

A considerable amount of land and livestock is allocated and owned by people residing in the cities, contributing significantly to problems.



## **RESOURCE SHARING**

### **1.2 ISSUES SURROUNDING MANAGEMENT OF INDIGENOUS FORESTS**

The Forestry commission manages 21 gazetted forests. Eighteen (18) of these indigenous (natural) forests are situated in Matabeleland North while three (3) are in the Midlands province. A key issue that requires careful thought is how these forests should continue to be managed sustainable for their environmental (ecological), economic and social value.

Current management of indigenous forests is shrouded with conflicts arising from:-

- o Competing objectives and priorities at national, district and community levels;
- o Competition in land use options; and
- o Different perceptions on issues of legitimacy and right of access to forest resources.

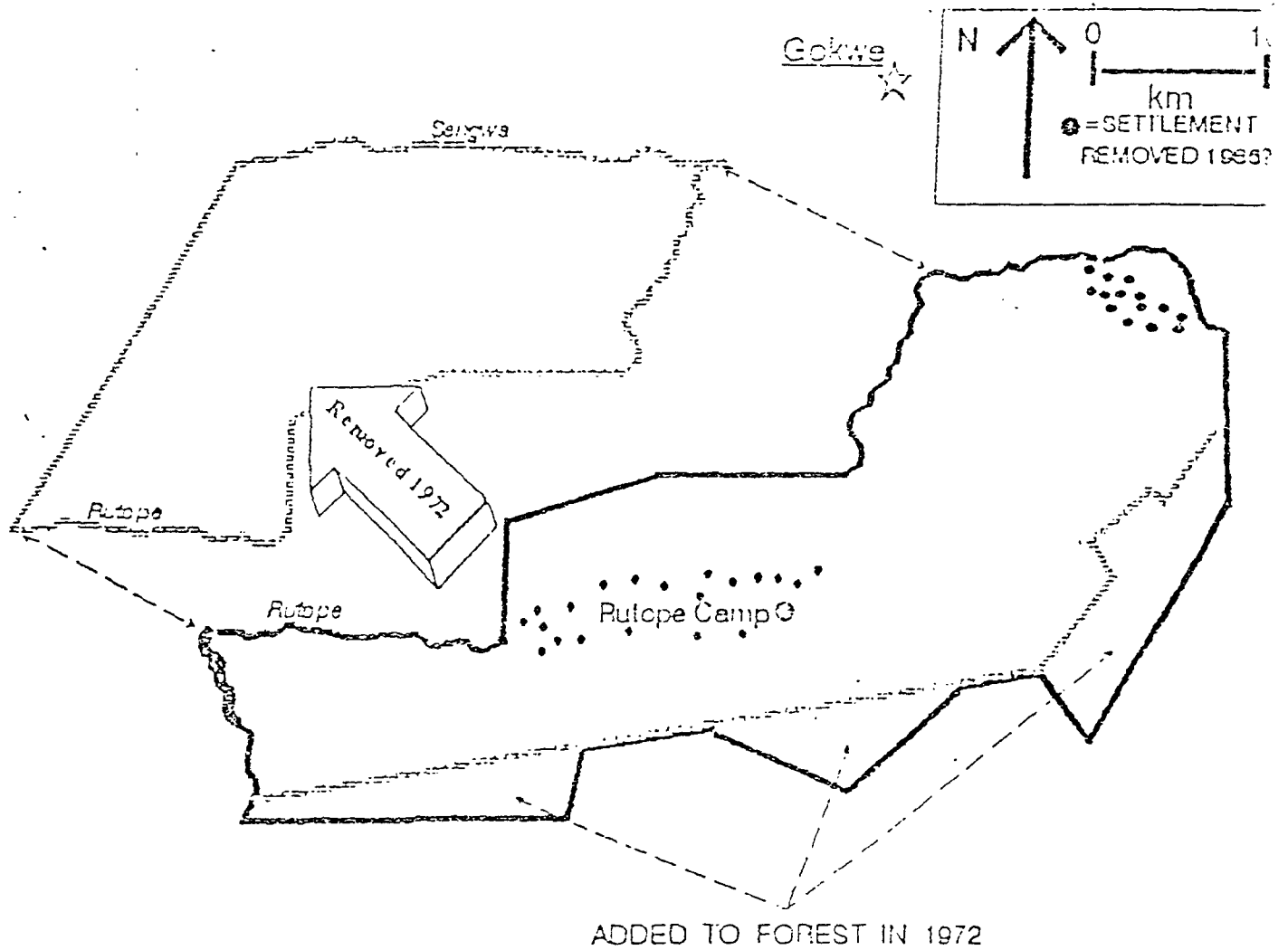
The challenges facing forest managers are, among other things:-

- o Articulating the conflicts arising from current uses of the forest, and who the users should be.
- o Resolving and/or minimizing conflicts in resource use.
- o Ensuring that the forests continue to be managed in a sustainable manner.

### **1.3 BACKGROUND INFORMATION ON MAFUNGABUSI FOREST**

Mafungabusi Forest was declared a demarcated forest in 1954 primarily because of its role as a catchment area, but also because of the value of its indigenous commercial timber, particularly, mukwa and teak. The ecological and biodiversity functions of the forest also justifies its "protected" status. The extent of Mafungabusi when it was gazetted in 1954 was 104 900 hectares. The forest boundary was revised in 1972 when 22 900 ha that had been affected by settlement and cultivation were excised and degazetted, that is, they were effectively transferred to communal land status. During the same year, several boundary changes were effected as illustrated in Figure 1. Pieces of unsettled communal land south of the forest were added to the forest as partial compensation for land transferred to communal lands. In 1986, settlers who remained in the forest since 1972 were forcibly removed by the army.

Today, no settlements exist in the gazetted forest apart from the Lutope Camp where Forestry Commission employees are housed.



**Figure 1.** Mafungabusi Boundary and Settlement Changes. The Mafungabusi state Forest was established in 1954 to include more than 100, 000 hectares of indigenous forest growing on Kalahari Sands. Since that time, several boundary and settlement changes as detailed above have occurred.

**1.4                    CURRENT MANAGEMENT OF THE FOREST**

Forestry Extension Services Division employs a Forester who is based at Gokwe centre and is directly in charge of the management of Mafungabusi Forest. Management activities include fire prevention, prevention of poaching of wildlife and unlicensed harvesting of live trees, and issuing of permits for harvesting some resources from the forest. Prior to 1986 the Forestry Commission planted some exotic trees on a small portion of land on an experimental basis.

Currently, resources are obtained from the forest in three ways.

**(a)    Licence/Permit System:- e.g.**

- Harvesting of commercial timber by concessionaires under contract arrangement with the Forestry Commission.
- Grass cutting by communal areas residents.

**(b)    Sanctioned Use With No Permits Issued: e.g.**

- Grazing of livestock in the forest area.
- Collection of dead wood for fuel.

**(c)    Unsanctioned Harvesting: e.g.**

- Poaching of wildlife.
- Cutting of live trees for construction poles and other uses.

**WHY IMPLEMENT THE PROGRAMME**

(a)    There are conflicts in the utilization of resources found in the forest areas as evidenced by poaching of wildlife and illegal cutting of trees by some members of neighboring communities. This has resulted in many arrests, payment of fines and "harassment" which in turn generate ill feelings between the Forestry Commission and local communities.

(b)    It has become increasingly obvious that conventional forest management approaches whereby the Forestry Commission is seen to be "protecting the forest from local communities" is no longer relevant under the new social order in Zimbabwe.

(c)    The question we are asking ourselves is "how do we minimize conflicts and at the same time maximize benefits from the use of the forest resources? Within the last two to three years there have been discussions on possible income generating projects that will benefit the Forestry Commission, the local authority and other institutions such as National Parks. The idea of a "Roan Breeding Project", for example, is still alive in the minds of "some".

(d)    The legitimacy of state control over a resource base where communities surrounding Mafungabusi.

(e)    The legitimacy of state control over a resource base where communities have limited access is being questioned with respect to this forests.

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## USE OF INDIGENOUS KNOWLEDGE

### INTRODUCTION

Ntabazinduna is a small communal area, 40 km north east of Bulawayo, in Zimbabwe. There are three wards in Ntabazinduna, named the South, North and West Wards. Each has an elected councillor. The area has a mean annual rainfall ranging between 450 and 550mm, at an altitude of between 1300 and 1500m. The terrain is flat with gentle undulations. Most of Ntabazinduna is covered by red-brown sandy loams (isibomvu), interspersed with black clays (isidaga) in the valleys.

The natural vegetation found on these soils is acacia open woodland, dominated by *Acacia karroo* (isinga), which occurs in association with other species, particularly *A. robusta* (mgamanzi), *A. nilotica* (isangawe), *A. rehmanniana* (iphucula) and *Zyziphus mucronata* (umphafa) (Timberlake et al, 1993). Pure stands of *Euclea divinorum* (umtshekesane) are found in low-lying areas and generally associated with termite mounds.

Deforestation and degradation of the communal grazing areas has led to hardships for the people of Ntabazinduna. Woodland resources within grazing areas provide essential inputs to the local farming systems and household livelihoods of communal land farmers (Bradley and Dewees, 1993). Of primary importance is the grazing resource for livestock. The forage productivity of the grazing areas is must reduced as a result of excessive pressure on both woody and herbaceous components. In addition, the grazing area woodlands are source of fuelwood, poles, fruits and a host of other important subsistence products. These products are no longer available in quantities adequate to sustain household needs, and families are forced to travel long distances to find them, or to buy them if they can afford to.

From as far back as the 1930s, development agencies have introduced a variety of technical interventions aimed at addressing the problems of woodland clearance and land degradation. These have centred around establishment of grazing schemes and eucalypt woodlots. In recent years, innovative community self-help initiatives aimed at rehabilitation of the degraded woodlands have started to spread throughout Ntabazinduna. A number of families have groves of regenerated acacia trees near to their homes, as a result of pruning and protecting acacia scrub. More recently, this practice has been taken up by village groups who have begun to manage regrowth within grazing areas. These efforts have resulted in both increased woody biomass and pasture improvement.

A study of local woodland management initiative and of performance of eucalypt woodlots in Ntabazinduna was conducted by researchers and extension staff from the Forestry commission. This is one of two papers that have been written about the study. the other paper (Clarke and Crockford, 1994) evaluated eucalypt woodlots and woodland management practices in Ntabazinduna, examining input costs, productivity and values to the community of each intervention. It concludes that eucalyptus woodlots are uneconomic on the loamy soils which cover most of Ntabazinduna, as input costs far exceed returns. In contrast, community initiatives to manage acacia regrowth cost less, are more productive and produce a much wider range of products and services than woodlots grown in the same area. These findings underscore the need for social forestry research and extension to focus on ways to support existing initiatives in woodland management, rather than on the introduction of narrow technical packages.

In this paper, we describe woodland management initiatives in Ntabazinduna and discuss the factors which have contributed to their success. In addition, we describe the participatory research methods which were used in the study and discuss how such methods can be used both to document and support community initiatives. Thus, there is a dual emphasis on methodology and findings of the study, as both contribute to a greater understanding of how to promote and build on existing resource management practices at the local level.

### **DISCUSSION AND RECOMMENDATIONS**

Historical information emanating from the study reinforces the findings of other authors that State land use policies and political events, rather than the depredations of local people, have been, and continue to be, the major cause of environmental degradation and deforestation in communal lands (Gill, 1985; Wilson, 1990; McGregor, 1991; Katerere et al, 1993; Scoones and Matose, 1993). In Ntabazinduna, high population densities, resulting from land alienation and forced resettlement, led to widespread woodland clearance for arable lands as well as trees cutting for building of new homes. Colonial government policies, aimed at forcing people off the land to create an urban workforce (Ndelela, 1981), resulted in expansion of the urban fuelwood trade. On the one hand there was a growing urban population which required fuelwood (Whitlow, 1980) and on the other, rural populations were in need of cash to pay taxes (Palmer, 1977). During the liberation war, local people were instructed to cut many of the remaining trees to reduce cover for the guerrillas.

Moyo (1994) goes further, linking the history of communal lands to current strategies and responses to problems of deforestation. The violent history of land alienation and subjugation of indigenous people has resulted in polarisation between the strategies of public sector agencies and those of local people, with respect to addressing problems of deforestation. On the one hand, forestry extension approaches have their roots in racist ideology evolved to justify land alienation. Central to this is the notion that local communities are "backward" and "need educating". The backbone of forestry extension programmes has been the promotion of eucalypt woodlots. Local people tend to mistrust State forestry programmes which they associated with the coercive and restrictive policies of the past, such as land alienation, and forced clearing of indigenous woodlands to establish woodlots.

Woodlot programmes have been largely unsuccessful as a result of this painful history as well as their failure to address the real resource needs of communities have, out of necessity, evolved their own changing strategies in order to gain greater access to essential wild products associated with woodland areas. Public sector agencies, in keeping with their history, have tended to ignore and/or criminalise local level strategies to gain greater access to natural resources.

### **FOREST PARTICIPATION SERIES**

This polarisation between "official" and local level forestry strategies highlighted by Moyo (1994) are well substantiated by the Ntabazinduna case study. There is a very large eucalypt plantation which was established in the 1940s using forced labour to destump the existing indigenous forest occurring there. Whilst this plantation is a success in so far as it supplies poles and fuelwood throughout Ntabazinduna and beyond, there is lingering resentment that these products must be bought from the council.

Furthermore, the plantation was established on the only patch of Kalahari sands in the area, which naturally supports a diverse forest ecosystem. Early maps of the first block of the plantation show a grove of umkhuna (*Parinari curatellifolia*), a tree highly valued and respected for its role in rainmaking ceremonies as well as for its fruits. It appears that subsequent expansion of the plantation led to stumping of these trees as they are no longer in evidence today. Post Independence efforts by development agencies to promote school and community woodlots in Ntabazinduna have met with almost total failure (Clarke and Crockford, 1994).

On the other hand, community initiatives to protect and manage woodlands are widespread, and are now on the increase in Ntabazinduna. Prior to this study, these initiatives appear to have gone unnoticed by the staff of agencies involved in promoting afforestation activities in Ntabazinduna. Yet some simple measurements have shown that these efforts to manage indigenous woodlands are much more cost effective than woodlot establishment. Furthermore, indigenous woodlands provide a much wider variety of products and services than do woodlots (Clarke and Crockford, 1994). These observations in Ntabazinduna are supported by those of others in different parts of the country (Makuku, 1990). Influential local leaders have played a key role in the spread of woodland management initiatives. Their strategy of fostering a commitment to woodland protection and management amongst the people over a period of decades contrasts sharply with the "quick-fix" approach of most development agencies.

This study highlights key challenges facing social forestry research and extension, whilst at the same time provides some insight into how these challenges might be taken on. In the first place there is need to raise awareness and appreciation of local strategies on the part of research and extension staff. The next step is to develop capacity to support and build on existing initiatives. The process and outcome of this study show how participatory approaches, including PRA methods, can be used to achieve both of these objectives.

The use of PRA methods was an effective means to raise overall awareness and appreciation of local initiatives by researchers and extension staff alike. The focus of the study was on the history, evolution and current status of these practices. The local extension staff went on a week long introduction to PRA course prior to the study, and were thus able to work in partnership with the research staff in designing the methods and steps to be followed. The team began by planning the study together: which methods to use and in what sequence in order to obtain the information in which we were interested.

During the course of the study this plan was modified and adapted where necessary. After each day the team sat together in the evenings reviewing the outcome of the day and planning for the next session. The methods reported in this paper are those which were finally used, although in practice they were not quite as clearly sequenced as they appear here! In fact, the research was carried out over a period of more than a year of separate visits, each time deepening and broadening the information as well as supporting extension activities arising from the research. Tools such as the historical timeline, semi-structured interviews with key informants, visits to family and community groves, and village mapping were very effective ways for local information to present and reflect on information about their practices and preferences.

In addition to raising awareness of local practices and documenting these, the study concurrently provided research and extension staff with insights and practical lessons in how to go about promoting community woodland management initiatives. The combination of research and extension objectives in this way can lead to better focused and improved extension approaches.

A number of ways in which field staff can support and encourage the spread of woodland management practices emerged during the course of the study, and have since been incorporated into the plan of work of the Forestry Extension Officers. These include:

- . visiting family and group woodland management projects and showing appreciation and a willing to assist;
- . arranging for study tours and field days within and between Wards to enable the sharing of ideas and the spread of these practices;
- . facilitating and sponsoring workshops for villagers who have started group woodland management projects, to enable them to review their progress so far, and to plan and carry out further pruning and thinning operations;
- . provision of improved pruning tools and advice on how to use them.

The village mapping techniques used in the research proved to be a very useful tool for enabling villagers to visualize their grazing areas, to plan and to evaluate woodland management efforts.

At the same time the study has served to define priority research needs for optimising existing management practices. These include the need to investigate management and harvesting options for sustainable utilisation of the range of desired products, including those for mixed livestock production, and a deeper understanding of institutional and socio-economic factors which are behind these initiatives.

In order to address the above research and extension priorities, the same adaptive research and extension model described in this study will continue to be used. Important features of this approach are:

- . the involvement of local communities in all aspects of the programme;
- . integration of research and extension;  
and
- . an iterative, heuristic approach which incrementally broadens and deepens with each successive step taken.

**THE ROLE OF THE PRIVATE SECTOR IN THE  
SUSTAINABLE MANAGEMENT AND  
DEVELOPMENT OF FORESTS IN**

**SUB-SAHARAN AFRICA**

**SUSTAINABLE FOREST MANAGEMENT AND DEVELOPMENT  
IN SUB-SAHARAN AFRICA**

**THE ROLE OF THE PRIVATE SECTOR**

*A presentation of the Interfrican Forest Industries Association (I.F.I.A.)*

**I.F.I.A.**

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**THE ROLE OF THE PRIVATE SECTOR IN THE SUSTAINABLE  
MANAGEMENT AND  
DEVELOPMENT OF FORESTS IN  
SUB-SAHARAN AFRICA**

***Introduction***

A series of World Bank documents concerning a strategy for the forest sector in Sub-Saharan Africa was published during the past few years. Many international seminars were held on the same subject. One of these with the title «Making forest policy work» was held between July 3 and 7, 1995, in Oxford.

The role of the private sector in forestry meaning also the timber industry and timber trade especially in developing countries was hardly mentioned in the past and rarely incorporated in seminars, proposals and decision making. This was the reason why the *Association Technique Internationale des Bois Tropicaux* (ATIBT) excluded from the World Bank seminar in Washington (in May 1994) - published a booklet «A Strategy for the Forest Sector in West and Central Africa» («*Stratégie pour le secteur forestier en Afrique de l'Ouest et Afrique centrale*»).

In the meantime, the private sector - long since acknowledged by the African developing countries as an important partner - is mentioned on every occasion.

ATIBT and IFIA are grateful for this invitation and hope that our information, comments and recommendations will be taken into account in the World Bank's forestry sector strategy in Sub-Saharan Africa.

Absolutely nothing has changed in ATIBT's afore-mentioned document published in June 1994. Its contents are fully shared and supported without exception by all the professional federations covering forestry, timber industry and timber trade activities in the African Timber Organization (ATO) countries.

Unfortunately, we feel that the explanations and recommendations of the private sector remain unknown to some decision makers in Washington (The World Bank), Brussels (EC) as well as participants in seminars whose objective is to «make forest policy work».

Regardless of what has been proposed in the World Bank's papers or concluded for instance by the afore-mentioned international seminar in Oxford, forest policy cannot work without a healthy private sector having the task to play its important role in national development and to lead the change towards sustainable practices in tropical forest management.

It should be useless to say that timber industry and investment are based on long term development, on a sustainable supply basis, meaning well-managed forests.

All that is said about forest policy, legislative reform, laws strengthening forestry institutions, land use and long-term forest development are matters for sovereign countries and their governments. The private sector is a partner for the government working within the framework

of the country's development policy, its laws and regulations. The private sector holding timber concessions is also a partner of local communities with all reciprocal environmental, economic, ecological and social obligations.

All the partners are fighting poverty together. The devastation of tropical forests by a fast-growing population doubling almost every twenty years in Sub-Saharan Africa, cannot be transformed into a sustainable management of natural resources without a process of information and education for the population and without restricting traditional rights of the population like shifting cultivation and hunting. The same process took place in Europe 200 to 300 years ago, with laws enabling the country and its population to use lands and forests in a sustainable way.

#### **Timber harvesting, timber industry and population**

Private companies in the Sub-Saharan African natural forest don't need encouragement in cooperating with the local population. From the very beginning of their activity, they have been living in symbiosis with villages and the people in their concessions. Without a permanent dialogue, mutual understanding and compromise, timber harvesting and industrialization in rural areas are not possible.

Villages in forest concessions, timber harvesting, timber industry and population are closely linked. This means that sustainable forest use and agriculture are closely linked as well. A private company engaged in timber harvesting, timber industry, job creation cannot take care of agriculture. Agriculture is a completely different branch with a different approach and different expertise. To harmonise both - forestry and agriculture - government support is necessary, and governments need the support of donors in order to integrate forestry/agriculture in projects with research and education.

The private sector is not the police. This also applies to land-use and hunting. Laws and traditional rights have to be respected by private companies. Requests by the population for better regional infrastructure and road-building are followed by private companies when supported by government authorities and financially feasible.

IFIA members are aware of the problems caused by illegal hunting and hunting of protected species. They do not organise hunting to supply bush-meat to the population. Pygmies and Bantus in the Congo basin do not know the difference between protected and non-protected animal. It is their traditional right also to hunt internationally protected species ; («Convention on International Trade in Endangered Species of Wild Fauna and Flora - C.I.T.E.S.»). This is why IFIA members try to solve the problem by information and education of their workers and in schools. The experience of National Parks (Nouabalé-Ndoki for instance) has shown that this method of cooperation - information - education and understanding yields much better results than confrontation and punishment. Nevertheless, IFIA proposes that governments of African countries reinforce their legislation and control concerning hunting, if necessary with prison sentences for hunting of protected animals, trade and consumption of their meat.

#### **The private sector and research**

Research is an important component of tropical forestry and one that has been neglected for a long time. Private enterprise is open to cooperation with scientists on research. But the former neither has the knowledge nor the financial means to carry out research. When the international community talks about global responsibility concerning biodiversity, industrial countries (having

already destroyed almost all their virgin forests) should participate in financing research projects concerning the ecological impact of natural forest use as well as the environmental impact and sustainability of planted forests. Also, silvicultural activities should be supported financially.

The need for scientific, technical and financial assistance, enabling the private sector to practise sound management of primary forests is imminent. Private enterprise has neither the physical nor the financial means for research, silviculture and post-harvesting operations. This concerns also the rural development component in communities living in primary forests. Outside help and also World Bank support - at least politically - would facilitate forest and wildlife conservation.

***Some errors concerning the issues of sustainable forestry development in West and Central Africa***

In a World Bank Note the following is said:

«The 'failure to correctly value timber' through adequate stumpage prices and concession allocation systems.»

***Reply:***

Offer and supply dictate value - not concession fees, taxes or others. The same applies to incorrect pricing.

«The 'increasing role' of financial markets in the tropical logging and timber industries primarily through investment in transnational logging companies which have raided capital on the international stock markets.»

***Reply:***

In West and Central Africa we can feel neither the role nor the influence of financial markets.

«These companies, while not the only source of unsustainable deforestation»

***Reply:***

Selective logging in Africa of 1 to 3 trees per ha on a rotation basis cannot lead to unsustainable deforestation.

«International logging company shares were among the best over the last few years»

***Reply:***

This statement is completely misleading when considering the situation in West and Central Africa.

***West and Central Africa is not comparable to South East Asia and South America***

To mention the fortune made in South East Asia with timber harvesting in connection with Sub-Saharan Africa is misleading without mentioning that:

In Central Africa we harvest about 5 to 15m<sup>3</sup> per hectare with a rotation of 30 to 40 years with a distance to the port of embarkation of about 800 to 1,200km.

In South East Asia about 50 to 150m<sup>3</sup> are harvested per hectare - 10 times more - with a distance of rarely more than 400 km to the port of embarkation ; in addition, long distances can be overcome by cheap water transport on rivers.

Wages are much lower in South East Asia than in West and Central Africa.

The main Central African species like Sapeli and Sipo compete directly with the main South East Asian species Meranti and Merbau.

There are two lessons to be learned concerning Sub-Saharan Africa

1. A large majority of European companies working in the logging and timber industry in Africa after independence, closed down, lost a great deal of money or went bankrupt, not only with their African operations but also with their mother companies in Europe. We would recommend to the policy makers at the World Bank to obtain information from commercial banks in Europe to find out what they think about granting loans to the timber industry in Africa. European banks do not consider participation in a logging operation or timber industry as an asset. Loans granted to European companies are based on other assets outside Africa.
2. A European company would be stupid to transfer its profits from Africa to Europe, paying high income tax (sometimes more than 50%) and then to transfer the remaining amount back to Africa for new investments. At the same time, an African company without profits has to pay its income tax based on its turnover (impôt minimum forfaitaire).

Sweeping statements are dangerous and destructive. They mislead the ignorant public and policy makers, as proven by seminars where such conclusions are made.

With the present situation of the national and international timber markets, there is very little room for private timber companies to bear the additional costs of sustainable forest management and no room at all for absolutely necessary research and silvicultural activities. It should not be forgotten that the natural regeneration of high-valued African species cannot be compared with the natural regeneration of the high-valued South East Asian species (Dipterocarpaceae) in the natural forests of Malaysia, Indonesia and the Philippines. Here again, Africa is at a disadvantage.

#### *Awarding of concessions through international bidding*

It is right that there be a growing concern of the African private sector regarding World Bank recommendations that concessions should be awarded through international bidding. There is a multifold concern:

International bidding would exclude most of the African companies and Africans from being awarded concessions in their own country. They do not have the money.

Companies which work in harmonious partnership with the local population and the government have invested and given proof over years or decades of their ability to play a constructive, economic, environmental and social role in the framework of national development policies,

could be replaced by other bidders paying a higher price for reasons which are not necessarily connected with better forest management and better social and economic integration in the national economy.

The majority of concession holders in Sub-Saharan Africa are « medium-sized » enterprises in comparison with South East and East Asian multinationals which have a far greater financial potential. There could be a switch from traditional partners to East Asian partners and their timber harvesting methods. In West and Central Africa we are used to a yield of one to two trees or 1 to 15 cubic metres per hectare with a rotation period of 20 to 40 years. South East Asia is used to 50 to 150 harvestable cubic metres of timber per hectare.

It would not be constructive for today's strategy for the forest sector in Sub-Saharan Africa when a document states some years later under «lessons learned»: «International bidding was not the right solution. National governments should select the private partner based on its reputation in the country, its investments already effected, giving chances to nationals, taking the opinion of the population into account which is directly concerned with the concession holder. Sufficient forest surface should be given to an existing industrial unit for the sustained existence of forests, timber industry and jobs.»

### **Certification and prices**

Medium and small companies will not be able to cover the costs of certification. There is another problem : in general, it can be said that not more than 20% of African timber is exported to countries interested in certified products. This means that these markets have to bear certification costs alone or five times more than other markets not bearing those costs.

In addition to higher production costs for improved sustainable forest management, African timber will have to bear quite important costs for certification. Timber producers in Africa wonder whether those importers and retailers asking for a «green label» are ready to pay a higher price and to motivate the end-user accordingly. If they are whole-heartedly in favour of supporting sustainable forest management in developing countries, their marketing strategies should take this into account.

If the commercial partners of timber producers and timber exporters in Africa insisting on certification negotiate their prices for certified timber at the same level as non-certified timber they will not support sustainable forest management. When a producer in Africa spends more money on better forest management, importers, the importing timber industry and end-users on the other side should invest in better publicity and a change in public opinion regarding tropical timber.

We do see a partnership between producers in Africa and consumers in industrial countries in the sense that both sides are willing to invest in and promote the consumption of tropical timber from sustainably managed forests.

### **Sustainable Management of Primary Forests**

There is no understanding whatsoever in African countries nor in an organisation like ATIBT of the World Bank's position on the use of primary forests. Repeating what the afore-mentioned ATIBT document says concerning the importance of primary forests, we have to emphasize

again that it is out of the question, unrealistic and counter-productive to declare large expanses of primary forest off limits.

The World Bank should back African countries which have fulfilled their global responsibility with larger forest areas being completely protected as national parks. Why does the World Bank not support timber harvesting and timber industry projects in primary forests? There can be no other reason for this completely unjustified decision than giving in to NGO pressure in rich industrial countries. Everybody knows that the entire primary forest in tropical countries cannot be completely protected.

Not to support research, silviculture and combined agricultural/forestry timber industry projects in primary forests set aside in wise land-use plans for sustainable use must, therefore, be considered «criminal» in the sense of developing strategies for sustainable forest management.

The World Bank should finally stand up to unrealistic eco-pressure which is destroying all the current efforts to establish a healthy national economy in countries blessed with forests. These countries need part of large areas of their primary forests for timber production, for buffer-zones - and other areas for complete protection. Hopefully, for the ATO countries, the World Bank will distance itself from the unrealistic approach regarding the protection and use of primary forests, especially in Central Africa.

#### **Taxes and revenue**

It is said that «seminars», «regional workshops» and «international workshops» are needed. Too many of these confuse rather than encourage a private company engaged in national development strategies.

Private enterprise since its beginnings has aimed to improve productivity and to strengthen its working capital. Supply and demand dictate the price. The lack of competitiveness of African products is well-known.

We can think of all sorts of taxes, stumpage fees and tax systems in order to burden further private enterprise. The latter can only survive and play its role in a country's national economy, its environment, its population, when it earns money and is encouraged to continue investing, and is not discouraged to the point of disinvestment.

It has become fashionable in seminars to talk about assessment of trade and the socio-economic dimension of timber production, the review of economic impacts of timber production, developed information systems, the role of private capital flows, value of standing timber, market failures etc. - last, but not least, forests have to be sold by auction. Taxes and revenue for the country have to be increased.

If the market price does not cover the costs and if a rigid, top-heavy tax system leads the entire private sector into difficulties, there will be no sustainable development and no sustainable forestry and timber industry. When the World Bank, the most powerful financial and political institution in the world, gives advice to African governments, it should be emphasized that any sort of tax, fee or duty is directly related to the life and death of the private sector.

To encourage governments to increase taxes, stumpage fees, fiscal revenues from the forest and timber industry - at a moment where the fastest possible introduction of sustainable more expansive forest management is demanded - is a wrong strategy. Instead, incentives should be found to encourage sustainable management and silvicultural measures.

In many conclusions and recommendations of seminars and in many World Bank documents, two of the most important facts are neglected or even forgotten:

- Prices, fluctuation in supply and demand - sometimes extreme over a short period.
- The African timber industry has to compete against South East Asian production, temperate zone soft and hard woods, and other materials such as aluminium and plastics...

A company's profit margin is necessary to its health. If, for instance, there are better margins for log exports, it is better to use the money for downstream investments and to cover additional costs of sustainable forest management than to take this money away from a downstream developing company through export duties or other taxes.

There is not enough room for a private company in Africa to cut its usual costs and to bear the additional costs of better forest management. In the particular situation of the timber industry in Sub-Saharan Africa - which is not a gold mine - this should mean that policy makers have to think more about:

**«How, where and when to compensate taxes with better forest management».**

We live in a free market economy where consumers are free to decide their purchases. The consumer buys as cheaply as possible. All over the world, distribution chains, wholesalers and retailers try to compete against each other with the highest rebates and the lowest prices.

Plastics and other polluting cheap materials which consume a lot of energy in the production stage are already beating and replacing African timber to a frightening extent in industrialized countries. Should timber as the only biodegradable, natural and naturally renewable material be replaced by plastics because it is too expensive? We are already facing this strong tendency in Europe.

Should timber in poor developing countries be expensive? Should it be replaced by cheap plastics imported from industrialized countries? Timber remains the no.1 material in Sub-Saharan Africa. The more expensive it is, the more people will take a chainsaw to cut trees illegally - and not sustainably, of course. Is this a good solution? Too high prices are pushing African timber out of the market.

Moving in the direction of overloading timber with duties and taxes means favouring the use of polluting materials, lowering the value of the forest by lowering demand in consumer countries, lowering exports, encouraging illegal felling, slowing down conservation measures and the process of better forest management. In other words : slowing down development in Sub-Saharan forest countries.

A change of mind, strategy and action of the European Union, donors and development banks should take place concerning this issue.

**The wish of the private forestry and timber industry sector for close cooperation with the World Bank.**

The Sub-Saharan forests and also part of the primary forests in the region have to be used - «well-managed» - for those who do not like the word «sustainable». Used for the benefit of the people, their country and for the sake of conserving their forest as capital, as a natural renewable resource and the basis of sound development.

A.T.I.B.T. set forth its proposal in its June 1994 document «A strategy for the forest sector in West and Central Africa» («*Stratégie pour le secteur forestier en Afrique de l'Ouest et Afrique Centrale*»). Up to now we have seen little change. The private sector, however, is happy to feel a new spirit and see a new team at the World Bank with a good knowledge of African problems. These experts display a new approach in solving problems hand in hand with timber companies and the timber industry. This is encouraging for the private sector especially in the current disastrous market situation with heavy losses for all involved in timber production, the timber industry and timber exports in Sub-Saharan Africa.

We - the private sector - are looking forward to a closer, comprehensive and constructive cooperation with the World Bank and those policy makers in Europe who truly want to help developing countries through cooperation and not eco-dictatorship and who have finally understood that there are only two alternatives left to the African forest:

**Use it together with governments,  
the population and the private sector, or lose it.**





