

<https://helda.helsinki.fi>

Partnership between public and private actors in forest-sector development : Options for dryland Africa based on experiences from Sudan, with case studies on Laos, Nepal, Vietnam, Kenya, Mozambique and Tanzania

Luukkanen, Olavi

Department of Forest Ecology / Viikki Tropical Resources Institute (VITRI)
2006

Luukkanen , O , Katila , P , Elsidig , E , Glover , E K , Sharawi , H & Elfadl , M 2006 ,
Partnership between public and private actors in forest-sector development : Options for
dryland Africa based on experiences from Sudan, with case studies on Laos, Nepal,
Vietnam, Kenya, Mozambique and Tanzania . Tropical Forestry Reports , no. 31 ,
Department of Forest Ecology / Viikki Tropical Resources Institute (VITRI) , Helsinki . <
http://www.helsinki.fi/vitri/publications/forestry_reports >

<http://hdl.handle.net/10138/26086>

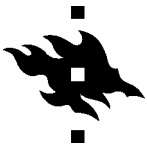
publishedVersion

Downloaded from Helda, University of Helsinki institutional repository.

This is an electronic reprint of the original article.

This reprint may differ from the original in pagination and typographic detail.

Please cite the original version.



HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI

**UNIVERSITY OF HELSINKI
TROPICAL FORESTRY REPORTS
31**

**PARTNERSHIP BETWEEN PUBLIC AND PRIVATE ACTORS IN
FOREST-SECTOR DEVELOPMENT**

**Options for dryland Africa based on experiences from Sudan
With case studies on Laos, Nepal, Vietnam, Kenya, Mozambique
and Tanzania**

By

**Olavi Luukkanen, Pia Katila, Elnour Elsidig, Edinam K. Glover,
Huda Sharawi and Mohamed Elfadl**

Study commissioned by the Ministry for Foreign Affairs of Finland

Prepared by the Viikki Tropical Resources Institute (VITRI)

University of Helsinki

Helsinki 2006

Executive Summary

This report, in its first part specifically relating to Sudan, attempts to contribute to understanding the ways of forming partnerships in forest management between the state and local resource managers. Specifically, it presents experiences gained from implementing such partnerships in Sudan, also identifying conditions and hindrances for them that affect local livelihoods and sustainable forest management. The partnerships in forest management between public and private actors are in this study defined as different ways of sharing forest management powers and associated costs and benefits between the state and private farmers and between the state and rural communities.

The second part of the study is based on an overview of different partnership arrangements in six case study countries. It includes a general description and comparison of forest tenure systems and different forms of partnerships in forest management in Kenya, Mozambique and Tanzania in Africa, and Laos, Nepal and Vietnam in Asia.

The specific aims of the second country-comparison part were

- to contribute to the understanding of different ways of forming partnerships in forest management by classifying existing partnerships according to different attributes of partnerships,
- to combine the experiences gained from implementing different partnerships and
- to formulate suggestions for future development of partnerships.

Due to the policies and actual situations in the case study countries this study focused mainly on the partnerships between communities/villages and the state. Partnerships between the state and households were included only in the case studies of Laos and Vietnam, where forest land allocation to households has a central role in poverty alleviation and in the development of the forestry sector.

Part I. The results for Part I can be summarised as follows. Collaborative forest management, especially as observed in two “success story cases” in Sudan (Elain and Elrawashda) represents a progressive shift towards state recognition of the interdependence between the well-being of forests and the well-being of local people depending on them for subsistence and livelihood needs. Especially in these two cases, out of several attempts and “models” to create collaborative forest management in Sudan, it can be concluded that it is possible to arrange the benefit-sharing within the community and motivate the local people to participate in forest conservation and rehabilitation and to achieve community-controlled forest protection.

The cases of the Elain natural forest reserve conservation and the Elrawashda forest reserve rehabilitation also provide promising examples for participatory management. The systems have won the confidence of the local people and resulted in good forestry practice.

Elrawashda is also a forest rehabilitation success story in which people and the forestry administration (FNC) have gained mutual benefits. The Elrawashda experience has been transferred to other large reserved forests (Wad Kabo and Shasheina forests, both in Gedaref State in the Blue Nile region).

Acacia senegal (the gum arabic tree) is commonly the main tree species planted by farmers in Sudan. The forestry administration (FNC) staffs, from the state forest manager to the forest overseer, are all involved in interaction with the farmers.

The Elain forest in Sudan is a conservation success story which stimulates policy change towards involving the traditional leadership and forest-dependent villagers in forest protection. When forest development in Elain was compared with another area where the policy was to try to prevent people from entering the forest it was found that participation in forest management has led to an increase in forest resources and biodiversity, while prevention of entry has caused forest degradation.

Part II. Results from Part II can be summarised as follows. In most developing countries the forest resources have since colonial times been under state ownership and management. However, governments have not had the capacity to bring forest resources under sustainable management. This has in many developing countries contributed to policy changes in search for local-level forest management regimes that would lead to sustainable resource management and improve livelihoods. These management regimes are based on the idea of sharing forest management authority and responsibility, as well as the associated costs and benefits, between the state and the people living in, or close to, the forest.

Table 1. An overview of the power sharing and household/community responsibilities and benefits under different types of partnerships, based on case studies in six countries in Asia and Africa.

Household/community role in partnership	Management powers	Responsibilities	Benefits
Beneficiary	Retained by the state	Participates in law enforcement, planting; respects restrictions and prescriptions on resource use	Subsistence use, employment, sharing of revenue; state or concessionaire-funded infrastructure development
Co-manager	Shared with household or community according to a contract	Participates in forest management according to contract; respects restrictions and prescriptions on resource use	Subsistence use, commercial utilisation of NTFPs
Designated manager	Contracted to household/community	Responsible for most management activities, draws management plans with forest officials' support, establishes rules for resource utilisation	Utilisation of forest products according to established rules and management plan: subsistence use, commercial utilisation of NTFPs and timber
Owner	Held by village/community organisation	Responsible for management activities, draws management plans, establishes rules for resource utilisation, grants permits for commercial utilisation	Utilisation of forest products according to established rules and management plan: subsistence use, commercial utilisation of NTFPs and timber

Two broad and overlapping types of agreements can be distinguished: agreements that give households/communities the role of "co-manager", and agreements that delegate households/communities the role of a "designated manager". A generalised overview of the sharing of forest management powers, responsibilities and benefits under different types of partnerships is presented in Table 1. The general trend in benefit sharing goes hand in hand with the power to manage forest resources: the greater the management powers and responsibilities the larger the share of the benefits.

The majority of partnerships aim at rehabilitating degraded forests, planting, afforestation or protection of natural forests. Partnerships in more production-oriented natural forest management have been less common.

The positive role of partnerships in forest sector development is recognised in the forest policies of all six case study countries (Laos, Nepal, Vietnam, Kenya, Mozambique and Tanzania). Also, the poverty reduction strategies or rural development programmes recognise the importance of sustainable resource management for poverty alleviation. In most of these case study countries, partnerships in forest management are seen as a way to improve local livelihoods through generating income-earning activities and employment. Although the policies in these countries support local participation in forest management, there are significant differences in the role envisaged for local resource managers and in the degree to which management authority and benefits and costs are shared between the state and the local people and communities.

Power-sharing arrangements range from complete state control to almost full devolution of powers to the village level. In one extreme, the state has retained all powers to control and manage the resource. In order to gain cooperation in forest protection or rehabilitation it permits the local people to use forest products for subsistence use or cultivate land under the trees, employs locals for forest protection work, or shares a part of the forest revenue with the local community.

In the other extreme, the power to make decisions concerning the development and utilisation of the resource is devolved to the local level. In between, there is a continuum of overlapping approaches which are usually based on management agreements (contracts) between households, associations, user groups, community or village organisations, and state authorities. These agreements delegate certain rights and duties to the households or communities and range from defining a "co-manager" to agreements that delegate households/communities the role of a "designated manager" or precisely recognise the owner of the resource.

Lessons learnt and suggestions for future development of partnerships

The following lessons learnt are based on the country level case studies on Laos, Nepal, Vietnam, Kenya, Mozambique and mainland Tanzania.

Policy issues

- The legislative framework for partnerships in forest management is in most countries very new and incomplete. Most partnership arrangements have been developed on a pilot project basis. When partnerships are implemented at a national scale, strong government support and political will are needed.

*It is essential to develop a **clear legislative framework** for partnerships including regulations and guidelines for implementation. This framework needs to be applied*

flexibly by adjusting it to local conditions and site-specific problems and opportunities.

- Secure land and resource rights are essential for establishing incentives for long-term sustainable resource management. Very complicated procedures or the lack of, or high costs of, mechanisms to establish secure rights to forests and forest resources are the greatest obstacles to effective community participation in forest management.

*A clear, simple and affordable framework for establishing **secure rights to forest land and resources** to communities and households needs to be instituted.*

- Strong, formally recognised community/village institutions are necessary for representing community interests. A clear framework for community representation is needed in order to develop equitable partnership arrangements.

***Community institutions should be recognised** in the legislation, and clear procedures for the selection/election of community representatives are needed.*

- The development and implementation of partnerships as well as the day-to-day forest management activities involve considerable costs that accrue in different forms to participants. The costs for participating are usually substantial for local people as the time spent in meetings and forest management activities competes with their other income-earning activities. The costs for government institutions that facilitate and implement partnerships as well as support community institutions in the everyday management operations are also substantial. These costs are covered by the government budget and/or by funds generated through the partnerships. However, in general, government funding has been very limited. This has hindered the development of partnerships and led to shortcomings in their implementation. So far, the development and implementation of partnership arrangements have been strongly dependent on donor funding.

*For developing sustainable partnerships an **equitable benefit-sharing system** is needed. It should encourage households/communities to sustainable forest management and create revenues for the government to cover the costs of developing, implementing and supporting such partnerships.*

- The majority of partnerships aim at rehabilitating degraded forests, planting and afforestation. Governments have been reluctant to involve local people in the management of valuable forests. In natural forests partnerships have concentrated on forest protection. Partnerships in production-oriented natural forest management have so far been less common. However, they have shown that partnerships in the management of valuable production forests can lead to sustainable forest management and create substantial income to local communities and to the lower level government institutions.

***Partnerships in production forests** should be developed to bring production forests under sustainable management and to generate real income for households and communities.*

Implementation and management issues

- The development of partnerships is a slow process involving building of trust between partners, establishing management regimes, and capacity building in organisational and management skills as well as in practical forest management. Continuous support is needed also after the establishment of a partnership. Partnerships in forest management should be understood as a continuous evolving process that responds to changing problems. A commitment for a minimum of ten years is generally needed before partnerships are firmly established.

***Long term commitment** of government and funding institutions is needed to develop and establish partnerships.*

- To sustain community interest in partnerships, communities need to obtain clear benefits from the arrangement. In beneficiary and co-management models, the benefits to communities are usually modest and may not provide sufficient incentives for long term sustainable forest management. In areas with poor forest resources and in protected areas, it is necessary to develop alternative income-generating activities to reduce the pressure on forest resources and to compensate for the restrictions in forest product harvesting. The development of these activities has mainly relied on non-timber forest products (NTFPs) and tourism. Although small additional incomes can be very important to poor households and communities, maintaining subsistence livelihoods does not help them out of poverty.

*More emphasis should be put in developing resource management that would increase incomes to communities and generate funds that can be invested into e.g. agricultural development (food security) and infrastructure. **Commercial utilisation of NTFPs and timber** should be developed together with value-added production and the development of marketing of forest products. Options for developing equitable **partnerships between private companies and households/communities** should be studied and promoted.*

- Shortcomings in implementing forest management partnerships are often related to inadequate assessment of the resources and livelihood strategies of local people.

*More emphasis should be placed on **assessing the resource base, understanding the livelihood strategies of the local people** and identifying their most pressing needs, which could be addressed by developing partnerships. The development of forest management partnerships should be integrated to regional and local-level land use planning.*

- Partnerships have not always benefited the poorest or marginalised groups of the community.

*Local level **resource management institutions** (user groups, committees, associations) **need to be accessible and open to all community members**. The needs of women, poorest members of the community and other marginalised groups need to be assessed and special arrangements may be needed to include these groups in partnership arrangements. The establishment of **democratic decision making processes and equitable benefit sharing** within communities need special attention. It may be necessary to develop special arrangements to ensure that the needs of the marginalised groups for e.g. fuel wood are met.*

Research and training

- People's awareness of their rights in relation to forests and of different policies is central to sustainable resource management as well as to equity and poverty reduction. In general, the awareness of these issues among local people, and even among government officials, is limited.

Campaigns to raise awareness of land and resource rights as well as procedures for formalising them are needed. Also, forest officers should be trained to change their attitude and role from policing and forest protection to facilitating and supporting local people's participation in forest management.

- In general, the research on the effects of different partnership arrangements on the resource base and on peoples' livelihoods and local development has been very limited.

Local-level research to assess the long-term effects of different partnership arrangements on the livelihoods of the local people, natural resources and local development is needed.

Preface

In Finnish forest-sector development cooperation, much has been achieved in such specific areas as forestry education, farm forestry, community-based forest management and industrial tree plantation management. The role of forests in poverty reduction is also well acknowledged. Forest policy development has resulted in national forest programmes and, in few cases, the initiation of institutional reforms. Now there is a need to implement the development plans for the benefit of local communities. In such case countries in Africa as Kenya, Tanzania, and Mozambique – all central in the Finnish development policy support – there is a lack of operational forest management models that also could define distinct roles for the public and the private sector. Inter-sectoral partnerships in forest resource management are well recognised as a promising approach. However, a serious constraint is the scarcity of reports on successful examples and recommendations for more general application.

Sudan was a leading recipient of Finnish forest-sector development aid in 1979-1991. After the discontinuation of this aid in 1991, implementation of its results has successfully continued to the present date, even if no comprehensive evaluation of this programme was ever undertaken. The related scientific research cooperation between Finland and Sudan, started in the early 1980's, has continued without interruption at the University of Helsinki, with a total of six doctoral theses by Sudanese leading forestry experts already completed and six other doctoral studies on Sudan either completed or ongoing by the international staff at VITRI.

For the first part of the present report, VITRI, with its Sudanese members and partners, has extracted the information related to public-private partnership in forest resource management mainly from already existing data sources in Sudan. This information is particularly useful because of the different types of collaborative forest management that the Sudanese forestry administration has for a long time already experimented with but which are not known outside the country and which are not covered in the ongoing Finnish-Sudanese forest research work.

When specifically relating to Sudan, this report attempts to contribute to understanding the ways of forming partnerships in forest management between the state and local resource managers. Specifically, it presents experiences gained from implementing such partnerships in Sudan, also identifying conditions and hindrances for them that affect local livelihoods and sustainable forest management.

The report begins with an executive summary of the main findings and recommendations. For the analysis of the situation in Sudan, the compilation of material was done by three researchers focusing on separate geographic regions. Dr Edinam Glover summarised the results of his previous study on Elrawashda, in Gedaref State in the central clay plain region of the Blue Nile, with emphasis on social structures in village communities. The geographical context is similar in the study by Dr Huda Sharawi who analysed the case of Singa Province in Sennar State and included in it her previously largely unpublished results on the economic profitability of different land-use systems. Dr Elnour Elsidig reviewed and analysed the data available from a very different context, the traditional gum arabic-growing region of North Kordofan, with focus on the Elain forest. Dr Mohamed Elfadl, as senior researcher at VITRI, worked both in Finland and in Sudan for the coordination of this report.

Because of different depths and widths of analysis, Sudan and the cases of the six other countries (Laos, Nepal and Vietnam in Asia and Kenya, Mozambique and Tanzania in Africa) are treated separately. The case studies on six countries were prepared by Pia Katila, forming part of her ongoing doctoral thesis work. These case studies focused on analyses at

the national policy-making level. The overall project leadership and the final compilation of the report was my personal task.

We wish to thank all partners in the long Finland-Sudan cooperation in forest research and education for their continuous interest in developing this fruitful cooperation further and also for wanting to bring scientific research results into the mainstream of development planning. In particular, we wish to thank Managing Director of the Forests National Corporation (FNC) Dr Abdelazim M. Ibrahim; Dean Prof. Abdelazim Abdelgadir of the Faculty of Forestry, University of Khartoum with his staff; and Prof. Ahmed A. Salih, Director of the Forestry Research Center (FRC) in Khartoum; all of them for their continuous contributions and support.

Especially in the separate case studies on countries in Asia and Africa apart from Sudan, we wish to thank the following persons for providing valuable material and information for this study: Enock W. Kanyanya, Project Officer, Kenya Forests Working Group; Dr Marko Katila, Economic Adviser, Ministry for Foreign Affairs, former CTA of Forest Management and Conservation Project, Laos; Rauno Laitalainen, Team Leader, Forestry Entrepreneurship and Joint Forest Management Project, Mozambique; Petri Lehtonen, Head of Financial Consulting, Savcor Indufor; Jyrki Salmi, Head of Forest Policy, Savcor Indufor; and Harri Seppänen, Area Director, Senior Consultant, Ramboll Finnconsult Oy.

At the Ministry for Foreign Affairs, valuable comments and suggestions for the present report were obtained from Kirsi Brolén, Dr Matti Nummelin and Jussi Viitanen. VITRI staff, especially Project Director Jörn Laxén, have also contributed with useful remarks.

Helsinki, August 2006

Olavi Luukkanen
Professor, Director/VITRI

Table of Contents

EXECUTIVE SUMMARY	3
PREFACE.....	9
TABLE OF CONTENTS	11
ABBREVIATIONS AND ACRONYMS.....	12
1 PART I: EXPERIENCES FROM SUDAN.....	15
1.1 INTRODUCTION: ASSESSMENT OF THE CURRENT SITUATION	15
1.2 OBJECTIVE AND THEME OF THE STUDY ON SUDAN	16
1.3 DESERTIFICATION AND LAND DEGRADATION IN SUDAN.....	17
1.3.1 <i>Causes of desertification/land degradation</i>	17
1.3.2 <i>Forest resources</i>	19
1.3.3 <i>Land resources</i>	22
1.3.4 <i>Community forestry development</i>	26
1.3.5 <i>Forest management partnerships</i>	28
1.4 SUCCESSFUL PARTNERSHIP-BASED MODELS	30
1.4.1 <i>Traditional community-based land management</i>	30
1.4.2 <i>New community-based forest management models</i>	33
1.4.3 <i>Use and sustainability in Elrawasda natural forest reserve</i>	35
1.5 FARMING SYSTEM ANALYSIS AND POTENTIALS FOR COMMUNITY FORESTRY IN SENNAR STATE 41	
1.6 CONCLUSIONS AND RECOMMENDATIONS BASED ON EXPERIENCE FROM SUDAN.....	50
2 PART II: CASE STUDIES ON LAOS, NEPAL, VIETNAM, KENYA, TANZANIA AND MOZAMBIQUE 54	
2.1 INTRODUCTION	54
2.2 PARTNERSHIPS IN NATIONAL FOREST POLICIES.....	55
2.3 CLASSIFICATION OF PARTNERSHIPS	56
2.3.1 <i>Classification according to the partners</i>	56
2.3.2 <i>Classification according to the nature of the resource</i>	57
2.3.3 <i>Classification according to the degree to which management powers have been shared between the partners</i>	57
2.4 EXPERIENCES FROM PARTNERSHIPS	59
2.4.1 <i>Distribution of economic benefits and costs in different partnership models</i>	59
2.4.2 <i>Partnerships and livelihood issues</i>	63
2.4.3 <i>Equity and poverty reduction</i>	65
2.4.4 <i>Experiences from the implementation of partnerships</i>	67
2.5 CASE STUDIES.....	70
2.5.1 <i>General remarks</i>	70
2.5.2 <i>Laos</i>	70
2.5.3 <i>Nepal</i>	76
2.5.4 <i>Vietnam</i>	82
2.5.5 <i>Kenya</i>	89
2.5.6 <i>Mozambique</i>	95
2.5.7 <i>Mainland Tanzania</i>	100
3 REFERENCES.....	107

ABBREVIATIONS AND ACRONYMS

Part I: Sudan

ADES	Agricultural Development for Eastern Sudan
CARM	Council for Area Resource Management
CTA	Civil Transactions Act
CBNRM	Community-Based Natural Resource Management
FAO	Food and Agriculture Organization
FNC	Forests National Corporation
FRA	Global Forests Resources Assessment
GEF	Global Environmental Facility
GLASOD	Global Assessment on Soil Degradation
GPS	Geographical Positioning System
HCENR	Higher Council for Environment and Natural Resources
ICRAF	International Centre for Agroforestry Research (World Agroforestry Centre)
IGAD	Intergovernmental Authority for Development
ISRIC	International Soil and Reference Information Centre
MRF	Mechanized Rain-Fed schemes (MRF, or <i>bildat</i>);
NDC	Nomadic Development Committee
NDDU	National Drought and Desertification Unit
NGOs	Non Governmental Organizations
NWFPs	Non Wood Forest Products
SECS	Sudanese Environment and Conservation Society
TRF	Traditional Rain-Fed farming
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCOD	United Nations Conference on Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNSO	United Nations Sahelian Office
VC	Village Council
VCDC	Village Council Development Committee
WCGA	Wildlife Conservation General Administration
WRI	World Resources Institute

Part II: Case studies of Laos, Nepal, Vietnam, Kenya, Tanzania and Mozambique

ADB	Asian Development Bank
AUSAID	Australian Government Overseas Aid Program
CBFM	Community based forest management
CFUG	Community forest user group (Nepal)
CGC	Comité de Gestão Comunitaria (Community Management Committees, Mozambique)
CMU	Community Management Unit (Mozambique)
COGEP	Comité de Gestão Participativa (Local Resources Management Councils, Mozambique)
DAFO	District Agriculture and Forestry Office (Laos)
DFO	District Forest Office (Nepal)
DANIDA	Danish International Development Agency
DOF	Department of Forestry (Nepal)

ERS	Economic Recovery Strategy
FAO	Food and Agriculture Organisation of the United Nations
FBD	Forestry and Beekeeping Division (Tanzania)
FD	Forest Department
FINNIDA	Department for International Development Cooperation, Finnish Ministry for Foreign Affairs
5MHRP	5 Million Hectare Reforestation Programme (Vietnam)
FOMACOP	Forest Management and Conservation Project (Laos)
FORCAP	Forest Conservation and Afforestation Project (Laos)
FS	Forest Service (Kenya)
FWL	Forest and Wildlife Law (Mozambique)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HLFFDP	Hills Leasehold Forestry and Forage Development Project (Nepal)
IDC	Iringa District Council (Tanzania)
IUCN	World Conservation Union
JFM	Joint Forest Management
JICA	Japan International Cooperation Agency
KFWG	Kenya Forest Working Group
KWS	Kenyan Wildlife Service
LA	Land allocation
LF	Leasehold forestry (Nepal)
LFUG	Leasehold forest user group (Nepal)
LSFP	Lao-Swedish Forestry Programme (Laos)
LUP	Land use planning
MAF	Ministry of Agriculture and Forestry (Laos)
MNRT	Ministry of Natural Resources and Tourism (Tanzania)
NFP	National forest programme
NOFIP	National Office of Forest Inventory and Planning (Laos)
NORAD	Norwegian Agency for Development Co-Operation
NTFP	Non-timber forest product
NWFP	Non-wood forest product
PAFO	Provincial Agriculture and Forestry Office (Laos)
PFM	Participatory forest management
PROAGRI	National Programme for Agricultural Development (Mozambique)
PRSP	Poverty Reduction Strategy Paper
SFE	State Forest Enterprise (Vietnam)
SIDA	Swedish International Development Cooperation Agency
SRV	Socialist Republic of Vietnam
UNCD	United Nations Conference on Environment and Development
VFA	Village forestry association (Laos)
VFO	Village forest organisation (Laos)
VNRC	Village natural resources management committee
WB	World Bank
WRM	World Rainforest Movement
WWF	World Wildlife Fund

Units

Feddan (fed) = 4200 m², 0.42 ha Hectare (ha) = 10000 m² = 2.38 fed

US \$ 1 = Sudanese Dinars (SD) 250 = Sudanese pounds (Ls) 2 500, SD 1 = Ls 10

PART I: EXPERIENCES FROM SUDAN

1.1 INTRODUCTION: ASSESSMENT OF THE CURRENT SITUATION

Poverty alleviation and sustainable development are the principal concepts guiding forest sector development. The principle of sustainable forest development, "Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations" (UNCD 1992), combines socio-economic development and sustainable use, conservation, and the development of forest resources. Since the adoption of the United Nations Millennium Declaration in 2000, the alleviation of extreme poverty has received a central role in the national development strategies in developing countries and has become the paramount goal of international development cooperation.

The above mentioned two concepts are strongly interlinked. According to World Bank (2004) estimation, worldwide about 1.6 billion people rely on forests for their livelihoods and about 80% of those living with less than 1 USD/day depend to some extent on forests. The world's 60 million indigenous people are almost totally dependent on natural forests. In addition to timber and non-timber forest products, forest provide a range of environmental services and are important for cultural and religious heritage and traditional practices in many areas. Forests contribute significantly to regional and national economies and create employment for millions of people world-wide.

The role of forests in poverty alleviation and local level development is diversified. Forests can contribute to livelihoods through providing subsistence goods and income from the sale of forest based products, by providing inputs for agriculture and through employment. Forests are also an important reserve to which people can turn in times of hardships. Access to forests and the ways people manage and use forest resources is mediated through institutional arrangements, which regulate resource access, control and use. These institutions can be either traditional or based on formal legislation. Traditional institutions are based on local rules and customs that regulate access to resources and their use. In the course of overall socio-economic development, formal legislation is replacing traditional norms. The role of these arrangements is crucial in development efforts aimed at sustainable resource use and poverty alleviation.

In most developing countries forest resources have since colonial times been under state ownership and management. The centralized state control and forest management systems have rejected local peoples' claims to forest resources and ignored the traditional forms of forest management and utilization, which in many cases had successfully regulated utilization of forest resources. Instead, forest resources were used as the source for economic development that lead to extensive areas being placed under timber harvesting concessions. Unsustainable timber harvesting and uncontrolled conversion of forest to agricultural land, as well as an increasing pressure on lands used for shifting cultivation, has led to large-scale deforestation, forest degradation and loss of biodiversity.

The governments' responses to forest loss and degradation were the development of tree planting programs and increasing efforts to protect the remaining natural forests by designating large areas for conservation. These measures proved to be ineffective in saving the forest. Forest encroachment and illegal timber harvesting are ongoing activities even in conservation areas in many countries. The inability of the state to manage and control the vast

areas of forest officially under its control has in many developing countries led to policy changes in search for sustainable local-level forest management regimes, which could lead to sustainable resource management and promote local development. This process is connected to the idea of decentralisation, which encompasses the shifting of natural resources management powers from the central government to government and other organisations at regional, provincial and village level.

In the search for sustainable resources management models, different approaches have been developed. Many of these approaches are based on the idea of sharing forest management powers and the associated costs and benefits between the state and the people living in or close to the forests. This process is ongoing, but experiences on the impacts of different models on forest resources and local livelihoods are still very limited.

1.2 OBJECTIVE AND THEME OF THE STUDY ON SUDAN

The basic terms of reference and objectives guiding this study in the case of Sudan were:

1. Taking account of the global environmental, economic, social and political changes, to determine the recent causes of deforestation in Sudan, especially as related to land-use and forest policies, and outline new partnership-based policy options that best ensure sustainable forest management.
2. To analyse the dependence of food self-sufficiency and food security on the maintenance of traditional partnership-based land-use practices, such as gum garden agroforestry.
3. To identify partnership-based land-use practices that conserve the biological diversity in tropical drylands while contributing to poverty reduction among local people.
4. To propose options for policies and land-use arrangements that enable the rural population to manage their farm and forest resources in an integrated and socially, economically and ecologically sustainable way and to add value to their products, thus improving their livelihoods. Resource constraints caused by natural disasters and refugee problems will also be analysed, so as to contribute to national development in Sudan and elsewhere.
5. To digest the accumulated knowledge and experience on partnership-based and collaborative forest management from Sudan for the benefit of dryland Africa in general and the Finnish development policy priorities in this region in particular.
6. To propose options for outsourcing and decentralization of forest management and for better provision of forest and tree-related benefits and services. This includes functions traditionally covered by governments, such as law enforcement and forestry extension.
7. To analyse, with recommendations, the fulfilment of national forest-related obligations derived from global environmental conventions and forest agreements and processes.

1.3 DESERTIFICATION AND LAND DEGRADATION IN SUDAN

1.3.1 Causes of desertification/land degradation

Land ownership, land tenure and access to land and resources are becoming important issues for sustainable natural resource management, as they relate to involvement and empowerment of the local community and creation of viable natural resource management institutions. Currently, a number of institutions in Sudan have processes in place for the revision of tenure and land use policies. Issues concerning tenure are similar and include the role of the state in land ownership; the future of customary forms of land ownership; the extent to which land regulation should be democratized; and the extent to which a market in land may be encouraged without unrecoverable social costs.

The importance of the various partnership approaches, including protected areas and on-farm forestry collaborative management and community-based conservation or natural resource management, is now not disputed as a means to better integrate conservation and livelihood objectives in the different parts of the Sudan. However, for government institutions the contemporary policy has progressed more rapidly than the practice in the field, and this may require additional efforts towards sharing or devolution of authority and power.

It is important that the achievement of the country's food security and rural livelihood improvement takes on a more holistic approach that seeks to actively integrate conservation objectives and benefits into improved livelihoods and so contribute to food security. Natural resources have played a vital role in this and, in particular, during stress times. However many of the local and customary regulatory mechanisms were lost and replaced by distant government control. This combined with population pressure has resulted in significant natural resource degradation and biodiversity loss. However, many government institutions, local community organizations and NGOs have been involved in these processes for some time, at local and national levels, trying to ameliorate this situation through partnerships. A range of donor-funded and government-supported projects, programs and initiatives actively embrace community participation issues including collaborative management, social policy and gender.

Creating enabling policies and using the experience and lessons from practice is essential for the future of conservation in the country. One key activity of this process will be to summarise and analyse existing policies, laws and practice in the country with a view to learning lessons, identifying best practice and finding the optimal balance between community empowerment and state control. Identifying clear rights and responsibilities for different stakeholder groups will be key to this, as well as the incentives necessary to achieve this. Ultimately, successful partnership is about communities and local resource users having clear rights and responsibilities, supported by an enabling policy and legislative framework where official institutions facilitate and enable this process, while retaining regulatory control of last resort.

Several case studies have been carried out to support the work of land degradation/desertification assessments in some subregions and continents, including the Sudan (UNEP 1977; FAO/UNEP 1984; UNEP/ISRIC (GLASOD) 1990; Dregne 1991; Glover 2005). According to Ayoub (1998), one can conclude that (excluding the hyperarid zone) of the agricultural land, pasture and forest and woodland (170 million ha in total), nearly 75 million ha (45%) have been degraded severely to very severely by human factors in recent history. The highest estimate was that of Dregne (1991), while the estimates of UNEP (1977) and FAO/UNEP (1984) were similar. The GLASOD soil assessment shows that severe and very severe degradation in Sudan totalled 58 million ha. This may indicate that desertification in the Sudan is more linked to soil degradation than to vegetation degradation. The GLASOD

methodology of assessing human-induced soil degradation was considered a definite progress as compared to those used in other assessments (Thomas and Middleton 1994).

According to Ayoub (1998), about 64 million ha of soils are degraded in the Sudan. Eighty-one percent of the total degraded area is in the susceptible drylands (arid, semi-arid and dry sub-humid). Most of the degradation (74 % of the total degraded soils) is in the arid and semi-arid zones, but significant land areas are also degraded in the dry sub-humid and moist sub-humid zones. As percent of total area per aridity zone, the dry sub-humid and moist sub-humid zones have figures higher than the semi-arid and hyper zones, 28 % and 29 %, respectively.

The causes of desertification/land degradation, among other things, could be traced back to the nation's quest of fuelwood (Ayoub 1998). It is reported that the Sudan derives more than 75 % of its energy requirements from fuelwood, estimated at 22 million m³ per year (WRI 1994). Ayoub (1998) estimated this to be equivalent to about 400 million acacia trees being cut annually.

Another cause of desertification/land degradation in the Sudan is the clearing of rangelands for mechanized rain-fed agriculture and shifting cultivation. According to FAO (2001b), during the 1980s and 1990s there was a rapid expansion of rain-fed mechanized cultivation with the aim of attaining self-sufficiency in food production. According to Salih (1987), the land area for mechanized agriculture increased from about 2.0 million ha in 1954 to about 14 million ha in 1994, a rate of 300,000 ha per year. Large scale mechanized farming has been the main factor contributing to deforestation and consequent land degradation (FAO 2001a; Glover 2005).

Range fires, deliberately set by herders to improve grazing, consume annually about 35% of the natural range productivity, estimated to be about 300 million tons (Elmoula 1985). Studies by Ayoub (1998) conclude that overgrazing (47%), improper agricultural practices (22%), deforestation for firewood and urban demand for charcoal (19%), and overexploitation of vegetation for domestic use (13 %) are the major causes of land degradation in the Sudan. Similar findings by the World Bank in 1984 confirmed that in Sudan (Kordofan and Darfur), about 88,000 ha of woodlands were cleared each year for conversion to mechanized agriculture. An estimated 42,000 ha of this land had after being cropped for sorghum continuously for three to four years become annually degraded and barren, which has led to their abandonment.

Efforts to combat desertification in Sudan

In the general provisions of the UNCCD, affected developing country parties are expected to (a) implement their obligation individually or jointly either through existing or specifically established bilateral or multilateral arrangements; (b) adopt an integrated approach addressing the physical, biological and socio-economic aspects of the processes of desertification and drought; (c) integrate strategies for poverty eradication into efforts to combat desertification and mitigate the effects of drought; and (d) determine if institutional mechanisms are appropriate, keeping in mind the need to avoid duplication.

Sudan as a country fulfils poorly its obligations to combat desertification. National Drought and Desertification Unit (NDDU) surveyed the affected areas in Northern Sudan (13 out of the 16 northern states) and it was found out that the total area affected by desertification amounts to 1,259,751 km² i.e. 50.5% of the total area of the country. The exceptions were the states of South Darfur, South Kordofan and the Blue Nile (Hassan 2002). Other basic results of the survey are summarized in Table 1.

1.3.2 Forest resources

Status of forest resources in Sudan

Forests are very important in satisfying basic needs of societies at all stages of development. Forest products in the form of wood fuel, charcoal, construction poles, timber, gums, leaves, native and processed medicines are in demand at varying levels. The means by which these products are obtained has varying impacts on the role played by forests in environmental protection as well as community support.

According to the FAO Global Forest Resources Assessment (FRA) (FAO 2001a), the total forest cover¹ of Sudan is estimated as 61,630,000 ha and constitutes 26 percent of the country's land area of 237,600,000 ha. The forest cover area in the Sudan decreased from 71,220,000 ha in 1990 to 61,630,000 ha in 2000, a decrease of 959,000 ha/year; 90% of which is for fuel and charcoal making (ADB/EC/FAO 2003; Glover 2005).

¹ Forest cover, by a definition adopted by this study, includes natural forests and forest plantations. It also refers to land with a tree canopy cover of more than 10 percent and area of more than 0.5 ha, and a minimum tree height of 5 m (FAO 2001a).

Table 1. Drought and desertification in North Sudan: Causes and suggested solutions.

State	Cause of the problem	Suggested solution
Red Sea	Local population activities Climatic changes Weak infrastructure	Better water management Reseeding of valleys, wadis and other suitable places to improve vegetation cover Land reclamation Extension services Raising awareness about the problem
Gezira	Moving sand dunes Lack of awareness about the scale of the problem	Replanting the vegetation and tree cover Sand fixation Raising awareness Energy substitutes
Khartoum	Drought Absence of laws enforcing protection and conservation of natural resources Absence of irrigation schemes in the areas affected by desertification	Conservation and improvement of natural pastures Establishment of irrigated schemes Applying new technologies Planting windbreaks
North	Lack of accurate information Lack of finance Fertile land restricted to the Nile banks	Reclamation of degraded land from desert encroachment Protection of fertile lands from desert
Gedaref	Deterioration of the vegetation cover Absence of laws protecting the environment Lack of coordination between research institutions and decision makers	Adopting rotation in agriculture Combating soil degradation Development of forests, pastures and wild life range in a sustainable manner Capacity building
White Nile	Climatic changes Misuse of resources	Fixation of moving dunes Recovery of vegetation cover Development of land use system Provision of extension services Improvement of livestock production Availing water and conserving habitat for wild life and biodiversity
Sennar	Absence of monitoring and evaluation of projects Laws and regulation for forest production and conservation are not respected Expansion of mechanized farming	Environmental awareness Reforestation Water harvesting Investment maps Laws and regulations

N Darfur	Drought Civil strife Economic crisis and inflation Inappropriate state interventions	Rehabilitation programmes in degraded areas Extensive extension programmes Developing energy substitute Grass root participation
W Darfur	Irrational uses of resources Lack of environmental awareness	Water harvesting projects Developing and improving farming systems
W Kor-dofan	Overstocking and overgrazing Excessive use of timber for construction	Re-planning rain fed agricultural production Protection and conservation of natural resource i.e. reserving forests, afforestation and reforestation (popular forests) Reclamation of range lands
River Nile	Moving dunes Deterioration of agricultural production and decrease of productivity Degradation of pasture and its carrying capacity Loss of vegetation and tree cover Desertification is not receiving due concern Absence of formal and popular awareness	Wind belts Wadi basin studies Environmental awareness Rehabilitation of pasture Availing energy substitutes Feed production for livestock Protection and conservation through availing water for animals and humans
Kassala	Inappropriate state policies Misuse of resources Poverty and ignorance Moving dunes	Regenerating the vegetation cover Rationalizing water utilization Awareness raising Increasing productivity of crops

Source: Ministry of Agriculture and Forestry, Combating Drought and Desertification Unit, Khartoum 1998.

The annual rate of forest cover change in the Sudan is -1.4%, and in concrete terms Sudan recorded an annual loss of 959,000 ha of forest cover from 1990 to 2000. As of 2000, Sudan had 2.1 ha of forested land per capita. In 2000, Sudan registered 60,986,000 ha natural forests and 641,000 ha of forest plantations. The volume of wood was estimated at 19 m³ ha⁻¹ corresponding to wood biomass of 12 t/ha on average in 2000 (FAO 2001a).

Non-wood forest products in Sudan

Non-wood forest products (NWFPs) are numerous including fruits, fibres, oils, fodder and medicinal, providing different contribution to food, cottage industries income generation and support to livelihood in rural areas. Gum arabic is the main non-timber forest product that provides income generation to farmers besides its export value which contributes significantly to the foreign currency. There is a growing concern about the production, quantities, values producers, uses, marketing and other commercially important NWFPs in Sudan. Various benefits are provided by NWFPs to rural communities including income generation, food security, medicinal and ornaments.

However, except for gum arabic, the value of the NWFPs has not been quantified and little is marketed or traded. They are mostly consumed by the gatherers, and less is known about their role, marketing and management. More research and studies are needed in order to contribute towards development of existing knowledge on NWFPs in Sudan. Some work had been done by the World Bank (1986) and the FAO Project "Forestry Development in Sudan (1994)". Although timber and fuelwood are considered as major forest products, the socio-economic and developmental roles of NWFPs have recently started to gain recognition in local and national economies. NWFPs are collected or produced from natural forests (reserves or non-reserves) as well as from trees planted or conserved on-farm, on communal land and at homestead. The main production areas for NWFPs include Southern Blue Nile, South Kordofan (Nuba Mountains), South Darfur, Jebel Marra and regions along the Nile and its tributaries.

Three production systems of NWFPs are known:

1. Incidental activities by farmers (inside farms) and pastoralists (along their routes).
2. Small-scale activities by household members as daily source of income.
3. Large-scale production with camps of producers in large forest areas, including gum collection.

The NWFPs are collected by men, women and children as the main beneficiaries of the products. To these people and to other target groups like wholesalers, retailers and government officials in the FNC or Custom Department, Ministry of Commerce and Industry, the NWFPs gain importance. The main opportunities for development of NWFPs come through their potential for income generation from the collection, transformation and production of such forest products as gum arabic, fruits, nuts, fibre, and grass for thatching. Doum palm leaves for weaving and medicinal and cosmetic products are additional benefits that have to be considered in designing programs with the aim of developing and improving the local knowledge and skills. Lack of a clear marketing policy for the NWFPs can be considered as a major constraint.

1.3.3 Land resources

Land-use in Sudan

Table 2 shows the trend and current area under different land use categories between latitudes 10 - 16° N in Sudan (HCENR 2000). This area represents the semi-arid and savanna zones that contain the major agricultural, range and forest lands. The natural resources indicate a declining trend while the wasteland and the rainfed traditional and mechanized agricultural lands show an increasing trend at the expense of forests and woodlands. Except for

small land areas legally constituted (forest reserves, nature reserves and natural range and pasture), much of the lands are not legally constituted (unregistered lands).

Table 2. Land area under different land use categories in Sudan (million ha; Elsiddig *et al.* 2004).

Land use category	1995	2000	2005
Forest land, >20 % canopy cover	3.200	3.069	2.939
Forest land, 10 – 20 % canopy cover	46.90	4.473	4.233
Rangeland with scattered trees/shrubs			
Grass rangeland	44.69	42.768	40.514
Protected wildlife land	20.11	19.982	19.96
Waste land	11.78	11.86	11.86
Irrigated agriculture	15.88	15.88	15.065
Mechanized rainfed agriculture	2.124	2.437	2.782
Traditional agriculture	6.25	7.192	8.232
	7.820	8.974	10.248

The Land Settlement and Registration Act, issued in 1925, provides for rights and interests over land (cultivation, pasture, wood-cutting, passage, water resources). In 1970, the issuance of the Unregistered Land Act that gave the government the ownership over unregistered land, negatively affected the unregistered rights based on the traditional land tenure system. Accordingly the act greatly influenced the exploitation of the natural resources (rangelands, forest lands and other uncultivated lands). However, the Civil Transaction Act (1984) introduced the principle of *manfaa* (usufruct), which to some extent reduced constraints imposed by the Unregistered Land Act (1970). The *manfaa* (principle of usufruct) has been defined as the right of using and enjoying land, the bare ownership of which belongs to another person (El Mahdi 1979). Examples include:

- Right to cultivate;
- Right of pasture;
- Right to forest produces (wood cutting and NWFPs).

In addition, the Civil Transaction Act 1984 contains a set of general principles and guidelines for granting benefits over agricultural land; among them:

- Protection of the integrity of areas, villages, suburbs, natural resources, the environment and animal wealth;
- Agriculture is a priority over the other benefits where its produce is beneficial to the general public.

Unregistered land covers almost 85 - 90% of the land area in Sudan. Private ownership of land is limited to the registered rights existing before the coming into force of the Unregistered Land Act in April 1970.

Land disposition is made by the Constructive Planning and Land Disposition Act (1994) which establishes a council for planning and policy making as to land use and land tenure

legislation. At the state level the Act establishes two inter- ministerial committees for land disposition, one for residential and urban purposes and another for agricultural purposes. The later is normally composed of representatives of all natural resource institutions within the state, in addition to the survey and land registration departments (Magzoub 1999).

Most of the land in Sudan is for agriculture, grazing and forestry; yet legislation relating to land use can also be found in the Town and Village Planning Act (1961), Unregistered Land Act (1970), the Acquisition Act (1930) and the Land Settlement and Registration Act (1925). The latter provided for the registration of ownership and rights to pasture, forest produce, cultivation and occupation. Lands not registered by 1970 were deemed property of the government of Sudan. Reference for land use can also be found in the Mechanized Farming Public Corporation Regulations (1975). Absence of land-use plan is considered as one of the main causes for conflicts over the use of natural resources. Formulation of such a plan will certainly provide the framework within which policies and legislation could be developed.

Land ownership

Elsiddig (2006) has reviewed the issue of land and community relationships, land tenure and land ownership in Sudan. Three types of land ownership systems exist:

Private land holdings. These are usually agricultural lands with an average holding size about 2.5 feddan (1.0 feddan = 0.42 hectare) registered under a person's or family name. Most of the privately owned land is not in fact registered in Sudan Gazette but known in records of the traditional leadership in rural areas. Such lands are owned on the basis of usufruct benefit acquired through long periods of time, perhaps during the traditional administration system prior to colonial times.

Forest reserves. Forest reserves are registered government property. They are surveyed, demarcated, mapped and registered in Sudan Gazette under government name. The objective behind reservation is to ensure protective conservation and sustainable management. Local people's access to these forest lands is controlled by legislation and only permitted for limited rights such as passage, water, grass collection and deadwood gathering. Recently the government attitude has slightly changed towards giving more rights to people to access the forest reserves through collaborative management systems. A collaborative management system inside a forest reserve provides opportunities for integrated land use on partnership basis in which farmers and pastoralists are involved. Contracts sometimes precisely govern the relationship and define the type of use permitted.

Community holdings. Communal land refers to unregistered land managed under traditional leaders (*nasir*, *sharti* and *sheikh*) who are responsible for land allocation to individuals or families. These leaders also participate in natural resource protection. In some areas of Sudan, communal lands are registered in Sudan Gazette in the name of the village community, to be used e.g. for forest development by the community in partnership with the FNC and donor -funded projects.

These three types are prevailing in all of Sudan and, in particular, western Sudan. However, government land is becoming the major type of land ownership, following the 1970 Land Act through which all unregistered lands were declared government land.

Land tenure

Tenure is an issue of interest that impacts management of forests and tree resources. Success in clearly understanding existing rights to land and trees is essential for any activity focusing on integrated land use development incorporating trees and people. Bruce (1993) defines tenure as a set of rights which a person or some private or public entity holds in land or trees as recognized by law or custom in particular societies. Tenure rights are usually defined by statements of ownership, usufruct, lease or contracts.

In most of the rural areas of west Sudan, tenure rights for land, trees and pasture come from customary laws or indigenous traditions usually based on tribal structure. Different ethnic groups, whether sedentary or pastoralists, have developed tenure and usufructs rights to trees and other critical resources, such as water and dry-season grazing, within their territories under the tribal management system. They minimize opportunities for over-use and degradation. Trees, in particular, gained special interest in the tribal systems with respect to tenure, rights and usufructs, as they provide fodder and other edible products during the dry season when the seasonal vegetation is out of stock. In addition, trees constitute a source of energy, shade and income generation particularly for the nomads during their long movement during the dry season. Experience shows that trees constitute an important source of income to meet contingencies of the rural poor (Chamber and Leach 1987).

In the tribal system, land is held under title to someone in several ways. Under the old "Haquru" system, which dates back to the 18th century, the village chief (Sheikh) would give land to an individual. Land granted under this system, and that handed over through generations, can still belong to the same family.

Since the beginning of the twentieth century, the national land legislation has been trying to harmonize tenure by issuing land registration acts and to introduce some element of restrictions on the right and usufruct of the land and some of the economic components of the resources particularly land and endangered trees. The Land Settlement and Registration Act of 1925 provided for the registration of land in the name of particular owners. The scope of the land tenure as defined by Section 3 of the Act included registrable rights for the people for cultivation and other recognized customary rights (rights of passage, water resources etc).

However, a very small total area of land was actually registered during the period 1925 - 1970. With the exception of some registered lands such as the reserved forests which are registered under government ownership, private lands under private ownership and land leased for farms (mainly irrigated schemes), most of the land in Sudan is unregistered. The 1970 Unregistered Land Act of Sudan stated that all unregistered land is state-owned but local people have rights to its usufruct and this applied to forests, rangelands and other uncultivated or non-residential lands. The unregistered land is under the control of government. Land owners holding customary rights could obtain recognition under the act.

Although the customary systems of land tenure defined the use of communal lands as under common use, mismanagement following the 1970 Act resulted in scarcity of land-based resources used as common property. Conflicting development policies on land use created land degradation and conflicts between land users, particularly between farmers and pastoralists. The Unregistered Land Act was superseded in 1984 with the passing of the Civil Transactions Act (CTA). Under the CTA, unregistered land is state property juridically, but it is recognized that individual rights of use are acquired by bringing into use formerly uncultivated land.

Land tenure and accessibility to land are not in some parts of the country free from problems that need to be addressed. Kinship relations, friendship and gifts are common means to land

access for cultivation. Access through contracts is also common. Two types of temporary land contracts are practiced between owners (individuals or government) and tenant farmers who are usually landless:

1. *Futra* or *Ushur*, which means “tithes”, is a rental arrangement between land owners and a farmer. The arrangement gives the land owner the right of ten percent of the produce.
2. *Dugondi* is a type of lease contract for a temporary possession and use of a demarcated agricultural land against cash payment agreed upon between the landlord and the farmer. The land owner is sometimes the government.

The number of landless people in the country may approach 10 – 12 %. Some of them are displaced people affected by droughts. Although more than 75 % of the women (particularly in west Sudan) are engaged in agricultural activities, they are most seriously affected by constraints to land accessibility. Women constitute the majority of the landless category. Women acquire land either through inheritance or as land given by their husbands. Women need to access land not only for agricultural practice, but more importantly for forest products. Women’s interest for forest products includes wood for domestic use and non-wood raw material for cottage industry.

It is the type of land ownership and tenure systems that govern the cropping pattern. The land cultivation system either consists of monocropping or is an integrated one with trees and animals in an agroforestry or an agrosilvopastoral system. However, tree planting in alley-cropping, shelterbelts, scattered trees arrangements or small woodlots has recently also been adopted, but these are very much affected by the tenure system. Farmers who are land owners are encouraged to plant trees, but the tenants are not keen to invest in tree planting without guarantee of tenure security.

1.3.4 Community forestry development

Management structure in community forests

Serious efforts in community forestry development in Sudan started in the early 1980’s on the basis of extension and awareness-raising campaigns. The activities covered the development of two types of forests, plantations and natural forests.

Fuelwood scarcity and environmental protection were among the driving forces for community land security and forest development. People became more experienced and more acquainted with their needs and aware of solutions for agricultural and environment problems. This called for cooperation among villagers with regard to village development and service facilitation, which encouraged them to seek for financial support to execute development programmes.

Of the sources for income generation to support villagers in such developments, forest products from communally owned forests were recognized to be attractive ones. Experience of some villages in this area, apart from the role played by extension, encouraged many communities to claim ownership of natural forests and raise tree plantations on communally managed forest land. Since the early 1980s, activities in awareness-raising with respect to community forest development were conducted in different parts of Sudan, involving NGOs, projects such as FNC/SECS and SSFS, and the local people themselves. The strategy of awareness raising incorporated extension activities, workshops, training programs, lectures,

seminars and demonstrations. Target groups included villagers, farmers, pastoral groups and the local institutions.

The Forest Act of 1989 provided a legal option for reservation of local forests as community forest reserves. According to the FNC Act of 1989, the management of community forests is assigned to committees designated by the communities for this purpose. The committee is the management body responsible for planning, protection, and investment in forest resources.

The procedure for community forest reservation is considered complicated and disabling. It starts by delegation of power by the Federal Authority (FNC and the Minister of Agriculture) to the State authority. The steps involve confirmation by the native leader, the commissioner and the State Minister of Agriculture. After that, the final order for reservation is made by the Federal Minister of Agriculture on recommendation by the General Manager of FNC

The Forests National Corporation provides the technical know how through extension and training, assistance in organization and management planning, and finally sets the rules and rights in cooperation with the village communities concerned. The Village Committee, in its turn, follows up the planting and tending operations, patrolling and protection, and other management activities.

The obvious public awareness is reflected in the communities' involvement in reservation, ownership and management of community forests. Table 3 shows the list of community forests by area in different states.

Table 3. Annual area planted by communities inside forest reserves in 1994- 2004 by region. Areas are given in feddans (1 feddan = 0.42 ha) (Elsiddig *et al* 2004).

Year	Northern	Central	Region Eastern	Kordofan	Darfur	Total
1994	2435	6120	2388	21385	2745	35073
1995	2739	13691	11489	11301	32760	71980
1996	2577	9654	7045	12233	26909	58418
1997	1574	10276	5723	7030	12020	36623
1998	970	26513	6336	19364	3320	56503
1999	1600	22400	11900	6200	800	42900
2000	83	21620	964	223	3289	26179
2001						42370
2002	220	8905	530	31002	2175	42832
2003	0	2174	1260	2735	4115	10474
2004	0	124418	2021	1290	761	128490
Total	12198	245771	44881	77513	78554	551842

1.3.5 Forest management partnerships

Background and justification

In Sudan, the traditions of communities in participatory work have been based on management structures among members of the communities or as a collaboration between communities and formal institutions.

“Common property resources” (CPR) management is based on traditional customs and principles that guarantee equal rights to uses or a social institution control that regulates and maintains a sustainable use of the resources and satisfies community needs. The systems have been controlled by traditional leadership and a tribal setting. Early social institutions were basically a native administration where the tribe which possessed the demarcated tribal land (*Dar*) was led by the tribe chief (*Nazir*), assisted by heads of sub-units (*Omda*) and the village leader (*Sheikh*). The *sheikh* was responsible for all administrative matters in each village, such as royalty and tax collection, protection of the natural resources and supervision of individuals in the implementation of development activities. He was also responsible for organising the rights provided by the Land Settlement Act of 1925.

The *omda* is responsible for juridical matters, enforcement of law and ordinances and reporting of security matters to the local government. To each *omda* belongs five to six villages, i.e. five to six sheikh units. The *nazir*, the tribe chief, is the tribe area governor who manages the land-use system within the tribe area. People in each village; (headed by a *sheikh*); have specific rights to certain areas controlled by the sheikh on the basis of the traditional system of territorial rights within the tribal territory, or *dar*.

People from outside a specific territory have to have permission, from the relevant territorial authorities, to be allowed a user right. In each village territory, the system is managed by village sheikhs, and all judicial problems of the village are brought to the *omda* of that area. Complicated matters are transferred to the *nazir* of all the tribes. This system applies to both sedentary and migrant communities.

The processing of forest land reservation and registration under government ownership that started in the early 1900s was not obstructed by the communities as long as the rights and benefits of the communities, such as grazing deadwood gathering and land tenure for agriculture were secured. The community control over other common property resources (non-reserves) in most of the rural areas was not broken with respect to grazing lands and the extensive non-reserved forests. The linkages between agriculture, animal husbandry, water and forests continued in sustainable shifting cultivation and integrated land use.

The native administration system was abandoned in 1970 and replaced by the local government system based on rural councils administered by government officers. This change was not able to break the link between villagers and their *sheikh* and tribal chiefs but resulted in a gap and weakening of links between the grassroots and the local government. The tribal chiefs, the *omda* and the *sheikh*, used to perform that link. Accordingly, all functions related to natural resource management were not any more controlled by the traditional tribal system as they used to be before, under the chiefs *sheikh*, *omda* and *nazir*. It gave the government the ownership over any unregistered lands, including wasteland, forests and rangeland. Land allocation and land-use type became subject to government decision at the centre instead of the land organization and use control by the tribal system.

Large areas of rangeland once under communal use, with no formal (legal) land tenure system, started to be used for agricultural practices that were previously organized through social control. Such a change in land tenure constituted major problems for sustainable land

and resource management. This trend was aggravated by agricultural development policies that tended to encourage land security in favour of government or individual ownership and investment in large-scale mechanised and traditional farming where schemes of 600-2500 ha are granted to individuals who are not always members of the local residents of the area. This is still common on the clay plains in the central and eastern regions of Sudan. On the other hand, land use in Sudan, particularly in the dry semi-arid and savanna zone, is characterized by highly mobile pastoral systems where animals are moved seasonally between the dry north and wetter south using demarcated path routes.

The traditional nomadic routes and tribal grazing lands were subjected to changes due to horizontal expansion of large-scale crop cultivation. Nomadic movements created conflicts over the use of the resources, between the agricultural large-scale farming system and the mobile pastoral system. A sedentary agro-pastoral system is also a common land-use practice in the dry semi-arid and the savanna regions.

Recently, the federal government has been convinced that the native administration system needs to be reinstated in order to bridge the gap between the local councils (localities) and the communities. Establishment of village councils that links 6-8 villages is an attempt to create a link between community institutions and local government councils. Each village has representation in the village council. The approach of village councils in each locality provides an opportunity for community participation in natural resource and land management, provided that the villagers are involved in the establishment of village councils and responsibility definitions. Representation of all community groups such as agropastoralists, nomads etc. is necessary. A large number of prior and on-going projects located since the early 1980s in different areas in Sudan in the dry semi-arid and savanna zone provide experience in natural resource rehabilitation and management, and nearly all of them are revolving around community involvement and integrated resource management. Some projects include water supply development to address constraints faced by both people and animals.

The rural people depend on agriculture, forests and rangelands, and it is the rising demand for fuelwood, by offering a steady source of cash income to rural families, that also increases the pressure on woodlands. The end result is that the environment becomes successively less suitable for crop cultivation and livestock management; unless a balanced use system is developed. The international support for reforestation, though continuously increasing since the early 1970s, resulted in very little progress in the restoration and management of rangelands and woodlands in Sudan, since the early practices were government-based. The rate of deforestation at that time exceeded the rate of restoration by up to 30 times (FAO 1984).

Evaluation of the reforestation and range rehabilitation efforts provided by international agencies in Sudan such as UNDP, GEF, UNSO, and the NGOs recognized the complex relationship between forests, rangelands, farmlands and household needs and called for new approaches in forest resource management. The management of natural forests has later proceeded well and started to gain more support than large-scale tree planting. Introducing traditional and improved forms of agroforestry could also help much. Research, conducted, for instance, by ICRAF, has also shown the benefits of trees on cultivated and grazing lands and suggested that agroforestry enhances conservation of the remaining natural forests. New resource management interventions must therefore seek to balance the factors that shape the resource use patterns, by enhancing the carrying capacity of the ecosystem (i.e. increasing the supply) and encouraging an efficient use and conservation of this resource (controlling the demand).

Management of forests resources

Natural forests in Sudan are either reserved or non-reserved. The reserved area has to date reached 12.0 million hectares. Since the time when reservation of natural forests started (1923), the policy was to concentrate the management of forest reserves under government control for such activities as fellings and protection. It was understood that the management of natural forest reserves would facilitate conservation of forest resources outside the reserves and maintain a sustainable supply of products and benefits sufficient for covering people's needs.

However, all the management activities executed within the natural forest reserves are based on forest legislation that prevents the local communities from access to the forest and to the use of its resources. Management was accordingly limited to protection, patrolling, guarding and policing, a practice that rendered the legislation and the management oriented more towards control and punishment than development and sustainable management. Natural forests outside the reserves have been subjected to continuous conversion for agricultural expansion, without involving the local communities.

However, local people living in villages around forest reserves are the main beneficiaries of those forests, legally or illegally practicing all types of land use inside the reserves, including farming, wood gathering, grazing, charcoal production and collection of non-timber products. Such conflicting practices of the government and the local people have resulted in forest depletion and, in some forests, complete removal of the tree cover. By adjusting such deficient policies, the Sudan government has an opportunity not only to provide for economic development but also to relieve the excessive pressure on the natural resource base through sustainable management.

Government control of land and other resources continued to be practiced more intensively since 1970 in association with the issuance of the Unregistered Land Act of 1970 that gave the government the right to own and allocate unregistered land. Farming systems benefiting from this legislation were based on monoculture on extensive areas of land. However, when the vegetation cover was removed, within a short time the land productivity fell to uneconomic levels, leading to abandoning of such lands and causing a massive need of land rehabilitation.

1.4 SUCCESSFUL PARTNERSHIP-BASED MODELS

1.4.1 Traditional community-based land management

A total of 17 acacia species are known in Africa for producing gum in varying amounts, and their gum is collected by the local communities either for export or for domestic use. Gum acacia, or gum arabic as it is known in trade and commerce, is of two types: "gum hashab" mainly obtained from *Acacia senegal*, and "gum talha" which is produced by *Acacia seyal*. Most commercial gum arabic is produced by *A. senegal* var. *senegal*, which is the only variety planted in Sudan and widely incorporated in farming systems, particularly in the western parts of the country. Sudan has an important comparative advantage in that *A. senegal* occurs both wild and cultivated over an extensive geographical area, giving the advantages of economies of scale (Elfadl *et al.* 1998).

In Sudan, *Acacia senegal* (hashab in Arabic) occurs naturally in a belt 300-km wide known as the gum arabic belt or the Gum Belt. This belt which lies entirely within the Sudano-

Sahelian zone is characterised by erratic and scanty rainfall (IIED and IES 1989). The gum belt comprises two types of soils: sandy soils (*qoz*) dominate the western part of the country while dark cracking clay soils extend over the eastern part. The gum belt supports non-mechanized rainfed farming with a mixture of field crops, livestock and indigenous tree crops.

A distinct advantage of gum arabic is that it is produced during the dry season, i.e. it is an off-season crop providing income when agriculture does not. This characteristic also fits well with the lifestyle of pastoralists as they can collect the gum while the animals are being herded over large areas. At local community level, sales from gum provide an alternative source of income during drought years and times of food shortages. Sudan used to be the main producer of gum arabic and exercised a monopoly on world gum trade, mainly because of the advantage of economy of scale benefiting from the large areas and the fact that gum production is a peasant industry. Still, in today's world market, Sudan has dominated the production and trade of gum arabic, accounting for more than 80% of the world supply, although, for the last eight years, the situation of the Sudanese gum production has fluctuated between 53 -80 percent depending on weather conditions and social and economic factors as well as on the increased competition from other countries such as Nigeria and Chad. However, several studies (cf. Gumaa 2002) have shown that the local price is the main determining factor affecting production.

Gum arabic is a dried gummy exudation which occurs as white to yellowish-white spheroid nodules of varying size. It is tasteless, odourless and dissolves readily in water. Gum solutions of up to 50% (w/w) can be prepared (Sawsan et al. 2004). It is a non-toxic, non-calorific and non-polluting food additive low in protein. It is a complex high-molecular-weight polysaccharide including mainly of calcium, potassium, and magnesium salt; during hydrolysis it forms arabinose, galactose, rhamnose and glucuronic acid (in proportions 3:3:1:1). Gum arabic as defined by the UN Statistics Division Classification Registry using the Standard International Trade Classification, Revision 3 (SITC, Rev. 3) Code 29222, is referred to as the gum extracted from *A. senegal* and *A. seyal* trees, the former being of a higher quality and consequently more expensive. Gum arabic has been approved by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) to qualify for use as food additives and in the pharmaceutical industry under food additive code number E 414. Its principal uses are as a food additive (confectionery, bakery products, pastries, candy, wine, low-calorie foods and soft drinks are the most common uses), as pharmaceutical components (capsules), and as glue or stabilizer for a variety of industrial uses (ranging from stamps to printing, painting and ceramics).

The acacia trees start to produce gum when about five years old. To increase the gum production, trees are tapped with a "Sunki", (previously tapping was done mainly with small, specially shaped axes) which is driven under the bark and pulled back till the bark breaks in stripes about 10-30 cm long and 2-4 cm broad. The art of tapping is far from simple, and on average 3-5 branches are tapped each year depending on the size of the tree. Weather is a significant factor affecting the exudation of the gum. The yield per tree is very variable depending on the year and the location. Gum yield averages of 900 g to 2000 g per tree annually are considered acceptable for young and old trees respectively.

The gum garden rotation cycle is shown in Figure 1. At the beginning of the agricultural rotation, (when the gum trees are 15 to 20 years old and gum production has decreased), the farmers cut back all the gum trees to 1.5 m. The ground is cleared and fire is sometimes used to destroy the woody vegetation to facilitate cultivation. At the end of the agricultural cycle, gum trees are re-established either through natural regeneration or by seeding. After a few years (4-5 years), the farmers can start to collect the gum again. This sys-

tem relies on the fact that each farmer owns the trees and the land, although the land is unregistered – this is an example of tree tenure (Glover 2005).

One of the best examples of gum production is in the Kordofan region of the Sudan, where *Acacia senegal* (Hashab) has historically been cultivated. The hashab bush fallow system of land management is based on rotation cycle which consists of about 4 -5 years of cropping (of pearl millet, groundnut, sesame or peas) followed by a period of 15 to 20 years of hashab cultivation during the fallow period (Glover 2005). Animals graze in these fallows making use of the grass and the pods of the gum trees and add to the soil fertility by their droppings (Ibrahim 2000; Ballal *et al.* 2005b; Elsiddig 2004; Glover 2005).

In many areas the cycle is shortened because of population pressure around permanent water points. In the less populated areas of Darfur, the old fallow system may still allow the trees to grow to maturity, but in Kordofan where pressures on the land are great; such a succession tends to face constraints. Development into more or less permanent agroforestry production systems is favoured by the farmers; in these, crops, trees and animals co-existing simultaneously may solve the problem of sustainability and a sufficient economic return; practical solutions, for instance, on optimal tree densities, have already been suggested (Gaafar *et al.* 2006).

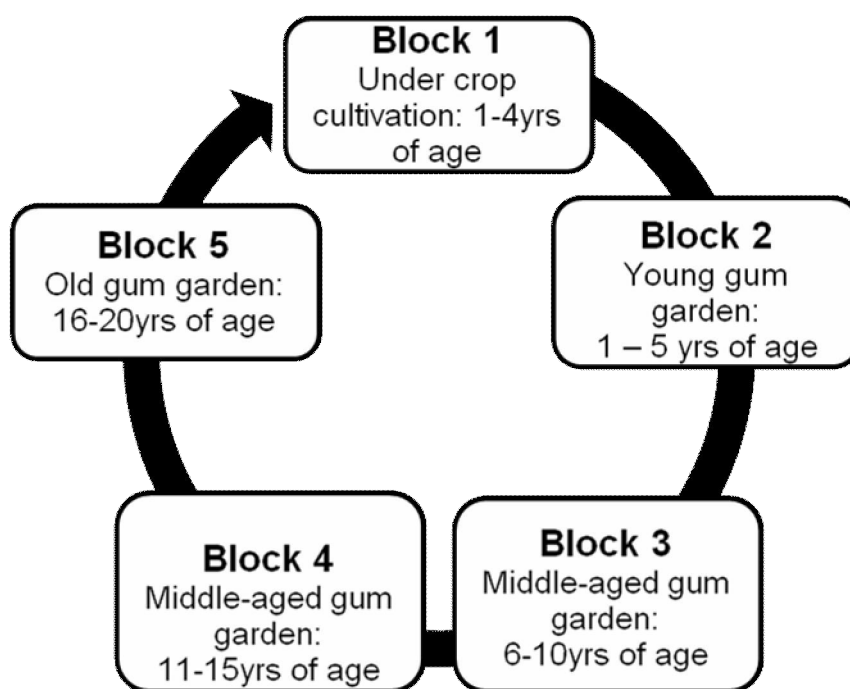


Figure 1. Gum garden rotation system adopted by farmers in the gum belt in Sudan (Elsiddig 2004).

The people living off the land in the gum area in Kordofan belong either to the settled agriculturists or the nomads. The settled agriculturists cultivate the land on a seasonal basis to produce subsistence crops, cash crops and gum arabic. The land tenure system and the tree ownership in the region are mostly in the hands of males. Polygamy is common and wives assist their husbands in farming of their lands. Women are responsible for plots in close proximity to the houses and often have management autonomy over non-timber forest products (NTFPs). In the case of gum arabic, men are responsible for tapping and collection

of gum from remote areas, whereas women and children are responsible for collection from areas and gum gardens near the villages (Eskonheimo 2006).

Opportunities

The national and international demand for *gum arabic* is a guarantee for income generation for farmers and an incentive that encourages sustainable management of a tree cover (consisting of *Acacia senegal*) by farmers. The long-term experience from the shifting-cultivation-based gum production system adopted by the communities is a key for finding sustainable land-use systems for Sudan today. Projects in the gum area have already developed new strategies for gum production based on farmers' land management.

Constraints

The increasing human population and the associated increasing demand for land is a constraint for practicing cyclic crop cultivation with a bush fallow -- even if this fallow gives economic returns in the form of gum -- and creates a threat to the sustainability of the system. Therefore, permanent intercropping of trees and agricultural crops in an agroforestry system may provide an alternative solution.

1.4.2 New community-based forest management models

General

Experience in partnerships is recognized for various types of natural resources in Sudan, and their management involved local communities. During the period since the early 1980s, international assistance introduced management practices inside the natural forest reserves based on project concepts and local people's participation with the objective of forest rehabilitation and sustainable management. Various organizations were involved including, FAO, UNSO, as well as SOS and many other NGOs. Through the period from 1980 towards the end of the 1990s, many experiences and lessons have been gained from developments of projects in forest reserves in central Sudan. Experiences are particularly well recorded in connection with two forest reserves, i.e. (1) the Elrawashda natural forest reserve with an FAO project (1980/90) followed by the project Agriculture Development for East Sudan (ADES, 1994-1999), and (2) the Elain natural forest reserve and an SOS/FNC project, in Kordofan (western Sudan) from 1990-1999.

Elrawashda Model I and Elrawashda Model II

The Elrawashda rehabilitation project, similarly to the well-known shifting cultivation production in general, demonstrates sustainability in crop production with grain yields of 800-1000 kg per hectare and the maintenance of the tree cover through the bush fallow system. Crop cultivation is succeeded by bush-fallow rotation that facilitates the restocking of the land with tree cover. This practice restores the soil fertility by the end of each bush-fallow rotation. Trees and agricultural crops successively co-exist, managed by the local communities which benefit from the system both in food security and in forest products and services. Such experience indicates that integrated agricultural and forest management is a viable option for involving the local communities in land management and in the management of government-own natural forest reserves in particular.

Two kinds of management systems dominated the land use activities inside the natural forest reserves in the Elrawashda area, known as the Elrawashda Model I and Elrawashda Model II, respectively. Both models have one thing in common, i.e. the partnership between FNC and a donor-funded project on the one hand, and the local people on the other, in planting, protecting and deriving benefits from forest reserves (Glover 2005).

Elrawashda Model I. The FAO Fuelwood Development for Energy Project in Sudan (1983-1989) designed a management plan for the Elrawashda forest (Vink 1987; FNC 2000; Ibrahim 2000; Glover 2005). The general theme of the plan was the participation of local inhabitants in the development of the reserved forest by giving them responsibilities in rehabilitation (replanting trees in a taungya system, originally adopted from SE Asia). The forest committee, which was formed by the local inhabitants, was also responsible for the protection of the reserved forest against illicit felling, illegal grazing, etc. In return, the community of local inhabitants was eligible to forest products as determined by the forest service in compartments prescribed by the plan. Some constraints were encountered related to policy barriers.

The centralized forest management system involved management control under the forestry authorities where tree establishment was carried out by different methods including local people, but protection was executed by the forest guards and officers.

There were high tree stocking densities during the first year (1988) of establishment. However, in the subsequent years the trees protected only by forestry authorities failed to survive. The failure in tree survival was attributed to heavy grazing due to ineffective protection exercised by the forestry authorities. Because the partnership relation was not clear, the consequent result was a low stocking density. In some cases, the stocking density declined to as low as zero because of the aforementioned factors related to mismanagement and low inputs to exercise effective protection. Successful regeneration and development was, however, reported in situations where protection was good. In this case, a 32 to 35% tree stocking density indicated a high success in protection of the regeneration area (Glover 2005).

Elrawashda Model II. In Elrawashda model II, selected blocks of degraded parts of Elrawashda forest reserve were allocated for integrated land use involving a rehabilitation process and a participatory approach. The model includes partnership between FNC/Agricultural Development Project for the Eastern Sudan (ADES) project and the local people in planting, protecting and getting mutual benefits from forest reserves.

The model, designed by the forestry component of the ADES is very similar to the FAO model, with the exception that the local inhabitants have to take responsibility of protecting the planted blocks against grazing. They are not allowed to collect firewood or other forest products other than deadwood prescribed as rights and privileges in the Forest Act of 1989.

The collaboration has been developed since 1994 on the basis of a contract between the two partners granting the farmers security of land tenure for crop (e.g. sorghum, millet and sesame) cultivation inside the reserve. The system grants each farmer land for cultivation each year, in a way that 75% of the land is used for crops and 25% for forest stand establishment. This is continued annually for four years until the whole piece of land is reforested. Then another piece of arable land within the forest reserve is targeted. The forest authorities provide the tree seeds and supervise the guarding and patrolling exercised by the farmers and forest guards as a joint activity. Farmers also accept to pay 10 to 20% of the grain yield to the forest authorities, who issue licenses to the people and local bakeries, at low royalties, for gathering dead wood and fallen trees under the control of the forest guards.

The contract outlines the responsibilities and obligations of each farmer for cultivation inside the forest reserve. It implies that the government secures the land and the seeds to farmers. The contract also provides for efficient protection exercised by the farmers and the forest guards.

Problems encountered with the first forest model were solved in the second one where high stocking densities (76-91%) could be maintained over time as a result of efficient protection provided through local people's involvement.

Two criteria indicate the success and efficiency of the collaborative system (i.e. Elrawashda model II) compared to the formal centralized forest management system (i.e. Elrawashda model I). The first criterion is the efficiency of the collaborative management system developed since 1994 in joint activities between farmers and the forest authority.

The survival percentage of the established forest stand indicates a stocking density as high as 76 % for a five-year-old stand. High stocking densities were maintained over age, and the decrease in stock over time from 91 % to 76 % may have been due to normal mortality after natural selection but not to grazing or mismanagement (Glover 2005).

The most important aspects that concern the management system adopted in the Elrawashda forest reserve and other reserves are contained in the success of rehabilitation, (in Elrawashda) and conservation (in Elain) based on partnership.

In Elrawashda, the number of farmers who applied for land grant increased from 30 farmers in 1994 to 800 in 1998. However, the annual number of farmers actually involved increased from 30 to 50. The area demarcated and surveyed is limited in spite of the increasing number of applicants.

1.4.3 Use and sustainability in Elrawashda natural forest reserve

Present results indicate that there was a considerable knowledge base in the study area with regard to tree species and their uses, with all respondents being able to name the major species of trees they wanted to integrate in their future land use systems. This attitude also showed that a high awareness level existed among respondents in the study area about environmental issues. It was also found that local people had strong relations with trees since trees provided them with different benefits and services.

It was found that a high demand for building materials especially by smallholder farmers put a considerable pressure on the nearby natural forest reserves. Given the high demand and the value local people put on local species for building, it is important to plant such local species outside the forests reserves to relieve the pressure on existing forests.

The stakeholders in Elrawashda showed distinct interests in future tree planting. Results from group discussions suggested that farmers were very much concerned about socio-economic benefits and satisfaction of their needs.

The quality of *Acacia senegal* gum is superior to that of any other acacias and it is an important export product. Majority of the farmers interviewed were interested in planting *A. tortilis*, which according to Webb (1984) produces high-quality firewood (4400 kcal per kg). Results revealed, however, that farmers were reluctant to integrate *A. tortilis* to their farmland owing to its wide, shallow roots that compete with crops. This very characteristic of *A. tortilis* reported by farmers is consistent with the findings of Noard and Birnie (1992).

It was observed that farmers who practiced livestock-based farming systems identified the basic benefits of trees to be provision of livestock fodder, while supply of fuelwood, building material, timber, fruits and shade were identified as other benefits.

Results of the present study agree with those reported by Ayuk (1997) and Isac (1994; cited by Sanchez 1995) who pointed out perceived benefits as one of the principal determinants of agroforestry planting practice. Similar results were observed by Madany (1991). Present research found that the adoption of live fences as an agroforestry practice was geared by their secondary benefit in fuelwood production.

It was found that the importance of various functions of trees varied between different user groups. Smallholder farmers regarded the domestic fuel production as a major role of *A. mellifera* while mechanized scheme farmers were more interested in its role in the fodder supply.

Local people saw trees as sources of material goods such as construction timber, fodder and fuelwood, rather than as providers of service functions, e.g. soil conservation or water regulation. In selecting tree species, care should thus be taken to include multi-purpose trees which would meet at least one of the high-priority needs (e.g. fuelwood) but which would also provide protective functions. This would be a more effective strategy than trying to persuade people to grow trees solely for service functions.

In summary it could be said that there were three levels of roles played by trees in farmers' land-use systems in the Elrawashda area, as follows (Glover 2005):

1. The territorial level:

- Presence of forest/trees in mechanized rainfed scheme, i.e. on the 10% of land set aside for shelterbelts and on forest lands (in the natural forest reserve and on the 25% of land set aside), farmland (permanent arable fields and farm boundaries), and home compounds.
- Ecological linkages between forest/trees and agricultural and/or livestock production.

2. The level of social relations:

- Forests as basis for maintenance of cultural integrity of the people of the Elrawashda area.

3. The level of rural households:

- Provision of forest products for household utilization.
- Provision of forest products for marketing.
- Trees as means of boundary demarcation or landmarks, which also strengthens title to land.

Analysis of the social survey (cf. Glover 2005) indicates that different user groups had different interests in forest resources. It was found that the roles of trees were not all of similar importance to the various community members. According to FAO (1985), such a differentiation in forest user groups exists at various levels - not only at the village level or communal group level, but also at the level of the household (e.g. male and female users).

The types of forest and tree utilization by the various groups of land users in the Elrawashda area were generally of complementary nature, although in some cases they were competitive. Against this background, for proper forest management, it is of paramount importance to adhere to a social mechanism so as to strike a compromise between interests that may appear contradictory. For a way out of these problems it is necessary to put in place an organizational structure for decision-making with respect to forest utilization and management and to spell out a control structure for ensuring that the decisions are adhered to (Glover 2005).

Administrative structure

It is obvious that the ADES/FNC system creates a collaborative management system, which facilitates tenure security and specifies property rights. Forest officers, forest overseers and guards work in close collaboration with villagers for executing the system. Farmers' willingness to participate in management is encouraged through rights to cultivate the land and use the resources. The land owner's (the government's) acceptance to facilitate system management is enhanced through sustainable development, protection and management of the resources. Lessons learnt included:

1. The experience of the FAO/FNC project with people's involvement provided useful information for the ADES/FNC project that facilitated better management of the Elrawashda forest reserve during the period 1994-1999 (and up to present).
2. The agricultural productivity inside the forest reserve exceeds the productivity of other open lands by three times.
3. The contract states that the government receives a 20% share of the agricultural grain products and 50% from agricultural residues sales. The revenue from this share constitutes a revolving fund directed to the resource management.
4. Negotiations between local people and the FNC are in progress concerning the future of the natural forest management and share distribution with regard to forest products.
5. Access to non-wood forest products is secured as a right of use.

Opportunities

The above rehabilitation program is still going on but confined within small pilot areas, and it has not expanded into larger areas or other forests. It is possible that:

1. The pilot project provides a good example of collaboration between the local communities (villagers) and the forest authorities. This experience can be extended to other natural forest reserves in the area (Shasheina and Sheiaib Natural forest reserves) and can be transferred to other natural forest reserves in Sudan on national project basis.
2. However, the Elrawashda natural forest reserve management with a collaborative system has not been under any precise management plan and may not be followed if staff members are transferred to other areas. Staff transfer within short periods is also another constraint.

Box 1. Natural forest reserve rehabilitation (Elsiddig 2004).

Rehabilitation of Elrawashda natural forest reserve (Gedaref State) experience.

A successful participatory rehabilitation and development process has been experienced involving the local people living around the reserve.

The FAO project (FAO/SUD/FDES) from its start in 1980 clearly defined the objectives of rehabilitation of the forest involving the local villagers. During the rehabilitation process, the villagers will have access to agricultural land, grazing land and water points. The land use practice adopted was known during the 1980s as "Village Taungya" which is an agroforestry system involving crops and tree seed cultivation on the same piece of land. The system was found economically sound in establishment of forest crop resulting in the lowest expenses in execution of a reforestation program. Forest seedlings survival counts indicated very high rates of survival during the first year. However the established forest crop was exposed to high rates of damage by pastoralists and sedentary herders. Some time complete damage to regeneration blocks was experienced.

That was the main constraint to the development of the rehabilitation programs executed by the FAO project during the period 1986-1988. The rehabilitation employed a mixed cultivation of agricultural and forest crops on the same piece of land. Although the rehabilitation process exercised by the FAO/FNC project (1980-1990) was based on mutual benefits between the local community and the FAO/FNC project, the relationship did not consider the protection of the reforestation block after the end of the cultivation season

The ADES/FNC project (1994-1999) developed a collaborative system with the local villagers based on a contract between the two partners, for the use of the forest land property. The contract clearly defines acceptable criteria for land cultivation by the local people and for renewal of forest crop by the people. On the basis of the contract each individual farmer is granted a piece of land inside the forest in such a way that 75% of it is used for crop cultivation and on the 25% the farmer raises a forest crop and is obliged to protect the young regeneration. The contract states that every year the farmer will have his land completed to 100% and he continues to raise the trees on the 25%. In this experience, the forest crop is separated from the agricultural crops i.e. existing on the 25% piece of land only. The success of the rehabilitation process is indicated by ADES/FNC by showing the annually planted area, the stocking density and the increasing number of farmers willing to participate in the system during 1994-1998.

Since 1994, farmers (villagers around the forest) who are willing to collaborate with the FNC/ADES project are annually increasing in number and protect now the new forests as indicted by the high stocking density as found in 1994-1998.

Elain and Habile Elkou natural forest reserves

The experience of natural forest reserve management in Kordofan (western Sudan) with partnership is based on a comparison between the management of two forest reserves as outlined by Mohamed 2000:

1. Elain forest reserve managed by FNC/SOS project in collaboration with traditional leadership and villagers, and

2. Habile-Elkou natural forest reserve managed by FNC on the basis of legislations and forest guards preventing people from entry.

Both forest reserves are located in Sheikan Province, North Kordofan State. Elain forest has been put under management conducted as joint activity between the Forests National Corporation (FNC) and the SOS Sahel NGO, in collaboration with the local people living in villages around the forest. It is a conservation management system involving local villagers. Habile-Elkou forest, on the other hand, did not receive management attention other than the traditional practices of guarding, patrolling and policing executed by forest guards and officers to prevent access of local people to the forest. In Elain forest, the management activities involving people is based on extension programmes and awareness raising associated with the prescription of activities. Village forest associations, local leaders and village committees are among the most efficient local institutions that collaborate with the FNC/ SOS project in people mobilization for activities including extension, fire protection and accessibility organization.

According to the study by Mohamed (2000), the conservation management system practiced in Elain natural forest reserve is based on joint activities between FNC, SOS in collaboration with local people. The system induced stand development indicated by an increasing stocking density when compared to Habile forest reserve. In the latter, traditional management practices include guarding and patrolling by few forest guards. An inventory was conducted during 1996-1999 in both forests to assess tree stock densities; the results showed that a general trend is an increase in the number of trees (per hectare and species) over time in Elain forest but the opposite is true for the Habile forest.

Contributions of people to water harvesting resulted in improved survival rates of naturally regenerated indigenous trees in the Elain forest reserve, in contrast to Habile where people were not involved. The most frequent species in Elain show better natural regeneration than the ones having low distribution.

As stated by Sidahmed (1996) land clearance for agricultural expansion, natural trees exploitation and extensive grazing decrease the chances for natural regeneration and restocking of cleared areas. This may be the reason for low number of seedlings in Habile forest.

The extension system practiced by the SOS/FNC project succeeded in establishment and development of community forests and in on-farm tree planting. These two resources increased the opportunities for the villagers to collect forest products from the communal and on-farm forests. Such opportunities reduced the pressure on the forest reserve and increased the chances for forest conservation.

Box 2 summarizes the success story of the collaborative management system adopted in the Elain natural forest reserve as compared with the results of the traditional government-controlled management system in the Habile forest reserve.

Lessons and opportunities

The above comparison between the two forests (Elain and Habile-Elkou) provides useful lessons and indicates that community-based natural forest reserve management constitutes a good basis for forest conservation and sustainable development. Without community involvement, the management of natural forest reserves will become a failure.

In community-based management wood gathering by the local people concentrates on deadwood. Tree felling occurs with permission and concentrates on selection of old trees and odd branches (cf. Elain forest above). People are also aware of destructive factors and

participate in fire control, preparation of micro-catchments for water harvesting, and enrichment planting. Together, community forests and on-farm trees improve the resource availability and reduce the pressure on natural forest reserves.

The present experience of management and conservation implemented in natural forest reserves in collaboration with village communities provides a good opportunity for system transfer to other natural forest reserves in Sudan and obviously also to natural dryland forests elsewhere.

Box 2. Natural forest reserve conservation: Elain natural forest reserve (western Sudan; Elsiddig 2004).

The SOS/FNC Elain Natural Forest Resource Project in the Elain natural forest reserve (1990-1998) is a forest conservation management system based on local community involvement.

The management system adopted at Elain (Kordofan state) forest reserve incorporated the local people in a participatory approach with the objective of organizing people in the management process in order to arrest the destructive illegal felling and at the same time to satisfy people's needs for forest products.

The success of the management system based on community involvement is reflected in a comparison between the characteristics of Elain forest reserve which incorporated the SOS /FNC community-based management system, as compared to the Habile-Elkou natural forest reserve which continued under government management based on access prevention. Both forests are forest reserves found at the same location.

Stand densities indicated higher stocking in the Elain natural forest reserve (800 trees/ha) than in Habile-Elkou (120 trees/ha).

Forest conservation and management responsibilities put more emphasis on local leaders, village committee rural people and village forest societies than on the FNC. The role of the FNC is to facilitate extension service and technical supervision. Results from a questionnaire survey indicate that only 22% of the respondents said that it is the FNC which is responsible for forest conservation and management in the Elain forest reserve. However, 60% of them knew that local leaders are responsible for forest conservation and management, and 43% indicated the forest association as being responsible for forest conservation and management. At the Habile forest reserve, respondents among villagers showed lack of awareness and complete ignorance of responsibility towards forest conservation and management. In comparison, the access to the Elain forest reserve is efficiently organized in collaboration among local people, local leaders, the village forest association and the FNC.

At the Habile-Elkou natural forest reserve, the access to the forest was not based on any precise management system and occurred illegally and in an unorganized and mismanaged way.

1.5 FARMING SYSTEM ANALYSIS AND POTENTIALS FOR COMMUNITY FORESTRY IN SENNAR STATE

Agricultural land in Singa Province of Sennar State is used under three main farming systems: mechanized rain-fed schemes (MRF, or *bildat*); traditional rain-fed farming (TRF); and irrigated schemes. In our survey used for the present report, almost half of the farmers (48%) were in the TRF system, while 32% of them were practicing MRF farming and only 16% were in the irrigated sector.

Within these farming systems, different land use systems have been adopted. Our farm analysis indicated that the bulk of farmers (69%) cultivate pure agricultural crops. About 12% practice an agro-pastoral system characterized by cultivating crops until at the end of the crop cycle animals are allowed to enter the land. Only 11% have adopted a traditional kind of agroforestry system (which we term a “crops with trees” system) where scattered trees (irregular in density and design) are left on the land and crops are cultivated in spaces among these trees². About 6% of farmers have adopted an agro-silvopastoral system where crops are cultivated with scattered trees and animals enter the land after the harvest of agricultural crops. The rest of farmers (2 %) cultivate only agricultural crops on their farmland but manage pure forests on a different piece of land.

Statistical analyses indicate that there is a significant association between farming systems and land use systems adopted. In irrigated farms, none of the farmers have adopted the policy of leaving part of the land for trees or tree regeneration, while the bulk of the farmers (88%) cultivate pure agricultural crops and some 13 % of them have included animals in the cycle. In bildat farms, very few, not more than 11%, have kept trees on the farms, while 82% of the farmers cultivate pure agricultural crops.

Agroforestry practices are thus completely lacking in irrigated schemes, i.e. the legally stipulated percentage of shelterbelts/windbreaks is not implemented. On the other hand, although the adoption of proper agroforestry is lacking in both MRF and TRF lands, the traditional adoption of some trees in what we term as crops with trees and agro-silvopastoral systems, indicate a positive attitude towards integrated management.

Seven percent of the farmers in irrigated farming system are also engaged in producing forest products (mainly gum arabic) on a separate (rain-fed) land. None of the farmers in bildat or MRF are associated with forest tree production. This indicates a vanishing gum arabic business, probably due to deterioration of the tree cover because of deforestation and the gum arabic pricing policy. An additional factor is the land and tree tenure problem that was explained in the statement forwarded by Edmond Barrow (1996) “...increases in human and animal populations have put heavy pressure on the old well-established system of tenure, which has started to disrupt the gum arabic bush fallow system”.

Within each land use system, crops are managed in rotational (changing sites of crops every year or two) or non-rotational regulation. About 75% of the survey respondents cultivate crops using rotational arrangements, whereas 68% of them are adopting pure agricultural crops; thus both systems may occur under one single farmer. This also indicates that rotational crop arrangement is quite common in this area although mostly applied to pure agricultural crop systems and only in a way of changing sites of crops every year or two without fallow periods in most cases; when there is fallow, the period is of one or two years, i.e. too short for improving land fertility or allowing tree establishment.

² This is similar to a system called the parkland system in West Africa.

Changes in land use

Farmer's responses to the question on when the current land use system had been initiated indicated that the change from tree cover to other systems had in some cases started as early as around 1915. A significant rise in the number of farmers clearing forests to other land uses occurred during the 1950's. Most families had undertaken the change in the period between the 1970's and the 1980's. In general, a continuous significant change had taken place up to the year of the investigation used for the present study (2001).

Analysis of land use change due to adoption of different farming systems gives a different picture. In irrigated farms, the change to current use started during the 1940s. The great change occurred in 1953-1954, when a large number of such farmers (26%) adopted the current agricultural crops and allowed animals to graze on the farmland after the harvest. In mechanized rain-fed farms, a quarter has adopted the traditional agroforestry system, but, on the other hand, 13% adopted an agro-silvo-pastoral system. This was encouraged by the large schemes initiated by agricultural investment companies, mainly by Abul Illa Company, as a response to a new agricultural policy that encouraged crop production and agricultural exports through various incentives including nominal land fees and export subsidies. A change to irrigated farms continued through that time but at a lower rate and then stabilised at the 1940 level in about 1982. It seems that this trend has stopped after 1996, probably due to a declining profitability of agricultural crops.

In rain-fed farms, most of the change occurred from 1964-1984 and became more regular up to 1999; after that year no more change was observed, mostly due to the scarcity of new arable land and partly due to the deteriorating productivity of existing schemes. In bildat, the traditional farming system, the change of land use to rain-fed agriculture has been or less regular over time. However, the intervals of change were longer in the earlier years than in the later ones, meaning that more land is now converted to new use than in the earlier periods. This is probably due to the rapid loss of fertility of land that allows only a short period of use after which the farmer has to move to another piece of land.

More than 60% of the survey respondents in Singa Province stated that before converting the land into current use it was covered by dense forest. Of them, 16% said it was covered by moderately stocked forest, while only 14% started on land already cultivated by their ancestors or other previous users. Only few respondents had started with bare land. Although some differences were observed among different farming systems as to the extent of destruction or the association between degree of destruction and a particular farming system, these differences were not statistically significant. With information on only the numbers of families engaged in different farming systems, we cannot thus prove that in Singa Province any one of the farming system would be more destructive to forests than another one.

However, combination of the data on numbers of farmers associated with deforestation in each farming system with the mean areas cleared of forests, resulted in an intuitive view of the relative impact of the change to the current land use. It was found that MRF is relatively the most significant factor responsible for deforestation. This result is supported by other studies, for example, by Abdelnour (2001). The next most destructive activity by this reasoning is TRF (bildat). Consequently, irrigated farms are, by far, the apparently least destructive land-use type, because of the small total areas cleared and the small number of farmers engaged; in addition, new irrigated schemes have ceased to be developed due to the substantial initial investment costs.

Most respondents (58%) indicated the purpose of deforesting land as being cultivation of sorghum or sesame, and it is worth noting that sorghum (the staple crop in Central Sudan) was the principal reason indicated by most respondents, whether grown alone or in combination with cash crops such as millet or sesame. Cotton is the cash crop of irrigated farms,

and it was introduced by scheme authorities for producing an export commodity. Statistical analysis showed that there is significant association between farming systems and the purpose of deforestation.

Although deforestation in order to produce subsistence food crops was driven by the obvious necessity to achieve food security and income generation, deforestation for cultivating exportable crops reflects market and government failure in pricing the resources, in which over-consumption and excessive depreciation of environmental assets is a result of a misled policy.

Impact of change in land use on biodiversity

Sennar State had in the early 20th century a high biological diversity. The change in land use was accompanied by disappearance of trees, other plants and animal species from the area. The disappearance of valuable natural grasses started in about 1940, although most respondents in the study used here related grass disappearance to the period from 1970-1990. This largely corresponds to a peak in changes in land use in rain-fed areas, both in mechanized farming and in bildat. The change in land use also resulted in the appearance of weeds which were not known before the change. About 67% of the respondents could mention at least eight such weed species. These plants are known to negatively affect the vigour and productivity of crops and make weeding more costly.

According to the respondents, Singa province had once a proper forest cover. Before land use changes, dense forests of *heglig* (*Balanites aegyptiaca*), *hashab* (*Acacia senegal*), *talh* (*A. seyal*) and *sunt* (*A. nilotica*) trees were present. Description of game animals which were common before the land use change and the appearance or increase of new species indicate an impact of land use change on animal biodiversity. In the category of carnivorous animal species, most respondents (95%) mentioned hyenas and wild cats. In the category of herbivorous animal species, gazelles and rodents (mostly rabbits, squirrel and rats) were mentioned by 91% of the respondents. It can be inferred from the results that many flora and fauna species are threatened, extinct or endangered. The national criteria and indicators of biodiversity on forest land (FNC 2003; HCENR 2003) validate the number of species as indicators of such change.

Perception of land users on deforestation

Almost all survey respondents (98%) considered deforestation as beneficial (in their own short-term perspective). Benefits mainly stated were provision of space for cultivation and firewood (91% of respondents as cumulative percentage), while other benefits such as building material and charcoal are also mentioned. Comparison among farming systems indicate that space for cultivation is the most important reason on rain-fed farms, both in mechanized (84% of such farms), and in bildat (85%) systems, while in irrigated schemes firewood production seemed to be more important (on 73% of irrigated farms).

The fact that almost all respondents perceived deforestation as beneficial reflects their need for forested lands for future cultivation; it is also an indicator for the need for awareness regarding the protective role of trees in conserving land fertility within their traditional agro-ecosystems. Such an indicator is important for adopting positive future programs /projects for reversing land degradation.

While 35% of the respondents had actually made use of the cut trees, 33% had destroyed them by burning, which indicates that, for this portion of farmers, cultivating the land was

really the only reason for deforestation. Of those who made use of cut trees, 91% had produced fuelwood (charcoal and firewood).

Although the collection of game animals and game animal parts were important income generation activities - according to informal discussions with respondents - only few of them mentioned bush meat as foregone resource; this is normally difficult to quantify or even mention, because it is mostly done informally and illegally.

Despite the benefits received from deforestation, 46% of the respondents seemed to perceive that deforestation resulted in negative consequences. In cumulative terms, over 89% mentioned environmental problems (detailed opinions in this respect include: declining and erratic rainfall, drought and desertification, floods, erosion and loss of topsoil, and decline in land productivity). A total of 61% mentioned the scarcity of forest products and 19% the scarcity of fodder as the main problems. One of the problems resulting from land clearing, indicated by 7% of the respondents, was legal confrontation with forestry authorities (FNC).

Respondents who saw problems arising from deforestation could also give solutions to these problems, as they perceived them. The most often suggested solution was planting new forests (79%), albeit not on their own lands; protecting the existing ones (47%); and provision of extension services to farmers on the importance of trees and on regeneration techniques (38%). None of the farmers supported allowing part of the land under crop production to be assigned for tree establishment or regeneration.

Perception of land users on alternative land use systems

Farmers adopting a pure agricultural system gave a variety of reasons, usually in combination, for considering it advantageous over other systems. The most frequently mentioned reason was income generation and profitability, as these were stated by 57% of those adopting the system. Around 37% favoured the system because it had given them an opportunity to settle on the land. A total of 24% considered that the seasonal nature of the system gives them the opportunity to practice other activities during the off-season period. Adopters also expressed problems associated with the system. The most frequently cited disadvantages were water problems, expressed as "fluctuation of rainfall" or "scarcity of water" (and associated delays in agricultural operations), and the declining land productivity (in 33% of the responses). Invasion of weeds and grasses was stated by 29%, while financing problems were mentioned by 16% of the pure croppers.

Statistical analysis showed significant association between the adopted farming system and the problems encountered. In irrigated farms the most prominent problem was, surprisingly, the scarcity of irrigation water.

Fluctuation of rainfall and declining productivity were the most prominent problems both in rain-fed mechanized schemes and in bildat. Pests seemed to be considered by the respondents as a secondary problem; this might reflect their frustration (as if saying, "there is nothing to be attacked by pests")

It was found that the "crops with trees" system was adopted by only about 11% of the respondents. The advantages perceived by adopters of this system centered around their belief that this system enhances land productivity (mentioned by 72 %) and is profitable (66%), while 32% indicated that it is advantageous because it involves two seasons with benefits, one from agricultural crops and another from trees.

Land productivity in different land use systems in deforested areas

In our survey the highest productivity was achieved on farms adopting crops with trees system or an agrosilvopastoral system, i.e. in systems where trees are present with or without animals.

Human practices associated with different land use systems seem to indicate different effects on land productivity, and hence on the sustainability of land use. A comparison of crop productivity revealed that the productivity of agricultural crops in traditional agroforestry practices (crops with trees, or an agrosilvopastoral system) is significantly better than that in the local non-agroforestry practices (Table 4).

Table 4. Comparison of crop productivity in different adopted land use systems (sacks/feddan).

System	Mean productivity (sacks /feddan)		
	Sorghum	Sesame	Pearl millet
Agricultural crops only	1.7 ^a	1.01 ^a	1.05 ^a
Agricultural crops with trees	3.59 ^b	2.02 ^b	2.03 ^b
Agropastoral	1.55 ^a	1.01 ^a	0.6 ^a
Agrosilvopastoral	2.95 ^b	2.18 ^b	5.1

Notes:

1. Comparison is across systems and not across products; different letters indicate that means are significantly different at the 0.05 significance level, according to the LSD test.
2. Millet productivity in the agrosilvopastoral system was excluded from the multiple comparison tests because too few farmers represented this system.
3. Computations were made for the years 1998-2001.

Estimate of financial net returns of different land-use alternatives

Table 5 shows the per unit area (feddan) cost of producing crops in different land use systems. It can be seen that, on average, the cost is the same for the same crop, regardless of the land use system. Gross and net revenues are presented in Table 6. Table 7 presents the per feddan net revenue in each system; each crop is weighed by its relative area on the average farm. This means that, on average, a deforested area produces LS 29975/feddan, if the crops with trees system are adopted, while it is a total waste when other systems are adopted. It can also be inferred that, from the financial point of view, traditional agroforestry systems are more sustainable than the other, non-agroforestry systems.

Table 5. Cost of producing crops in different land use systems (Ls/feddan).

Crop	Costs all systems (Ls/feddan)			
	Seeds	Machine	Labour	Total
Sorghum	2461	7954	31988	42403
Sesame	2919	7337	36094	46350
Millet	1934	7897	25933	35764

Table 6. Gross and net revenue of producing crops in different land use systems (Ls/feddan).

Crops only		Crops with trees		Agropastoral		Agrosilvopastoral	
Gross return	Net return	Gross return	Net return	Gross return	Net return	Gross return	Net return
40869	-7452	86306	31406	37262	-10536	70920	-52672
30568	-19298	61136	7754	30568	-19298	75979	-53939
37800	-1619	73080	30249	21600	-16253		-53517

Note: Productivity is average over 3 years

Table 7. Proportional net return from producing crops in different land use systems (Ls/feddan).

Proportional net return				
Crop	Crops only	Crops with trees	Agropastoral	Agrosilvopastoral
Sorghum	-5459	23008	-38588	-38588
Sesame	-3712	1492	-10375	-10375
Millet	-293	5475	-9687	-9687
Total/feddan	-9464	29975	-58650	-58650

Policy implications

It is obvious that the main issue in smallholder agriculture in Sennar Province in Sudan is the land degradation resulting from massive deforestation. This deforestation does not only lead to tree cover loss but also to decline in soil productivity and loss of benefits associated with forest cover, such as climatic conditions or biodiversity. Deforestation was motivated by need for food, income and forest products. Incentives provided by agricultural policy that focused on encouraging investment in agricultural crops for exports purposes have resulted in deforesting large areas of land and converting them into intensive agricultural production without considering the limited capacity of land, also ignoring land reclamation measures. This was especially convenient since land was available for conversion at little or no financial cost.

Although irrigated schemes were also established at the cost of forest clearance, deforestation in them has ceased, because they are designed for a specific area of land. Adding new schemes would require substantial investment in infrastructure, which the government does not seem to be willing or capable to incur. The private sector requires substantial incentives to invest in new irrigated schemes.

Rainfed agriculture, on the other hand, requires less initial investment in opening new land. A particular piece of land can be as small as one portion of a feddan and can be managed by any number of farmers. This is why opening new rainfed land for agricultural cultivation has occurred on a very large scale and has continued up to the present date.

Although all unregistered land is by law owned by the government, farmers in rainfed areas consider the land they are cultivating out of deforestation as their own land, since they have cleared it themselves or it has been cleared and cultivated by their ancestors. Apart from the relatively recently introduced land clearance license system, there are no other formal property/use rights. The implication of this is that a person can convert any piece of land and consider it as his/her own as long as he/she is able to cultivate it. Licensing of land and incorporation of trees is regulated by a ministerial decree, but this has not been successful

because the committees responsible for licensing and controlling tree incorporation do not function efficiently, and in some areas they have not been functioning at all.

Considering the current land use and land arrangements in deforested lands, it is obvious that few farmers in any of the farming systems have adopted the tree integration approach forwarded by the above-mentioned policy. The bulk of farmers cultivate purely agricultural crops with simple rotations where fallow periods do not exceed two years and in a few instances animals are introduced after harvest. Integration of trees was observed in our study in few cases on traditional rain-fed farms. Even in these rare instances trees were not introduced in systematic or conventional agroforestry arrangements; rather, they were left scattered at irregular and large spaces to serve as shade for animals and humans during resting periods, and in some instances they were believed to attract rains.

This indicates an obvious failure of the tree/crop integration policy and the land clearing committees implementing this policy. This failure can be attributed to the fact that the real needs of the land users have not been sufficiently explored. It has been seen in our study that most of the early land clearers burned away the trees and did not make use of the wood. The financial value of crops was far higher than the value of fuelwood. In fact, fuelwood was abundantly and freely available. However, in recent years, cleared trees have also been converted and sold in the form of firewood and charcoal, which, due to relative scarcity, have a real commercial value now.

Although the need for opening new fertile land for food production still exists, it may be suspected that a land clearance license is now actually used mainly for fuelwood production, as a quick means of income generation, rather than for crop cultivation. As long as there is need for subsistence income, deforestation will continue. The fact that almost all farmers consider deforestation as beneficial -- as a means of providing land for agriculture and fuelwood for both own use and for sale -- supports this explanation. The few respondents who perceived problems emanating from deforestation forwarded solutions that are for the government to handle, such as protecting existing forests, increasing the forest cover in areas not currently used as agricultural lands, and provision of extension services. This indicates perception that trees and forests are the responsibility of the government.

Farmers adopting pure agricultural systems reasoned it on financial basis, i.e. they perceived adoption of the alternative integrated land use or agroforestry systems as having a lower financial value (or equivalently, a higher financial cost), understanding that crop cultivation is a seasonal activity that provides off-season opportunities to supplement the on-farm activities. This also implies understanding that other systems will tie the farmers to the land all over the area and forgo off-farm income. However, empirical financial analysis has shown just the opposite. While the cost of production is the same in different systems, the simple agroforestry system adopted by some farmers is more profitable than the pure crop system, as the productivity is higher in the former. Farmers need to be exposed to such information and see the results themselves.

In a study parallel to the one reported here, conducted by the FNC³, farmers on rainfed land gave reasons for not adopting the crop/tree integration policy. One of the major concerns was the possibility of a decreasing income due to forgoing productive agricultural land to be used for tree establishment. In many areas farmers complained that they had been forced to leave aside part of the land. But this land was neither used by farmers for crop production nor by the FNC, it was simply left idle. This is because the FNC was not prepared or obliged to invest in the land, and farmers could not see the benefits of sacrificing such land for tree establishment. Farmers were of the opinion that tree growing is none of their business and

³ This was an FAO-supported project aiming at forest policy formulation and revision of the FNC organisation and regulations.

that there are other costs and constraints (mainly related to water, seedlings and tree protection) that are not thought when proposing the policy of incorporating trees into croplands.

Policy guidance

The goals of sustaining land productivity and reversing land degradation in central Sudan are closely linked to the national goals of maximizing productivity and the national income while reducing poverty and improving the income distribution and the environment. Specific to the forest sector are the national goals of increasing the forest cover and enhancing biodiversity.

The objectives of the policy related to smallholder agriculture are to improve land productivity for agricultural and forestry crops in order to increase the incomes of the farmers and enhance the biodiversity and the general environment. This can be achieved by adopting sustainable land use systems in which trees constitute an important part.

It is recognized that benefits of reducing land degradation and enhancing the environment are public goods that can only be undertaken by private entities when the externalities are internalised through some incentive schemes. Private farmers are motivated by financial incentives, and this will guide their decision on which system and even which crops they adopt. Biodiversity and sustainable productivity are benefits for the whole society and for the present and future generations alike, because the loss of biodiversity and land productivity are irreversible in the long run and will affect a large population at different times. Such benefits are non-market benefits, and their provision is the sole responsibility of the public sector. For this reason, any incorporation of trees with private or public lands needs the assurance of the government that losses to private entities will be fully compensated and those benefits are guaranteed.

Society as a whole should be in a better position and no one should be worse-off because of the intervention. Maximizing net social benefits entails that a land resource is managed by adopting a holistic approach, for multipurpose benefits of crop supply, biodiversity conservation, and for increasing the forest cover for enhancing the aesthetic value and the general environment. This requires cooperation and coordination of different sectors and stakeholders. In particular, the agricultural and forest administrations should be the major role players, since it requires particular skills to achieve the objectives effectively.

It is recommended that conservation of trees or establishment of a new tree cover in rainfed agriculture be achieved through integrating trees and crops in a suitable arrangement on the farm (e.g. on adjacent pieces of land, or through intercropping, shelterbelts or other arrangements). Communities can establish a suitable partnership system between the farmer and the government (represented by the forest authority), as successful examples of such systems are already seen in the case of community-based management of reserved government forests.

This policy requires development of solid land property/land use rights. This will guarantee that the tragedy of the commons is not replicated. On land registered as private, intervention is limited to national priority needs. Given the property rights constraint, private owners are consulted, advised and encouraged to sustainably manage and protect forests and trees on their lands, especially indigenous trees of high biodiversity value. Private land owners are encouraged to make use of commercial wood and non-wood products from indigenous trees on their lands. Unnecessary constraints and regulations that hinder this use should be avoided as long as there is evidence of sustainable tree management. Conservation of biodiversity, sustaining land productivity and increasing the forest cover are priorities that need

to be addressed. These priorities call for the principles of loss compensation and payment for providing public goods by the private sector.

On unregistered government land, redistribution of land to users based on establishing a solid user right is an important concern for the implementation of this policy. The redistribution process should strictly apply the principles of equity, transparency and collective decision making, in order to avoid potential conflicts.

It might be the case that some farmers were previously given very large areas of land, and according to the redistribution requirement such land areas will be reduced. It is important therefore to encourage the application of modern technology, including biotechnology, that permits vertical expansion instead of horizontal expansion. This is in line with the national goal of efficient use of resources and equitable distribution of resources and income.

User/property rights should be offered for a long enough period to allow for sustainable management of the land and in order to provide security to the user/investor. It should be clear from the start how the land is going to be allocated to agricultural and tree production. The forestry authority is responsible for providing control, technical assistance and inputs for tree establishment. Direct management intervention should be avoided, as this will cause confusion if two different bodies are managing the same land. Farmers can fully manage the land for crop and tree production according to an agreed-upon management plan that is based on the principle of sustainable management.

While farmers are free to choose their agricultural crops, invest and enjoy the full returns, the government bears the cost of tree production and shares the benefits of wood and non-wood tree products with the farmer on agreed-upon basis. Land management should be controlled by a legal contract between the farmer, the agricultural administration and the forestry administration. The responsibilities and rights of each party should clearly be stated in the contract, including the incentives and penalties.

The choice of tree species should be carefully considered and based on scientific research. Tree species that are suitable for a particular arrangement are preferable. Multipurpose trees that meet the biodiversity conservation purpose improve land fertility and produce wood or non-wood products of high commercial value are ideal. These can be established in combination with fast-growing exotic species, as indigenous trees are usually slow growers and provide adequate financial returns only after a long period of time.

The implementation of this policy will require forestry and agricultural staffs well trained in both fields and in participatory management approaches. It will also require integration of efforts by local governments and various related administrations with those of the local communities. Continuous consultations will minimize conflicts and assist in achieving successful results. Effective and well-prepared and well-financed awareness and extension programs need to be implemented in order to gain farmers' support. Model farms that show the benefits of the integrated systems need to be carefully considered and presented. Effective monitoring and regulations to ensure the implementation of the policy and programs are inevitable. In this connection the capacity of forestry and agricultural staff needs to be strengthened. No efforts should be spared to establish consultative and participative management systems. The policing approach should be abolished altogether. The forest legislation needs to be revised to incorporate the means of implementation of the new policy.

1.6 CONCLUSIONS AND RECOMMENDATIONS BASED ON EXPERIENCE FROM SUDAN

Criteria and indicators for sustainable forest development with partnership

Criteria and indicators are becoming important tools in evaluation of sustainability level associated with forest development and management.

In the present report these issues are mentioned or indicated in most of the examples concerning experience in partnership in Sudan. In case of natural forest resources management, the example of Elrawashda states the criterion "increase in forest cover based on people involvement." The success in achieving this criterion is based on the indicator that the number of people involved increased from 30 farmers in 1994 to 800 farmers in 1998. Another indicator is provided by the annual area rehabilitated and protected by the farmers resulting in a good stocked forest cover of 76-91%, which is an indicator of rehabilitation of the degraded part of the forest.

The example of Elain natural forest reserve provides an indicator that the forest stock was increased from 800 stems to 1020 stems per hectare at Elain forest as a result of people involvement in forest conservation. When this is compared with Habile forest reservation, only 120 stems per hectare were measured. This stands as strong indicator of the role of partnership in sustainable management of the forest (case Elain).

Then sunt (*Acacia nilotica*) riverain forest is a relevant example. The criteria of sustainable management during the first rotation (1935-1964) have an indicator of balanced area/age distribution. During this period, people were not in need of entering the sunt forest and hence the forest was developed. But during the second rotation (1965-1994) the social dimension was very strong and the impact of illegal felling was very clear as indicated by a disturbed sustainability in the area/age distribution. This shows a need for partnership to facilitate a better management system based on people's involvement. When considering a community forest model, the criterion of increasing the tree cover is based on an indicator of annual increase in the community forest area.

Conclusions

In the study on experiences from Sudan the case of the Elain natural forest reserve management provides a success story of community-based natural forest resource management. The collaboration in organizing activities inside forest reserve as performed between the SOS/FNC and the local people facilitates an efficient mechanism in the development of natural stands and enhances forest protection against illegal felling and may ultimately arrest forest degradation. Such collaboration is lacking in the Habile natural forest reserve described as a contrasting example.

The results show marked difference between the two forests in stocking densities and stand development. People's awareness and participation levels are also different. Such differences are, to a great extent, a result of differences in management systems. At Elain the management system incorporates the community in collaboration with the FNC/SOS project. Such collaboration is lacking at Habile. The reservation policy adopted by the government to manage the resource for the benefit of the people of Habile was no longer effective. There was a complete absence of extension during the reservation era in this particular case. Prevention policy thus has a negative impact on the forest resource, as manifested in a continuous deterioration of the natural forest reserve and loss of benefits.

In contrast, collaborative forest management in Elain and Elrawashda represents a progressive shift towards state recognition of the interdependence between the well-being of forests and the well-being of local people depending on them for subsistence and livelihood needs. It has succeeded in benefit-sharing arrangements within the community and motivates villagers to participate in forest conservation and rehabilitation through community-controlled protection.

The cases of Elain natural forest reserve conservation management and Elrawashda forest reserve rehabilitation management provide promising examples for participatory management for different purposes. Such systems gain local people's confidence and are reflected in good forest performance. Collaboration enabled activities inside forest reserves implemented by the non-governmental organisation SOS, the FNC, and the local people, creating an efficient mechanism for the protection and development of these natural forest reserves.

Elrawashda is a rehabilitation success story in which people and the FNC gain mutual benefits; the goal is rehabilitation of the forest and provision of people's needs. The Elrawashda experience is being transferred to the other large reserved forests of Wad Kabo and Shasheina, both in the Gedaref area. In Shasheina, the gum arabic tree *Acacia senegal* is the main species planted by farmers. The FNC staffs, from the state forest manager to the forest overseer, are all involved in the cooperation with farmers.

The Elain forest experience is a conservation success story which stimulates a policy change towards involving the traditional leadership and the forest-dependent villagers in protection and conservation. When Elain forest development is compared with near-by Habile, the former is developing and increasing in stocking density while Habile is degrading.

Around the Elain forest reserve, the FNC helped the local communities to establish community forests and on-farm trees and encouraged the people to manage these resources for the supply of wood and other products. It is this development that facilitated conservation in Elain.

Habile is still under the policy system based on preventing people from entry. However, people enter illegally and continue to degrade the forest.

Main findings and specific recommendations

The management experience gained from Elain and Elrawashda natural forest reserves need to be documented and transferred to other natural forest reserves. Information on stand density, composition and structure should be given consideration, so as to assist the forest managers to prepare better management plans for rational use of the resource.

There is much interest in the collaborative forest management approach. To take this concept to other new areas is more a matter of dedication, hard work and serious commitment than simply funding, as the approach is relatively easy to understand. However, there are no two identical rural communities, and working with local communities is not always easy, something which calls for active technical assistance by experienced facilitators to keep this process of change on track.

For the case of Sudan, and for potential application elsewhere, this study has come up with a number of findings and recommendations for the public and private actors in forest-sector development. The following are the main ones:

1. Collaborative forest management, also as observed in two "success story cases" in Sudan (Elain and Elrawashda), represents a progressive shift towards state recognition of the interdependence between the well-being

of forests and the well-being of the local people depending on them for subsistence and livelihood needs. In these cases, out of several attempts and “models” to create collaborative forest management in Sudan, it can be concluded that it is possible to arrange the benefit-sharing within the community and motivate the local people to participate in forest conservation and rehabilitation and to achieve community-controlled forest protection.

2. The cases of the Elain natural forest reserve conservation and the Elrawashda forest reserve rehabilitation also provide promising examples for participatory management. The systems have won the confidence of the local people and resulted in good forestry practice.
3. Elrawashda is a forest rehabilitation success story in which people and the forestry administration (FNC) have gained mutual benefits. The Elrawashda experience has already been transferred to other, larger reserved forests (Wad Kabo and Shasheina forests, both in Gedaref State in the Blue Nile region).
4. *Acacia senegal* (the gum arabic tree) is commonly the main tree species planted by farmers in Sudan. The forestry administration (FNC) staff, from the state forest manager to the forest overseer, is all involved in interaction with the farmers for proper management of this valuable tree species.
5. The study shows that Elain forest is a conservation success story which stimulates policy change towards involving the traditional leadership and forest-dependent villagers in forest protection. When forest development in Elain was compared with another area where the policy was to try to prevent people from entering the forest, it was found that participation in forest management has led to an increase in forest resources, while prevention of entry has caused forest degradation.
6. *Land-use and forest policies* with provisions to promote the conservation and sustainable management of the forest resources, the development of private forest, and the participatory forest management adopted by the government to manage the resource for the benefit of the nation all show positive results in Sudan and should be followed elsewhere when feasible.
7. The study shows tentative development and operationalising of a functioning system of *criteria and indicators (C&I)* for sustainable forestry development, with community participation.
8. Sustainability of forest management depends on having communities working together with government agencies, concession holders, NGOs and other institutions involved in forest management in assessing, planning and monitoring management operations according to locally defined concerns, needs and goals.
9. Partnership between public and private actors in forest-sector development offers substantial promise as a way of dealing with natural resource conflicts in a participatory and equitable manner. The case of Sennar state also analysed in the present report outlines a number of specific policy measures which should be implemented.

10. Multiple functions of trees constitute the main source of multiple socio-economic and environmental benefits for the local people. They are particularly critical to livelihood strategies during drought.
11. Forestry extension services should be planned so as to fulfil the stated management objectives.
12. Forest authorities should encourage the rural people to plant trees on their own farms or establish new community-managed forests, so as to reduce the pressure on the natural forest reserves.
13. Research on the interaction between people and the environment on drylands should be given a high priority both nationally and internationally. Dryland development should be supported by appropriate use of the existing research information and, when necessary, new research. Projects should be preceded by sufficient analysis of the situation and accommodate local people's priorities and capacities.
14. Sustainable forest management, including forest conservation, must be given an important niche role for rural livelihoods and land use in the future, for example to meet contingencies, to mitigate risk and improve resilience, and to provide goods and services that other forms of land use cannot provide.
15. For the partnership between public and private actors in forest-sector development to attain long-term sustainability and become a viable long-term option, it is important not to lose sight of the complexity and diversity of local people's dependency on forests. The challenge is to move beyond community forest protection to develop options for the sustainable satisfaction of essential needs of the local people.
16. Policies to improve smallholder farming systems can insure that small farmers are not disadvantaged in the society. In particular, traditional agroforestry systems should be analysed and developed from the viewpoint of poverty reduction; new policies should support the maintenance of traditional and new sustainable forms of land use.
17. A growing consensus asserts that new approaches must depend less on direct interventions by national governments and more on participatory approaches, civil society, market forces and true partnerships between stakeholders.

2 PART II: CASE STUDIES ON LAOS, NEPAL, VIETNAM, KENYA, TANZANIA AND MOZAMBIQUE

2.1 INTRODUCTION

Poverty alleviation and sustainable development are the principal concepts guiding forest sector development. These two concepts are strongly interlinked. Sustainable forest development combines socio-economic development and sustainable use, conservation and development of forest resources. The sustainable forest management principle states that "Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations" (UNCD 1992). Since the adoption of the United Nations Millennium Declaration in 2000, poverty alleviation has received a central role in the national development strategies and has become the paramount goal of development cooperation.

According to World Bank (2004) estimate, about 1.6 billion people worldwide rely on forests for their livelihoods and about 80% of those living with less than 1 USD/day depend to some extent on forests. The world's 60 million indigenous people are almost totally dependent on natural forests. Forests contribute to livelihoods through providing subsistence goods and income from the sale of forest products, by providing inputs for agriculture and through employment. Forests are also an important reserve, to which people can turn to in times of hardships. In addition to timber and non timber forest products, forests provide a range of environmental services and are important for cultural and religious heritage.

Access to forests and the ways people manage and use forest resources is mediated through institutional arrangements that regulate resource access, control and use. These institutions can be traditional and/or based on formal legislation. Traditional institutions are based on local rules and customs that regulate access to and the use of resources. The role of formal and traditional institutions and interaction between them are crucial in development efforts aimed at sustainable resource management and poverty alleviation.

In most developing countries forest resources have since colonial times been under state ownership and management. However, the governments have not had the resources and capacities needed to bring forest resources under sustainable management. At the same time, centralized state control and forest management systems have for a large extent ignored traditional forms of forest management. This has contributed to the disempowerment of local people and communities in controlling and managing forest resources (Poffenberger 1999; Forest Trends 2002).

Forest resources have been used as the source of economic development, which has led to extensive areas being placed under timber concessions. Unsustainable timber harvesting and uncontrolled conversion of forest to agricultural land, as well as increasing pressure on lands used for shifting cultivation, have led to deforestation, forest degradation and loss of biodiversity. The efforts to protect the remaining natural forests by designating large areas for conservation and to enhance tree planting and plantation development have proved to be ineffective in saving the forest. In many countries, forest encroachment and illegal timber harvesting are ongoing activities even in conservation areas.

The inability of the state to manage and control the vast areas of forest officially under its control has in many developing countries led to policy changes in search for local level forest management regimes, which would lead to sustainable resource management and promote local development. These management regimes are based on partnerships between the state and people living in or close to the forest. The overall process is in most countries

also closely connected to the ideas of decentralisation, which encompass the shifting of natural resource management powers from the central government to lower level government organisations at regional, provincial and village levels and to local communities. These processes are widely supported by international development agencies and are a central focus in natural resource related projects and programmes.

In many countries, the policy changes to involve local people in forest resources management are ongoing and the experiences of the impacts of different forms of partnerships on forest resources and local livelihoods are still very limited. However, for the future development of partnerships, it is important to draw together the experiences gained so far and the lessons learnt in implementing different forms of partnerships in varying socio-economic and environmental conditions.

This study is based on an overview of different partnership arrangements in six case study countries. It includes a general description and comparison of forest tenure systems and different forms of partnerships in forest management in Laos, Nepal, Vietnam, Kenya, Mozambique and Tanzania.

This study is

- to contribute to the understanding of different ways of forming partnerships in forest management by classifying existing partnerships according to different attributes of partnerships,
- to combine the experiences gained from implementing different partnerships and
- to formulate suggestions for future development of partnerships.

Forest management partnerships between public and private actors are in this study defined as different ways of sharing forest management authority and responsibility, and the associated costs and benefits, between the state and private farmers and between the state and rural communities. Due to the policies and actual situations in the case study countries this study focuses mainly on the partnerships between communities/villages and the state. Partnerships between the state and households are included only in the case studies of Laos and Vietnam, where forest land allocation to households has a central role in poverty alleviation and in the development of the forestry sector.

Partnerships' role in the national forest policies and poverty reduction strategies of the case study countries is reviewed shortly in Chapter 2. Chapter 3 presents different ways of classifying partnerships. Experiences from different partnership arrangements are presented and discussed in Chapter 4. Case studies of Laos, Nepal, Vietnam, Kenya, Mozambique and Tanzania are presented in Chapter 5.

2.2 PARTNERSHIPS IN NATIONAL FOREST POLICIES

The forest policies of all the case study countries recognise the positive role of partnerships in forest sector development. In Nepal, the changes in forest policy towards involving local communities in forest management started already in the late 1970s. In the other case study countries this development is quite recent. In Laos, Vietnam and Tanzania the main policy changes took place during the 1990s. In Kenya and Mozambique, the policy is still evolving and the legislative frameworks needed for implementing the policy have not yet been formalised.

Although the forest policies in all the case study countries support local people's participation in forest management, there are significant differences in the role envisaged for local

resource managers and in the degree, to which management authority and benefits and costs are shared between the state and local people. Tanzanian forest policy gives full support to different partnership arrangements and provides options from joint forest management to community ownership. In Mozambique, the policy is still evolving, but the framework seems to restrict community participation to representation in district level resource management planning institutions and to benefits negotiated with concession holders. In Laos and Vietnam, the main emphasis is in involving households and communities in forest management through forest land allocation.

Forest policies have generally supported partnerships in degraded areas, where forest management has concentrated on reforestation, rehabilitation and planting activities. Policies to encourage partnerships in the management of valuable natural forest have been absent. In three case study countries (Laos, Tanzania and Vietnam) forest policy allows or encourages partnerships also in the management of natural forests. In Nepal, however, where the forest policy has for a long time supported community based forest management in the hills, new policy initiatives restrict community management in large valuable natural forest areas.

The poverty reduction strategies or rural development programmes of the case study countries recognise the importance of sustainable resource management for poverty alleviation. In most of the case study countries, forest management partnerships are seen as a way to improve local livelihoods through generating income earning activities and employment. In Laos and Vietnam, forest land allocation and sedentarisation of shifting cultivators are among the main goals of the socio-economic development strategies.

2.3 CLASSIFICATION OF PARTNERSHIPS

2.3.1 Classification according to the partners

Partnerships in forest management can be classified in different ways depending on which attributes of partnerships are used as the basis for classifying.

We can distinguish partnerships between the state and private households, between the state and forest associations, user groups or villages and between the state and private sector companies. Partnerships can also be formed between private households and/or communities and private companies. As well, examples of partnerships among the state, private companies and households/communities exist. Table 8 gives examples of the different forms of partnerships found in the case study countries classified according to the partners.

Table 8. Examples of existing partnerships classified according to the partners.

State in partnership with	Examples
Household	Laos: forest land allocation Vietnam: forest land allocation and contracting
Association	Kenya: shamba system Kenya: forest association Laos: village forest associations in pilot projects (LSFP, FOMACOP) ⁴
User group	Nepal: community forest user group, leasehold group
Village	Tanzania: village forest management areas Laos: village forest management agreement Vietnam: forest land allocation to village community
Private company and households	Kenya: honey production
Private company and community	Mozambique: community consultation, tourism ventures

2.3.2 Classification according to the nature of the resource

Another option is to classify partnerships by grouping them according to the attributes of the resource, which is the object of the partnership arrangement. We can then distinguish partnerships in relation to e.g. natural forests, degraded forests, bare lands and planted forests. The majority of the partnership arrangements aim at rehabilitating degraded forests, afforestation and planting of bare lands or protection of natural forests.

Partnerships in natural forests have generally focused on forest protection. Partnerships in more production oriented natural forest management have so far been less common (e.g. pilot projects in Laos, contracting of forest land in Vietnam, village forest management areas in Tanzania). Governments have generally been reluctant to give up the control over valuable forest resources. In Nepal, community forestry has been supported in the hills where forests have generally been degraded, but initiatives to expand community forestry to the Terai area, with valuable forest resources, has led to policy changes that restrict community forestry in the management of valuable forests. On the other hand, the recent Decree on the Sustainable Management of Production Forest in Laos calls for the participation of villagers in planning, management and benefit sharing in production forests. Also in Kenya, the Forest Bill 2005 introduces new forms of co-operation in indigenous forests.

2.3.3 Classification according to the degree to which management powers have been shared between the partners

The most crucial issue, which cross cuts through different classifications, is the degree to which the powers to control and manage forest resources or forest land have been shared between the partners (Alden Wily and Mbaya 2001). In the case study countries, power sharing ranges from complete state control to almost full devolution of powers to the village level. In between, there is a continuum of approaches. The general trend in benefit sharing goes hand in hand with the power to manage forest resources: the greater the management powers and responsibilities the larger the share of the benefits.

⁴ Lao-Swedish Forestry Programme and Forest Management and Conservation Project

In one extreme, the state has retained all the powers to control and manage the resource. In order to gain cooperation in forest protection or rehabilitation the state permits local people to use forest products for subsistence or cultivate land under the trees in plantations as in the shamba system in Kenya. Cooperation can also be based on sharing a part of the revenue gained from the resource with the local community or through offering employment opportunities. (Alden Wily 2002). For example, community consultations in Mozambique aim at securing benefits to communities through employment opportunities and infrastructure development when forest concessions are awarded to third parties, while subsistence use of the area is safeguarded through legislation. Another example is the Kakamega forest in Kenya, where the Forest Department and Kenya Wildlife Service have employed various incentives to enhance community participation in forest conservation and management. These measures have included infrastructure development and animal control. Local communities have been consulted on regulating forest use and people's dependence on forests has been reduced by developing other income earning opportunities and agroforestry (Mogaka et al. 2001).

In the other extreme, the power to make decisions concerning the use, development and utilisation of the resource is devolved to the local level (Alden Wily 2002). In Tanzania, a village council can declare an area of village land as a village land forest reserve and manage it according to a management plan and by-laws drawn by the village council. The village council is responsible for the management of the reserve and can grant permits for the commercial use of the resource.

Between these extremes there are different forms of cooperation, which are usually based on management agreements between households, associations, user groups, communities or villages and state authorities. These agreements delegate certain rights and duties to the households/villages. Two broad and overlapping types of agreements can be distinguished: agreements that give households/villages the role of a "co-manager" and agreements that delegate households/villages the role of a "designated manager" (modified from Alden Wily 2002).

Co-management models often restrict household/community participation into implementing predetermined management activities. Forest land allocation and contracting in Vietnam are examples of co-management arrangements. The allocated, or contracted, land needs to be used for a specified purpose according to general management prescriptions. However, the regulations give more freedom to decide what trees to plant and when to harvest on degraded or bare lands when households carry the costs of planting. Participatory management planning in Kenya is being developed to include negotiations and agreement on the main roles and responsibilities of the stakeholders. However, the role assigned to community associations seems to be very protection oriented. The emphasis has been put on developing alternative income generating activities. Co-managers are usually also entitled to commercial utilisation of some NTFPs or to receive a share of revenues from e.g. tourism activities in addition to subsistence use of forest products.

When full rights and responsibilities to manage a forest area (or forest land area) are contracted to a village, community or household, they can be considered as designated managers of the area. Community forest user groups in Nepal are an example of designated managers. Management is based on an approved management plan. Designated managers have more power than co-managers to decide on the use and management of the resource, including commercial utilisation of NTFPs and, at least in some degree, of timber. They can also decide on the use of the funds generated through forest activities.

Table 9 is a tentative presentation of the distribution of some of the different forms of partnerships implemented in the case study countries according to the role of the house-

hold/community/village (modified from Alden Wily 2002). It should be noted that these categories are overlapping and situations vary within a country, depending on how the policy has been implemented.

Table 9. Partnerships classified according to the degree to which management powers have been shared between the partners.

"Beneficiary"	"Co-manager"	"Designated Manager"	"Owner"
Community consultation in Mozambique	Leasehold forestry in Nepal	Community forestry in Nepal	Village land forest reserves in Tanzania
LSFP2 ⁵ in Laos	Village forest management areas in Tanzania Forest land allocation in Laos Forest land allocation in Vietnam Community participation in Kenya	Pilot projects in Laos: LSFP1 ⁶ , FOMACOP ⁷	

2.4 EXPERIENCES FROM PARTNERSHIPS

2.4.1 Distribution of economic benefits and costs in different partnership models

In the case study countries, the changes in the forest policies, towards formally involving local people in forest management, are quite recent and evolving. Only in Nepal, have communities been formally managing forests for more than a decade. In Mozambique and Kenya, the policies are still evolving and rules for implementing the policy have not yet been formalised. The establishment of partnerships is a very slow process. It involves e.g. building of trust between the partners, establishing management regimes and capacity building in organisational and management skills, as well as in practical forest management. Experience from Tanzania shows that more than ten years may be needed before participatory forest management is firmly established (MNRT 2003). For these reasons, the experiences from the case study countries are still very limited.

The development, implementation and day-to-day activities in different forms of partnerships involve costs that accrue in different forms to participants. The development of partnerships requires identification of the stakeholders, facilitation of community organising, capacity building, border delimitation, resource inventories, preparation of management plans, management activities in the forest, monitoring, etc. The costs for provincial and district forest offices, which are usually responsible for developing and implementing partnerships, are generally substantial. Inadequate funding has been a major problem in all case study countries; the development and implementation of partnerships has been greatly dependent on donor funding.

⁵ Lao-Swedish Forestry Programme, Model 2

⁶ Lao-Swedish Forestry Programme, Model 1

⁷ Forest Management and Conservation Project

Participation in different partnerships arrangements also brings considerable costs to local people. Through these arrangements the tasks previously undertaken by forest officials (e.g. management planning, law enforcement, fire control, planting) fall by differing degrees to local people or villages/communities. In general, the costs for local people include the opportunity cost of the time spent in meetings and in different protection, rehabilitation and planting activities, and the costs related to the restrictions in access to and use of forest land and resources. Increased threat from wildlife can add to costs as well (MNRT 2003). For developing sustainable partnerships an equitable solution in benefit sharing is needed. It should encourage villages/communities in sustainable forest management and create revenues for the government to cover the costs of developing, implementing and supporting partnerships.

Beneficiary and co-management models

In beneficiary and co-management models, the economic benefits from the resource accrue mainly to the state, to the state and concessionaire (timber concessionaires in Mozambique, tourism concessionaires in Kenya and Mozambique), or to the wider society as in the case of conservation areas. Participating communities are entitled to subsistence use of forest products and delegated some additional benefits in the form of payments, employment or infrastructure development. These approaches are usually combined with the development of other income generating activities to reduce pressure on forest resources and compensate for the reduced incomes from the forests. This is also necessary to sustain community interest as the direct and indirect benefits from forest protection and/or rehabilitation are generally not sufficient for ensuring community involvement, especially when forests are of poor quality. In Kenya for example, the ban on harvesting timber in government forest reserves strongly limits the options for creating benefits from wood utilisation (Enock W. Kanyanya pers. com 2005). Income generating activities have mostly been based on the development of NTFPs, wildlife and tourism.

In general, these approaches have been protection oriented and benefits to local communities have been modest. In Kenya and Tanzania, the developed income earning activities have included beekeeping, butterfly farming, raising tree seedlings and fish farming, as well as tourism related activities. Only in exceptional cases have fees from tourism development generated important benefits to communities. Generally, the opportunities to create income through tourism development are limited to areas with exceptional wildlife or natural setting (MNRT 2003). The development of bitter bamboo and cardamom marketing groups in Laos (Morris et al. 2004) and honey production in Kenya (UNDP 2002) are examples of successful NTFP based development. In Tanzania, the most successful activities have usually been those, which have built on already existing economic activities in the communities. Beekeeping has been successful also in Tanzania, and there is considerable potential for expansion. The biggest constraints in developing honey production are related to processing and marketing (MNRT 2003).

Generally forest officers have controlled the use of the resource and issued permits for harvesting forest products. Forest authorities' reluctance to issue permits can seriously hamper the development of income generating activities as has been the case in Derre, Mozambique, where a local association has, without success, been trying to get a license for carpenters to harvest wood (Nhamtumbo et al. 2003).

Incomplete legislative framework and missing mechanisms to implement the law can effectively prevent communities from enjoying the benefits envisaged for them. For example, the Forest and Wildlife Law (1999) in Mozambique establishes a framework for communities to benefit from the commercial harvesting of forest resources in the area. The law entitles local communities to a percentage (20%) of the revenue collected by the state through issuing

licenses and concessions. However, there is no mechanism to implement this policy (Johnstone et al. 2004).

Out of the case study countries, only in Vietnam do households receive direct payments for planting and protection work. The income received from planting and protection contracts is an important additional income to poor farmers. However, it has been argued that payments are not sustainable long-term incentives for forest protection. They encourage households to protect forests for government payments and not for the current or future benefits forests provide. This can encourage dependency on government subsidies and when payments end farmers end protection (Nguyen Van Thinh et al. 2000; Bui Dung The et al. 2004). In the long run, the government cannot afford to pay for the protection of all forest areas designated for protection forests.

Table 10 presents examples of the main economic benefits and costs to households and communities in different beneficiary and co-management models. Costs include the opportunity cost of the time spent in different activities. This is indicated by listing the activities in which households/communities participate.

Designated managers and owners

When community is the designated manager or the owner of forest resources, the economic benefits accrue to the community (village forest reserves in Tanzania), or are shared with the government (pilot projects in Laos). In two pilot projects in Laos (FOMACOP and LSFP1) the villages have received rather substantial revenues from timber harvesting. The funds have been used for village development projects (MAF 2001a,b). Also, when community forest user groups in Nepal have been able to manage and use forests for commercial purposes, the benefits to user group members have increased through employment opportunities and community development projects (e.g. Singh 2005a, b). In Nepal, the general trend of forest degradation has been reversed and the forests under community management have regenerated significantly (Yadav et al. 2003). This has led to greater forest product flows, livelihood improvements and opened possibilities to commercial utilization of forest products (Springate-Baginski et al. 2002). Table 11 presents examples of the main costs and benefits to households and communities when they are designated managers or owners of the resource.

Table 10. Examples of the main economic benefits (+) and costs (-) to households and communities in different beneficiary and co-management models.

Partnership	Economic benefits/costs
Community consultations in <i>Mozambique</i>	+ subsistence use, employment, infrastructure development (FWL 1999)
Pilot projects: Tchuma Tchato	+ 33% of taxes collected from safari operators, community development - law enforcement activities (Foloma 2000)
Niassa reserve	+ crop protection through fences, employment, infrastructure development, an option for including communities as shareholders in the future - restricted hunting and fishing and limitation of areas used for agriculture and settlement (Anstey 2002)
Community participation in <i>Kenya</i>	+ development of mainly NTFP, wildlife and tourism based income generating activities, infrastructure development - reduced access to forest products, forest conservation, law enforcement, fire and wildlife control activities (Enock W. Kanyanya pers. com 2005)
Joint forest management in forest reserves in <i>Tanzania</i>	+ development of income generating activities (beekeeping, fish farming, ecotourism), employment, permission based extraction of dry timber - in resource rich areas emphasis on protection activities and in resource poor areas in rehabilitation and degeneration activities, reduced access to forest products, increased threat from wildlife (MNRT 2003)
Forest land allocation in <i>Laos</i> Village forest	+ subsistence use of forest products, grazing, commercial utilization needs authorization - reduced access to forest products
Forest land allocation to households	+ land used for given purposes (annual crops or fruit trees, commercial tree planting), subsistence use, authorization needed for commercial utilization of forest products (Eggertz 1996) - reduced access to land for cultivation (Kallabinski and Lundgren 2004)
Forest land allocation and contracting in <i>Vietnam</i>	+ benefits depend on the state of the forest at the time of allocation/contracting, payments for protection, rehabilitation and planting (Decisions 08/2002/QD-TTg and 178/2001/QD-TTg) - reduced access to land for cultivation in upland areas (Castella et al. 2002), rehabilitation, planting and protection activities
Leasehold forestry in <i>Nepal</i>	+ improved availability of forage and fuel wood - rehabilitation activities, restrictions in forest products utilization (Karmacharya et al. 2003)

Table 11. Examples of the main economic benefits (+)/ costs (-) to households/communities when they are designated managers or owners of the resource.

Partnership	Economic benefits/costs
Pilot projects in <i>Laos</i> : FOMACOP and LSFP1	<ul style="list-style-type: none"> + utilisation of forest products following management plan, village development - involvement in most forest management activities
Community forestry in <i>Nepal</i>	<ul style="list-style-type: none"> + utilisation of forest products according to established rules and management plan, community development - usually reduced access to forest products at the beginning, involvement in most forest management activities
Village forest reserves and community forest reserves in <i>Tanzania</i>	<ul style="list-style-type: none"> + utilisation of forest products according to village by-laws and management plan, village development - involvement in most forest management activities, possibly reduced access to forest products (MNRT 2001b)

Benefit sharing is one of the crucial issues in all partnerships, and especially when partnerships are established in resource rich areas. In the pilot areas in Laos, over half of the income from timber sales went to the government through taxes and royalties or through specific revenue sharing arrangement (FOMACOP project). The central government does not give any budget support to village forestry activities. The benefit sharing arrangement has enabled the continuation of village forestry activities in the FOMACOP area through district and provincial level support despite the ending of donor funding (Forest Management Programme 2001, cited in Markopoulos 2003). In Nepal, benefit sharing issues actualised when community forestry started to spread to areas with high value forests and as the condition of forest resources under community management improved increasing possibilities for commercial utilisation. The government has since 2003 imposed a 40% tax on the sales of two valuable tree species and a 10% tax on other forest products when they are sold outside the user group (Pandey 2004). Before, community forestry activities were not taxed.

There are so far practically no experiences of communities managing resource rich forests as designated managers or owners in the African case study countries. Communities are in these areas involved only in co-management models, where forest or wildlife officers retain control over the resource. In Tanzania community based forest management has been quite successful in areas, where resources are seriously degraded and where there is little to be shared at the beginning but where the impact of restoration is substantial (MNRT 2003).

2.4.2 Partnerships and livelihood issues

All partnerships aim, at least on some level, at addressing local livelihood concerns while enhancing sustainable forest management or conservation. In "beneficiary" and "co-management" models, the arrangement seeks to bring some immediate benefits to households and communities through payments and employment, commercialisation of NTFPs and through allowing subsistence use of forest products. When the household/community is more like a "designated manager" or "owner" of the resource, it is entitled to a wider range of benefits and it has more control over the development and utilisation of the resource and thus also over future benefits (Alden Wily and Mbaya 2001).

Although small additional incomes can be very important to poor households and communities, maintaining subsistence livelihoods does not help them out of poverty. More emphasis should be put in developing resource management that would increase incomes to communities (MNRT 2003). In Tanzania for example, the primary problems identified in participatory rural appraisals are usually related to infrastructure and social services. Partnership arrangements are more likely to succeed when forest management brings income than can be invested in developing these services (FBD and IDC 2003).

In Laos and Vietnam, forest land allocation has emphasised forest protection and limited the area used for shifting cultivation. In areas where the amount of land suitable for permanent agriculture is limited, upland farmers face the need to develop alternative production systems and income generating activities. As commercially valuable production forest has not generally been allocated to households, the possibilities to generate income from forest resources have been limited. The improvement of agricultural productivity and the development of alternative, sustainable production systems to shifting cultivation have not received enough attention. According to Boissau et al. (2001) the real development challenge is to assist upland farmers in the search for sustainable production systems.

In lowland areas in Vietnam, forest land allocation has led to intensified rice production, and where suitable land has been available, to the development of new irrigated rice fields, as well as to planting of tree crops (Boissau et al. 2001; Castella et al. 2002). In these areas, forest land allocation and contracting have increased forest cover and improved the quality of forests. In the upland areas, however, only the better-off families can afford to invest in plantations; those with enough paddy fields to meet their food needs tend to develop plantations in search for additional profits (Castella et al. 2002).

Similar issues have emerged in leasehold areas in Nepal. When the most immediate problem for poor households is food deficiency, it cannot be addressed through leasehold forestry (leasehold land cannot be used for cultivation). Thus a programme to lease or provide land for cultivation to the poorest households would be more efficient for poverty alleviation (Thoms et al. 2003).

These experiences emphasise the need to assess the whole livelihood base and most important needs of the participants in any planned partnership arrangement. As long as the most immediate problems are related to food insufficiency they cannot be solved solely by developing forest management partnerships unless forest land is suitable and can be used for crops or agroforestry. On the other hand, forests can provide income, which can be used to improve agricultural productivity or to buy food. Improving forest condition will also lead to increased amounts of forest products for subsistence use and can create opportunities for commercial utilisation. This potential will, however, be out of the reach of most households and communities if they are not entitled to use forest resources for commercial purposes. Improved forest resources, reduced soil erosion and flooding contribute also indirectly to people's livelihoods through improving conditions for agriculture.

Natural resource based income generating opportunities are important in reducing pressure on forest resources and in generating income for local households. The efforts to develop income earning opportunities need to be combined with the development of processing and marketing, e.g. through supporting the establishment of micro and small enterprises or marketing groups. Inter-sectoral cooperation is also needed for supporting the development of alternative income sources (MNRT 2003).

Risk avoidance is generally an important livelihood strategy for the poor. Perceived risks can effectively prohibit participation in income generating activities (Ashley 2000). The Honey Care Ltd. in Kenya is a good example of how a private company can enhance the development of income earning opportunities through training, provision of equipment and by guar-

agreeing to buy the produced honey. This arrangement reduces producer risks related to the marketing and prices of honey, which can be crucial factors for investing in honey production.

In Laos, increased incomes through organised bitter bamboo and cardamom marketing groups have provided a stepping stone to diversifying income earning opportunities and investments in livestock. The realisation and appreciation of the value of the forest through the economic benefits creates an incentive for long term protection of forest resources (Morris et al. 2004). However, commercialisation of forest products can lead to over exploitation of the resource. Great care is needed to establish sustainable harvesting regimes and to exclude outsiders (Barrow et al. 2002). This is possible only through formalising secure and enforceable rights to manage and control forest resources to local households and/or communities.

Partnership arrangements have contributed to the general awareness of forest management and conservation issues within communities. In some cases the relationship between forest officials and local people has improved, although examples of distrust between state officials and locals also exist (e.g. Kakamega forest in Kenya, Mogaka et al. 2001).

Partnership arrangements have also contributed to personal skills and social organisation within communities. Most partnership projects, especially those with donor funding, have included capacity building within the community, e.g. in forest management, conservation, agroforestry, organisation, administration and financial management. The strengthening of existing community organisation(s) or the establishment of a new organisation for administering and implementing forest management is one of the crucial issues in developing partnerships. The development of strong community level organisations to manage natural resources can also further contribute to wider community development activities as has happened in Nepal (Springate-Baginski et al. 2003).

2.4.3 Equity and poverty reduction

The central question in developing partnership arrangements with local communities is who can participate and how. There are two general approaches. In the first, the partnership is formed with the village/community as a whole (e.g. in Tanzania, Laos and Vietnam). In the second approach, the partnership is formed with a specific group within the village/community. Even when the partnership is formed with a specific group, it can include all whose livelihoods depend on forests. In Nepal, community forest user groups consist of all forest users in the community. In Kenya, the Forest Bill introduces registered forest associations as community institutions through which people can participate in forest management and benefit sharing. Forest associations can be formed by people who live close to the forest or who have a traditional association with the forest.

In some cases, participation in forest management has been organised through different interest groups (e.g. beekeepers, carpenters). While this approach can promote the interests and activities of the group members, it may fail to represent wider community interests. Wider community representation is needed to secure the interest of all forest users as they may not converge with those of the interest groups (Alden Wily 2002). However, it is also important to recognise that communities are not homogeneous, but the interests of different socio economic sub-groups can differ greatly.

It has also been noted that among poor communities even a low membership fee can be an obstacle to join an association created for mobilising people to manage and benefit from natural resources. It is important that the committee or association managing forest resources is not seen as an "elite" group but an institution representing all community mem-

bers and that everybody, even the poorest members of the community, can join different interest groups (Nhamtumbo et al. 2003).

In Mozambique, the framework for community representation has not been formalised. Community management committees have been proposed to represent communities in planning and management of resources in district level councils, which shall be created for participatory management of forests and wildlife. Councils will consist of representatives from the private sector, local communities and state authorities. In this model, the decision making power is not devolved to the local level; instead it is shared between different stakeholders at the district level, where the influence of the private sector interests can be strong. It is not very probable that this institution can in the proposed form represent community interest and concerns (Nhamtumbo and Mcqueen 2003).

Partnership arrangements alter the resource use and benefit-cost sharing within the community. Benefit sharing is generally based on commonly agreed rules, established e.g. through village by-laws or based on forest user group's or forest associations' constitution. Usually, the establishment of strict rules for the extraction of forest products has restricted forest product harvesting. This has imposed difficulties to the poorest households, whose livelihoods depend for a large part, or solely, on community/village forests. Experiences from Nepal show that the principle of sharing forest products equitably within the user group members can impose difficulties to the poorest households, whose share of forest products does not meet their needs for e.g. fire wood and fodder. Inadequate assessment of both the CFUG members' needs and forest's potential has been a general problem. Generally, the current community forestry programme in Nepal does not specifically address livelihood and poverty issues. In some CFUGs, the needs of the poorest households have been recognised and they have been entitled to a larger share of some forest products and allowed to sell fuel wood or to graze small stock (Karmacharya et al. 2003).

Harvesting wood for house construction is usually considered as a part of subsistence use and authorised by local authorities. In CFUGs in Nepal, timber is usually distributed through auctions. This leads to inequitable distribution of timber when poorer households cannot afford to buy it (Springate-Baginski and Blaikie 2003; Yadav et al. 2003).

Participation in forest management is also often a bigger burden to the poorer households than to the richer, who are able to make their contributions in cash. The poorer can often contribute only in labour, which competes with their other income earning activities and can have a negative impact on their livelihoods (Kumar 2002).

Funds generated through community forestry activities (through collection of fees and in some cases sales of NWFPs or timber) have been used for forest development and community development activities, such as improving schools and roads, electrification and in some cases for establishing credit facilities. The use of the funds has not always benefited the poorest households as they have, for example, been unable to benefit from electrification.

Leasehold programme in Nepal has tried to target the poorest members of the communities. Overall the programme's impacts on poverty have been uneven and depended on the production potential of the leasehold site, its location in relation to markets and the degree of dynamism and collaboration within the leasehold group (IFAD 2003). The creation of leasehold forests has seemed to cause conflicts. Households excluded from the leasehold group have refused to respect the rights of the group and its rules concerning forest management. However, rules favouring poor households within community forest user groups have been accepted more easily (Karmacharya et al. 2003).

The leasehold approach is costly, and a simpler and cheaper solution needs to be developed if it is to be applied in a larger scale as intended by the Nepalese government. Also, it would be more efficient to address poverty by introducing specific arrangements for the poorest and other marginalised groups within community forestry concept than to create new arrangements, which inevitably exclude some who have traditionally relied on the resource (IFAD 2003; Karmacharya et al. 2003).

Democratic and participatory decision making within the community or user group is essential to sustainable partnership arrangements. However, there is a risk that the prevailing social relationships, which can discriminate against women, poor or low caste members, are transmitted to the user groups or to community level forest management organisations. There are also clear examples of the so called elite capture, where large part of the benefits from a partnership will fall to a small group of people. For example, in connection with forest land allocation in Vietnam, better-off villagers and village officials have often received a disproportionately large share of the allocated land (Xuan Phuc 2003).

In CFUGs in Nepal, decision making has often been dominated by the elite and wealthier groups of the community. This is largely due to the prevailing social relationships in Nepalese society, where the poorest, women and low caste members have traditionally had very little say. It has been estimated that elite and wealthier members dominate decision making in maybe half of the CFUGs. The possibilities of the poor to influence decision making are better in the relatively small CFUGs (Spingate-Baginski et al. 2002).

People's awareness of the rights to land and forests and knowledge of different policies are central to sustainable resource management as well as equity issues and poverty reduction. Often local people, and in some cases even government officials, are not aware of land and forest policies and their implementation. A national level study in Mozambique shows clearly that the knowledge of the Forest and Wildlife Law is very limited. Government officials do not have copies of the law and in cases they have, they do not have the capacity to spread information concerning the contents of the law. The high level of illiteracy and the fact that the law has not been translated to local languages contribute to the limited knowledge (Nhan-tumbo and Macqueen 2003).

In Vietnam, some villagers did not participate in land allocation because they had not known about the allocation. Also, people's awareness of benefit sharing policies varies and can be very low or non-existent in remote areas (Pham Xuan Phuong 2003).

2.4.4 Experiences from the implementation of partnerships

Developing partnership arrangements is not a onetime exercise. Instead, it should be understood as a continuous evolving process. The problems encountered in this process change. As the experiences from Nepal show, the initial difficulties may relate to the establishment of community organisations, securing land and resource rights and to the drawing of management plans. After the partnership has been firmly established, problems may relate to equitability within community members, commercialisation of forest products, marketing and to the linkages between forest development and overall community development efforts, etc.

It is also clear that concepts that may work in small project areas are not necessarily feasible for large scale implementation. Most projects have been valuable trials and provided experiences concerning what works and what does not work. Projects have also been able to work in political environments where government support has been quite weak or ambivalent. However, when moving to national level implementation of different partnerships, strong government support and political will is necessary. It is essential to have clear legisla-

tive support and implementing regulations and guidelines. It is also widely recognised that guidelines need to be applied flexibly by adjusting them to local conditions and site specific problems and opportunities.

Partnership arrangements require the existence of a strong village/community level organisation for forest management planning, decision making and implementation as well as for financial administration, etc. Generally the development of partnership arrangements has been built on existing village/community level organisations. In many areas, however, the traditional village level governance systems are weak, or have broken down. In such areas, the strengthening of existing organisations, or establishment of new community based organisations, is needed.

A precondition for sustainable community based resource management is that village/community institutions are recognised in the legislation. For example in Tanzania, the existing legally recognised village governance system facilitates the development of village/community based forest management. Village councils manage village lands as trustees of the villagers. Villagers can enact by-laws, e.g. to regulate and control the use of forest resources. On the other hand, in Mozambique the legislation does not specify who should represent the community and how the representatives should be selected/elected. This undermines communities' possibilities to participate in forest management. In Nepal, leasehold group is not recognised as a legal body, which undermines the security of the rights granted through the lease (IFAD 2003).

In countries where partnerships are based on contracts between the state and households/communities, weak or non-existent contract legislation leads to uncertainty regarding the future of the contract. For example, there is no contract legislation in Laos to support the "village forest management agreements" made between village forest organisation and district forest authorities. In practice, the state can at any time break the agreement without any legal consequences.

The implementation of partnerships means almost always a reorientation for the forest sector personnel. This is a very long process. In Nepal, a clear framework for implementing community forestry has existed for over ten years. In the hills community forestry has also been quite strongly supported by government policies and programmes. However, the reorientation of forestry personnel from forest protection and policing to support community forestry and capacity building in communities is still ongoing.

Communities need continuous support also after the establishment of a partnership. Inadequate funding is one of the biggest problems in implementing partnerships. It has led to inadequate support to communities after the partnership has been established. In general, government funding and the funds generated through partnership arrangements have been very limited. Most of the existing arrangements have received donor support.

When partnerships are implemented at a large scale, the processes developed are often sped up to fulfil quantitative targets. This has for example led to unclear borders between communities, to land allocation being conducted without assessing the needs of local farmers or to inadequate assessment of forests' potential. The lack of land use planning at district and communal levels has been a general problem.

Generally, the more communities depend on forest resources the more interested they are in getting involved in forest management. On the other hand, communities can also be severely impacted by limitations concerning forests products utilisation. There is also some indication that the interest in participating in forest management is greater in resource poor areas than in resource rich areas, especially when people have realised that the current management practices are not acceptable (MNRT 2003).

The establishment of clear borders is an important benefit in partnership arrangements. Clear borders reduce conflicts between neighbouring communities and contribute to community capacity to control the area, and to regulate outsiders' use of the resource (FDB and IDC 2003; Kallabinski and Lundgren 2004). The agreement on the borders between communities has often helped to control the access and use of the area belonging to one community by people from other communities. However, it has not been enough to secure community interest against commercial interests or the state (e.g. when forest concessions are awarded or forest areas declared to protected areas).

Secure land and resource rights are essential for establishing incentives for communities to manage resources sustainably. The lack of, or high costs of, mechanisms to obtain secure land and resource rights is one of the biggest problems for communities. In Tanzania, the legislation (Village Land Act 1999) enables villages to survey and register village forest reserves. The costs of this are, however, generally too high for communities, which do not have outside funding. To overcome this problem the Community Based Forest Management Guidelines (MNRT 2001b) established a procedure for registering village land forest reserves with the relevant districts.

In Mozambique, the Land Law (1997) established a mechanism for communities to register customary rights and an option to apply for a formal title. The costs of this process (includes mapping, demarcation) have proven to be too high for communities even when outside funding has been available (e.g. Chipanje Chetu Project, Anstey 2000). In addition, communal rights include only subsistence rights to forest resources. This can severely weaken communities' possibilities to negotiate with outside investors and to benefit from forest resources.

In Laos and Vietnam, forest land has first been allocated to households on temporary certificates. In Vietnam, the issuance of more permanent rights (Red Books) often takes a long time (Hanoi Agricultural University 2001). In Laos, permanent rights have so far not been issued (Evrard 2004). Permanent rights should be issued to households without long delays in order to increase land security and incentives to invest in the land.

2.5 CASE STUDIES

2.5.1 General remarks

The following Table 12 gives information on the forest areas, deforestation and plantation areas as well as some general background information of the case study countries.

Table 12. Background information on the case study countries (FAO 2005).

	Total forest area ('000 ha)	% of land area	Annual change rate % (1990-2000)	Plantation area ('000 ha)	Population ('000)	Rural population % of total	GDP /capita (USD 2003)	Population density/km ²
Lao PDR	12 561	54.4	-0.4	54	5 657	79.3	361	25
Nepal	3 900	27.3	-1.8	133	24 164	85.0	233	176
Vietnam	9 819	30.2	0.5	1 711	81 377	74.3	471	250
Kenya	17 096	30,0	-0.5	232	31 987	60.6	444	56
Mozambique	30 601	39.0	-0.2	50	18 863	64.4	222	24
United Rep. of Tanzania	38 811	43.9	-0.2	135	36 977	64.6	271	42

2.5.2 Laos

Partnerships' role in forest policy and poverty reduction in Laos

The Forest Strategy 2020 recognises that forests have an important role in local livelihood systems. In the upland areas the strategy aims at, for example, linking rehabilitation, conservation and the expansion of forest cover with meeting the needs for food and commodity production. It also aims at decreasing the amount of land used for shifting cultivation. The implementation principles of the strategy include the development of village based natural resources management and the promotion of sustainable participatory NTFP management and processing. The strategy also targets to complete the land-forest allocation programme by 2020 (MAF 2003).

The land-forest allocation programme (implemented since early 1990s) is an important part of the rural development strategy, and it forms the basis for enhancing rural people's participation in forest management. The objectives of this programme are sustainable management and use of natural resources, reduction and gradual elimination of shifting cultivation and promotion of commercial production. It also supports government policy to consolidate and relocate villages to so called focal sites in order to bring people closer to services and to encourage community investment in degraded lands (Morris et al. 2004).

Villagers' participation in forest management has been recently emphasised in the Decree on the Sustainable Management of Production Forests (Decree No. 59/PM 2002). One of the objectives of this decree is to "create a framework and facilitating mechanism for sustainable management of production forest areas based on the participation of villagers in planning, management and benefit sharing". In Laos the framework for local communities' participation in forest management is called "village forestry".

The National Growth and Poverty Eradication Strategy gives top priority to agriculture and forestry sector development in achieving food security and better livelihoods for the people. Village based natural resource management, sustainable participatory management and processing of NTFPs, tree planting, capacity building and the participation of villagers in conservation activities are among the measures proposed to alleviate poverty and to ensure more sustainable management of forests (Lao PDR 2003).

Forest tenure and land allocation

In Laos all land is owned by the national community, represented by the state. The state is responsible for land management and allocation of land to individuals, families and organisations for effective use. The land-forest allocation programme is based on different pieces of legislation, the most important being the Land Law (Law No.1/1997) and Forest Law (Law No. 1/1996).

In the land use planning/land allocation process the boundaries of village land are demarcated and the land is mapped and divided into different land use categories. Agricultural land is allocated to households (the area depends on the labour force in the family and for what kind of production the land is used for). Forest land is contracted to villages. The rights to degraded forest or barren land can also be allocated to households according to their labour force and capacity to plant and rehabilitate forest (Eggertz 1996). The Land Law recognises temporary and permanent land holdings. In the land allocation process farmers receive temporary land use rights to the designated land area. Permanent land use right is granted after the land has been used as specified (according to given purpose and targets, either annual crops or permanent crops) for three years. Permanent rights include the rights to transfer, inherit and use as collateral. So far temporary use rights have not been transferred to permanent rights (Evrard 2004).

Part of, or the entire, land use planning/land allocation process has been conducted in 6 510 villages (out of 10 500) (Rock 2004). Between 1995 and 2002, 82% of the allocated land was classified as forest land (MAF 2003).

The Lao legislation recognises customary rights to forests for subsistence purposes, including hunting and fishing of non-protected species (Order 54/MAF 1996 on the Customary Rights and the Use of Forest Resources and Recommendation 377/MAF on the Customary Use of Forestry Resources). Also, the Forest Law (Law No.1/1996) allows customary use of forests, forest lands and forest products for making fences, for fire wood and for harvesting forest products. Customary utilization must be conducted according to village regulations.

It seems that customary law will lose its importance as the land allocation process advances. On the other hand, in principle traditional village boundaries should form the bases for the definition of formal borders between villages (Eggertz 1996). Also, the land allocation process leaves vast areas of forest land between village areas under direct state management. Rural people will continue to use these areas on the basis of customary rights.

Village forestry

During land allocation process forests surrounding a village are divided into different forest categories (conservation forest, protection forest, production forest, degraded forest and regenerating forest). The location, management and utilization of different forest categories are specified in the village forest management agreement, a contract between a village (Village Forest Organisation, VFO) and district forest authority. Utilization is very restricted in conservation and protection forests. Also, in production forests, commercial utilization has

basically been prohibited, except in some areas under international development projects. The function of production forests is mainly to supply villagers with non timber forest products, fuel wood and building material. They can also be used for grazing (Eggertz 1996).

Forest lands with good commercial potential are generally not allocated and are kept under provincial or district jurisdiction (WB et al. 2001). The overall focus of the land use planning/land allocation process has been more on increasing forest protection than on securing the livelihoods of the rural population (Rock 2004).

The Decree on Sustainable Management of Production Forests (Decree No. 59/PM, 2002) creates a framework for villagers' participation in the planning, management and benefit sharing in production forest areas. The decree states that "the total revenues generated from different activities in production forest areas shall be managed and used for common purposes, such as: remittance to the national budget, forest development funds ... and local development funds." It also defines village forestry organisation as a villagers' organisation established for participating in forest management in areas, which are under village's responsibility. District Agriculture and Forestry Office (DAFO) shall organize production forest management activities, which shall be implemented by Forest Management Technical Units, village forestry organisations or other relevant parties.

Experiences from forest land allocation

Provincial and District Agriculture and Forestry Offices are responsible for land use planning (LUP) and land allocation (LA) in the villages. The national LUP/LA manual proposes a participatory approach to implement this process. In practice, participation is mostly restricted to the collection of information and villagers are not actively involved during the subsequent steps of the process (Rock 2004).

An impact assessment of land use planning/land allocation in 15 villages showed that villagers highly approved of the establishment of clear village boundaries, which reduce conflicts with neighbouring villages. Most villagers also mentioned a considerable improvement in forest regeneration and some claimed that their living conditions have generally improved (Kallabinski and Lundgren 2004).

However, in a participatory poverty assessment, rural people mentioned land allocation as the first cause of impoverishment in three out of four regions (north, east and centre) (ADB 2001, cited in Evrard 2004). "This negative perception appears to be the outcome of many related factors: the general perspective of the reform, the reduced access to land, the degradation of local living conditions, the absence of agricultural intensification and the continued relocations of villages from highland areas." The forest land allocation has been biased towards forest conservation and protection, while little efforts have been undertaken to improve agricultural productivity. As commercially valuable production forest has generally not been allocated, the possibilities to generate income from forest resources have been very limited for the villagers (Fujita and Phanvilay 2004; Kallabinski and Lundgren 2004).

One of the main objectives of the land allocation has been to reduce the area used for shifting cultivation in the uplands. The land allocation process restricts the amount of upland plots households can have and enforces a three-year maximum rotation period, which is not enough to reinstall the productivity of the land. Decline in soil fertility has led to reduced rice yields. This has caused problems especially in the upland areas with limited access to agricultural land suitable for permanent cultivation (Morris et al. 2004). Sometimes shortage of agricultural land has led to increasing pressure on NTFPs causing a decrease in certain NTFPs, for example green bamboo (Kallabinski and Lundgren 2004) and wildlife (Morris et al. 2004).

However, small scale private plantations have expanded rapidly in some areas after the land allocation process. Small (0.1-1.0 ha) teak plantations have been established in Northern Laos. Trees are inter-planted with agricultural crops during the first one to three years, planted along roads and rivers and to the edge of paddy fields, etc. The total planted area is about 8 000 ha. Harvesting is done on a very small scale, almost on tree by tree basis ensuring a continuous revenue stream (Manivong et al. 2004). The expansion of small teak plantations has also been connected to the possibility to sell young teak plantations (or the trees) to investors (Hansen et al. 1997). This can, however, lead to the farmers losing access to the land.

The problems related to land allocation are mostly related to the way, in which the policy has been implemented (Morris et al. 2004; Rock 2004). Because of the limited funds allocated for the LUP/LA process, the land use planning and allocation procedures in the villages have been cut down and rushed through. The national budget has allowed only 3-5 days of field-work in the villages. In some cases, the procedure has been completed during one short visit to the village, without any follow up, extension work or monitoring after the process (Rock 2004).

The LUP/LA process and its impacts on land use need to be reviewed. The process should be adapted to take into consideration the needs of households in upland areas, where the options for permanent cultivation are limited. The district staff involved in the process should be trained in order to change the nature of the process from a top down approach to a more participatory exercise (Rock 2004).

Pilot projects

Lao-Swedish Forestry Program (LSFP). As part of the LSFP, two different pilot models of participatory forest management were tested in production forests in eastern Savannakhet Province (1994-2001). These pilots were referred to as the Joint Forest Management (JFM) Model 1 and Model 2. They were implemented in 15 villages, which have a population of 5 500 people and cover 25 000 ha. Both pilot models were based on co-management involving communities and local government authorities. Forest management was based on a 50-year management plan (drawn by the National Office of Forest Inventory and Planning, NO-FIP), 5-year plans (the first 5-year plan was also prepared by NOFIP, subsequent by the province) and annual operational plans drawn jointly by provincial and district authorities and villagers (MAF 2001a). The models differed in the degree of community participation, villagers' rights and responsibilities in relation to management decisions, selling of timber and benefit sharing (Braeutigam 2003).

Model 1 was implemented in one large village of 1 000 inhabitants. Based on a management contract the village received full rights and responsibilities to manage a part of the forest according to an approved management plan. The rights included logging and selling the logs and/or processing the logs and selling sawn timber. The village administration was responsible for the forest management activities, logging and forest protection. Villagers were entitled to the benefits from timber sales after paying government royalties and taxes, contributions to the District Forest Development Fund and to a specific provincial fund. The village contracted logging and other forest activities (to villagers, who were paid wages for their labour) and transport (to outside contractors). The villagers also paid field allowances for the district and provincial forest staff when they worked with the villagers. The benefits were used in village development projects that benefited the whole village and for investments into forest resources (MAF 2001a).

In model 2, the villagers worked as contracted labourers. Provincial authorities managed the forest in cooperation with the villagers. Each year villagers from 2 of the 14 villages were contracted to forest management work (logging, skid trail clearing, work in nurseries and enrichment planting). Based on forest protection contracts each village received some income, which was spent on village development. For managing the logging and protection activities and for the management of the village development fund each village formed a Village Resources Management and Development Committee, as part of the overall village administration (MAF 2001a).

According to the Ministry of Agriculture and Forestry Evaluation Team (MAF 2001a) Model 1 had clear advantages over Model 2. The Model 1 village was involved in forest management activities every year. Model 2 was based on a rotation of activities: each of the 14 villages was involved in forest protection every year, but in any given year only 2 out of the 14 villages were involved in timber harvesting and associated activities. The Model 1 resulted in greater achievements in terms of village development as well as greater protection and conservation of the forest.

The Model 1 village received significant revenues over 6 years; these funds were used for village development initiatives (road construction, water pumps, wells, a water reservoir/fish pond, health centre, furniture for the school and creation of a revolving credit fund) and they contributed to the transformation of the overall economy of the village. For example, in 1998/99, the village development funds were 7% of the total timber sales (USD 627). In earlier years the development funds were substantially higher than this because of lower royalty rates and larger amount of timber harvested. The villagers had a long-term (50-year) perspective on their involvement in forest management and general protection of the forest increased (MAF 2001a).

Because of the rotational structure of the Model 2, the revenues received in villages fluctuated strongly. As a result, the villagers under Model 2 were less committed to sustainable management and conservation of the forest and had limited opportunities to generate funding for village development. In this model, the Provincial Agriculture and Forestry Office (PAFO) received the timber sales revenues and paid royalties and taxes. The village development fund for the 2 villages involved in logging in 1998/99 was about 4% of total timber sales (US 450 per village). During the same period the forest protection fees received by the 12 non-logging villages were very low (MAF 2001a).

Although the villagers in villages under Model 2 complained that the village under Model 1 received more benefits than their villages, they acknowledge that they are better off under JFM than previously, as they have received some funds for village development activities (MAF 2001a).

The Forest Management and Conservation Project. The Forest Management Sub-programme of the Forest Management and Conservation Project⁸ (FOMACOP 1995-2000; Extension: Forest Management Programme 2000-2001) focused on the development of a pilot participatory forest management model in two state production forests in Savannaketh and Khammouane provinces. The project aimed at promoting sustainable forest management and improving rural livelihoods through close collaboration of villagers and government forestry field staff in production forests management (MAF 2001b).

The pilot Village Forestry Programme worked with 60 villages (with a population of 19 000). Village boundaries were demarcated and land use planning completed in the villages. Land allocation was based on villages' traditional borders. Within the demarcated village area the

⁸ The project was supported by the World Bank, Global Environmental Facility and FINNIDA

land was allocated for various management purposes according to physical criteria, villagers' needs and government regulations (Katila 2000).

In the project area, land use plans covered 145 000 ha and forest management plans 100 000 ha of natural forest. The project involved an intensive training programme, which focused on three key elements: village organising, participatory forest management and village development. PAFO staff members were trained as trainers to further train DAFO staff and villagers. The training was combined with actual field activities (MAF 2001b).

Village organisation was based on Village Forestry Associations (VFA); villagers in 41 villages were organised into 33 VFAs. All village residents over the age of 18 could join the VFA and become eligible to vote and be considered for employment. The VFAs had over 5000 members, of which about half are women. 50-year contracts with the provincial authorities authorised villagers to manage state production forests in collaboration with government foresters according to government-approved forest management plans. Villagers participated in most forest management activities but they were trained, guided, and monitored by PAFO and DAFO staff. (MAF 2001b). VFAs formed VFA federations to facilitate inter-village cooperation in e.g. fire protection, harvesting and in organizing wood sales and forest certification (Katila 2000).

One of the important challenges was to develop an equitable benefit sharing system between the VFAs and the government. The VFAs received approximately 43% of the profits. The rest was divided among government agencies to compensate the administrative costs of facilitating village forestry. 10% of the VFAs share of the profits was used for paying wages to those who had worked in forest management activities, the rest went to village development funds. The whole village decided on the use of village development funds. Funds were used to finance village development projects such as school and road construction (MAF 2001b).

Experiences from this pilot project clearly show that the formal recognition and demarcation of the traditional village boundaries reduce encroachment and provide incentives for protecting the forest. The project also demonstrated that villagers have the ability to undertake tasks like boundary demarcation, mapping, inventorying, forest management and operational planning and monitoring with active collaboration with the DAFO and PAFO staff. In the project area, the village forestry model contributed to the livelihoods of the villagers through seasonal wage labour and through village development projects funded through timber and NTFP sales (Katila 2000).

Part of the project area (50 000 ha) was certified under the Forest Stewardship Council accredited SmartWood certification programme in 2005 (Katila pers. com.). The initial idea of certifying VFAs did not succeed and was replaced with a partnership model between VFAs and provincial level forest administration. A provincial structure, Sustainable Forest Management Group, was formed of two separate entities: a legally recognised group entity (a unit of the provincial forestry office) that administers the certification system and group members. Group members consist of 11 VFAs and a district forestry office (Markopoulos 2003).

NTFP project. The NTFP project⁹ supported forest land allocation to villages and developed marketing groups for bitter bamboo and wild cardamom in order to increase benefits from the forest to local people. In the project area, collection of bitter bamboo, cardamom and other NTFPs are the main sources of income for the majority of households. Marketing groups regulate harvesting and buy bamboo from households and sell it in larger scale to

⁹ The project was supported by the National Agriculture and Forestry Research Institute and the World Conservation Union.

traders. Through marketing groups collectors have been able to raise their income from bamboo. Bamboo amounted to 40% of their cash income. Part of the income (10-15%) has been used for community development and services (e.g. water supply system, electric generator, rice mill, credit fund, employment of school teacher) and to pay salaries for monitoring, accounting and trade activities. Since the project started (1995) poverty rates have reduced by half, food security increased, school enrolment doubled, child mortality lowered and the amount of livestock increased indicating increased savings. Incomes generated through NTFPs have had an important role in this development (Morris et al. 2004).

Forest Conservation and Afforestation Project (FORCAP¹⁰). The overall objective of the project was to reduce forest degradation caused by shifting cultivation in the upper Nam Ngum Watershed. The project focused on capacity building of district level government staff and local communities and promotion of forest conservation and income generation activities (Braeutigam 2003).

Following participatory land use planning farmers established plantations with exotic and indigenous tree species on their own land. They gained ownership over the plantations and are exempted from paying land taxes (Braeutigam 2003).

A joint plantation establishment system was introduced to promote reforestation of highly degraded forestland. Farmers, organized in Village Forest Groups, make 15-year contracts with district authorities who provide seedlings, materials and extension services. The benefits from plantations are shared between the farmers (75%) and the district authorities (25%). The system brings additional income to farmers and enables government authorities to generate funds for future support. Between 1997 and 2002, 300 families planted altogether 213 ha (with *Eucalyptus camaldulensis*, *Pterocarpus macrocarpus* and *Azelia xylocarpa*) and 7 ha with Agroforestry systems (Braeutigam 2003).

2.5.3 Nepal

Partnerships' role in forest policy and poverty reduction in Nepal

In Nepal, the policy to hand over degraded forests to village Panchayats (the lowest administrative level of the government) started already in the late 1970s. Panchayats were later replaced with Village Development Committees, and community forestry evolved around the concept of user groups. Since early 1990s the forest policy has emphasised handing over degraded forest in the Middle Hills to local forest user groups as community forests in order to fulfil forest related basic needs. The forest legislation (Forest Act 1993 and Forest Regulations 1995) provides the framework for implementing this policy. The Revised Forestry Sector Policy (2000) emphasises people's participation in forest management and increasing the opportunities for forest resource management under the community, private and leasehold forestry programmes.

The Poverty Reduction Strategy Paper (PRSP)/Tenth five-year plan (2002-2007) recognises the success of community and leasehold forestry in creating income earning opportunities and emphasises the usefulness of user group approach in mainstreaming poor communities in forestry sector activities. Community participation in natural resource management is one of the strategic cross cutting approaches of the PRSP. It also calls for the expansion of the leasehold programme (National Planning Commission 2002).

¹⁰ The project was supported by JICA.

Forest tenure

The Forest Act (1993) classifies forests into national forests and private forests. National forests are under the ownership of the state and include government managed forests, protected forests, community forests, leasehold forest and religious forests. Government managed forests are national forests that do not belong to any other category. Community forests are national forests handed over to a user group for development, conservation and utilization for collective benefit. Leasehold forests are national forest areas, which are leased to any corporate body, industry or community. Private forests are forests planted, nurtured or conserved on privately owned land.

The area under private forestry has increased from 4 700 ha in the beginning of 1970s to 108 800 ha in the beginning of the 1990s. Private plantations have in some regions of Terai-area increased considerably as a response to increasing timber scarcity and rising timber prices (Chakraborty et al. 1997).

Nepal can be divided into three main geographic regions: the Terai-Siwalik area, the Middle Hills and the High Mountains. The community forestry program started as a program for providing for the forest related basic needs for the local population in the Middle Hills. This area covers 41% of the country's total land area and 45.5% of its population (Springate-Baginski et al. 2003). Most of the community forestry user groups (CFUGs) are in this area. Altogether over 12 800 CFUGs, representing around 1.4 million households, are managing over more than one million hectares of forest (Royal Danish Embassy 2004), which is about 17% of the total forest and other wooded land area of Nepal. Only 1 477 of the CFUGs are located in the Terai-region, managing 224 136 ha of forest land (DOF 2003, cited in Springate-Baginski et al. 2003). Community leasehold groups (1 729) representing 11 756 households manage about 7 000 ha of forest land (IFAD 2003).

Community forestry

Forest user groups. The authority to hand over community forests has been devolved to District Forest Offices (DFOs). DFOs are authorised to hand over any part of national forest to a user group in the form of community forest. They should provide support to the community forest user group (CFUG) in drawing up a constitution and an operational plan. In principle, the first phase in the CFUG formation process is the identification of the actual local forest users and the forest area that they have traditionally been using. DFO considers also the distance between the forest area and the local users and their capacity and willingness to manage the forest, but village or other administrative boundaries have no effect on handing over community forests (Forest Act 1993; Forest Regulations 1995).

The highest authority in a CFUG is held by the assembly that consists of all forest users. The assembly prepares a constitution and an operational plan. The application for registering the user group must be submitted to the relevant DFO together with the constitution of the group. The constitution specifies the membership of the group and the establishment of the user group committee that monitors community forest management. It also defines the rules concerning community forest, benefit sharing and sanctions against breaking the rules. After being registered, the CFUG is recognised as a legal, autonomous, corporate body, which may acquire, use, sell or otherwise transfer community forest products but it cannot sell or otherwise alienate forest land (Chakraborty et al. 1997).

After registration the user group needs to submit an operational plan for the requested forest area. Operational plan covers issues like forest boundaries, condition, forest types, etc. and silvicultural methods to be used in the management, harvesting, protection and improvement of the forest as well as an income generating program and provisions related to the use of

the income acquired from the sale of forest products. The operational plan regulates the extraction of forest products and specifies, which products the CFUG is allowed to collect, sell and distribute, and it has to be approved by the DFO (Forest Regulations 1995). Generally, operational plans do not include provisions for NTFP management, but concentrate on the management of timber, fuel wood and fodder (Ojha 2000).

DFO can cancel the registration of the forest user group and rescind its rights to the community forest if the group does not follow the work plan, or if it undertakes any action with significant environmental effects, or fails to comply with the law (Forest Act 1993). The sizes of the established user groups and community forests vary significantly. The average number of households in a user group is around 100 and the average size of a community forest around 50 ha (Brown et al. 2002).

Most of the forests handed over to CFUGs have been degraded or planted forest. CFUG activities have concentrated on the protection and improvement of the forests and in allowing for the most part only subsistence use of forest products. Most CFUGs have restricted the use of commercially valuable forest products, such as timber, fuel wood and traded NTFPs. Community forests may, however, be utilized for supplying timber and poles for construction and tool making within the user group. Timber and poles are usually distributed through auctions or tender. Members of the user group are usually allowed to collect leaf litter, fallen twigs and branches and grass free of charge. The first responsibilities of CFUGs have been to satisfy the basic needs of their members, surplus forest products can be sold outside the user group (Malla 2000).

CFUG members take part in planting, thinning, pruning and cleaning activities, watch the forest, attend meetings and assemblies and pay fees to the CFUG. CFUGs are entitled to fix prices of forest products without consulting the Forest Department (Forest Act 1993). The income from community forests is used for the development of community forests and various community development activities, such as infrastructure development. Since 1999, 25% of the funds have been directed to forestry development (Acharya 2002). The government has since 2003 imposed a 40% tax on the sales of two valuable tree species and a 10% tax on other forest products when they are sold outside the user group (Pandey 2004).

Experiences from community forestry. Community forestry evolved to prevent the environmental crisis that threatened the Himalayan area. In this respect the program has succeeded: the general trend of forest degradation has been reversed and the forests under community management have regenerated significantly (Yadav et al. 2003).

The first challenges in implementing community forestry related to the identification and formation of the CFUGs, which required clear laws and procedures. The Forest Act (1993) and Regulations (1995) gave a clear framework for the implementation of this policy. However, the implementation of community forestry has meant a total reorientation of the Forest Department personnel in changing their role from forest protection and policing to supporting community forestry. This reorientation and capacity building in all aspects of implementing community forestry are still ongoing. The role of forestry field staff is critical in the CFUG formation and forest hand over process. In practice, the hand over has oriented to fulfil quantitative targets, and serious short cuts have occurred in the process. Also, the needs for post-formation support have not been adequately addressed (Springate-Baginski et al. 2002).

Unclear borders and boundary conflicts, resulting from poor hand over process, are a serious problem in many CFUGs. When boundary disputes are not addressed at the hand over phase, as is often the case, they are passed on to the CFUG and hamper the development of community forestry activities (Yadav et al. 2003).

In most community forests, forest management has remained protection oriented, but some CFUGs are moving towards more active forest management. However, only a small number of CFUGs have adopted forest management planning by forest area or block. Often activities are poorly planned and inconsistent. Another problem is that the objectives for forest management are generally not defined in the operational plans, leading to the lack of clarity in the planning and management activities. Quite often forests management does not follow operational plans, especially when plans are not updated (Yadav et al. 2003).

The majority of CFUGs is not utilizing their forests to the full potential (Kumar 2002; Yadav et al. 2003). As the condition of the forests under CFUG management has improved, new opportunities for revenue generation have emerged. Although, according to the law commercial utilization of community forests is allowed, the Department of Forestry has so far avoided permitting timber production and marketing from community forests. It has done this through informal obstruction through circulars requesting user groups to follow excessively complicated requirements in order to harvest and market timber. DFOs have also refused to approve CFUGs' operational plans, which have included timber marketing (Springate-Baginski et al. 2002). There is a general lack of consensus among policy makers and forest department staff on the role of commercial utilization of forest in community forests, which has led to unclear directions and even contradictory orders to DFOs and field staff (Kumar 2002).

However, when CFUGs have been able to manage and utilize community forests for commercial purposes the outcomes have been positive for the resource base and for CFUG members. For example, four CFUGs are managing the Chaubas–Bhumlu community sawmill and plantation forest of 223 ha. AusAID supported the building of the sawmill and provided capacity building to sawmill staff and CFUG members. CFUG members use about 5% of sawmill's output, about 15% is sold at the local market and the rest is sold in Katmandu. A major part of the income (80%) is shared between the CFUGs according to the volume of logs that each group has supplied; 20% is used for maintenance and other expenditures at the mill. In CFUGs, the income is used for members' salaries and community development projects (Singh 2005a). The sawmill employs nearly 30 people and has an important impact on local employment. Local people are also hired for pre-harvest tree marking, harvesting, transporting logs, milling, and timber stacking and loading (Singh 2005a).

In another example from a very remote area in western Nepal, CFUG is managing community forest for producing *lokta*, raw material used in the CFUG's paper factory (Malika Handmade Paper Industry, established in 1998). The CFUG has a nursery for raising seedlings of *lokta* and other species. CFUG members harvest *lokta* bark according to a systematic harvesting regime and sell it to the factory. The produced paper is sold through a non profit marketing organisation established by community-based enterprises. The factory provides an important livelihood source for the villagers; and community forest is sustainably managed to produce *lokta*, medicinal plants and other locally needed produce (Singh 2005b).

In some cases, in the initial phases of the program, the establishment of strict rules for the extraction of forest products impose difficulties to poorer households, which depend solely on community forests for their fodder, firewood etc. needs. In general, however, the regeneration of the forest resource has led to greater forest product flows, livelihood improvements and opened possibilities to commercial utilization of forest products (Springate-Baginski et al. 2002).

The current community forestry programme does not specifically address livelihood and poverty issues. A general problem has been the inadequate assessment of both the CFUG members' needs and forest's potential. Generally, forest products for subsistence use have been equitably distributed. However, this does not reflect the differences in the needs for

forest products, and can lead to situations where landless user group members, who have traditionally relied solely on common resources suffer, while richer households can get fuelwood, tree fodder etc. also from their own land. In some CFUGs the needs of the poorest households have been recognised and they have been entitled to a larger share of grass, fuelwood or fodder and to sell fuel wood or to graze small stock. (Karmacharya et al. 2003). Timber is usually distributed through auctions, leading to inequitable distribution when poorer households cannot afford to buy timber (Springate-Baginski and Blaikie 2003; Yadav et al. 2003).

The contribution to the CFUG activities is often a bigger burden to the poorer households than to the richer, who are able to make their contributions in cash. The poorer can often contribute only in labour, which competes with their other income earning activities and can have a negative impact on their livelihoods (Kumar 2002).

NWFPs are especially important for the poorest CFUG members for subsistence and for cash income. The management of NWFPs has been neglected in the operational plans (Kumar 2002). NWFP management should be included in the management plans and the options for commercialising NWFPs should be inspected.

While the community forestry concept encloses democratic and participatory decision making including all forest user group members, the decision making in CFUGs has often been dominated by the elite and wealthier groups of the community. This is largely due to the prevailing traditional social relationships, which have been transmitted also to the user groups: the poorer households, women and low caste members have traditionally had very little say in Nepalese society. It has been estimated that elite and wealthier members dominate decision making in maybe half of the CFUGs (Springate-Baginski et al. 2002). The possibilities of the poor to influence decision making are better in the relatively small CFUGs. More inclusive decision making, emphasising participation of all members of the user group, as well as equity and gender issues, are now underlined in donor funded projects and in training DFO staff (Springate-Baginski et al. 2003).

Funds generated through community forestry activities (through collection of fees and in some cases sales of NWFPs or timber) have been used for forest development and community development activities, such as improving schools and roads, electrification and in some cases for establishing credit facilities. The use of the funds has not always benefited the poorest households as they have, for example, been unable to benefit from electrification.

Although many problems and shortcomings are still common in the CFUG formation process, CFUGs have in many cases become firmly established and represent local development institutions that can also contribute to wider community development activities (Springate-Baginski et al. 2003). The Ministry of Forestry and Soil Conservation has designated in each district certain forest areas for community forestry. In several districts these areas have been handed over to community management and there is a need to designate new areas for future community forestry development. However, the government has been reluctant to do this (Clausen et al. 2003). The implementation of the programme in the Terai-region has also been more difficult than in the hills. The reasons for this include the higher ethnic diversity, higher number of forest users, recent settlement and the greater mobility of the population, higher pressure to convert forest for agricultural land, proximity of markets and high value forest resources in the area.

The current conflict between the Mao insurgents and the state has slowed down community forestry development and hampered community forestry activities. Many districts are not safe to travel to and the insurgents have destroyed ranger posts, government offices and other infrastructure (Clausen et al. 2003). In conflict areas, government officials are confined

to district headquarters and the only functional democratic institutions still operating are mainly CFUGs. Both the state and the Mao insurgents have, however, discouraged or forbidden public meetings, thus severely curtailing the functioning of CFUGs, which is based on general assemblies and group meetings. The insurgents hide in forested areas, also in community forests, and the government has as well in some cases established military camps in community forest areas. Both groups can require permits to enter forests and perform forest management activities. In some districts, the insurgents have banned the harvesting of certain forest products, they have also taxed CFUGs. Insecurity and travel restrictions have severely affected the support of the forestry staff and technical support to CFUGs. This has emphasised the need to have people with forest management skills at the local level (Banjade and Timsina 2005; Pokharel and Paudell 2005).

Leasehold forestry

The implementation of the first leasehold forestry project, Hills Leasehold Forestry and Forage Development Project (HLFFDP), began in 1993; the project closed in 2003. The project combined the objectives of raising the living standards of the poor and regenerating degraded forest resources. The rehabilitation of degraded resources was to be achieved by banning grazing in the leasehold sites. Income earning possibilities were to be improved by increasing the supply of fodder for livestock and by providing other income earning opportunities. The project objectives included also the empowerment of communities through the formation and training of leasehold groups, mobilisation of savings and access to credit. The project provided subsidised high yield grasses and fodder tree seedlings, improved breeds of animals, veterinary services, training programmes and subsidised agricultural credit. Initially the project worked in four districts, later it was extended ten districts (Karmacharya et al. 2003; Thoms et al. 2003).

Leasehold forestry (LF) is targeted especially for the poorest members of the communities, landless or near-landless farmers. Degraded national forest areas are leased to relatively small leasehold groups of marginal people within a community for 40 years. The lease can be extended with another 40 years. Participation is restricted to farmers with less than 0.5 ha of land and annual income less than Rs 3035 (USD 110 at 1995/96 rate). Thus many members of the community who have traditionally used the forest are not eligible for leasehold groups. Usually leasehold groups consist of five to ten families (Karmacharya et al. 2003). In practice, many households belong to CFUGs and leasehold groups (IFAD 2003).

An agreement concerning the formation of leasehold forest user group (LFUG) is supposed to be reached with the community. After this has been achieved, the LFUG is formed and the constitution and operational plan are drawn. Leasehold contract is signed between DFO and the chairperson of the group (Karmacharya et al. 2003).

Leasehold forests have been contracted without any fees (ADB 2001). LFUGs are entitled to forest produce like grass, tree fodder, other NWFPs and fuelwood, but they are not entitled to standing trees. Also, cultivation of NWFPs including grass is allowed but the cultivation of cereals and grazing are not allowed. The rehabilitation, management and utilization of the leasehold areas are based on five year operational plans (IFAD 2003). In some LFUGs products are harvested collectively and divided equally, in some products are harvested individually (Karmacharya et al. 2003).

The security of the use rights granted through the lease is severely undermined by LFUGs' lack of formal legal status: the law does not recognise leasehold groups as legal, independent, autonomous bodies. Theoretically, the lease can be withdrawn at any time by the government. At present, the leasehold certificate recognises only group rights, but not the rights of individual members. It is not clear whether the rights can be inherited (IFAD 2003). Ac-

According to the Forest Regulations (1995) selling, mortgaging or otherwise transferring the title of the leasehold forest is not allowed. However, forest products planted or grown on leasehold forests or on community forests can be used as collateral for the development of the leasehold forest/community forest.

Experiences from leasehold forestry. The establishment and operation of leasehold forest rises more conflicts than that of community forests. Usually CFUGs include all community members, LFUGs on the other hand, consist usually of less than ten families. Community members that have been excluded from the LFUG have refused to respect the rights granted exclusively to the LFUG members. They have not respected the rules concerning the management and use of the leasehold forest. On the other hand, rules that favour the poorest households' in community forests have been more generally accepted by all CFUG members (Karmacharya et al. 2003).

In order to solve conflicts, LFUGs have accepted new members regardless of the eligibility criteria. These members are, however, not officially recognised and have not been included in the number of member households that forms the basis for DOF and HLFFDP coordinated activities, such as distribution of seedlings, forage seeds or training (Karmacharya et al. 2003).

According to the evaluation of the HLFFDP project, the project was generally successful in the restoration of degraded forest lands. However, the results varied between areas and depended on the natural conditions, state of degradation and the level of support and inputs invested in the site. In some highland areas degradation had continued. The project promoted livestock ownership through improved availability of forage. Increased availability of fuelwood decreased the time devoted to fuelwood collection. The credit scheme failed, with only 63% of the groups accessing external loans through the project. However, another financing form emerged during the project. It was based on an informal savings mobilisation by groups and especially leasehold cooperatives, which provided short term loans for agricultural activities and farmers' other needs. Planting of imported fodder tree species did not succeed, because in many locations the bio-physical conditions were not suitable to these species (IFAD 2003).

Overall the project's impacts on poverty were uneven and depended on the production potential of the site, its location in relation to markets and the degree of dynamism and collaboration within the group. It was concluded that the project approach was costly, and a simpler and cheaper solution needs to be developed if LF is to be applied on a larger scale as intended by the government (IFAD 2003).

It might be more efficient to introduce specific arrangements for the poorest and other marginalised groups within the community forestry concept than create new situations, which inevitably exclude some who have traditionally relied on the resource (Baral and Thapa 2003; IFAD 2003). In addition, when the most immediate problem for poor households is food deficiency, which cannot be addressed through leasehold forestry, a programme to lease or provide land for cultivation to the poorest households would be more efficient for poverty alleviation (Thoms et al. 2003).

2.5.4 Vietnam

Partnerships' role in forest policy and poverty reduction in Vietnam

The Forestry Development Strategy 2001-2010 indicates a shift from resource exploitation based forestry to people oriented forestry, which focuses e.g. on poverty reduction, liveli-

hood improvements and social forestry (NFTP project 2003). Forest land allocation has been one of the central strategies in the Vietnamese forest policy since early 1990s. Sedentarisation of shifting cultivators has been one of the main objectives of this policy.

National programmes have been important in the implementation of forest policy. The 327 Programme (Re-greening barren hills -programme) was followed by the current 5 Million Hectare Reforestation Programme (5MHRP). The main objectives of this programme are to protect the existing forests and to re-establish 5 million hectares of forests in order to increase the forest cover to 43% (by 2010), to effectively use bare hills and mountains and create employment in order to alleviate poverty and increase incomes in the mountainous regions, to complete land and forest allocation as well as sedentarisation of farming and population and to supply wood and other forest products for domestic consumption, for the industry and for export (PM Decision No. 661/QD-TTg, 1998). Its implementation relies strongly on the participation of local people in tree planting and forests protection and they are seen as the main beneficiaries of the programme.

The government policy (Decision 187/QD-TTg, 1999), which aims at restructuring State Forest Enterprises (SFEs) to viable commercial entities and includes reallocation of much of the land and forest currently managed by SFEs to households and individuals, supports local people's increasing participation in forest management (Artemiev 2003). A new law on forest protection and development (No. 29/2004/QH11) encourages organisations, individuals and households to receive uncultivated and bare land for forest development and prioritises afforestation and plantation development for raw material production. This law enables the allocation of land to village communities, which had not been eligible for land allocation before. Land allocation to communities or groups of households is relevant especially in the highland areas where ethnic minorities still manage land according to their traditional rules and customs. Community is, however, not recognised as a legal body in Vietnamese legislation (Pham Xuan Phuong 2004).

The Comprehensive Poverty Reduction and Growth Strategy (SRV 2003) emphasises measures for providing incentives to plant forests and for promoting communities' role in forest protection and natural regeneration. It calls for speeding up the land-forest allocation process, and together with implementing fixed cultivation and settlement, to ensure that people living in mountainous areas, especially poor households, can directly manage and protect their forests. These households should be provided with appropriate incentive systems to link their responsibilities to forest benefits.

Forest tenure and forest land allocation

In Vietnam, land is property of the entire people and managed by the state (Constitution 1992). The Land Law (1993, amended 1998, 2003) relates to all categories of land and regulates land tenure and access to land. It states that the state shall allocate land to e.g. economic organisations, state institutions, households and individuals for stable and long-term use. This legislation did not recognise communities eligible for land allocation. After the recent changes in the land and forestry legislation, the allocation of land for communities and their participation in forest management and utilisation has become possible (Land law 13/2003/QH11, in effect since July 2004 and Law on Forest Protection and Development No. 29/2004/QH11, in effect since April 2005). According to the new land law, land-use planning at the commune level should be a participatory process, and the outcome must be publicly announced.

Forest land allocation is based on the Land Law (2003), Law on Forest Resources Protection and Development (2004) and Government Decree 163/ND-CP (1999) concerning allocation and lease of forest land to organisations, households and individuals for stable and

long-term forestry purposes. In addition to the national level legislation, provincial level regulations have been given to regulate the implementation of the forest land allocation process.

Land is allocated to households, individuals and village communities following authorised land use plans and applications for land from local people. Land for planting annual crops is allocated for twenty years and for perennial crops for fifty years (allocation entitles to land use certificate, "Red Book"). For forestry purposes the duration is also fifty years. If the land is needed after this period the allocation can be prolonged. If the land user has planted trees with a rotation period of more than 50 years, the validity of the allocation will be prolonged to the end of the rotation. The limit for the amount of forest land that can be allocated to households is 30 hectares. For open land, bare hills and coastal sandy land the area limit is decided on the basis of land availability in the area and the production capacity of the household.

The Law on Forest Resources Protection and Development (2004) classifies forests into three categories according to the purpose of use: special use forests (e.g. natural parks, forest areas with cultural or historical value), protection forests (e.g. watersheds, wind breaks) and production forests. Production forests are further divided into natural and planted production forests and seeding forests. This classification forms the basis for forest land allocation, leasing and contracting. Management boards will be established for the management of special use forests and large protection forest areas. Small areas of protection forests in less critical watershed areas can be allocated. Large natural production forests areas are allocated or leased to economic organisations for production and business, but scattered natural production forests can also be allocated or leased to households, individuals and organisations for protection, development and production and business purposes.

Generally, only degraded and bare lands have been allocated to individuals and households under long term tenure certificates. The certificate gives a long term use right to the land and includes the rights of transfer, lease, exchange and mortgage and to pass on the land for inheritance. The user has to use the land for a specified purpose and to follow general management prescriptions defined in related decisions and regulations (e.g. Forest Protection Law) and to pay taxes as regulated. The terms and conditions of land allocation give detailed prescriptions about e.g. what species to plant and the spacing to be used (Van San Nguyen and Gilmour 1999).

SFEs and protection forest and special use forest management boards can further contract forest land to communities, households and individuals for 50 years in the case of protection and special use forest and for the production cycle in the case of production forests (Decree 01/CP/1995 on contracting forest land and agricultural land). Under the 327 Programme land was contracted on annual bases. Studies in the provinces show that instead of the decree 01/CP contracts were made according to the 327 Programme (Vu Huu Tuynh 2001). The contracts made under the 5MHRP cannot exceed five or six years depending on the forest category (Pham Xuan Phuong 2001).

Village communities can be allocated forest that they are already using and forests that directly serve the community interests, e.g. as water catchment, and cannot be assigned to households, individuals or organisations. Village community means all households and individuals living in the same hamlet, village or equivalent unit. The law also states that village communities have the same customs, practices and traditions and that their production, life, culture and beliefs are closely associated with forests (Law on Forest Resources Protection and Development 2004).

In 2000, the total area of allocated or contracted forestland was 7 956 592 hectares. (Pham Xuan Phuong 2004). The progress in forest land allocation varies greatly between prov-

inces. Land allocation has mostly concentrated on the central and northern parts of the country (Vu Hua Minh and Warfvinge 2002). In practice, the allocation of land use certificates with more complete management rights has been restricted to barren land designated to reforestation and regeneration. Existing forest have generally not been allocated and they have remained in direct state control (Apel and Van Viet 1998; Neef and Schwarzeimeier 2001). Natural forests have been mostly assigned to households with protection contracts (Chirst and Kloss 1998). Recently, however, there has been a shift towards allocating also natural forest to households and communities, for example in Song La and Dac Lac provinces (Nguyen Hong Quan 2003).

Million Hectare Reforestation Programme. The Ministry of Finance allocates state funds to provinces for the implementation of provincial level projects and to management boards for the implementation of central government level projects. Individuals and households are paid for protection, regeneration etc. work. Depending on the character of each local project, the Provincial People's Committee will determine the exact amount of the payments (MARD 2001a).

According to the 5MHRP individuals and organisations investing in afforestation or regeneration with supplementary planting on waste land and bare hills, or in the development of an establishment to process forest and agricultural products shall enjoy preferential investment promotion according to the Law on Domestic Investment Promotion (amended in May 1998, effective since 1999). This includes a 50%-100% reduction of the land use tax for a period of three years or more, up to the planting cycle, depending on the site. The land tax is exempted for the first planting cycle if the land lies in a remote or deep-lying area and is used for planting production forests. In addition, preferential loans up to 70% of the total approved investment are available. The land use right can be used as a collateral (MARD et al. 1999).

Benefit sharing

The benefit sharing for allocated, contracted and leased forest land differs according to the forest classification, state of the forest at the time of allocation and who has invested into the establishment or development of the forest/plantation. Benefit sharing is based on the Decision 08/2002/QD-TTg on the management of natural special use, protection and production forest and Decision 178/2001/QD-TTg on rights and obligations of households and individuals allocated with forests and forestlands and on the 5MHRP (MARD 2001a).

Special use forest. Benefits from *contracted special use forest* include only payments for planting, regeneration and protection and a possibility to participate in research and tourism activities. For protection the payment is not to exceed 50 000 dong (about USD 3.5 in 2003) per ha per year for a maximum of 5 years. For natural regeneration, assisted by planting, the payments should not exceed 1 million dong per hectare, to be paid over a period of 6 years (MARD 2001a).

Protection forest. Households, which are *contracted protection forest* for protection, regeneration and reforestation, are entitled to payments according to the contract and to collect fuelwood and NWFPs. They can also harvest bamboo and cut selectively up to 20% of the timber volume when the forest is mature. They are entitled to 85-90% of the value of this harvest. For natural regeneration, assisted by additional planting, the payments should not exceed 1 million dong per hectare distributed over six years. In this case, households are also entitled to all thinning products and can grow subsidiary agricultural crops under the forest canopy as long as the function of the forest is not affected. Reforestation and tending is supported by an average of 2.5 million dong/ha during a period of three years. If house-

holds have themselves covered all the costs of additional planting, they will be entitled to all agriculture and forest products when the forest is ready for harvest (MARD 2001a).

In *allocated protection forest*, the benefits are similar to those received when contracting protection forest. When land is allocated for protection forest plantation households are also entitled to use 20% of the land for agricultural or aquatic production.

Production forest. When households are *contracted natural production forest* for protection they can use forest products obtained during silvicultural measures, interplant trees, graze cattle and are entitled to 1.5-2% of harvest each year. When production forest land is contracted for planting, tending and protection households are entitled to state funds, allowed to interplant, practise agroforestry and enjoy 2-2.5% of the harvest each year. Under 5MHRP the state reimburses those who have spent their own money in establishing production forests with rare and precious tree species with a production cycle of 30 years or more. The average payment is not to exceed 2 million dong per hectare (MARD 2001a).

In *allocated production forests* households are allowed to use forest products for domestic needs and interplant with agricultural trees. The yearly benefits from timber harvest depend on the state of the forest when it was allocated: from poor secondary forest 100% of the harvest, from regenerated post-cultivation or post-cutting forest 70-80% and from medium or rich forest 2% of the harvest (after paying tax). When allocated production forest has been planted with state funding, households are entitled to inter-plant with agricultural trees, harvest NTFPs, harvest wood for housing and to get 75-85% of the value of the timber harvested. If planting is funded by the households they have the right to decide planted species, harvest and use of products and they can use 20% of the land for agriculture.

When forest land without forest cover is leased and planted for production forest plantation, the lessee decides planted species, technique, how to harvest and utilise forestry products. Maximum 20% of the area can be cultivated or used for aquaculture.

The procedures for acquiring permits to harvest on allocated land are very complicated. The permission depends on the purpose/use of the forest, source of funding and forest status on time of allocation. The harvesting from plantations for owners own use is simple but on the other extreme harvesting from allocated natural forest with forest cover is very complicated (Vietnam-Finland Forestry Sector 2000). Some provinces only allow forest owners to harvest planted trees, not natural trees on their land. For the sale of NTFPs district level approval is needed (Vu Huu Tuyinh 2001).

Community forestry

Already before the recent policy changes, which enable land allocation to communities, forest land has been allocated to communities or groups of households in many provinces. Land allocation to communities has been implemented on a pilot project basis and these initiatives have often been supported by donor projects (e.g. Rural Development Project in Dak Lak and Social Forestry Development Project in Song Da, both financed by GTZ; Sweden Mountain Rural Development Programme in Yen Bai and Ha Giang provinces and PROFOR in Thua Thien-Hue Province financed by UNDP). SFEs and special use forest and protection forest management boards have also contracted forest and forest land to communities for protection (based on the Decision 01/CP). In 2001, 1203 communities were managing over two million hectares of forest land, which is about 15.5% of total forest land (Pham Xuan Phuong 2004).

Provincial level decisions have been issued in several provinces to guide the implementation of forest allocation and benefit sharing. They differ somewhat from each other and in some cases also from the national level legislation. For example, in Son La province degraded or young regenerating forests have been allocated to village communities, groups of households and social organisations in villages (Pham Xuan Phuong 2003).

With the cooperation of the Forest Protection Department of Son La province, the Social Forestry Development Programme began in late 1998 to develop a method of protecting forests and regulating their exploitation at village level. Village level forest protection and management regulations have now been drawn in Song La and Lai Chau provinces, in more than 500 villages.

The main benefits for contracted communities have been the payments for forest protection. Communities have also been entitled to fuelwood and NTFPs. In Ha Giang province, large areas of protection forest have been contracted to communities for 20 years. The community is paid 50 000/dong/ha/year for five years and it is entitled to harvest forest products (firewood, bamboo, etc.) as agreed. Each community sets up its own regulations for forest management and utilisation of the money received (O'Reilly 2000).

In general, the annual payments are not large enough for an incentive for long term protection of the contracted forests and there is no legal framework for benefit sharing between community members (Ha Cong Tuan 2001). The rights and obligations concerning the forest land allocated to communities or groups of households are unclear. It is not clear whether the rights and obligations are the same as for households (Vu Long 2003).

Experiences from forest land allocation and contracting

The effects of forest land allocation seem to be very location specific and vary according to the geographic location and natural conditions, which largely determine the production options for farmers. The way the allocation policy has been implemented has also been important for the outcomes of the allocation.

In some areas, forest land allocation and contracting have led to increased tree cover, better management of existing forests and decline in forest clearing. Forest land allocation has also increased local people's awareness about forest protection and management (Hanoi Agricultural University 2001; Ngyen Van Xuan 2003; Vu Duc Thuan 2003; Reports cited in Sunderlin and Huynh Thu Ba 2005). Three years after allocation, forest area and timber volume had declined in ten villages in Dak Lak province in Central Highlands. However, the area of non-allocated forest (under SFE management) had shrunk more than that of allocated forest. In non-allocated, as well as allocated land, forest loss resulted from clearing for shifting cultivation, clearing for agriculture under state projects and from illegal exploitation of timber (Tran Ngoc Thanh et al. 2004).

In general, forest land allocation has reduced the amount of land used for shifting cultivation. It has led to intensified lowland rice production and to the development of new irrigated rice fields where suitable land has been available as well as to the planting of tree crops (Bois-sau et al. 2001; Castella et al. 2002). In areas with no food shortage, forest land allocation and contracting have increased forest cover and the quality of forest. However, "forest land allocation and reforestation programmes have had little or even negative impact on the livelihoods of resource-poor hamlets or households that constantly suffer from food shortage". In these areas forest land allocation and forest protection limit or reduce the amount of land available for food production (especially land for shifting cultivation), grazing or firewood collection (Hanoi Agricultural University 2001).

In upland areas dominated by shifting cultivation based food production, forest land allocation has led to diminishing crops as additional lowland for sedentary cultivation is often not available, and former shifting cultivation areas are unsuitable for permanent cultivation. Areas planted with tree crops are generally small and experimental in nature. Only better off families can afford to invest in plantations. "The economic role of a tree plantation depends on the current household production system. Those households with sufficient paddy fields to meet their food needs tend to develop plantations in search of additional profit" (Castella et al. 2002).

Forest land allocation has thus in upland areas led to the destabilization of the upland farmers' livelihoods and to the need to develop alternative production systems and income earning opportunities. According to Boissau et al. (2001) the real development challenge is to assist these farmers in the search for sustainable social institutions and production systems. This includes the development of infrastructure and markets and village level institutions for land management (Castella et al. 2002).

The biggest problems with forest land allocation process relate to the lack of district and commune level land use plans, unclear borders (between agricultural land and forest land, between forest categories, between communities and between landowners), lack of local people's participation and equality in allocation as well as uncertainties in future benefit sharing and lack of forest and agroforestry extension (MARD 2001b; Le Thi Phi et al. 2004). One of the crucial shortcomings, the fact that communities were not eligible for forest land allocation, was removed with the approval of the new Forest Protection and Development Law.

In many locations boundary demarcation has not been carried out in the field, which creates conflicts between land holders. With the exception of international development projects, land allocation is also often carried out in a top down fashion, without sufficient local participation. This contributes to discrepancies between official land use designations and existing land uses and inequalities in land allocation. Often government agents consider fallow lands as unused lands that can be targeted for reforestation and allocated, thus limiting the amount of land that can be used for food production (MARD 2001b). In many cases, fallow lands have been allocated to low land Kinh people or other migrants ignoring the rights of those, who have been using the land for shifting cultivation. This has led to escalated land conflicts and violence especially in the Central Highlands (Human Rights Watch 2002).

In some cases, all villagers have not known about land allocation and have thus not been able to participate in forest land allocation. The poorest have also been reluctant to receive forest land because they have been afraid of not being able to invest in the land as required. In some cases, the allocated forest plots have been very small and/or scattered and far away, thus preventing the establishment of viable production and effective protection (Pham Xuan Phuong 2003). Forest land allocation has often been inequitable. Most of the existing forests have been allocated to state organisations, which have contracted households, groups of households and communities to protect parts of the forest. Better off villagers and village officials have often received a disproportionately large share of the allocated forest land (Xuan Phuc 2003). Also the issuance of red books often takes a long time, which undermines land security (Hanoi Agricultural University 2001).

People's awareness of land allocation and benefit sharing policies varies and can be very low or non-existent in remote areas. A study in Song La province indicates that a large part (30%) of households that had been allocated forest land thought that they are entitled to all benefits from the land or that they were only entitled to NTFPs (Pham Xuan Phuong 2003).

The benefits from allocated or contracted forest land depend on forest classification. In practice the distinction between protection and production forests has not always been clear or

has been simplified in the field when allocation documents are filled. This has led to uncertainty regarding benefit sharing (Pham Xuan Phuong 2003). It has also been argued that the payments for reforestation and natural regeneration under the 5MHRP are too low (MARD 2001b). Due to lack of funds, in some provinces the forest protection fees actually paid have been much less than stated in the government policy (Bui Dung The et al. 2004).

Forest land has been allocated to communities in some areas on pilot project basis. The experiences from these areas show that allocated forests have been protected well. In high-land areas communal forest management is also more compatible with traditional forms of land management than forest land allocation to individuals and households (Department of Forestry and National ...2003). The strength of the traditional (or new) village institutions to draw village regulations concerning forest utilisation and management and sufficient resource base that reduces pressure on forests facilitate the success of communities to protect and manage forests (Vu Hua Minh and Warfvinge 2002). Participatory development of village level forest protection regulations has led to improved forests, reduced forest fires and increased people's awareness of forest protection (Nguyen Huu Ai 2003). The incorporation of traditional community rules into the regulations and wide community participation have increased their acceptance (Best Practices on... 2005).

Land allocation and the 327 and 661 programmes have been implemented nationwide in a top-down fashion without considering variations in natural conditions and local culture. They have as well emphasised more environmental protection than improving the livelihoods of the poor. These policies work better in market-oriented communities than remote, traditional communities (Hanoi Agricultural University 2000). The income received from planting and protection contracts is an important additional income to many poor farmers and as long as they are paid for planting, maintaining or protection work, the forest will be relatively safe from destruction. However, it has been argued that payment for protecting forest is not a sustainable long term incentive. It encourages households to protect forests for government payments not for the current or future benefits forests provide. It can thus encourage dependency on government subsidies and lead to farmers ending protection when payments end (Nguyen Van Thinh et al. 2000; Bui Dung The et al. 2004). In the long run the government can also not afford to pay for the protection of all forest areas designated for protection forests.

Currently, encouraging farmers to plant trees on their own land is a major challenge. Even when food security needs are met, the absence of secure markets for forest products and/or perennial crops generally undermines smallholder interests in tree planting. Forest owners can sell forestry products to provincial forestry companies or state owned farms at regulated prices. (Vu Huu Tuynh 2001). In addition, the procedures involved for formal approval to harvest forest are complicated. The procedures depend on the purpose/use of the forest, source of funding and forest status at the time of allocation (Vietnam-Finland Forestry Sector... 2000). A permanent logging ban is in force in special-use forests, and a 30-year ban in critical watershed areas. All commercial logging has also been banned in natural forest in certain areas. Restricted logging is still allowed in the Central Highlands and central coastal area. The logging ban covers 4.8 million ha (58% of the country's natural forests; Pham Trung Dien 2002).

2.5.5 Kenya

Partnerships' role in forest policy and poverty reduction in Kenya

In Kenya, the policy shift towards formally involving local people and communities in forest management is only at the beginning. The Kenya Forest Sector Master Plan (Ministry of

Environment and Natural Resources 1994) forms the basis for the current forest policy. It supported poverty alleviation and rural development through community participation in forest management. However, the process of drawing a new forest policy and implementing legislation has been slow. The new Forest Development Policy and Forest Bill are currently (August 2005) before the parliament (KFWG 2005).

The proposed law will (Forest Bill 2005) establish the Kenyan Forest Service (FS) to e.g. manage all indigenous state forest, draw or assist in drawing up management plans for all indigenous state forest and plantations, provide extension for forest owners, farmers and associations in sustainable forest management and collaborate with communities in the management and conservation of forests. It will also promote the empowerment of associations and communities in the control and management of forests. The Bill introduces new forms of cooperation in forest management.

The Kenyan Poverty Reduction Strategy Paper (PRSP 2001) emphasises conservation and sustainable use and management of the environment and natural resources as an integral part of national planning and poverty reduction efforts. However, the priority sectors in PRSP are agriculture and tourism. The government's new Economic Recovery Strategy (ERS) presents the strategy for economic recovery during the next five years (2003-2007). Poverty reduction through improved natural resources management and promotion of income generating activities are priorities of the ERS. In forestry sector development the ERS emphasises allocation of forest land for private development, promotion of agroforestry and encouraging community participation in efficient management of forests. These measures will be complemented with continued afforestation, including private sector participation, to ensure that the minimum required forest coverage of 10% is reached by the end of 2007 (Ministry of Planning and National Development 2003).

Forest tenure

The Constitution of Kenya (1969, revised 2000) is under revision. According to the current Constitution president holds land in trust for the government. The Constitution addresses explicitly only private property and trust lands. Trust lands are vested in local authorities, county councils, for the benefit of the people living on that land. Trust lands "shall give effect to such rights, interests or other benefits in respect of the land as may, under the African customary law..., be vested in any tribe, group, family or individual". The Constitution also gives the county councils power to allocate trust land to non-residents and extinguish customary rights in that land.

The draft Constitution (2004) includes a specific chapter for land and property. It states that all land belongs to the people of Kenya, collectively as a nation, as communities and as individuals. It defines public, community and private lands. It establishes National Land Commission to e.g. manage public land on behalf of the government and to formulate national land policy. It also states that the parliament shall enact legislation to revise, consolidate and rationalise existing land laws and revise sectoral land use law in accordance of the national land policy.

According to the draft Constitution community land is vested and "held by communities identified on the basis of ethnicity, residence or community of interest". Community land includes trust lands, lands registered in the name of group representatives (group ranches), land lawfully held, managed or used by specific communities as community forests, grazing areas or shrines and ancestral lands lawfully occupied by hunter-gatherer communities.

Public land includes e.g. unalienated government land, land lawfully held, used or occupied by any government ministry, department or agency of local authority and government forest

(other than community land), game reserves, and water catchment areas, national parks, animal sanctuaries and specially protected areas and any land not classified private or community land under the constitution. Private land includes any registered land held under freehold or leasehold tenure.

The new Constitution tries to tackle issues related to the alienation of unalienated public lands (very little remains) and the allocation of trust land to private interests. It emphasises the need for reconciliation of customary and statutory law through comprehensive land law.

Forest related rights are further specified in many forest and land related laws:

Government Land Act (Cap 280) concerns government lands including forest reserves, unalienated government land and national parks. This Act gives the president power, subject to any other written law, to alienate unalienated government land by granting estates, rights or interests in or over this land to any person.

The current forest law, *Forest Act* (Cap 385), will be replaced by the Forest Bill (2005). The Act gave the minister wide authorities to gazette forest areas and to alter their borders, leading to continuous conflicts between government authorities and local people whose rights to the forest were thus limited (Matiru 1999).

About 1.65 million ha of indigenous and plantation forest have been gazetted under the Forestry Act (cap 385) as forest reserves. Forest reserves on government land are managed directly by the Forest Department (FD) but those on trust land (328 136 ha) are managed by local authorities (IUCN 1999). Gazetted national parks and national reserves are managed by the Kenyan Wildlife Service (KWS). Areas that fall under the Memorandum of Understanding are managed jointly by the FD and KWS. These are forest areas with high biodiversity value. These forests include Kakamega, Arabuko-Sokoke and Shimba Hills.

Trust Lands Act (Cap 288) makes provisions for the rights on trust lands and controls the occupation of these lands. Currently about 78.5% of Kenya's land is trust land, including an estimated 100 000 ha of closed canopy forests outside national reserves (IUCN 1999). County councils hold the land and should manage it according to the interests of the local people. Management is based on customary law. In practice customary law has been overridden by the statutory law.

The Act sets procedures for alienating trust land for purposes that are likely to benefit local people in the area. While county councils are supposed to hold the land as trustees for the benefit of local people they have alienated land totally disregarding the interests of the local people. The government (Commissioner of Lands) can also require that a parcel of land is set apart for the purposes of the government. Compensation shall be paid for this land (IUCN 1999).

In addition to forest reserves on trust land, some areas of trust land are set aside as national reserves after the Wildlife Conservation and Management Act (Cap 376) and are also managed by local authorities (IUCN 1999).

Group Representatives Act (Land Act Cap 278) establishes group ranches defined as demarcated areas of rangeland to which a group of pastoralists have official land rights. A group in this act is a tribe, clan, family or other group of persons, whose land under recognised customary law belongs to persons of the group. Each group needs to have a constitution and elect representatives. Most group ranches are in the areas occupied by pastoral communities. There has been substantial pressure to subdivide group ranches in some districts, especially in Narok and Laikipia (Waikanjo and Ngugi 2001). Today, there are 401

group ranches, covering an area of about 7 million hectares with 54 452 members (Wanyumba 2004).

An unknown area of indigenous forest is in private ownership. Though the holdings tend to be small, they are important for catchment and conservation purposes and provide subsistence and small-scale commercial products. Farmers have also planted trees on private agricultural lands, and trees on farms form an important part of farming systems. It has been estimated that planted and managed trees and shrubs usually cover between 5 and 10% of agricultural land (Deweese 1995).

Partnerships in the Forest Bill

The Forest Bill (2005) introduces several new forms of partnerships.

Partnerships between FS and private owners: Private forest owners can apply for the registration of a private forest (private or farm forest). After registration the owner is entitled to receive technical advice and loans for forest development. The Bill also introduces Forest Conservation Agreements between the Director of Forest and with any person for the joint management of any forest or part of forest in order to conserve biodiversity. If the agreement causes losses to the participant a payment of compensation is paid.

Provisional Forest: When a local authority forest or private forest is according to FS mismanaged or neglected, the minister may declare the area to be a Provisional Forest. It is managed by the FS in collaboration with the owner. Profits from the forest shall be paid to the owner after FS expenses have been covered. A declaration for provisional forest is possible only if the area is an important catchment area, rich in biodiversity and contains rare, threatened or endangered species, supports an important industry or is a source of livelihood for the surrounding forest communities.

Partnerships in the management of indigenous state forests: The FS may enter into a joint management agreement for the management of indigenous state forests with any person, institution, government agency or community forest association. The agreement shall cover revenue sharing and management issues. The management of state owned plantations can also be arranged through management agreements.

Partnerships in the management of local authority forests: Local authority forests are areas on trust land, which have been set aside as forest according to the Trust Lands Act (Cap 289). The management of these forests can be based on management agreement between the local authority and e.g. a NGO, a company, a forest community or an individual.

Community participation: The Bill includes a specific chapter for community participation based on the formation of registered forest associations. People, who have a traditional association with a forest for livelihood, cultural or religious purposes, or live within five kilometres from the forest, or who are registered as an organisation engaged in forest conservation can form a forest association. A registered association can apply for permission to participate in the conservation and management of a forest according to an approved management plan. The association will receive rights to harvest timber and fuel wood for domestic use, to harvest grass and honey and to collect other NTFPs, to collect forest produce for community based industries and to undertake agroforestry or ecotourism activities. Forest management needs to be sustainable and consistent with traditional user rights of the community.

The Ministry of Environment and Natural Resources has drawn guidelines for participatory forest management, which will be used to develop enforceable rules and regulations for

each forest. These guidelines describe an iterative process to be applied in the management of government forest reserves, trust land forests and communally owned forested areas (i.e. areas not yet designated as trustland or central government forests).

Participatory forest management process can be initiated by government officers, NGOs, community based organisations or private investors. The first step in the process is to identify the main interested parties and verify the nature of the resource base in the area. A local planning team consisting of representatives from key local forest user groups, responsible authorities and other key stakeholders should be formed. The main task of this team is to work together with other committed stakeholders to assess the forest and community in more depth and to draw a draft forest management plan. This process includes negotiations and agreement on the main roles and responsibilities of each stakeholder (Ministry of Environment, Natural Resources and Wildlife 2004).

Community forest associations should have at least 50 member households from the adjacent forest area, normally within 5 km of the forest resource. Associations should draw constitutions to specify the membership in the association, association's committee structure, the roles and responsibilities delegated to individual officers as well as the procedures and criteria for appointing committee members and officers and rules for financial management (Ministry of Environment, Natural Resources and Wildlife 2004).

Forest management agreement is a legally binding agreement that enables different stakeholders to become involved in the conservation and management of a forest area. It will need to include: the name and description of the forest, the purpose and specific aims of the agreement, parties of the agreement, management functions of the community forest associations, management activities to be performed by other parties, the rules and regulations and penalties for rule-breakers, the time period of the agreement, how any funds or monies will be managed, how the agreement will be revised or renewed, how disputes will be settled and the names and addresses of the signing parties. Agreements are signed by representatives of the community forest association or local authority (in case of legally recognised trustland forest area) and the district forest officer (Ministry of Environment, Natural Resources and Wildlife 2004).

Current forms of partnership

Until recently Kenya's forest policy and legislation have not encouraged local communities to participate in forest management. On the contrary, the policy has quite effectively alienated local people from forest management. However, the new forest policy opens new possibilities for participation. In anticipation of the enactment of the Forest Bill many projects have already included local people in forest management planning.

In donor funded projects, the general trend has been to improve local people's knowledge about natural resources and biodiversity/conservation issues and to reduce their dependency on forest resources by introducing other income generating activities together with forest/biodiversity conservation activities. Community associations have been developed to participate in forest management and participatory forest management plans have been drawn. Some of the most important projects are: Arabuko-Sokoke Forest Management and Conservation Project, Community Management of Protected Areas Conservation COMPACT, Forestry/Range Rehabilitation and Environmental Management Strengthening Initiative FORREMS, Mt Elgon Integrated Conservation and Development Project MEICDP, IUCN project in Loita and Kakamega forest (Arabuko-Sokoke Forest Management Team 2002; UNDP 2004; Vrije Universiteit 2001; Karanja et al. 2002; Mogaka et al. 2001).

Kenya Forest Working Group (KFWG) is developing management plans in five different locations: *Rumuruti, Eburru, Kereita, Kitobo and Ngangao forests* (WRM 2004). In connection with these projects, it has been observed that the costs of participating in forest management are substantial for community members. Negotiating and agreeing on a management plan is time consuming. In addition, the management plan usually restricts access to the forest and forest products. This can cause problems especially to the poorest that rely on forests for most of their needs (Enock W. Kanyanya, pers. comm. 2005).

The role of community associations in forest management seems to be very protection oriented. One reason for this is that there is currently a ban on harvesting timber in the government forest reserves. In order to successfully involve community associations in forest management, their members have to benefit from the involvement. Alternative forest related income generating activities have been created because the options for creating benefits based on the utilisation of wood are very limited in Kenya. Many different approaches have been employed. Development activities have included e.g. beekeeping, butterfly farming or horticultural crops, forest based tourism, micro-credit schemes for developing forestry related enterprises like growing eucalyptus poles and raisin tree seedlings for sale. Reintroduction of shamba system is advocated as a way to combine enhanced plantation management with crop production. The system is now banned, and it has been blamed for forest degradation especially by environmental activists (Enock W. Kanyanya pers. comm. 2005).

Honey Care Africa has been involved in several donor funded projects in promoting small holder beekeeping and honey production. Beekeeping brings additional incomes to local people and contributes to fire control and biodiversity conservation. Beehives are provided either on a loan or cost sharing basis. The company guarantees to purchase all the honey produced at a competitive price. Close to 2 000 households receive supplementary income from beekeeping and are able to earn USD 200-250/year (UNDP 2002).

Until recently the emphasis in forest extension was in seedling production and distribution of seedlings for free to farmers. Currently the emphasis is on farmer facilitation (in providing seeds and technical advice) and farmer to farmer extension. Extension has been mainly targeted to farmers, not for example people living close to and using indigenous forest or to pastoralists (Ministry of Environment and... 1994). The cuts in the civil service employment have led to reductions in the extension staff, which has been reduced to almost half of its original size. Because of this, extension to farmers has diminished considerably (Muok et al. 2001).

Shamba system: The shamba system is an agroforestry system where people cultivate agricultural crops with trees on the same land until tree crop starts to dominate. The system was first introduced to convert natural forest to plantations and then to replant harvested plantations. When the trees start to cover crops, the farmers are moved to another location and allocated another piece of land for the same practice. Residential shamba system, where farmers lived in the forest close to the land they were cultivating was banned in 1985. The reasons for the ban included the observations that the system attracted outsiders, led to large forest clearing and cultivation, but less attention was put to tending trees, and the forest area did not increase (Barrow et al. 2002).

The system has been later continued as a non-resident shamba system, where farmers are not allowed to live in the forest. The general problems with this system relate the failure of the Forest Department to lay down rules for the system, to the need to protect crops from wild animals and thieves (Matiru 2002). However, the system has received support as a cost effective way of establishing plantations and contributing to the food security of the farmers living near the planted area (Walubengo and Mutie 2004).

2.5.6 Mozambique

Partnerships' role in forest policy and poverty reduction in Mozambique

The new land policy (1995) has a strong potential for bringing about a change towards more decentralised natural resources management and enhancing partnerships between local communities and investors. According to the Land Law (1997), local communities shall participate in the management of natural resources, conflict resolution, titling process and in identification and definition of land occupied by communities. The law sets the procedures for communities to acquire secure land rights, which however, include only rights for subsistence use of forest resources. In natural resources management and conflict resolution communities shall use, among others, customary norms and practices.

One of the objectives of the Forest and Wildlife Policy and Strategy (1997) is to increase rural communities' participation in the management, fire protection and use and conservation of forest and wildlife resources (Ribeiro 2001). The Forest and Wildlife Law (No. 10/99) recognises several ways in which communities can participate in forest resources management. The under law regulations to clarify them have, however, not yet been drawn. Partnerships seem mainly to be developed around some degree of participatory resource management at the district level and community consultations when rights to natural resources are awarded to third parties.

Mozambique's strategy document for the reduction of poverty and promotion of economic growth lists agriculture and rural development as some of the main areas of action in poverty reduction (Republic of Mozambique 2001). The principal programme in the agricultural and rural development is PROAGRI (National Programme for Agricultural Development). Its objective is to create the conditions needed for sustainable and equitable growth in agriculture, forestry and livestock and contribute to poverty reduction and greater food security, while protecting the physical and social environment. The principal measures in forestry and wildlife sectors are to re-establish and rehabilitate hunting reserves, forestry and wildlife reserves and national parks with the involvement of local communities and the private sector, and to develop and adopt policies and programmes for reforestation and the restocking of wildlife. Community based forest management is in PROAGRI identified as one of the key components of the forestry and wildlife sub-sector (Mansur and Cuco 2002).

Forest tenure

In Mozambique, all the land and resources therein are owned by the state. The state can grant rights of use and enjoyment for individuals or judicial entities. These rights can be inherited. However, the land may not be sold, mortgaged or otherwise alienated. The Land Law (No.19/97), Land Law Regulations (Decree 66/98) and the Technical Annex to the Land Law Regulations (Diploma Ministerial no 29-A/2000) establish the principles for land tenure.

The Land Law acknowledges private, corporate and communal rights of land use and benefit, and it recognises the existence of customary rights and introduces mechanisms to register them. The rights for land use and benefit can be acquired through occupancy and customary use or through application to the state. Mozambican nationals, who have occupied the land for at least ten years (good faith occupiers) and local communities that have occupied land according to customary norms and practises acquire a right to use and benefit of land (*Direito de uso aproveitamento de terra, DUAT*) automatically. Communal rights are joint titles.

Areas for which rights for land use and benefit have been acquired through occupation (individuals) or through customary norms and practices (communities) can be delimited (includes e.g. participatory appraisal and sketch map) and recorded in the National Land Cadastre. A certified extract of the register or an oral testimony of someone, who has knowledge of the acquisition are adequate proofs of rights. Communities can also apply for a formal title document, which requires a more precise and more costly mapping exercise, demarcation, and includes the placing of cement markers at reference points around the perimeters. For formal communal title the opinion of district administrator and the decision of the governor of the province are needed. With community's approval individuals can apply for personal titles within community area. Communities are free to enter into contracts for economic activities on their land.

A local community is defined as a group of families and individuals that seek to safeguard its common interests through the protection of areas for habitation, agriculture, forests, and areas of cultural importance, pasture land, water sources and areas for expansion. The community can essentially define itself, but its area cannot extend beyond administrative boundaries (locality) legislated by the parliament.

The application to the state for the right to land use and benefit is subject to an exploitation plan. The maximum term for the right is 50 years, but it is renewable. A statement of district administrator is needed to confirm that the area for which rights are applied for is free and has no occupants. Community consultations should precede the issuance of this statement. The outcome of the consultation should be a written document signed by 3 to 9 community representatives. In case the land is occupied, the district authorities give the terms of partnership between the applicant and the holder of the right of land use land benefit acquired by occupancy.

The implementation of the Land Law has been slow and piecemeal. The costs involved in delimitation of communal lands and in applying for formal title are very high for communities. This can in practice effectively prohibit communities from formally securing rights to community lands. The delimitation of community lands has been undertaken only where donor funding has been available. (Alden Wily and Mbaya 2001; Norfolk 2004). A total of 163 community land delimitations have been completed and 59 communities have been issued certificates. Only 24 have received full land titles (CTC cited in Norfolk 2004). "Although a certificate or title document gives a community real power to negotiate with potential investors, there are no examples of this actually happening. No contracts (based on the land law) have been signed" (Hanlon 2002).

The rights acquired through the Land Law include only subsistence use of forest resources, which should follow customary norms and practices. Other than subsistence use is based on simple licenses and forest concession contracts defined in the Forest and Wildlife Law (FWL No.10/99). Simple licences allow removing a limited quantity of wood within 12 months in productive and multiple use forest areas for commercial, industrial and fuel wood purposes. The holder of a simple license should show proof of possessing technical capacity to harvest and transport the requested forest products.

Concession contracts are granted to productive and multiple use forest areas for 50 years. They are valid for a clearly defined area and renewable for another 50 years. The holder of a concession contract must guarantee the processing of the products harvested. This requirement makes concession contracts difficult to attain for communities, although in theory they could also apply for forest concessions.

Community participation in forest management

The Forest and Wildlife Law (No. 10/99) introduces several ways in which communities can participate in forest resources management: community management of *areas of historical and cultural value*; *participatory management*, *community consultations and delegation of forest management powers*.

Areas with historical, cultural or religious importance to local community set aside for protection can be used according to local communities' customary norms and practices. Local communities can request provincial governor to declare such areas.

Participatory management. The FWL creates mechanisms for local communities to co-manage forest resources, but maintains a strong state ownership over the resources. In respect to participatory management, the FWL states that the management should ensure local community participation in the exploitation of forest (and wildlife) resources and to entitle communities to benefits generated through resource utilization.

According to the FWL, Local Resources Management Councils (Comité de Gestão Participativa COGEP) shall be established for participatory management of forest and wildlife resources. These councils will consist of representatives from the local communities, private sector, associations and local government authorities. COGEPs are collective persons and have a legal personality (Forest and wildlife Law Regulations 12/2002). In the defined territorial or administrative areas they have power to ensure that the sustainable use of resources contributes to rural development and especially to the development of local communities. COGEPs should also participate in conflict resolution regarding resource use, facilitate and assist in law enforcement, propose measures to improve policy and legislation regarding the use of forest and wildlife and enhance fire control as well as pronounce upon proposed management plans for resources within their area.

The legislation does not specify how these councils are established or how community representatives are selected. It has been suggested that councils are established at the district level, and that the presidents of the Community Management Committees (CGC) represent communities in the councils (Nhantumbo and McQueen 2003).

In general, the establishment of co-management requires that a legitimate and accountable framework for community representation is in place. Community Management Committee (Comité de Gestão Comunitaria CGC) is a community level committee to represent the community in negotiations, in planning and management of resources and to receive and account for the community earmarked tax revenue. CGCs have so far not been specified in the legislation (Johnstone et al. 2004).

In practice COGEPs do not yet exist or function as envisioned in the legislation (Nhantumbo and MacQueen 2003). They represent several communities, commercial operators, NGOs and government administration, with different economic and political powers and authority. The decision making power is not devolved to the community level; instead it is compromised between different actors at the district level, where the influence of commercial interest can be strong. It is not very probable that this institution can currently represent community interests and concerns. To clarify the role of different institutions and to create coordination between e.g. different sectoral committees is needed. Councils should be developed to facilitate strategic planning and to coordinate resource management at the district level (Nhantumbo and MacQueen 2003).

Community consultation. According to the FWL and FWL Regulations (No. 12/2002) communities should be consulted before allocating forest concessions or simple licenses to third parties. The law tries to protect community rights by stating that local communities' access

to the area being harvested and their rights to use natural resources for subsistence purposes should be safeguarded. The consultation is mediated by local government institutions and it is aimed at securing benefits to communities in the form of employment opportunities and infrastructure development. The concession contract should include a description of benefits to the communities and their participation.

Community consultations are only required when concession contracts are allocated not when contracts are renewed. There are no mechanisms to monitor whether the benefits negotiated ever were realized. The process of community consultation is weak and clear guidelines for conducting it do not exist. The failure to fulfil agreements is not considered as an infraction in the law and thus the current legal framework does not secure community benefits (Johnstone et al. 2004). In practice, community consultations have so far not encompassed wider community participation. In many cases, all villagers have not even been aware that a concession has been awarded to land they are using (Reyes 2003). Communities lack capacity to engage in negotiations with the private sector and there are no financial or other incentives for the private sector to encourage them to form partnerships or even to work with communities (Ashley and Wolmer 2003). Community representation is also problematic; the legislation does not specify who should represent the community and how the representatives should be selected/elected. In practice the consultations have generally been conducted with the traditional leaders (Ashley and Wolmer 2003). Consultations have also been substituted by bringing a ready made document for signing to community leaders (Johnstone et al. 2004).

In addition, communities cannot veto against concessions. Because of the condition to guarantee the processing of the harvested forest products, it is very difficult for communities to acquire concessions (Ashley and Wolmer 2003). The FWL puts communities in a weaker position than commercial operators even when the forest in question is according to the land law recognised as community land. It seems that the principles, which strengthen community resource management in the Land Law, are seriously compromised in the FWL.

Options for financial benefits. According to the FWL, local communities resident in the area being harvested are entitled to a percentage (20%) of the revenue from simple licenses and concessions. The revenue allocated to communities should be used for collective benefit and conservation of natural resources in the area. There are however no official mechanisms to implement this policy (Reyes 2003; Johnstone et al. 2004).

The regulations recognise an unspecified role of "community agents" in law enforcement activities. Community agents and local communities among others are entitled to 25% share of the fines resulting from their participation in reporting an offence. However, only a very low amount the fees are actually paid and there is also no mechanism to implement the policy of rewarding communities or community members for participating (Johnstone et al. 2004).

Delegation of resource management powers. The FWL states that the state can delegate the power to manage forest and wildlife resources (including restocking of forest) to local communities, associations or to the private sector. In relation to this, the regulations state that the terms and conditions for delegation of management powers will be defined in a ministerial diploma (technical annex). The intention is to involve the managers in the harvesting, use and conservation of forest and wildlife resources. The regulations specify that management authority can be delegated in protected areas, buffer zones, official hunting areas, productive forests, multiple use forests and multiple use zones. The procedures for the delegation of these powers have not been specified (Norfolk 2004).

Experiences from implementing the forest law. A national level study to investigate the implementation of the new forest policies was conducted by Nhantumbo and Macqueen in

2003. The results clearly show that in general the knowledge of FWL is very limited. The reasons for this are: 1) government agents do not have copies of the law and they do not have the capacity to spread information concerning the contents of the law even when they are familiar with it; 2) the law has not been translated to the local languages; 3) the NGOs involved in spreading the law do not always fully understand the concepts and the spirit of the law; and 4) high level of illiteracy in the rural areas. In general, the knowledge and understanding of the FWL is better in areas where natural resources related projects are implemented. Companies are more familiar with those aspects of the law that directly affect their activities, but they do not try to act according to the spirit of the law in relation to the communities.

In spite of the general problems related to the incomplete regulatory framework and problems in the implementation of the new policy, some positive developments have already been noted. According to Mansur and Cuco (2002) there are clear positive developments in areas with projects that involve communities in forestry compared to areas without this kind of projects. Positive developments include community empowerment and better relationships between communities and government officers. Especially, the recruitment of community scouts to patrol and protect forests and their success in arresting or reporting people involved in illegal harvesting, in some cases government officials, has within communities contributed to a shift from powerlessness to a sense of control over local resources (Norfolk 2004).

In late 2001, the Community Management Unit listed 51 community based natural resource management related projects. Almost all of them were supported by international donors and/or local NGOs (CMU 2001). In 2000, of about 40 projects only in less than half communities were directly involved in forest management. In most projects, the benefits for communities came through tourism development (Alden-Wily and Mbaya 2001). For example, the following projects have included communities in natural resource management: Tchuma Tchato (partnership between the state, communities and private sector in tourism, hunting, fishing), Chipanje Chetu (local level forest resources management) and Niassa Reserve (buffer zone management partnership between the state, communities and private sector), Support for Community Forestry and Wildlife Management (pilot activities in community forestry and wildlife management) and Sustainable Forest Resource Management Project in Derre (strengthening local institutions in resource management and the development of income generating activities).

The land and forest policy frameworks are quite recent and the forest legislation is still incomplete. The implementation of these policies has also been only partial. Capacity and resources to implement new policies is very low or non-existent at the provincial and district levels (Norfolk et al. 2001; Johnstone et al. 2004). The lack of political will to implement forest policy has slowed the process to draw guidelines for implementing the legislation (Johnstone et al. 2004). As noted above, e.g. the guidelines for community consultations and clear framework for community representation have not been drawn. The policy objective to attract private investment into the forestry sector can also compete against community involvement (Ashley and Wolmer 2003).

The main problems in implementing community participation relate to the difficulties in securing rights to land and resources and community organisation and representation. Gaining property rights to land has been found to be too expensive and complex for local communities or committees representing community members (Anstey 2000). In addition, the rights established through the land law include only subsistence rights to forest resources. Strong, representative community institutions are needed to ensure that communities can participate and benefit from resource management (Norfolk 2004).

2.5.7 Mainland Tanzania

Partnerships' role in forest policy and poverty reduction in Tanzania

The Tanzanian forest policy strongly supports the involvement of all stakeholders in forest management and conservation through defining clear ownership and management regimes for all forests and trees (MNRT 1998). The ultimate goal the National Forest Programme 2001-2010 (NFP) is to reduce poverty and increase economic growth by managing forests sustainably without compromising environmental and cultural values. Communities' and other stakeholders' participation has a central role in the NFP. Its implementation programme includes, among others, the following strategies: participatory forest management (PFM), joint forest management (JFM) and community based forest management (CBFM), increasing financial capacity of governments and villages through cost and benefit sharing on implementing JFM and CBFM, encouraging the sharing of management responsibilities in plantations and natural forests through management plans and through coordination among different stakeholders in the forest sector (MNRT 2001a).

The Forest Act (No. 7, 2002) provides the legal framework to implement forest policy. One of the objectives of the Forest Act is to implement forest policy "to encourage and facilitate active participation of citizen in the sustainable planning, management, use and conservation of forest resources through the development of individual and community rights, whether derived from customary law, or under this Act, to use and manage forest resources." The Act also emphasises the delegation of forest resources management to the lowest possible level of local management.

Tanzania updated its Poverty Reduction Strategy in 2005 (National Strategy for Growth and Reduction of Poverty, United Republic of Tanzania 2005). The strategy recognises the importance of wildlife, forestry and fisheries sectors in rural poverty reduction and targets to increase these sectors' contribution to poverty reduction. To accomplish this it supports participatory forest management for increasing income to rural communities, increasing local control and earnings in wildlife management areas and community based and environmentally sound natural resource management.

Forest tenure

All land in Tanzania is vested in the President as trustee on behalf of all citizens. For management purposes the land is divided to general land, reserved and village land. General land is land that is not reserved and not village land. Reserved land is designated according to specific laws, e.g. Forest Act and National Parks Act (Land Act No. 4, 1999; Village Land Act No. 5, 1999).

Village land is the land area within villages' boundaries, defined according to the earlier legislation or agreements or land, which boundaries have been agreed on between village councils having jurisdiction over that land and/or land, which the villagers have regularly occupied and used as village land during 12 years before 1999 (Alden Wily 2003). Villages can legally register their landholdings and apply for a Village Land Certificate. Through this process the villages gain responsibility to manage village land, to issue individual land titles to people living in the village and to set aside areas for various purposes (MNRT 2003).

Village is the lowest government administrative unit in rural areas. All adult members of a village make the village assembly, which governs the village. Executive powers, e.g. the management of village lands, are vested with the village council as a trustee of the villagers. Villages have the right to enact by-laws, which can be used to enforce local rules and regu-

lations. By-laws need to be approved by district councils (Local Government Act 1982). Most of the land in Tanzania is village land. There are 11 000 village areas, i.e. land areas that are under the village authorities (Alden Wily 2003).

Village land needs to be divided into three categories: communal village land, individual and family land, for which titles may be issued, and land to be set aside for future individual or communal use. Communal village land will be registered as common property owned by all villagers together. Village forest reserves and wildlife management areas can be established on communal village land. Village councils should manage the land according to customary law that includes any rules established by use and is in practice the prevailing custom (Alden Wily 2003).

The citizens may hold rights to the land, based on customary rights or granted rights of occupancy. These rights can be registered and titled. The land legislation gives customary rights of occupancy and granted rights of occupancy the same legal status and establishes the procedures for obtaining a customary right of occupancy. The law protects customary rights even when they have not been registered. Customary rights are held for indefinite period while granted rights can be issued for the maximum period of 99 years.

In Tanzania forest land is divided into two main categories: forest reserves and unreserved land (general land, public land). Reserves have been gazetted either to protect special values (water catchments or valuable forest types/ecosystems) or to ensure sustainable timber production. Forest reserves may be under the authority of districts, regions or central government. About 13 mill. ha (37% of the forests and woodlands) have been gazetted as forest reserves and are managed by the Forestry and Beekeeping Division (FBD) in the Ministry of Natural Resources and Tourism (MNRT). About 9 mill. ha of forest reserves is under production forestry, 4 mill. ha is managed as water catchment areas and soil protection areas without any licensed direct use. 83 000 ha of the gazetted area is under plantation forestry. Local authorities manage about 600 000 ha. Forests and woodlands within national parks etc. cover 2 000 ha (6%) (MNRT 2001a)

Non-reserved forest land includes all the land between village lands and reserved forests. About 54% of natural forests and woodlands belong to unreserved land (covers app. 19 mill. ha). A large part of this area is without any ownership or proper management and under shifting cultivation, heavy pressure for conversion and rampant degradation. The area under private and community forestry is estimated to be 70 000-150 000 ha. This is about 9% of the total forest area. Tanzania has allocated about 25% of its total area to national parks, game reserves and game controlled areas (MNRT 2001a).

Forms of partnerships in forest management

The Forest Act (2002) classifies forest into a) national forest reserves b) local authority forest reserves c) village forests and d) private forests. Partnerships in forest management include direct village level forest management (*village land forest reserves*), community forest management in forests on village lands (*community forest reserves*) and joint forest management of national and local authority forest reserves (*village forest management areas*). Different parts of a national and local forest reserve and different activities within the reserve can be managed by different persons or organisations. In principle, commercial harvesting of forest produce in national and local authority forest reserves is based on licences.

Management plans: Management plans shall be prepared for each reserved forest and private forest. An outline of the management plan is needed when the Minister makes a decision concerning the declaration of a forest to national forest reserve or local forest reserve. The views of local authorities and communities living close to the forest should be regarded

when drawing the outline of the management plan. They should also be consulted in the process of preparing detailed forest management plans. Village councils are responsible for drawing village land forest management plans. The process involves village assemblies and consultations with the relevant district council.

Partnerships in national and local authority forests, Village Forest Management Area:

National and local authority forest reserves can be managed by government authority, a village council, a community group, concession holder, private organisation or a non-governmental organisation. A village council can apply to manage whole or a part of or an activity in national or local authority forest reserve. Management will then be based on joint management agreement and the area is referred to as village forest management area. Joint forest management agreements are valid for five years, after which they are subject to renewal/re-negotiation.

Village land forest reserve: A village council may by resolution declare an area of village land to village land forest reserve. It can also apply for the forest reserve to be gazetted. Gazetting can be made only after the council has been managing the forest for at least three years. The village council can also make a joint management agreement or other kind of agreement regarding the management of the village land forest reserve. As well, it may establish a committee to manage the forest or delegate this task to an existing committee. The management should follow accepted (submitted to the district council) management plan and by-laws and other rules drawn by the village council and customary rules and practices applicable to forest management in the area. The village council grants the permits for other than domestic uses of the village land forest reserves. Two or more villages can also manage forest reserves jointly.

There are two ways by which villages can formalise their rights to village land forest reserves. Village lands can be surveyed and registered according to the Village Land Act (1999) or village land forest reserve can be established according to the Community-Based Forest Management (CBFM) Guidelines (MNRT 2001b). According to the guidelines the formalising process includes agreement on borders with neighbouring communities, drawing of a management plan and by-laws and registration of the village forest reserve at the district. The process was established to speed up the formalising of village forest reserves as gazetting takes time and may be too expensive for a community to undertake (MNRT 2001b).

Community forest reserves: Community forest reserve can be a separate reserve or a part of a village land forest reserve. Community forest reserve can also be managed on the basis of a joint forest management agreement between the village council and the community group. A community forest management group can consist of villagers or other people living in or near the forest who are managing or who would like to manage the forest reserve, or a part of a forest reserve in communal ownership. According to Alden Wily and Mbaya (2001) there are 26 community forest reserves.

Participatory forest management. In Tanzania the approaches involving joint-forest management (JFM) in central or local government forest reserves and community-based forest management (CBFM) of forests under the control (or ownership) of local communities are generally referred to as participatory forest management (PFM). An estimated 2000 villages are implementing community based forest management on about 1 million ha of forest land, and about 525 villages are involved in JFM on 1.86 million ha (Ramadhani 2003 cited in MNRT 2003).

The Forest Act (2002) gives a clear framework for forest policy implementation. The basis for developing partnerships in forest management rests in building on the existing village and community organisations and avoiding the establishment of new parallel institutions.

MNRT has drawn Community-Based Forest Management Guidelines (MNRT 2001b) for foresters to guide the implementation of CBFM at the local level. The guidelines are meant to be used with flexibility and need to be adapted to local conditions. One drawback is that they are targeted to foresters and not to communities (MNRT 2003).

CBFM-guidelines emphasise the active role of communities and power sharing in forest management: "(CBFM)... aims to secure forests through sharing the right to control and manage them, not just the right to use or benefit from them. Therefore CBFM targets communities not as passive beneficiaries but as actors, not as users, but as managers." The guidelines propose an eight step process in establishing CBFM, including the drawing of forest management plan, election of a village forest management committee and patrol team, formulation of by-laws (regulate the use of forest produce, sets fines for offences and procedures for financial management), boundary definition, zoning, the declaration and registration of a village forest reserve or a community forest reserve or agreement on the joint management with FBD or district authority (MNRT 2001b). The guidelines emphasise learning by doing and modification and adjustment of the management after a trial period.

Village by-laws for forest management are legally binding after they have been approved by the village assembly and the district council. For community based forest management the main issues to be addresses in the by-laws are rules related to the management and use of the forest, procedures for handling offences and fines for offences and handling of monies from fines and fees (MNRT 2001b). Sub-committees are, with district support, responsible for practical management activities: proposing forest boundaries, drawing management and utilisation plans and for writing by-laws, issuing licences, collecting revenue and monitoring and law enforcement. District council's tasks include facilitating forest management planning in the villages, approving by-laws, issuing village land certificates, declaration of village land forest reserves, capacity building and conflict mediating (MNRT undated).

PFM-approaches have been developed and implemented in many different projects since 1990s. Different approaches to enhance community organisation and forest management were developed in the first projects. After the PFM guidelines were drawn, they have usually been used to guide the implementation of PFM activities in the field. Since 2004 the implementation has moved towards nationwide scale. This is supported by the new donor funding strategy, which is changing towards a sector wide approach. In Tanzania forest policy implementation will be increasingly coordinated through NFP and mainstreamed through government institutions.

The NFP is the main instrument for implementing forest policy. Villages' and local people's participation in forest management is under NFP supported by the Tanzania Forest Management and Conservation Programme, which currently receives support from the World Bank, DANIDA and Finnish Ministry for Foreign Affairs . The programme is planned to assist participatory forest management in 37 districts in 14 regions (additional 12 districts in four regions will be included through Finnish Ministry for Foreign Affairs support by July 2005) (MNRT undated).

Examples of PFM projects include: Duru Haitemba and Mgori Forests in Babati and Singida Districts (SIDA supported LAMP project); Traditional Forest management (Ngitiri) in Singida District (NORAD Supported Hidadhi Ardhi Shinyanga, HASHI Project); Uluguru Mountains - Joint Forest Management around Catchment Forests in Morogoro District (DANIDA supported UMCMP); Community Based Natural Woodlands Management Project and the Udzungwa Mountains Forest Management and Biodiversity Project in Iringa district (DANIDA funded MEMA-projects); Woodland and Forest Management in Lindi and Kilwa Districts (DANIDA supported UTUMI project); East Usambara Conservation Area Management Programme in Muheza and Korogwe districts (Finnish Ministry for Foreign Affairs funded EU-CAMP-project); Natural Resource and Buffer Zone project in Handeni district Tanga (GTZ

supported); Rural Integrated Support Programme in Lindi and Mtwara regions (Finnish Ministry for Foreign Affairs supported RIPS) and Conservation of Lowland Coastal Forests in the Coast region (supported by WWF); Joint Forest Management Project in Lushoto district (GTZ support). The Ruvu Fuelwood Project has supported the development of individual woodlots on state land.

Experiences from JFM and CBFM

The primary problems identified by villagers in participatory rural appraisals are usually related to infrastructure and social services, like poor roads, lack of water and need of health and education services. Forest related issues are not among the most important problems. This has been the case even when people have seen that PFM brings some benefits and helps preserving forest resources (FBD and IDC 2003). Because of this, when participatory rural appraisal in relation to PFM initiatives is not part of a broader rural development programme it should focus on issues, which can be solved within the scope of the natural resource management project. Otherwise too high expectations can be created in the villages (Veltheim and Kijazi 2002). On the other hand, PFM is more likely to succeed when forest management brings income that can be invested in providing for infrastructure and social services (FBD and IDC 2003).

Developing PFM is a long-term process. Experience shows that at least ten years are needed before PFM is firmly established. The EUCAMP supported PFM in East Usambaras for 3 years, after the programme closed some communities gave up the PFM control systems, which has again lead to illegal harvesting (MNRT 2003).

Participatory processes are very slow. In EUCAMP the establishment of a management plan and by-laws took on average about four months (Veltheim and Kijazi 2002). However, by proceeding slowly more villagers will learn about the process and participate. It has been learnt that raising general awareness of PFM process can take considerable amount of time and effort (MNRT 2003). Especially, women are less aware of PFM issues. Poor communication at community and household level contributes to this (FBD and IDC 2003).

Many projects have included training and capacity development of communities, village councils, technical teams implementing forest management and village scouts. Two general lessons have emerged in relation to these programmes: the importance of the awareness of communities about their rights and responsibilities and the learning-by-doing and flexible approaches in PFM development (MNRT 2003).

PFM does not work with each and every community. Certain conditions enhance the acceptance of and willingness to adjust to new ways of managing resources. These conditions relate to the realisation that current management system does not work (resource degradation, lower amounts of forest based products available), to the familiarity of the new system (people have seen it work somewhere else), long term (MNRT 2003).

Both traditional and formal institutions can form an effective structure for community level resources management. HASHI project is an example of a project where traditional institutions and local knowledge were incorporated to restore degraded woodlands (IUCN 2004). The location specific circumstances are crucial in determining whether to build forest management institutions on traditional or newly created structures or on a mixture of both.

The successes of the village natural resources management committees (VNRC) have been variable and dependent on both the local leadership and outside support (MNRT 2003). Some village forest management committees are functioning well, follow management plans and have transparent systems for income and expenditure management (FBD and IDC

2003). However, one of the biggest problems in the villages is managing money from licences and fines (FBD and IDC 2003). When community members are not aware of their rights and the responsibilities of the VNRC, it is possible for committee members to take a part of the income. Village committee and council members are generally poor and do not get paid for their work. This can increase the temptation for illegal activities. A review in seven villages under the MEMA project area revealed that in most villages very few people knew how much money committee had collected and how it had been used. The knowledge of PFM activities and the existence of a VNRC was especially poor in the more remote sub-villages (FBD and IDC 2003).

The relationship between village council and VNRC has in some cases been problematic. In some villages, village councils have taken over the finances of the VNRC, in some an agreement on how the income is used between forestry and other village development activities has been reached (FBD and IDC 2003).

The benefits from PFM have included cash from the sale of forest products and fees and fines collected. There is clear evidence that PFM has the potential to enhance sustainable resource management. Positive changes in the environment have for example been observed by villagers in the MEMA project areas. Documented positive changes include fewer fires and increase in observations of wild animals. In many villages outsiders' use of forest resources had decreased indicating that villages are able to regulate forest exploitation (FBD and IDC 2003).

PFM brings costs to the communities. A general problem is that villages do not have funds to invest in forest surveying and registration (MNRT 2003). So far, the implementation of JFM and CBFM has been largely donor dependent, with projects scattered throughout the country. The costs of PFM include reduced access to forests resources, time and energy spent in forest protection and rehabilitation work and in attending meetings. Increased threat from wildlife can also add to costs. Because of these costs it is important to develop other income generating activities, and especially other rather quickly appearing benefits, to reduce the pressure on forest resources and to compensate for the reduced incomes from the forests.

In developing village forest reserves within EUCAMP (11 villages involved in managing five village forest reserves) the biggest problems related to border conflicts. Villagers expected clear benefits from joint management, either through harvesting timber or poles or through employment. The villagers were willing to take over responsibility for protecting the forest through patrolling and controlling NTFP collection, but expected to be paid for labour intensive tasks such as border clearing and maintenance and enrichment planting. This employment was considered as an important benefit. Direct benefits were restricted to collection of dry fire wood, medical plants and wild fruits and vegetables for domestic use (Veltheim and Kijazi 2002).

Supporting subsistence livelihoods does not help people out of poverty. In general, more emphasis should be put on developing resource management that would bring real incomes to communities. PFM development is often constrained by the fact that the benefits will realise only after a considerable time, while local people's concerns are focused on how to fulfil daily subsistence needs (MNRT 2003).

Generally, it is much more difficult to establish significant benefits to local communities through JFM than through CBFM. The benefits from JFM are usually not sufficient to sustain community interests. For this reason the development of alternative income sources is especially important in JFM initiatives. The most frequently developed activities have been beekeeping, fish farming and eco-tourism. The most successful activities have been those which had already existed in the communities. In exceptional cases, fees from tourism de-

velopment have generated important benefits to communities. The opportunities to create income through tourism development are, however, quite limited (MNRT 2003).

So far general rules for benefit sharing in JFM do not exist. Different systems to share benefits with the local communities have been used including employment opportunities, permission based opportunity to extract dry timber, permission to keep beehives and to fish. Generally, control over the resource use and issuing permits has rested with forest officers. In community based forest management communities control the resource. These initiatives have in Tanzania been successful especially in degraded areas where the impact of regeneration is substantial (MNRT 2003).

Even though the distribution of costs and benefits within the villages has not been systematically studied, some evidence indicates that costs and benefits are not equally distributed across different wealth groups. According to a study in four communities, the lower income class bears the highest costs of forest management and receives the lowest net benefits. The differences in the distribution of benefits are at least partly explained by the fact that higher income groups own more livestock and thus collect more fodder grass than poorer groups (Meshack 2004).

In most development initiatives forest protection has been supported by developing new income earning opportunities to reduce pressure on forest resources. In some cases problems related to marketing, such as the weak position of small scale producers against well-organised traders, lack of market information and poor infrastructure, combined with long distance to markets, have hampered the success of these initiatives. Efforts to develop alternative income earning opportunities need to be combined with the development of processing and marketing. Inter-sectoral cooperation is also needed for creating alternative income sources as in many cases income diversification can be best accomplished by developing activities outside the forestry sector (MNRT 2003).

Forest type and condition affect the management objectives and communities' interests in PFM. In locations with rich forest resources communities tend to be less interested in PFM, except to protect the resource from outside exploitation. In resource rich areas the focus of JFM seems to be in biodiversity and/or catchment protection and in CBFM in production and sustainable utilisation. In areas with poor or degraded forest resources JFM focuses on regeneration and increased production. In resource poor areas the interest in PFM is generally greater than in resource rich areas. Also the more dependent communities are from forest resources the more interested they are in getting involved in forest management. However, restrictions to forest products utilisation, which usually follow PFM development, can have severe impacts on communities that rely heavily on forest resources. It has been noted that communities, which rely on agriculture protect forests better than communities for which charcoal or timber production are important (MNRT 2003).

3 REFERENCES

Abdelnour, H.O. 1999. Implementation of national forest programmes in Sudan. A case study. Paper presented at FAO-Turkey workshop, Istanbul 11-12 October. 46 p.

Abdelnour, H.O. 2000. Problems of land degradation in tropical Africa-with particular reference to the Sudan. A paper presented at the Regional Workshop on "Management of Trees for Farmland Rehabilitation and Development", 27.10-7.11.2000, Khartoum, Sudan. 16 p.

Abdelnour, H.O. 2001. Case study of Sudan on Implementation of national forest programmes.

Acharya, K.P. 2002. Twenty-four years of community forestry in Nepal. *International Forestry Review* 4(2):149-156.

ADB (African Development Bank)/ EC (European Commission)/ FAO, 2003. Forestry outlook study for Africa (FOSA): Sub-regional report for North Africa. FAO, Rome. 50 p.

Alden Wily, L. 2002. Participatory forest management in Africa. An overview of progress and issues. The Community-Based Natural Resource Management Network global portal web site http://www.cbnrm.net/pdf/aldenwily_l_002_cfm.pdf (Accessed 22.8.2005).

Alden Wily, L. 2003. Community-based land tenure management. Questions and answers about Tanzania's new Village Land Act, 1999. IIED Drylands programme, Issue Paper 120. 59 p.

Alden Wily, L. and Mbaya, S. 2001. A Study of Land, People and Forests. The Impact of Property Relations on Community Involvement in Forest Management, forthcoming IUCN. 298 p. + annexes.

Anstey, S. 2000. History Matters: Institutional Change and CBNRM in Sanga District, Northern Mozambique. Presented at "Constituting the Commons: Crafting Sustainable Commons in the New Millennium", the Eighth Conference of the International Association for the Study of Common Property, Bloomington, Indiana, USA, May 31-June 4.

Anstey, S. 2002. Necessarily vague. The Political Economy of Community Conservation in Mozambique. In D. Hulme and M. Murphree (eds.) *African Wildlife & Livelihoods. The Promise & Performance of Community Conservation*. James Currey Ltd, Oxford, U.K. Pp. 74-87.

Apel, U. and Pham Van Vien. 1998. The Community Forest Management Strategy of the SFDP Song Da. Vietnamese - German Technical Co-operation, Social Forestry Development Project (SFDP) Song Da, Ministry of Agriculture and Rural Development - GTZ -GFA. Community Forestry Unit, Working Paper No. 9. Revised Version 11/98. 24 p.

Arabuko-Sokoke Forest Management Team 2002. Arabuko-Sokoke Strategic Forest Management Plan 2002-2027.

Artemiev, I. 2003. State Forest Enterprise Reform in Vietnam. Unlocking the potential for commercial wood growing. EASRD Technical note. World Bank.

Ashley, C. 2000. Applying Livelihood Approaches to Natural Resources Management Initiatives: Experiences in Namibia and Kenya. ODI Working Paper 134. ODI, London U.K. 30 p.

Ashley, C. and Wolmer, W. 2003. Transforming or Tinkering? New Forms of Engagement between Communities and the Private Sector in Tourism and Forestry in Southern Africa. Sustainable Livelihoods in Southern Africa, Research Paper 18. 67 p.

Ayoub, A. T. 1998. Extent, severity and causative factors of land degradation in the Sudan. *Journal of arid environment* 38: 397-409.

Ayuk, E. T. 1997. Adoption of agroforestry technology: The case of live hedges in the Central Plateau of Burkina Faso. *Agricultural Systems* 54 (2): 189 – 206.

Ballal, M.E., Elsiddig, E.A., Elfadl, M.A. and Luukkanen, O. 2005(a). Gum arabic yield in differently managed *Acacia senegal* stands in western Sudan. *Agroforestry Forum*, 63: 237-245,

Ballal, M.E., El Siddig, E.A., Elfadl, M.A., and Luukkanen, O. 2005(b). Relationship between environmental factors, tapping dates, tapping intensity and gum arabic yield of an *Acacia senegal* plantation in western Sudan. *Journal of Arid Environments* 63:379-389.

Banjade, R.M. and Timsina, N.P. 2005. Impact of armed conflict in community forestry of Nepal. *ETFRN NEWS Forest and Conflicts*. No 43-44: 81-83.

Baral, J.C. and Thapa, Y.B. 2003. Nepal's Leasehold Forestry for the Poor: Looking at the Unintended Consequences. The Mountain Forum on-line library. <http://www.mtnforum.org/resources/library/barax03b.htm> (Accessed 21.9.2005).

Barrow, E.G.C. 1996. The dryland of Africa: Local participation in tree management. Initiative publishers, Nairobi, Kenya. 268 p.

Barrow, E., Clarke, J., Grundy, I., Jones, K.-R. and Tessema, Y. 2002. Analysis of Stakeholder Power and Responsibilities in Community Involvement in Forestry Management in Eastern and Southern Africa. IUCN Eastern Africa Programme. *Forests and Social Perspectives in Conservation* No.9. 154 p.

Best Practices on Indigenous Knowledge. Vietnam. Management of Social Transformations (MOST) Programme web page. <http://www.unesco.org/most/bpik11-2.htm> (Accessed 11.10.2005).

Boissau S., Castella J.C., Nguyen Hai Thanh 2001. Forest land allocations in Northern Vietnam: sedentarization and evolution of production systems. SAM Paper Series 10, Vietnam Agricultural Science Institute, Hanoi, Vietnam.

Braeutigam, D. 2003. Community Based Forest Management in Cambodia and Laos. Frame Conditions, Selected Examples and Implications. MRC-GTZ Cooperation Programme Agriculture, Irrigation and Forestry Programme Watershed Management Component. Working Paper 03. Phnom Penh, October 2003. 95 p.

Brown, D., Malla, Y., Schreckenber, K. and Springate-Baginski, O. 2002. From supervising 'subjects' to supporting 'citizens': recent developments in community forestry in Asia and Africa. ODI, Natural Resource Perspectives Number 75(February). Overseas Development Institute, London, UK. 4 p.

Brown, L. R. and Wolf, E.C. 1985. Reversing Africa's decline. *Worldwatch Paper* No. 65. 81 p

Bruce, J. 1993. The variety of reform: A review of recent experiences with land reform and the reform of land tenure, with particular reference to the African experience. In: Marcussen, H.S. (ed.) Institutional issues in natural resource management. Denmark: International Development Studies, Roskilde University.

Bui Dung The, Dang Thanh Ha and Nguyen Quoc Chinh 2004. Rewarding upland farmers for environmental services. Experience, Constraints and Potential in Vietnam. World Agroforestry Centre (ICRAF) Southeast Asia Regional Office Indonesia. 57 p.

Castella, J-C., Boissau, S., Nguyen Hai Thanh and Novosad, P. 2002. Impact of forestland allocation on agriculture and natural resources management in Bac Kan Province, Viet Nam. In J.C. Castella and Dang Dinh Quang (eds.) Doi Moi in the Mountains. Land use changes and farmers' livelihood strategies in Bac Kan Province, Vietnam. The Agricultural Publishing House, Ha Noi, Viet Nam. Pp.197-220.

Chakraborty, R., Freier, I., Kegel, F. and Mäscher, M. 1997. Community Forestry in the Terai Region of Nepal. Policy Issues, Experience, and Potential. German Development Institute. Reports and Working Papers 5. Berlin. 130 p.

Chambers, R. and M. Leach 1987. Trees to meet contingencies: Savings and security for the rural poor. IDS Discussion Paper 228.

Christ, H. and Kloss, D. 1998. Sustainable Management of Resources in the Lower Mekong Basin Project. Social Forestry Development Project Song La. GTZ, ADB, Hanoi. 54 p.

Clausen, R., Hammett, T. and Seyler, J. 2003. USAID's Enduring Legacy in Natural Forests: Landscapes, Livelihoods, and Governance Volume III: Focus Country Profiles. USAID and BIOFOR. 85 p.

CMU 2001. Directório de Iniciativas de Evolvimento Comunitário na Gestão dos Recursos Naturais no País. FAO and CMU, Maputo 57 p.

Department of Forestry and National Working Group on Community Forest Management 2003. Workshop proceedings. National Workshop on Allocation and Management of Natural Forest in Community Forestry, Hanoi, 22nd May 2003.

Deweese, P.A. 1995. Social and economic incentives for smallholder tree growing. A Case Study from Murang'a District, Kenya. FAO, Community Forestry Case Study Series.

DoF 2003. FUG database. Referred to in Springate-Baginski, O. Dev, O.P., Yadav, N.P. and Soussan, J. 2003.

Eggertz, D. 1996. Tenure and Sustainable Use of the Forest Land in Lao PDR. Master Thesis at the Faculty of Law, University of Uppsala. 75 p. + app.

Elfadl, M.A., Luukkanen, O., and Kaarakka, V. 1998. Environmental conservation and economic development in the Sudan: a case study of gum arabic. Yearbook Finnish Society Development Studies 7: 117-137.

El Mahdi, S.M.A 1979. Introduction to land law of the Sudan. Khartoum University Press.

Elmoula, M. E. A. (ed.) 1985. On the problem of resource management in the Sudan. Monograph Series No. 4, Institute of Environmental Studies, University of Khartoum. 131 p.

Elsiddig, E.A. 1980. The stem and branch volume of *Acacia nilotica* in the Fung Region in the Sudan. Ph.D. Dissertation. Department of Forestry & Wood Science, Bangor, North Wales.

Elsiddig, E. A. 1999. National conversion factors of forestry and grassland for carbon dioxide inventory in the Sudan. Higher Council for Environment and Natural Resources, Sudan. 46 p.

Elsiddig, E.A. 2002. The management of *Acacia nilotica* L. Plantation along the Blue Nile Flood Basin in Sudan. Sustainable Production: A Review. *Univ. of Khart. J. Agric Sci.* 10 (1), 2002. 119 – 130.

Elsiddig, E. A. 2003. Management of dryland forest reserves in Sudan based on participatory approach. In: Alsharan, A.A., Wood, W.W., Goudie, A.S., Fowler, A. Abdellatif, E.A. Desertification in the third millennium. Belkan Publishers, Lisse, The Netherlands. pp. 361-364.

Elsiddig, E.A. 2004. Community Based Natural Resource Management in Sudan, In: Awimbo, J.; Barrow, E. and Karaba, M. 2004. Community Based Natural Resource Management in the IGAD region. IGAD; IUCN.

Elsiddig, E.A. 2006. Jebel Marra: The Potential for Resources and Rural Development. (a book in press).

Elsiddig, E.A.; Elhassan, N.G. and Elasha, B.M. 2001. A consultancy report to the IGAD.

Elsiddig, E. A.; A.M; El Tayeb; A.Y.Abdelgadir and S. M. Eltayeb 1996 . A ten year working plan for Jebel Marra Circle (1996-2005) JMFC.

Eskonheimo, A. 2006. Women, Environmental Changes and Forestry-Related Development: Gender-affected roles of rural women in land degradation and environmental rehabilitation in a dry region of Sudan. Doctoral dissertation, Viikki Tropical Resources Institute, University of Helsinki. Tropical Forest Report No. 29. 214 p.

Evrard, O. 2004. La mise en œuvre de la réforme foncière au Laos Impacts sociaux et effets sur les conditions de vie en milieu rural (with Summary in English) FAO Programme d'Appui aux Moyens d'Existence (LSP) Un Programme interdépartemental pour l'amélioration de l'appui aux Moyens d'existence de la population rurale pauvre. LSP Document de Travail 8. 46 p.

FAO, 1984. World Soil Resources Reports. Nairobi, Kenya.

FAO 1985. Tree growing by rural people. FAO Forestry Paper No. 64. FAO, Rome. 130 p.

FAO, 1990: Working Paper on Importing of the Legal Environment for Community Forestry, Rome, Italy.

FAO, 2001a. Global forest resources assessment 2000. Main report. FAO Forestry Paper No. 140. Rome.

FAO, 2001b. State of the world's forests. FAO, Rome.

FAO 2005. State of the world's forests. FAO, Rome.

- FAO/UNEP, 1984. Map of Desertification hazards: explanatory note. Nairobi, Kenya: United Nations Environment Programme. 14 p.
- FBD and IDC 2003. MEMA Matumizi endelevu ya misitu ya asili, Initial learning experiences. Dar es Salaam Oct., 2003. 24 p.
- FNC, 1994. Forestry products demand study. Department of Forest Management. Annual Report. Khartoum, Sudan.
- FNC, 1998. Forests National Corporation, Department of Forest Management. Annual Report (1998). Khartoum, Sudan.
- FNC, 1999. National Forestry Inventory in Sudan 1998-1999. Forests National Corporation, Khartoum, Sudan. 26 p.
- FNC, 2000. The annual afforestation and programme – present and future, FNC Khartoum. 50 p.
- FNC, 2003. National report to the fourth session of the United Nation Forum on Forests. Republic of the Sudan Ministry of Agriculture and Forests National Corporation, Khartoum, Sudan.
- Foley, G. and Barnard G. 1984. Farm and community forestry. Technical Report No. 3. Earthscan, IIED, London. 132 p.
- Foloma, M. 2000. Tchuma Tchato: Participation of Communities in the Management of Natural Resources and Benefit Sharing. The Common Property Resource Digest NO 52, March 2000.
- Forest Trends 2002. Strategies for strengthening community property rights over forests: lessons and opportunities for practitioners. Forest Trends, Washington D.C. 50 p.
- Fujita, Y. and Phanvilay, K. 2004. Land and Forest Allocation and Its Implication on Forest Management and Household Livelihoods: Comparison of Case Studies from CBNRM Research in Central Laos. Draft paper to be presented to the Tenth Biennial Conference of the International Association for the Study of Common Property (IASCP): "The Commons in an Age of Global Transition: Challenges, Risks and Opportunities" Instituto de Investigaciones Sociales, Universidad Nacional Autónoma de México Oaxaca, México, 9-13 August 2004.
- Gaafar, A.M., Salih, A.A., Luukkanen, O., Elfadl, M.A. and Kaarakka, V. 2006. Improving traditional *Acacia senegal*-crop system in Sudan: the effect of tree density on water use, gum production and crop yields. *Agroforestry Systems*. DOI 10.1007/s10457-005-2918-y
- Glantz, M. H. and Orlovsky, N. S. 1986. Desertification: Anatomy of a complex environmental process. In: Dahlberg, K.A. & Bennett, J.W. (eds.). Natural resources and people: Conceptual issues in interdisciplinary research. pp. 213-219.
- Glover, E. K. 2005. Tropical dryland rehabilitation: Case study on the participatory forest management in Gedaref, Sudan. Doctoral dissertation. University of Helsinki, Tropical Forest Report No. 27. 183 p.
- Gumaa, Y.M.A. 2002. Estimating the effect of International prices on demand for Sudanese gum arabic. M.Sc. Thesis, University of Khartoum.

Ha Cong Tuan. 2001. Initial Survey on the Current Situation of Community Forest Management in Vietnam. In Nguyen Hai Nam, Nguyen Hong Quan and Pham Xuan Phuong (eds.) National Workshop on a Policy Framework to Support Community Forest Management in Vietnam. Hanoi, Nov. 14-15, 2001.

Hanlon, J. 2002. The Land Debate in Mozambique: will Foreign Investors, the Urban Elite, Advanced Peasants or Family Farmers Drive Rural Development? Oxfam UK.

Hanoi Agricultural University 2001. Government Policies on Resource Management and Improvement of the Livelihood of Local People in the Ca River Basin, Vietnam. Executive Summary. WRI Institutions and Governance Program REPSI Resources Policy Brief. 11 p.

Hansen, K., Sodarak, H. and Savathvong, S. 1997. Teak production by shifting cultivators in Northern Lao P.D.R. Shifting Cultivation Research Sub-programme Lao Swedish Forestry Programme, Luang Prabang, Lao P.D.R. Technical Report No. 9. 16 p.

Harrison, M. N. and Jackson, J. K. 1958. Ecological classification of the vegetation of the Sudan. Forest Bulletin No. 2. Ministry of Agriculture, Khartoum. 45 p.

HCENR, 2000. The Sudan's National Biodiversity Strategy and Action Plan. Higher Council for Environment and Natural Resources (HCENR), Ministry of Environment and Tourism and IUCN with support from UNDP: Khartoum. 75 p.

HCENR, 2003. Second National Report on the Implementation of the Convention on Biological Diversity. Khartoum, Sudan. 23 p.

Human Rights Watch. 2002. Repression of Montagnards. Conflicts over Land and Religion in Vietnam's Central Highlands. <http://www.hrw.org/reports/2002/vietnam/index.htm#TopOfPage> (Accessed 10.3.2005).

Ibrahim, A. M. 2000. Past, present and future afforestation, reforestation and tree management models for farmland in the Sudan. Workshop: Management of trees for farmland rehabilitation and development. October 27 –November 7, 2000. Khartoum, Sudan. 11 p.

IFAD 2003. Kingdom of Nepal. Hills Leasehold and Forage Development Project. Interm Evaluation. Report No 1431-NP. 84 p.

IUCN 1999. Forest Cover and Forest reserves in Kenya: Policy and practice. IUCN Eastern Africa programme. Revised by V. Matiru. 32 p.

IUCN 2004. Trees are our bank account... IUCN News release Bangkok, Thailand 19 November 2004.

Johnstone, R., Cau, B. and Norfolk, S. 2004. Specific example of using the GAB in Mozambique. Forestry legislation in Mozambique: compliance and the impact on forest communities. Terra Firma Lda. Maputo. 61 p.

Kallabinski, J. and Lundgreen, D. 2004. Land use planning: an approach to poverty reduction and stabilisation of shifting cultivation in the Lao uplands to improve upland livelihoods. NAFRI Workshop proceedings, Shifting Cultivation and Poverty Eradication in the Uplands of the Lao PDR. Pp. 161-168.

Karanja F., Tessema Y. and Barrow E. 2002. Equity in the Loita/Purko Naimina Enkiyio Forest in Kenya: Securing Maasai Rights to and Responsibilities for the Forest. IUCN Eastern Africa Programme. Forest and Social Perspectives in Conservation No. 11.

Karmacharya, M., Karna, B. and Ostrom, E. 2003. Rules, incentives and enforcement: Livelihood strategies of community forestry and leasehold forestry users in Nepal. Paper presented at the international Conference on Rural Livelihoods, Forest and Biodiversity 19-23 May, Bonn, Germany. 25 p.

Katila, M. 2000. Village Forestry Experiences in Lao PDR: from Piloting to Expansion in FOMACOP. Regional Workshop on Community-Based Forest Management in the Mekong River Basin: Strategies and Policy Tools for Community Forest Management Support. Organized by Asia Community Forestry Network and SMRP (GTZ/MRC) March 27-29, 2000 in Ho Chi Minh City, Vietnam.

KFWG 2005. Finally, Forests Bill 2005 Approved by Parliament at Critical Second Reading. KFWG web-page http://www.kenyaforests.org/Bill_Passed.htm (Accessed 26.8.2005).

Kumar, N. 2002. The Challenges of Community Participation in Forest Development in Nepal. Operations Evaluation Department (OED), the World Bank, Washington, D.C. 29 p.

LAO P.D.R. 2003. National Growth and Poverty Eradication Strategy (NGPES). 151 p.

Le Thi Phi, Ton Van Chung and Le Bang Tam 2004. What maintains poverty? A study of factors affecting poverty in mountainous areas of Quang Ninh province, Vietnam. A component of the collaborative research project steered by IIED: Land use and sustainable livelihoods in upland Vietnam. IIED, London, UK. 81 p.

Madany, M. H. 1991. Living fences: Somali farmers adopt an agroforestry technology. *Agroforestry Today* 3 (1): 4 – 7.

MAF 2001a. Evaluation of Joint Forest Management Pilot Models 1 and 2 (1994-2000). Department of Forestry. Technical Report. Final Report, January 2001, Vientiane, Lao PDR. 62 p.

MAF 2001b. Evaluation of Forest Management and Conservation Programme FOMACOP Village Forestry Pilot Model (1995-2000). Department of Forestry. Summary Report.

MAF 2003. Forestry Strategy 2020, 2nd draft, 65 p.

Magzoub, T. M. 1999, Legal aspects of local forests management in the Sudan.

Mohamed, H.M. 2000. Community-based natural forest reserves management case: Elain and Habile Elkou natural forest reserves in Kordofan. M.Sc. Thesis, Faculty of Forestry, University of Khartoum, Sudan. 62 p.

Malla, Y. 2000. Impact of community forestry policy on rural livelihoods and food security in Nepal. *Unasyva* 202, Vol. 51, No. 3:37-45.

Manivong, K., Xayvongsa, L., Ongkeo, O. Ketphanh, S. and Prixar, S. 2004. Management of Pilot Watershed Areas in Lao P.D.R. Baseline Survey. Part I: Framework for Land and Forest Resources Management in Lao PDR. MRC-GTZ Cooperation Programme Agriculture, Irrigation and Forestry Programme, Watershed Management Project (WSMP) Consultancy Report, Vientiane. 22 p.

Mansur, E. and Cuco, A. 2002. Building a community forestry framework in Mozambique: local communities in sustainable forest management. Second International Workshop on Participatory Forestry in Africa Arusha, 18-23 February, 2002.

MARD 2001a. Updated Description of the National Five Million Hectare Reforestation Programme 1998 – 2010. Hanoi, March 2001.

MARD 2001b. Five Million Hectare Reforestation Programme. Synthesis Report. International Cooperation Department, 5MHRP Partnership Secretariat. 120 p.
<http://www.isgmard.org.vn/Information%20Service/Report/Forestry/5MHRP%20Final%20Synthesis%20Report.pdf> (Accessed 22.8.2005).

MARD, Ministry of Planning and Investment and Ministry of Finance 1999. Joint circular No. 28/1999/tt-LT of February 3, 1999 guiding the implementation of decision No. 661/QD-TTg of July 29, 1998 of the prime minister on the targets, tasks, policy and organization in the implementation of the project of planting 5 million new hectares of forests.

Markopoulos, M.D. 2003. The Role of Standards-based Approaches in Community Forestry Development. Findings from Two Case Studies in Southeast Asia. RECOFTC Working Paper 2/2003, Bangkok. 73 p.

Matiru, V. 2002. Forest Landscape Restoration. Kenya Country Report. Analysis of Existing Initiatives and policy and Legal Framework in Kenya. IUCN and WWF. 62 p.

Meshack, C.K. 2004. Transaction costs of participatory forest management: empirical evidence from Tanzania. *The Arc Journal* 16: 6-9.

Ministry of Environment and Natural Resources 1994. Kenya Forestry Master Plan Development Programmes. Nairobi. 422 p.

Ministry of Environment, Natural Resources and Wildlife 2004. Participatory Forest Management Guidelines June 2004. Revised version for final comments. 41 p.

Ministry of Planning and National Development 2003. Kenya Economic Recovery Strategy for Wealth and Employment Creation 2003-2007.

MNRT 1998. National Forest Policy. Dar es Salaam 1998. 59 p.

MNRT 2001a. National Forest Programme in Tanzania 2001-2010. 132 p.

MNRT 2001b. Community Based Forest Management Guidelines. Forestry and Beekeeping Division, Dar es Salaam, Tanzania. 64 p.

MNRT 2003. Participatory Forest Management. A report on lessons learnt. Draft 10.10.2003. 71 p.

MNRT undated. Administrative and Financial Manual for Participatory Forest Management. MNRT Forest and Beekeeping Division. 24 p.

Mogaka, H., Simons, G., Turpie, J., Emerton, L. and Karanja, F. 2001. Economic Aspects of Community Involvement in Sustainable Forest Management in Eastern and Southern Africa. IUCN Eastern Africa Programme. Forest and Social Perspectives in Conservation No. 8.

Morris, J., Hicks, E. Ingles, A. and Ketphanh, S. 2004. Linking Poverty Reduction with Forest Conservation. Case Studies from Lao PDR. IUCN, Bangkok, Thailand. 108 p.

Muok, B., Kimondo, J. and Atsushi, I. 2001. Farmer to farmer extension: experience in drylands Kenya. Assisting Forest Owner, Farmer and Stakeholder Decision-making. IUFRO Proceedings of the Extension Working Party (S.6.06-03) Symposium. <http://www.regional.org.au/au/iufro/2001/muok.htm> (Accessed 6.10.2005).

National Planning Commission 2002. The Tenth Plan (Poverty Reduction Strategy Paper) 2002-2007 Katmandu, Nepal. http://www.npc.gov.np/tenthplan/docs_in_english.htm (Accessed 10.10.2005).

Neef, A. and Schwarzmeier, R. 2001. Land Tenure Systems and Rights in trees and Forests: Interdependencies, dynamics and the role of development cooperation - Case studies from mainland Southeast Asia. GTZ Division 4500 Rural development. 97 p.

NEP/GEF 2003. Vietnam Report on Review of National Legislation on Forest Protection and Development in Vietnam. NEP/GEF South China Sea Project. Working Document. 13 p.

Nguyen Hong Quan 2003. Opening Address. In Workshop Proceedings. National Workshop on Allocation and Management of Natural Forest in Community Forestry. Hanoi 22nd May, 2003. Pp. 7-9.

Nguyen Huu Ai 2003. Report on the monitoring and evaluation system for the methodology of community forest protection regulation - experience from Lai chau. In Workshop Proceedings. National Workshop on Allocation and Management of Natural Forest in Community Forestry, Hanoi, 22nd May, 2003. Pp. 36-44.

Nguyen Van Tinh, Pham Minh Thoa, Ho Viet Sac, Botillen, O., Vu Hoai Minh and Warfvinge, H. 2000. Field Assessment of Projects in the National Five Million Hectare Reforestation Programme. Team South. Partnership for the National Five Million Hectare Reforestation Programme MARD-UNDP PROFOR Hanoi, Viet Nam. 33 p.

Nguyen Van Xuan 2003. The allocation of natural forests in Dak Lak opportunities and challenges. In Workshop Proceedings. National Workshop on Allocation and Management of Natural Forest in Community Forestry. Hanoi 22nd May, 2003. 130p. Pp. 13-18.

Nhantumbo, I. and Macqueen, D. 2003. Direitos das Comunidades Realidade ou retórica. Síntese das conclusões e recomendações principais da consulta na Zona Norte (Cabo Delgado, Niassa e Nampula) Zona Centro (Manica, Sofala, Zambézia e Tete) e na Zona Sul (Maputo, Gaza e Inhambane). DNFFB, Maputo, Mozambique. 64 p.

Nhantumbo, I., Norfolk, S. and Pereira, J. 2003. Community Based Natural Resources Management in Mozambique: A Theoretical or Practical Strategy for Local Sustainable Development? The Case Study of Derre Forest Reserve. Sustainable livelihoods in Southern Africa Programme, Environment group, Institute of Development Studies, University of Sussex, Research Paper 10, Brighton, U.K.

Noad, T. and Birnie, A. 1992. Trees of Kenya. T.C. Noad & A. Birnie Publishers. Nairobi, Kenya. 308 p.

Norfolk, S. 2004. Examining access to natural resources and linkages to sustainable livelihoods. A case study of Mozambique. FAO Livelihood support programme Working Paper 17. 69 p.

Norfolk, S., Nhantumbo, I., Pereira, J. and Matsimbe, Z. 2001. Sustainable Livelihoods in Southern Africa. Institutions, Governance and Policy Processes. Mozambique Mapping Phase Report 1 of 2.

- <http://www.ids.ac.uk/ids/env/PDFs/MozambiqueMappingReport1.pdf> (Accessed 16.3.2004).
- NTFP Project (MARD-IUCN) 2003. Assessing the “enabling environment” in Vietnam for linking forest conservation with poverty reduction. A policy analysis for Vietnam. Prepared for IUCN’s 3I-C Project on poverty alleviation, livelihood improvement and eco-system management. 13 p.
- O’Reilly, S. 2000. Joint forest Management in Vietnam - A concept with a future? Experiences from the Northern Mountains. Paper presented at EC workshop on sustainable rural development in the Southeast Asian mountainous region. Hanoi, 28-30 November. 11 p.
- Ojha, H. 2000. Current Policy Issues in NTFP Development in Nepal. Asia Network for Small-Scale Bio-resources. Katmandu, Nepal. 5 p.
- Pandey, T.R. 2004. Forests for communities. The Raising Nepal April 11, 2004.
- Phan Trung Dien 2002. Recent Forest Policy Reviews in Vietnam. In T. Enters and R.N. Leslie (eds.) Proceedings of the Forest Policy Workshop Kuala Lumpur, Malaysia 22-24 January, 2002. FAO, Bangkok, Thailand.
- Pham Xuan Phuong. 2001. An Overview of the Forestry Policies Framework Related to Community Forest Management in Vietnam. In Nguyen Hai Nam, Nguyen Hong Quan and Pham Xuan Phuong (eds.) National Workshop on a Policy Framework to Support Community Forest Management in Vietnam. Hanoi, Nov. 14-15.
- Pham Xuan Phuong. 2003. Survey Report on Allocation of Existing Forest and benefit Sharing Policy in Son La Province. In Workshop Proceedings National Workshop on Allocation and Management of Natural Forest in Community Forestry. Hanoi 22nd May, 2003. Pp. 75-84.
- Pham Xuan Phuong 2004. Report on Community forest management status in Vietnam and emerging issues (for presentation in the meeting with Ministries and Central Committees to be organised in March, 2004). 16 p.
- Poffenberger, M.(ed.) 1999. Communities and forest management in Southeast Asia. A Regional Profile of WG-CIFM. The Working Group on Community involvement in Forest Management. IUCN. Gland, Switzerland. 137 p.
- Pokharel, B.K. and Paudel, D. 2005. Armed conflicts and community forest user groups in Nepal: Can community forestry survive and contribute to peace building at local level? ET-FERN NEWS Forest and Conflicts. No 43-44: 83-85.
- PRSP for the Period 2001-2004, prepared by the People and Government of Kenya, September 2001.
- Republic of Mozambique 2001. Action Plan for the reduction of Absolute Poverty (2001-2005) (PARPA) (Strategy Document for the Reduction of Poverty and promotion of Economic Growth) Final Version Approved by the Council of Ministers April 2001. 129 p. + annexes.
- Reyes, D. 2003. An evaluation of Commercial Logging in Mozambique. Collaborative for Development Action, Cambridge, USA. 23 p.
- Ribeiro, A. 2001. Natural Resource Management Policy in Mozambique: an overview. Marena Research Project Working Paper no.7. 17 p.

Rock, F. 2004. Comparative Study on Practices and Lessons in Land Use Planning and Land Allocation in Cambodia, Lao PDR, Thailand and Viet Nam. MRC-GTZ Cooperation Programme Agriculture, Irrigation and Forestry Programme Watershed Management Component, Working Paper 05, Plascassier, May 2004. 57 p.

Royal Danish Embassy, Katmandu, Nepal 2004. Web page on Danish Development Support to the Natural Resource Management Sector in Nepal. <http://www.denmarknepal.com/daniad/narmsap.htm> (Accessed 1.12. 2004).

Salih, M. A. M. (ed.) 1987. Agrarian Change in the Central Rainlands: Sudan, a Socio-Economic Analysis. Scandinavian Institute of African Studies, Uppsala. 178 p.

Sanchez, P.A. 1995. Science in agroforestry. *Agroforestry Systems* 30: 5-55.

Sawsan, A.A., Elhour, A.A. and Elfadl, M.A. 2004. Some Physiochemical characteristics of gum from eight provenances of Acacia Senegal in the Sudan. *Sudan Silva* (in press).

Sidahmed, A.E. 1996. The rangelands of the arid/semi-arid areas: Challenges and hopes for the 2000s. Key-note address to symposium D: Range Management. The International Conference on Desert Development in the Arab Gulf Countries. KISR, Kuwait 23-26 march. 16 p.

Singh, H.B. 2005a. Chaubas-Bhumlu Community Sawmill: Empowering Local People. In P.B. Durst, C. Brown, H.D. Tacio and M. Ishikawa (eds.) In Search of Excellence: Exemplary forest management in Asia and the Pacific. RAP Publication: 2005/02. FAO Regional Office for Asia and the Pacific and Regional Community Forestry Training Center for Asia and the Pacific, Bangkok.

Singh, H.B. 2005b. Shree Binayak Pimidanda Community Forest: More than a Paper Tiger. In P.B. Durst, C. Brown, H.D. Tacio and M. Ishikawa (eds.) In Search of Excellence: Exemplary forest management in Asia and the Pacific. RAP Publication: 2005/02. FAO Regional Office for Asia and the Pacific and Regional Community Forestry Training Center for Asia and the Pacific, Bangkok.

Springate-Baginski, O., Blaikie, P., Dev, O.P., Yadav, N.P. and Soussan, J. 2002. Community Forestry in Nepal. Improving policy-livelihood relationships in South Asia. Policy Review Paper 3. Stockholm Environmental Institute, York. 19 p. + appendices.

Springate-Baginski, O. and Blaikie, P. 2003. Is Community Forestry in Contemporary Nepal Pro-poor and Sustainable? A Policy Process Analysis. Stockholm Environment Institute, York. 38 p.

Springate-Baginski, O., Dev, O.P., Yadav, N.P. and Soussan, J. 2003. Community Forest Management in the Middle Hills of Nepal: The Changing Context. *Journal of Forest and Livelihood* 3(1): 5-20.

SRV 1999. Ministry of Finance Circular No. 28/1999/TT-BTC On Management of State Funds for the National Five Million Hectare Reforestation Programme Based on Decision 661/QD-TTg by the Prime Minister Dated 29/07/1998.

SRV 2003. The Comprehensive Poverty Reduction and Growth Strategy. Hanoi. 161 p.

Thoms, C.A., Karmacharya, M.B. and Karna, B.K. 2003. Exclusion Isn't Easy: Lessons from a Leasehold Forest. *Journal of Forest and Livelihood* 2 (2):48-54.

Sunderlin, W. and Huynh Thu Ba 2005. Poverty Alleviation and Forest in Vietnam. CIFOR, Indonesia. 73 p.

Tran Ngoc Thanh, Nguyen Quang Tan and Sikor, T. 2004. Local Impact Assessment after Forest Land Allocation in Dak Lak, Central Highlands of Vietnam. Tropical Ecology Support Programme (TOEB), Eschborn. 123 p.

UNCD 1992. Agenda 21, Annex III. UN, New York.

UNDP 2002. Equator prize 2002 finalists. UNDP web-page http://www.undp.org/equatorinitiative/secondary/equator_prize2002htm#kenya. (Accessed 8.9.2005.).

UNDP 2004. Global Environmental Facility Small Grants Programme Community Approach to the Rehabilitation of Mt Kenya World Heritage Site. UNDP Kenya web page <http://www.ke.undp.org/GEF-SGP/Mt.%20Kenya%20COMPACT%20Project/main.htm> (Accessed 16.8.2005).

Thomas, D.S.G. and Middleton, N. J. 1994. Desertification: Exploding the myth. John Wiley & Sons, Chichester, England. 194 p.

UNEP 1997. World atlas of desertification. Edward Arnold, London, UK.

UNEP/ISRIC (GLASOD) 1990. World Map of the status of human induced soil degradation. Nairobi: UNEP.

United Republic of Tanzania 2005. National Strategy for Growth and Reduction of Poverty (NSGRP). <http://www.povertymonitoring.go.tz/downloads/new/nsgrptext.pdf> (Accessed 11.8.2005).

Van San Nguyen and Gilmour, D. 1999. Forest Rehabilitation Policy and Practice in Vietnam. In Proceedings of a National Workshop Hoa Binh, Vietnam 4th-5th November. IUCN.

Veltheim, T. and Kijazi, M. 2002. Lessons learned on participatory forest management. East Usambara Conservation Area Management Programme Technical Paper 61. FDB, Department of International Co-operation, Finland and Metsähallitus Consulting Oy. Tanga. 25 p.

Vietnam-Finland Forestry Sector Co-Operation Programme. Phase II:1999-2003. Community Forest Management -A Study on Institutional Aspects. Final Report. 2000. Ministry of Foreign Affairs, Department for International Co-Operation, Helsinki Finland.

Vink, A. T. 1987. Integrated Landuse Plan for Rawashda Forest Reserve (1987-1991). Fuelwood Development for Energy in Sudan GCP/SUD/033/NET. Field Document No. 27. Forests National Corporation. 100 p.

Vrije Universiteit 2001. External Evaluation: Mount Elgon Integrated Conservation And Development Project. Nairobi/Amsterdam.

Vu Duc Thuan 2003. Report on achievements and experiences with forest land allocation in Son la province. Workshop Proceedings from National Workshop on Allocation and Management of Natural Forest in Community Forestry, Hanoi, 22nd May, 2003. Pp. 12-18.

Vu Hua Minh and Warfvinge, H. 2002. Issues in the management of natural forests by households and local communities of three provinces in Vietnam: Hoa Binh, Nghe An and

Thua Thien-Hhue. Asia Forest Network, Working Paper Series, Volume 5. Asia Forest Network Santa Barbara, California USA.

Vu Huu Tuynh. 2001. Summary Report of an Analysis of Application and Implementation of Forestry Policies in the 5 Provinces under MRDR Program. In Nguyen Hai Nam, Nguyen Hong Quan and Pham Xuan Phuong (eds.) National Workshop on a Policy Framework to Support Community Forest Management in Vietnam. Hanoi, Nov. 14-15.

Vu Long. 2003. Assessing the effects of the management of community forests in Cao Bang Province. In Workshop Proceedings. National Workshop on Allocation and Management of Natural Forest in Community Forestry. Hanoi 22nd May, 2003. Pp. 61-74.

Waiganjo, C. and Ngugi, P.E.N. 2001. The Effects of Existing Land tenure Systems on Land Use in Kenya Today. In Proceedings from International Conference on Spatial Information for Sustainable Development. Nairobi, Kenya 2-5 October, 2001. 10 p.

Walubengo, D. and Mutie, J. 2004. Brief on Residential Cultivation (Shamba System) in Kenya. A Brief on the NRC System as submitted to Members of Parliament in 2004. FAN web-page <http://www.fanworld.org/NRC%Brief.html> (Accessed 26.8.2005).

Wayumba, G. 2004. A Review of Special Land Tenure Issues in Kenya. Expert Group Meeting on Secure Land Tenure: New legal frameworks and tools. Nairobi, Kenya 10-12 November, 2004. 11 p.
http://www.fig.net/commission7/nairobi_2004/papers/ts_06_3_wayumba.pdf (Accessed 12.10.2005).

Webb, D. B. 1984. A guide to species selection for tropical and sub-tropical plantations. Tropical Forestry Paper No. 15. Commonwealth Forestry Institute, Oxford, UK.

WB, Sida and Government of Finland Ministry of Foreign Affairs. 2001. Lao PDR Production Forest Policy. Status and Issues for Dialogue. Volume 1. Main Report. 43 p.

World Bank 2004. Sustaining Forests: A Development Strategy. The World Bank, Washington D.C.

WRI 1994. A guide to the global environment toward sustainable development: 1994-95. Oxford University Press, Oxford. 400 p.

WRM 2004. Kenya: Using Participatory Forest Management Plans to further Community-Based Forest Management. WRM Bulletin Issue Number 81, April 2004.

Yadav, N.P., Dev, O.P., Springate-Baginski, O. and Soussan, J. 2003. Forest Management and Utilization under Community Forestry. Journal of Forest and Livelihood 3(1):37-50.

Xuan Phuc 2003. Widening the Gap between the Rich and the Poor: Impacts of Forestland Allocation in a Dao Community in Northern Vietnam. Paper presented at the International conference on Politics of the Common, July 11-14, 2003, Chiang Mai, Thailand. 14 p.