



BTC UGANDA

ENVIRONMENT AND NATURAL RESOURCES REPORT SERIES

Enhancing Forests' Contribution to Growth, Employment and Prosperity



UNDP-UNEP POVERTY - ENVIRONMENT INITIATIVE



Citation

Title: Enhancing Forests' Contribution to Growth, Employment and Prosperity.

Editors: Kaggwa, R., Hogan, R., and Hall, B.

Publisher: UNDP/NEMA/UNEP Poverty Environment Initiative, Uganda.

Year: 2009.

Place: Kampala.

Technical content disclaimer

The views expressed in this publication are those of the author and do not necessarily represent those of UNDP and UNEP.

While reasonable efforts have been made to ensure that the contents of this publication are factually correct and properly referenced, UNEP and UNDP do not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication, including its translation into languages other than English.

Cover photograph - caption and credit:

Forests provide fertility, shade and moisture retention services to agriculture.

Photo credit: NEMA Archives

Table of Contents

Acknowledgements iv

Foreword v

Acronyms and Abbreviations vi

Glossary of Terms viii

Executive Summary xi

1. Introduction 1

1.1 Background to the Study 1

1.2 Forestry in National Development 4

1.3 Forestry resources of Uganda 4

1.4 The permanent forest estate 6

1.5 Government policy framework 7

1.6 Forestry in the Sector Investment Plan 9

2. Self-Assessment And Situational Analysis Of The Sub-Sector 9

2.1 Ongoing and planned projects and programmes 9

2.2 Assessment of previous performance 10

2.2.1. Performance against the National Forest Plan indicators 10

2.2.2. Performance against Annual Plans 17

2.3 Achievements made and underlying reasons 18

2.4 Failures in attaining the sector outcomes and underlying reasons 20

2.5 Constraints and challenges faced 21

3. Analysis of the Sub-sector's Linkage to National Development 22

3.1 Status of forestry resource stock, trends and implications for sustainability 22

3.2 Millennium Development Goals 25

3.3 Forests and trees as a core asset for national development and prosperity 27

3.4 Backward and forward linkages of forestry and climate to other sectors' performance 28

3.5 Forest degradation and cost implications to other sectors and the economy 32

4. Emerging Issues, Opportunities and Lessons Learned 32

4.1 Investment in industrial timber plantations 32

4.2 Lessons learned 35

5. Priorities, Strategies and key assumptions 36

5.1 Vision and goal/mission for the forestry sub-sector 36

5.2 Forestry sub-sector priorities 36

5.3 Major sub-sector strategies for implementation of the priority interventions 38

- 5.4 Estimated investment costs **45**
- 5.5 The role of the different stakeholders in the Implementation of priority interventions **52**
- 5.6 Major assumptions **54**
- 5.7 Risks and strategies to overcome them **54**

6. Monitoring and Evaluation Framework **55**

- 6.1 Monitoring and evaluation indicators **55**

7. Conclusion **55**

Tables

- Table 1: Study methods, activities and outcomes **3**
- Table 2: Categorizing protected area forestland by function **7**
- Table 3: Summary of forestry-related programmes and projects **9**
- Table 4: Forest cover change, 1990–2005 **11**
- Table 5: Total annual income per household, income from the forest and the percentage of income derived from the forest. **15**
- Table 6: Summary of the forestry sub-sector annual performance **17**
- Table 7: Stocking of timber trees in production zones of Uganda’s five main central forest reserves with tropical moist forest **25**
- Table 8: Future trends in job creation from industrial forest plantations **28**
- Table 9: Summary of investment costs (revised Medium-Term Expenditure Framework) **46**
- Table 10: Summary of Investment costs within the current Medium-Term Expenditure Framework **49**
- Table 11: Broad indicators for monitoring implementation of the Forestry Sub-sector Plan **55**

Figures

- Figure 1: Forestry Sub-sector Conceptual Framework **2**
- Figure 2: Land Cover in Uganda, 2005 **4**
- Figure 3: Changes in Land Cover, 1990–2005 **6**
- Figure 4: Trends in Tropical Moist Forest Cover in Uganda, 1926–2005 **11**
- Figure 5: Per Capita Forest Area in Uganda **23**
- Figure 6: Roundwood Demand, 1996/97–2005/06 **24**
- Figure 7: Available Supply of Plantation Timber Resources **24**
- Figure 8: Revenue from Timber, 1995/06–2005/06 **30**
- Figure 9: Effect of Forest Law Enforcement and Governance on Revenue Collection, 1995/06–2005/06 **31**

Boxes

- Box 1: Forestry Greatly Contributing to Rural Development **5**
- Box 2: Uganda’s population growth compared to other countries **22**
- Box 3: Impact of Forest Degradation on Water Supplies **29**

Annexes

- Annex 1: Ongoing And Planned Projects In The Forestry Sub-Sector **59**
- Annex 2: Assessment Of Previous Performance In The Forestry Sub-Sector **61**
- Annex 3: Matrix Of Sub-Sector Performance Based On The National Forest Plan And Sector Investment Plan Indicators **70**
- Annex 4: Performance Against Annual Plans **78**
- Annex 5: Linkages Of The Forestry Sub-Sector With National Development **83**
- Annex 6: Proposed Sectoral Plan Matrix **96**
- Annex 7: Use Of Agroforestry Technologies At The District Level **122**

Acknowledgements

This report would not have been possible without the invaluable efforts of many institutions, groups and individuals who contributed in various ways. The National Environment Management Authority (NEMA) therefore wishes to acknowledge the contribution of these groups and individuals.

Special thanks and appreciation go to the Fund Director, Belgo-Ugandan Study and Consultancy Fund, Keith Muhakanizi, Deputy Secretary for the Treasury, Ministry of Finance, Planning and Economic Development, and Koen Goekint, Co-Director of the Fund and Resident Representative, Belgium Technical Cooperation (BTC), Ms. Rose Athieno Kato, BTC Uganda and Mr. Alain Schmitz, Attache for Development Cooperation, the Embassy of Belgium.

NEMA is particularly grateful to the following members of the Environment and Natural Resources (ENR) Sector Paper Drafting Committee for the National Development Plan: Mr. Eugene Muramira, NEMA; Mr. Ronald Kaggwa, NEMA; Ms. Margaret Lwanga, NEMA; Ms. Rose Hogan, UNDP-UNEP Poverty Environment Initiative Uganda; Mr. Daniel Omodo-McMondo, UNDP Uganda; Mr. Cornelius Kazoora, Sustainable Development Centre; Dr. Bob Ogwang, Green Belt Consult; Mr. James Kaweesi, Ministry of Water and Environment; Mr. Joshua Zaake, Environment Alert; Ms. Solveig Verheyleweghen, the Royal Norwegian Embassy; Ms. Harriet Namara, UWA; Ms. Norah Namakambo, Wetland Inspection Directorate; Mr. Stephen Khaukha, NFA; Ms. Sandra Kirenga, NPA; Mr. Achilles Byaruhanga, Nature Uganda; Mr. Bashir Twesigye, ACODE; and, Mr. Stephen Magezi, Department of Meteorology (MWE).

NEMA is especially grateful to the Team Leader and Lead Consultant, Professor John David Kabasa, and his Technical Support Team, Sengooba Asman and Eliot Twikirize, for their innovation and hard work.

This report was made possible through the financial support of the Belgo-Ugandan Study and Consultancy Fund UGA/01/004. Editing and printing was supported by the UNDP-UNEP Poverty Environment Initiative (PEI). NEMA greatly appreciates all these contributions.

Foreword

Uganda started the process of developing a five-year National Development Plan (NDP) for the period 2009/10–2014/15 to replace the Poverty Eradication Action Plan (PEAP) as a national development framework. The theme of the NDP is “**Growth, Employment and Prosperity**”. This forestry report has been written to inform the preparation of the NDP process and demonstrates the contribution of the subsector to the NDP objectives.

The forestry sector contributes to Uganda’s gross domestic product (GDP), household incomes and livelihoods, employment, provision of ecosystem services such as carbon sequestration and water catchment, and national biodiversity. It is therefore important for the country’s development process, including the attainment of the Millennium Development Goals (MDGs). In spite of this contribution, Uganda’s forest cover is reducing at an alarming rate, especially outside the protected areas. While there are clear policy and legal frameworks in the forest sector, the main weaknesses have been in the area of governance, particularly in the implementation and enforcement of these policies and laws.

There are good efforts to revive the country’s dwindling forest stocks, with increasing interest and participation of the private sector, especially in forest plantation development; however, there is limited investment in natural forest management by the private sector, which has led to their rapid decline. Although the creation of the NFA as a lead agency for managing central forest reserves was a good development, the local government forest departments and private forest owners have not been given adequate support to develop their capacity for effective management of the forest resources under their jurisdiction.

The costs of not meaningfully prioritizing the forest subsector are seen in adverse socio-economic and environmental effects. These include the negative impacts of climate change, reduced energy supply, increased hardships for the poor who depend on the forests, and reduced and lower quality water supply for domestic, agricultural and industrial use.

The NDP planning process provides an opportunity for developing strategies to address the identified gaps and challenges, and to enhance the contribution of the subsector to national development. In line with the NDP theme and objectives, and the MDGs, the following priority interventions have been identified:

- Strengthening the District Forestry Services
- Expanding and increasing economic productivity of forestry resources
- Promoting public-private partnerships to increase economic returns from forests and trees
- Promoting forestry-based industries and trade
- Improving forestry information management
- Improve forest governance and management
- Investing in natural forest expansion and management.

When these priority interventions are effectively implemented under the new NDP, the negative ecological trends will be steadily reversed and the sector will make even more substantial contributions to growth, employment and prosperity. I therefore urge all central and local government agencies, civil society organizations, the private sector, communities, individuals and development partners, to support the implementation of these priority interventions.

Dr. Aryamanya-Mugisha, Henry (PhD)
Executive Director
National Environment Management Authority (NEMA)

Acronyms and Abbreviations

CBO	Community-based organization
CFR	Central Forest Reserve
CSO	civil society organization
DDP	District Development Plan
DEA	Directorate of Environmental Affairs
DFD	District Forestry Department
DFO	District Forestry Officer
DFS	District Forestry Services
ENR	Environment and Natural Resources
EU	European Union
FBE	Forest Based Enterprises
FID	Forestry Inspection Division
FIEFOC	Farm Income Enhancement and Forest Conservation (Project)
FMP	Forest Management Plan
FSSD	Forestry Sector Support Department
GDP	gross domestic product
GEF	Global Environment Facility
IRR	internal rate of return
IUCN	World Conservation Union
MDG	Millennium Development Goal
MEA	Multilateral Environment Agreement
MoFPED	Ministry of Finance, Planning and Economic Development
MWE	Ministry of Water and Environment
MTEF	Medium-term Expenditure Framework
NAADS	National Agricultural Advisory Services
NDP	National Development Plan
NFA	National Forestry Authority
NFP	National Forest Plan
NFTPA	National Forestry and Tree Planting Act
NGO	non-governmental organization
OWLS	Other wooded lands (commonly known as ‘woodlands’)
PEAP	Poverty Eradication Action Plan
PES	Payment for Ecosystem Services

PFE	Permanent Forest Estate
PMA	Plan for Modernisation of Agriculture
PPP	Public-Private Partnership
PQAD	Planning and Quality Assurance Department
SFM	Sustainable Forest Management
SIP	Sector Investment Plan
SPGS	Sawlog Production Grant Scheme
TMF	Tropical moist forest (commonly known as ‘tropical high forest’)
UBOS	Uganda Bureau of Standards
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society

Glossary of Terms

Term	Meaning
Biological diversity	The variability among living organisms from all sources including, <i>inter alia</i> , terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (Higman <i>et al.</i> , 2002).
Buffer zone	A zone within a protected area, protecting particularly sensitive areas such as strict nature reserves from undue human pressure that may exist outside the protected area, usually by allowing some limited and controlled human use within the buffer (Grove, 1995).
Deforestation	Change of land cover with depletion of tree crown cover to less than 10 percent (European Forest Institute, 2002).
Ecosystem	A community of all plants and animals, and their physical environment, functioning together as an interdependent unit (Higman <i>et al.</i> , 2002).
Endangered species	Any species that is in danger of extinction throughout all or a significant portion of its range (Higman <i>et al.</i> , 2002).
Enrichment planting	The practice of planting trees within a natural forest to supplement natural regeneration (Higman <i>et al.</i> , 2002).
Environmentally sensitive area	An area of land that is particularly susceptible to damage by forestry operations and where operations are prohibited or restricted: for example, wetlands, watersheds, streamside buffer zones, conservation zones, recreation areas, areas near human settlements, sites of special ecological significance, habitats of rare or endangered species (Higman <i>et al.</i> , 2002).
Forest	An area of at least 1ha of land with a minimum tree canopy cover of 30 percent and a minimum tree potential height of 5 m (UNFCCC, 2001). It includes all alpine, tropical high- and medium-altitude forests, woodlands, wetland and riparian forests, plantations and trees, whether on land held in trust by government (gazetted forest reserves, national parks and wildlife reserves) or non-gazetted land (<i>mailo</i> , leasehold, freehold or customary lands) (Forestry Policy, 2001).
Forest certification	The process of verification by a body of proven independence that the management of a forest has reached a specified standard (Uganda Forestry Policy, 2001).
Forest degradation	The reduction of the capacity of a forest to provide goods and services. Capacity includes maintenance of ecosystem structure and functions.

Term	Meaning
Forest ecosystem	Any natural or semi-natural formation of vegetation whose dominant element is trees, with closed or partially closed canopy, together with the biotic and abiotic environment (National Forestry and Tree Planting Act, 2003).
Forest management	The practical application of scientific, economic, and social forestry principles to the administration of forests for specific forestry objectives (National Forestry and Tree Planting Act, 2003).
Forest management unit (FMU)	An area of forest under a single or common system of forest management (Higman <i>et al.</i> , 2002).
Forest reserve	An area declared by law to be a central or local forest reserve (National Forestry and Tree Planting Act, 2003). For purposes of natural forests, forest reserves are placed in Category VI (Managed Resource Protected Area) of the World Conservation Union (IUCN) Categories for Nature Protection. This category of protected area is managed mainly for the sustainable use of natural ecosystems.
Forestry	The management and conservation of forests and trees, which includes the management of land that does not have trees growing on it but which forms part of an area reserved for or dedicated to forestry (National Forestry and Tree Planting Act, 2003). It includes all activities related to forests, tree growing, forest produce, forest conservation, forest management and forest use (Forestry Policy, 2001).
Natural forest	Forest areas where most of the principle characteristics and key elements of native ecosystems are present, such as complexity, structure and diversity (Higman <i>et al.</i> , 2002).
Non-timber forest product (NTFP)	All forest products except timber, including other materials obtained from trees, such as resins and leaves, as well as any other plant and animal products (Higman <i>et al.</i> , 2002).
Woodland	Land that has a crown cover (or equivalent stocking level) of more than 30 percent of trees not able to reach a height of 5 m at maturity (FAO 2000a: FRA 2000 <i>Main Report</i>), but modified to read canopy cover of 30 percent instead of 10 percent.
Permanent Forest Estate (PFE)	Land set aside for forestry activities in perpetuity (Uganda Forestry Policy, 2001).
Production forest	A forest which is available for wood supply and other uses.
Production zone	Same as for <i>production forest</i> , but the area is part of the overall forest nature conservation programme.
Protected area	All land gazetted and held in trust by the Government, such as forest reserves, national parks and wildlife reserves (Uganda Forestry Policy, 2001).
Savanna	Grassland dotted with trees. Grasses form the predominant vegetation type, usually mixed with herbs and shrubs, with trees scattered individually or in small clumps (TheFreeDisctionary.com Encyclopaedia).

Term	Meaning
Strict Nature Reserve	An area within a forest reserve set aside for species and habitat protection, and in which only research, education and monitoring are permitted (National Forestry and Tree Planting Act, 2003).
Sustainable forest management (SFM)	The management of forest resources so as to supply goods and services to satisfy the needs of present and future generations in perpetuity (Uganda Forestry Policy, 2001).
Sustained yield	Continued production of forest products ensuring that the rate of removal of forest products does not exceed the rate of replacement over the long term (Higman <i>et al.</i> , 2002).
Threatened species	Any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range (Higman <i>et al.</i> , 2002).
Tropical moist forests (TMF) – also known as ‘tropical rain forests’	Broadleaf forests found in a belt around the equator and characterized by warm humid climates with high year-round rainfall. Uganda's TMF belong to the Afrotropic ecozone with the flagship Albertine Rift Forests that extend to the Democratic Republic of the Congo (DRC), Burundi, Rwanda and the United Republic of Tanzania (TheFreeDisctionary.com Encyclopaedia). Normally, forests are evergreen, although some species may shed their leaves periodically.
Forest Encroachment	Activities that occupy a forest or part thereof without legal permission. This may include settlement, cultivation, grazing, among others.
District Forest Service	This includes local governments, service providers and farmers in charge of mobilizing and coordinating forestry extension services in the districts, and developing forestry activities on farms, around forest reserves, and in private and customary forests, through support services and incentives for sustainable forest management (NFP, 2002).

EXECUTIVE SUMMARY

Analysis of the forestry sub-sector

The Poverty Eradication Action Plan (PEAP) is being revised to inform the new five-year National Development Plan (NDP), which will replace it as Uganda's principle planning framework and public investment vehicle. This forestry sub-sector study aims at contributing to the *Environment and Natural Resources (ENR) Sector Paper*, which will feed into the NDP.

The overall goal for forestry development enshrined in Uganda's Forestry Policy, 2001, is “*an integrated forest sector that achieves sustainable increases in economic, social and environmental benefits from forests and trees by all the people of Uganda, especially the poor and vulnerable*”. This corresponds well with the national development aspiration of promoting ‘*growth, employment and prosperity*’.

The contribution of forestry to gross domestic product (GDP) is estimated at 6 percent. During the 2002–2006 period, the forestry sector grew at an average of 5.7 percent. In terms of livelihoods, Bush (2004) established that 11–27 percent of household cash incomes of communities around forest reserves were derived from forestry. In terms of employment, the Forest Policy, 2001 estimates that forestry employs 1 million people in the formal and informal sectors. In addition, Bush estimated that the combined contribution of forests to soil and water management, carbon sequestration and future uses for Uganda's biodiversity is valued at U Sh 222.2 billion (US\$130.7 million) annually.

The forestry sub-sector is increasingly seen as a cross-cutting contributor in achieving the Millennium Development Goals (MDGs), especially those dealing with poverty eradication, health, environment, gender and development, universal primary education and global partnerships for development.

Today, Uganda's forest cover (3,556,000 ha), which supplies the above goods and services, stands at 17 percent of total land area of the country, a reduction from 24 percent in 1990. Over the last 15 years (1990–2005), the average rate of deforestation was 1.9 percent. The deforestation rate outside protected areas is considerably higher (2.9 percent) than that in Central Forest Reserves (CFRs) (0.3 percent for tropical moist forests). As the forests on private lands continue to disappear, there is now pressure on government protected areas to expand agricultural land, harvesting and human settlement. While the policy and legal frameworks are clear with regard to forest crimes associated with these activities, the main weaknesses have been in the area of governance associated with implementation of these policies and laws.

Nevertheless, forests and trees are increasingly recognized as avenues of investment for income generation and development. During the 2004/05–2006/07 period, approximately 21,000 ha of new quality timber plantations were established by the National Forestry Authority (NFA) and the private sector, valued at approximately US\$70 million. However, investment in natural forest management by the private sector is still limited, even where the forests are owned privately.

Considering government plans for forest management within the medium-term expenditure framework provisions, management of CFRs improved during the first years of the NFA. There was increased investment in commercial timber plantation by the NFA and the private sector, and the management of natural forests began to comply with independently verifiable management standards. However, in 2006, the integrity of CFRs has been negatively affected

following the institutional instability caused by the resignation of the Board and top management of NFA. This has caused a lack of continuity and institutional memory in the management of the CFRs. Forest crime is consequently returning to former levels.

While formation of the NFA was properly thought out and subsequently well-funded (at least for the first four years), the local government forest departments and private forest owners were not given due attention and funding. Due to their lack of good forest management, the forests outside the protected areas will continue to deteriorate and ultimately, the NFA will find it increasingly difficult to hold on to the CFRs. The performance of the district forest offices is below the desired standards largely due to under-resourcing (staff, equipment and operational funds). As a result, there is very little management in private natural forests, even as many are being converted into agricultural lands. The main reason for this is that the private forest owners are realizing little or no financial returns for keeping their lands under natural forest cover. While initial steps have been made to provide incentives for plantation development, especially under the Sawlog Production Grant Scheme (SPGS), there are no similar arrangements to promote responsible management of private natural forests.

Planned management and administration of the forestry sub-sector

Uganda's development path focused on 'growth, employment and prosperity' has been aligned to these MDGs. Consequently, the forestry sub-sector will deliver on the following priority interventions in the NDP:

- Strengthening the District Forestry Services
- Improving community livelihoods from forest, tree and woodland resources
- Expanding and increasing economic productivity of forestry resources
- Promoting PPPs to increase economic returns from forests and trees
- Promoting forestry-based industries and trade
- Improving forestry information management
- Improve forest governance and management

Arising out of the above priorities and in line with the ENR Sector Investment Plan, 2007, seven strategic objectives have been designed. Each objective will be achieved through a series of strategies, as outline below:

Objective 1: Improve the ability of forests and trees to yield increased economic, social and environmental benefits for all people, especially the poor and vulnerable, now and in the future.

Strategies:

- Improve the management of the permanent forest estate.
- Improve the management of forests on private and communal land.
- Improve the quality of tree seed and planting materials.
- Increase economic benefits of forests, woodlands and trees to communities.
- Expand the capacity and quality of harvesting and processing timber and non-timber forest products.
- Promote biodiversity conservation and its sustainable use.
- Promote business partnerships between public and private sector for forestry-based investments.
- Promote urban forestry.

Objective 2: Make positive changes in the restoration of environmentally degraded ecosystems.

Strategies:

- Restore/rehabilitate deforested and degraded watersheds.

Objective 3: Promote research for the improvement of the productivity of the natural resource base.

Strategies:

- Conduct objective-driven forestry research.

Objective 4: Establish comprehensive laws, policies, regulations, standards and guidelines, and ensure that they are enforced for efficient and effective management of the environment and natural resources.

Strategies:

- Increase good governance and public accountability in forest management.

Objective 5: Strengthen the capacities of lead agencies and other institutions (including the National Forestry Authority, District Forest Services and the Forestry Sector Support Department) to implement programmes for environmental management.

Strategies:

- Develop and implement a user-friendly information management system.
- Strengthen the capacities of stakeholder institutions to supervise and effectively deliver forestry services.

Objective 6: Build the capacity of the Ministry of Water and Environment to coordinate planning and monitoring, and account for the public resources provided for management of the environment and natural resources.

Strategies:

- Mobilize investments for growth of the forestry sub-sector.

The total estimated cost for implementing this plan is U Sh745 billion. It is expected that 42 percent (U Sh 316 billion) will be provided by the Government of Uganda, while 58 percent (U SH 429 billion) will come from the private sector and non-governmental organizations (NGOs). However, if the financial ceilings of the Medium-Term Expenditure Framework (MTEF) are not revised to take this budget into consideration, the Government's contribution will be U Sh 215 billion (47 percent), and the private sector and NGOs will contribute U Sh239 billion (53 percent).

In implementing this plan, the Government will increasingly direct implementation of field activities to the private sector, civil society organizations (CSOs) and community institutions. However, it will continue to catalyze investment through public-private partnerships (PPPs),

demonstrations, policy and legal reforms and technical guidance. Central Government institutions will also lead the way in long-term investment where the private sector is reluctant to invest. The following results will be achieved through the NDP:

- 1.2 million ha of CFRs and local forest reserves effectively protected;
- 50,000 ha of profitable and productive forest plantations planted on forest reserve and private lands;
- 250,000 ha of CFRs managed in partnership with forest adjacent communities;
- 50,000 ha reclaimed from encroachers and 15,000 ha of degraded CFRs/local forest reserves rehabilitated;
- 2,500 ha of riverbanks, lakeshores and bare hills rehabilitated;
- 10,000 households supported to improve livelihoods, in addition to 20,000 households effectively receiving advisory services;
- 20 million quality tree seedlings produced annually;
- 5,000 ha of on-farm woodlots grown annually;
- 150,000 ha of natural forests certified by international certifiers as sustainably managed;
- ten new ecotourism sites developed;
- commercial investments valued at US\$500 million worth of PPP arrangements
- 20 Urban Development Plans with forestry mainstreamed;
- fully operational database producing and distributing ten information packs annually.

The above investments will result in the creation of about 321,000 jobs in the formal sector and another 3 million jobs in the informal sector. They will also result in maintenance or increase of the 6 percent forestry contribution to GDP. Indirectly, investment in forestry will lead to the growth of other sectors, especially agriculture, hydropower, construction industry and tourism. The forest-based enterprises will lead to increased cash incomes of the rural poor.

However, if the Government (including local governments and official development assistance) does not fund the forestry sub-sector, the trend in forest loss will escalate, leading to the following:

1. **Negative impacts of climate change** evidenced by increasingly dry to desert conditions, high incidences of floods and the attendant health and nutritional problems.
2. **Reduced energy supply** for domestic use, the manufacturing industry and the service sector, including the scarcity of woodfuel for small-scale processing industries, such as brick-making, bakeries, pottery, hotels and schools. This will lead to increased costs of production and thus lower Uganda's competitive edge in the region.
3. **Increased hardships for the poor** who directly derive 27 percent of their cash income from neighbouring forests.
4. **Reduced and low-quality water supply for domestic and industrial use** as the water reservoirs (lakes, rivers and wetlands) become polluted and eventually silt up. Water tables would become lower, leading to drying up of wells, springs and boreholes, and the consequent increased costs of providing water to the population and livestock.
5. **The Government's Water for Production Programme** in support of PEAP would be rendered unviable because it requires forests as natural regulators and reservoirs of water flow. The whole country would therefore be rendered unviable for cattle grazing and agriculture. For example, the Uganda National Household Survey 2005/2006 (Agriculture Module) revealed that 43 percent of all national crop plots suffered from damage, mainly due to rain shortage (19 percent), followed by crop disease (10 percent).
6. **Reduced raw materials, especially timber for construction** would undermine the fast-growing construction industry. This would directly affect economic growth and employment opportunities.

7. **Escalating import bills.** IUCN (2001), for example, estimated that if kerosene were substituted for charcoal in urban households, there would be an annual increase in the national import bill by US\$180 million (U Sh 324 billion). Such a move would also lead to loss of jobs by poor people involved in woodfuel (charcoal and firewood) income-generating activities.
8. The environment in the fast-growing urban areas will become more polluted and a **danger to people's health**. This would lead to increased costs of providing health care, higher incidences of respiratory diseases and the consequent increased misery for the poor living in urban areas.

Some of the effects of the Government not funding the forestry sub-sector can be mitigated by promoting private sector investment. Since most of the investment in forestry is of a public nature, however, it will not be possible to attract sufficient private sector investment in the next five years. Therefore, the Government and its development partners will have to invest directly in forestry over the coming years. It should continue to go into partnerships with the private sector.

In spite of the declining government investment in forestry, the sub-sector has registered growth. However, this could easily be neutralized by the negative impacts of sustained declining investment in the sub-sector. When the planned investment under this Development Plan is done well, it will reverse the negative ecological trends and result in higher growth rates in the sector and thus a bigger contribution to GDP.

1. INTRODUCTION

1.1 Background to the Study

Purpose of the Study

The Poverty Eradication Action Plan (PEAP) is Uganda's Poverty Reduction Strategy Paper and a comprehensive national development framework. This study aims at contributing to the Environment and Natural Resources (ENR) Sector Paper for the PEAP review. It is an opportunity for the ENR sector to move forward on the basis of experiences gained, lessons learned, and the challenges and opportunities presented by emerging situations.

This study reviews the contribution of forestry to growth, employment and prosperity, and determines the priority areas for the forestry sub-sector and the strategies to meet them in the five years of the NDP. This paper provides valid and reliable background information for the ENR sector, which will enable the PEAP revision process to recognize the contribution of forestry as a sub-sector, and identify priority strategic interventions for integrating into the NDP. The paper will also be used as reference material in other processes that support the role of forestry in national development.

Tasks of the Study

In line with the theme of the proposed NDP, the study team was tasked to:

- (i) collect, analyze and present data on the contribution of forestry to growth, employment and prosperity;
- (ii) prepare the *Forestry Sub-sector Working Paper* to inform the development of the ENR Sector Paper;
- (iii) ensure that the contents and priority areas of the forestry sub-sector are integrated in the *ENR Sector Working Paper*.

The structure of this paper follows the guidelines provided by the PEAP revision/NDP formulation secretariat of the government of Uganda in October 2007.

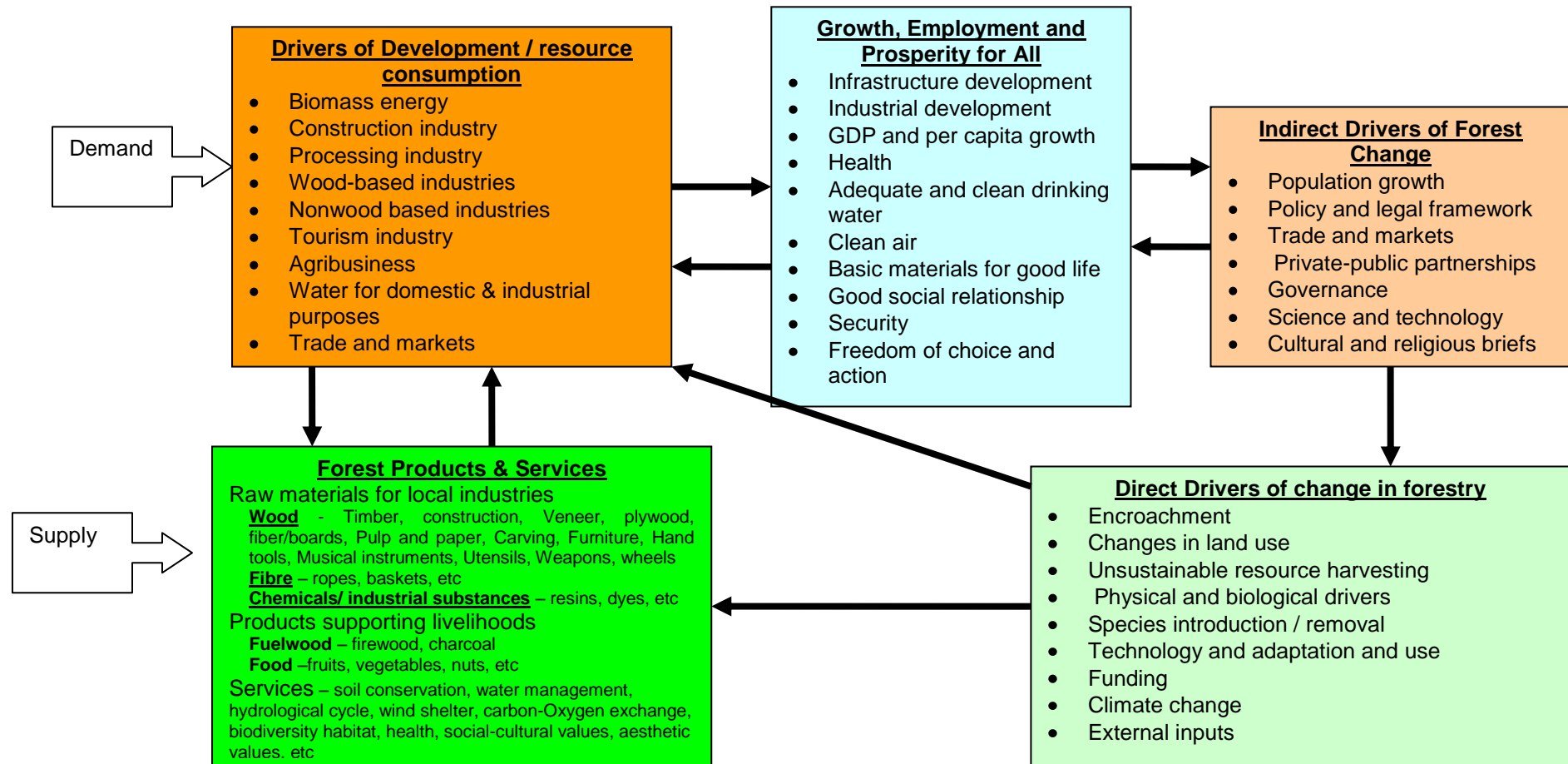
Conceptual framework

The study adapted the Millennium Ecosystems Assessment Model to analyze the contribution of forestry to growth, employment and prosperity (Figure 1). The framework shows that forest and woodland ecosystems supply a wealth of products and services that drive development, such as construction, tourism and agri-business. In order to contribute to these drivers of development, forests supply raw materials for local industries, products for supporting livelihoods, and services in support of agriculture, water conservation, health preservation, climate stabilization, biodiversity conservation and socio-cultural values.

The sustained supply of these products and services is influenced by direct and indirect drivers of change. The direct drivers include encroachment, changes in land use, illegal activities, unsustainable harvesting, production and management technologies, and other inputs such as funding. The indirect drivers of change include population growth, policy and legal frameworks, and governance.

Therefore, the approach to the development of the forestry sub-sector within the overall NDP is oriented towards managing the drivers of change, because they affect the supply of products and services to drivers of development, and therefore influence 'growth, employment and prosperity'.

Figure 1: Forestry Sub-sector Conceptual Framework



Methods of the Study

This study was undertaken by a team of three consultants who applied the methods outlined in **Table 1**.

Table 1: Study Methods, Activities and Outcomes

Method	Activities	Outcomes
Literature Survey	Examine the available literature from the lead agencies within the environment and natural resources (ENR) sector (policies and relevant laws, Sector Investment Plans, Ministerial Policy Statements and budget framework papers) and guidelines related to GDP and the national development plan	Clarity on achievements to date, lessons learned and on gaps that need to be addressed.
Semi-structured interviews on forestry- based opportunities, their level of development, concerns and issues.	Hold meetings with forestry-based lead agencies (leaders and technical personnel) and development partners	Clarity on policy, laws and implementation issues, land use opportunities, weaknesses, threats and access, and ownership, and roles played by forestry in their organizational mandates, which link them to ‘growth, employment and prosperity’.
Data compilation and analysis	Collate interview and documentary review results. Establish trends.	Synthesized information; trends.
Presentation of key aspects of the <i>Forestry Sub-sector Paper</i> , followed by discussions	Write up and present the <i>Draft Forestry Sub-sector Paper</i> to the ENR Sector Drafting Committee.	Clarity on various aspects in the paper; approval from the Sector Drafting Committee.
Completion of the report and submission to drafting team coordinator of the sector at National Environment Management Authority	Prepare the final report.	A Final Report with a summary of the findings and recommendations.

1.2 Forestry in National Development

The National Forest Plan (NFP, 2002), whose vision is ‘*a sufficiently forested, ecologically stable and economically prosperous people*’, provides the planning framework for the forestry sub-sector. It is focused on making a positive difference in the lives of Ugandans. In the rural areas, about 24 million people depend on forests and tree resources for their basic needs such as firewood, building poles, furniture and medicine. The annual incomes from the different forest types average U Sh332.3 billion, or US\$195.5 million (Bush and Nampindo, 2004).

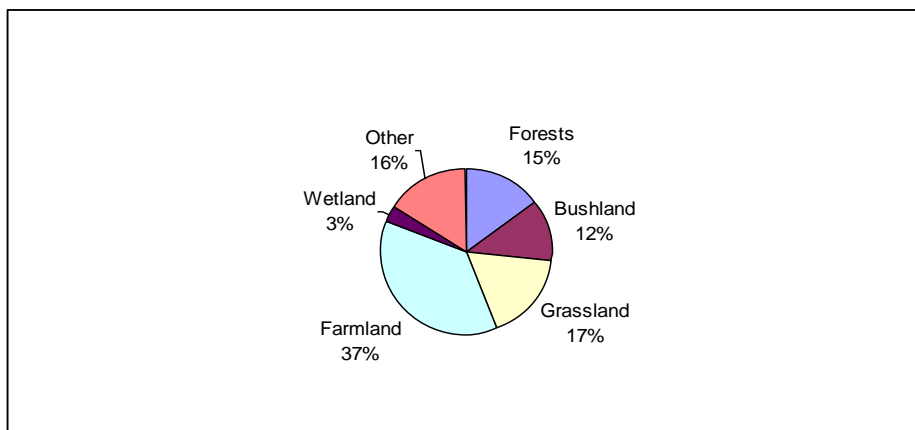
In addition, Uganda's forests contribute significantly to the protection and stabilization of the environment. The combined contribution of forests to **soil and water** management, **carbon** sequestration and future uses for Uganda's **biodiversity** is valued at U Sh222.2 billion, or US\$130.7 million annually (ibid). This represents the amount that the Government would have to spend annually to buy fertilizers, drill new boreholes and clean up air pollution.¹

Fuelwood is the main source of energy for domestic cooking, lighting and heating in the country. Over 90 percent of Ugandans use it as their sole source of energy, consuming nearly 27 million tonnes (43.2 million m³) of fuelwood in 2007, valued at U Sh324 billion (US\$191 million).

Timber contributes greatly to the construction and industrial sectors. With the current growth in these sectors averaging 10 percent over the last five years, the demand for timber is estimated at U Sh57 billion (US\$32 million)

1.3 Forestry resources of Uganda

Figure 2: Land Cover in Uganda, 2005



Preliminary data from the National Biomass Study Unit of the NFA (2008) suggests that Uganda's forest cover is now 3,556,000 ha (or about 17 percent of total land area), reduced from 24 percent in 1990. In terms of land-use forests cover 15 percent of the total area of Uganda (Figure 2).

The reduction in forest cover can be partly attributed to population growth, which has increased from 16.7 million in 1991 to 26.8 million in 2005 (UBOS, 2005), with the expected expansion of farmland in some parts of the country. The urban population alone has increased from 1.9 million in 1991 to 3 million in 2002, and thus demand for forest products has been increasing

¹ These figures do not include administrative costs and the attendant haemorrhage of funds due to corruption.

even as forested land declines. The construction industry alone has been growing at an average of 10 percent over the last five years, leading to high demand for timber, poles and furniture (UBOS, 2006).

From 1991 to 2005, demand for biomass energy grew by 60 percent.² The energy demand for domestic, hotel, school and small-scale industrial processing has been increasing as the sub-sectors have expanded.

Growth in monetary agricultural food production declined from 1.7 in 2004/05 to 0.9 in 2005/06, largely due to nutrient depletion and unpredictable climate variations). Box 1 illustrates this point. In addition, the contribution of agriculture to GDP has declined from 39.9 percent in 2001/02 to 34 percent in 2005/06.

Box 1: Forestry Greatly Contributing to Rural Development

The contribution of forestry to rural development can be clearly demonstrated in Tororo District. Mr. Etoori Martin (pers. comm., 2007) noted that most people in Mella sub-county have not embraced tree planting and forest conservation. They are looking for quick money in charcoal burning, brick making and selling firewood. As a result, the sub-county has been hit by wood scarcity and environmental degradation (e.g. soil erosion).

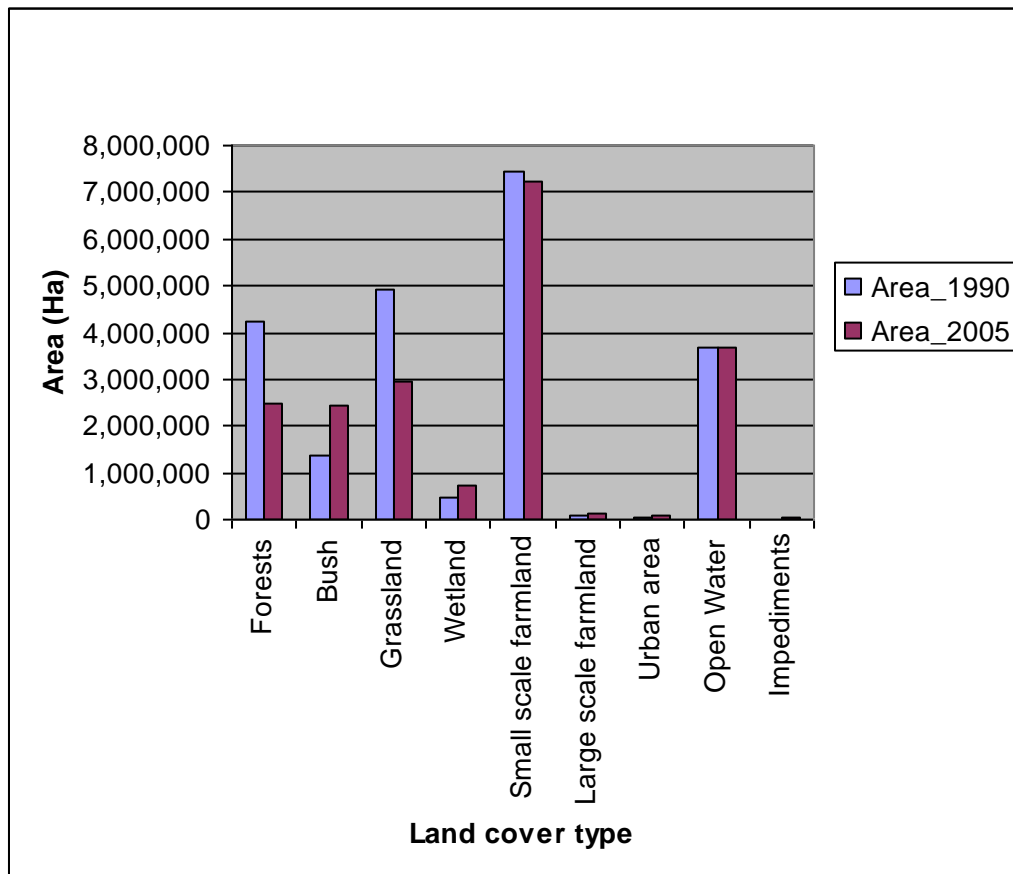
However, he observed, people in the neighbouring district in Kenya that embraced tree planting have started to obtain benefits such as increased supply of woodfuel and restored soil fertility. Similarly, Rubongi sub-county in Tororo District presents the same scenario after several years of practising agroforestry. The household incomes in Rubongi sub-county are much higher than in Mella sub-county as a result of engaging in tree planting.

Anguti Silas (pers. comm., 2007) reported that in 2007, Nile Ply Ltd. spent U Sh100 million on buying utility transmission poles from Rubongi sub-county; local people now know that money can be earned in growing trees.

Figure 3 further shows the changes in land cover from 1990 to 2005. The reduction in the forestry cover has negatively affected the supply of forest products and services, resulting in social stress, such as hostilities between the people and law enforcement agencies. The hostilities were exacerbated by poor governance (e.g. corruption, ethnic tensions, politicization of technical matters) that has plagued the forestry sub-sector for a long time.

² The estimated annual average per capita consumption of biomass energy is 1 m³.

Figure 3: Changes in Land Cover, 1990–2005



In many districts of Uganda (e.g. Tororo, Iganga, Nakasongola, Maracha, Arua, Soroti, Kumi, Palisa, Rakai, Adjumani), the declining forest cover has resulted in a fuelwood deficit. The result is that people walk longer distances every year to get fuelwood. The PEAP, 2004/5–2007/8, estimated that people walked 0.73 km per day in 2000 to collect firewood. In 2007, the *Farm Income Enhancement and Forest Conservation (FIEFOC) Project Baseline Study Report* (FSSD, 2007) indicated that, on average, people travelled more than 1 km per day to collect firewood. Although agricultural residues are left on the farm to recycle nutrients, some people use it for cooking, while others cook only one meal a day due to insufficient fuelwood.

In addition to the forest resources described above, there are also substantial forest, tree, woodland and shrub resources on farm. Private lands hold 312 million tonnes of biomass (NBS Study, 2003), equivalent to U Sh2.5 trillion (valued as firewood).

1.4 The permanent forest estate

The Forestry Policy, 2001 defines the permanent forest estate (PFE) as “*land that is set aside for forestry activities in perpetuity.*” In Uganda, the PFE is held in trust by the Government for the people. It consists of 1.9 million ha, representing about 9 percent of the total land area of Uganda. According to the Policy, this is the minimum area that the Government has committed

itself to keep as forest land permanently. It covers CFRs, local forest reserves and forested areas in national parks.

The main functions of the PFE are ecological and biodiversity protection, and the production of forest goods and services to meet economic and social needs of society. Table 2 shows the area of forestland in the PFE for each major function.

Table 2: Categorizing Protected Area Forestland by Function

Category	Total Area (ha)	Remarks
Ecological and biodiversity importance	1,600,000	Protection of steep slopes, water catchments, river banks, lakeshores and wetlands; this includes forested areas of national parks (NPs)/wildlife reserves (WRs).
Industrial forest plantations in CFRs	151,000	Mainly in the cattle corridor.
Forest reserves for production of assorted forest goods and services	45,500	Small CFRs, especially suited for small-scale investments.
Total	1,796,500	191,000 ha deforested since 1990.

Source: NFA, 2008

1.5 Government policy framework

The Constitution of the Republic of Uganda, 1995 and Vision 2035 aim at sustainable national development that addresses environmental conservation, social development and economic growth. The constitution empowers the Government, including local governments, to hold protected areas, which include forest reserves in trust for the people of Uganda.

In accordance with these constitutional provisions, the National Forestry Policy (2001) sets out government development objectives and direction for the forestry sector in Uganda. It sets the overall goal for forestry development as *‘an integrated forest sector that achieves sustainable increases in economic, social and environmental benefits from forests and trees by all the people of Uganda, especially the poor and vulnerable’*. This is in line with the national development aspiration of promoting *‘growth, employment and prosperity’*. In this policy, the Government commits itself to the following actions:

- Support all landowners to manage and use their land in accordance with the Forests Act and other relevant laws.
- Hold forests in protected areas as PFE, and not to lease out or alienate any of the forestlands without the approval of Parliament.
- Promote profitable development of plantation forests.
- Promote development of well established and run forest industries.

- Enhance the rights of the forest adjacent communities to access and use resources in forest reserves by managing the resources together with NFA and local governments.
- Promote farm forestry and delivery of quality advisory services to tree farmers.
- Promote conservation of biodiversity in order to sustain the forest resource base and other products, and environmental benefits accruing from forests.
- Promote conservation and rehabilitation of watersheds to ensure sustained supply of adequate and clean water for domestic consumption, industrial development, production and generation of hydroelectricity.
- Promote urban forestry for beautification, environmental sanitation from industrial emissions and provision of tree products.
- Promote forestry research and training.
- Promote development and supply of quality tree seeds and planting materials for afforestation.

The National Forestry and Tree Planting Act, 2003 (NFTPA) is the main legislative framework for the forestry sub-sector. Other important sector laws for enhancing the contribution of forestry to the creation of employment, growth and prosperity include:

- The National Environment Act (CAP 53)
- Uganda Wildlife Act (CAP 200)
- Local Governments Act (CAP 243)
- Land Act (CAP 227)
- The Traditional Rulers (Restitution of Assets and Properties) Statute (CAP 247)
- The Inspector General of Government Act (CAP167)
- The Leadership Code (CAP 168)
- The Magistrates Act (CAP 16)
- The Police Act (CAP 303) and The Evidence Act (CAP 6).

Sector policies that affect or are affected by forestry include the Gender Policy (1997), National Environment Management Policy (1994), the National Policy for the Conservation and Management of Wetland Resources (1995), The Wildlife Policy (1999) and The National Water Policy (1999).

One of the most important milestones in forest management in Uganda is the Sector Reform (1998–2003), which decentralized management of forestland outside government protected areas. This is now crucial in managing tree habitats and forests so that they can effectively contribute to growth, employment and prosperity. The following are among the key decentralized forestry services:

- local government administration and management of 70 percent of the total forest cover in the country;
- provision of forestry advisory services to farmers;
- development and collection of local forestry revenue to enhance growth and financial sustainability of local governments and contribution to GDP.

Other government commitments relating to forestry are included in the macro-policy instruments such as the Decentralization Policy, Poverty Eradication Action Plan and the Plan for Modernization of Agriculture (PMA).

1.6 Forestry in the Sector Investment Plan

Forestry is one of the sub-sectors under the ENR sector. The ENR Sector Investment Plan (SIP) is a ten-year plan, from 2008/09 to 2017/18. Within the Key Result Areas, the forestry sub-sector addresses the following strategic objectives:

Key Result Area: Sustainable Harnessing/Use of Natural Resources

1. To improve the ability of forests and trees to yield increases in economic, social and environmental benefits for all people, especially the poor and vulnerable, now and for future generations.
2. To effectively conserve and manage wildlife and protected areas in order to contribute to poverty eradication.

Key Result Area: Clean, Healthy and Productive Environment

1. To comprehensively establish laws, policies, regulations, standards and guidelines for efficient and effective management of the ENR sector.
2. To significantly strengthen the capacities of lead agencies and other institutions to implement programmes on environmental management.

Key Result Area: Productive Natural Resources Base

1. To progressively make changes in the restoration of environmentally degraded ecosystems.
2. To promote research for the improvement of environment and natural resources.

According to the ENR SIP launched in December 2007, an estimated budget of US\$1,282,692,000,000 (equivalent to US dollars 166.3 million) will be required to fund the investments in the sector over the ten-year period, of which US\$513,269,000,000 (US\$301.9 million) will fund the forestry sub-sector investments.

2. SELF-ASSESSMENT AND SITUATIONAL ANALYSIS OF THE SUB-SECTOR

2.1 Ongoing and planned projects and programmes

Some of the projects with a direct impact on forestry are summarized in Table 3. Details are given in **Annex 1**.

Table 3: Summary of Forestry-Related Programmes and Projects

Programme/Project	Status
Establishment of the National Forestry Authority (NFA)	Designed to set up a start-up fund to support the budget of NFA during its first four years. It will end in December 2008.
Farm Income Enhancement and	A five-year project recently launched and being

Programme/Project	Status
Forestry Conservation Project	implemented by the Forestry Sector Support Department of the Ministry of Water and Environment (MWE). The main players are the local governments.
Lake Victoria Environmental Management Project	A regional project with a forestry component operating in the Lake Victoria surroundings.
Mount Elgon Regional Ecosystem Conservation Programme (MERECP)	A cross-border project for management of the Mount Elgon Ecosystem straddling the Uganda – Kenya border.
Rwenzori Mountains Conservation and Environmental Management Project	A project for the conservation of the Rwenzori ecosystem, straddling the Uganda-Democratic Republic of the Congo (DRC) border.
Lake Albert Eastern Catchment Management Initiative	An initiative for the conservation of Lake Albert, which straddles the Uganda-DRC border
Conservation of Biodiversity in the Albertine Rift Forests in Uganda	A project for the management of forests within four districts in the Albertine Rift.
Productive Resource Investments for Managing the Environment (PRIME/West)	A project to finance a conglomeration of activities aimed at biodiversity conservation. It recently shifted its focus to northern Uganda.
Wildlife and Landscape Conservation and Development (WILD) Project	A five-year cross-border project, which has just started, for managing protected areas along the Uganda–Sudan border.

2.2 Assessment of previous performance

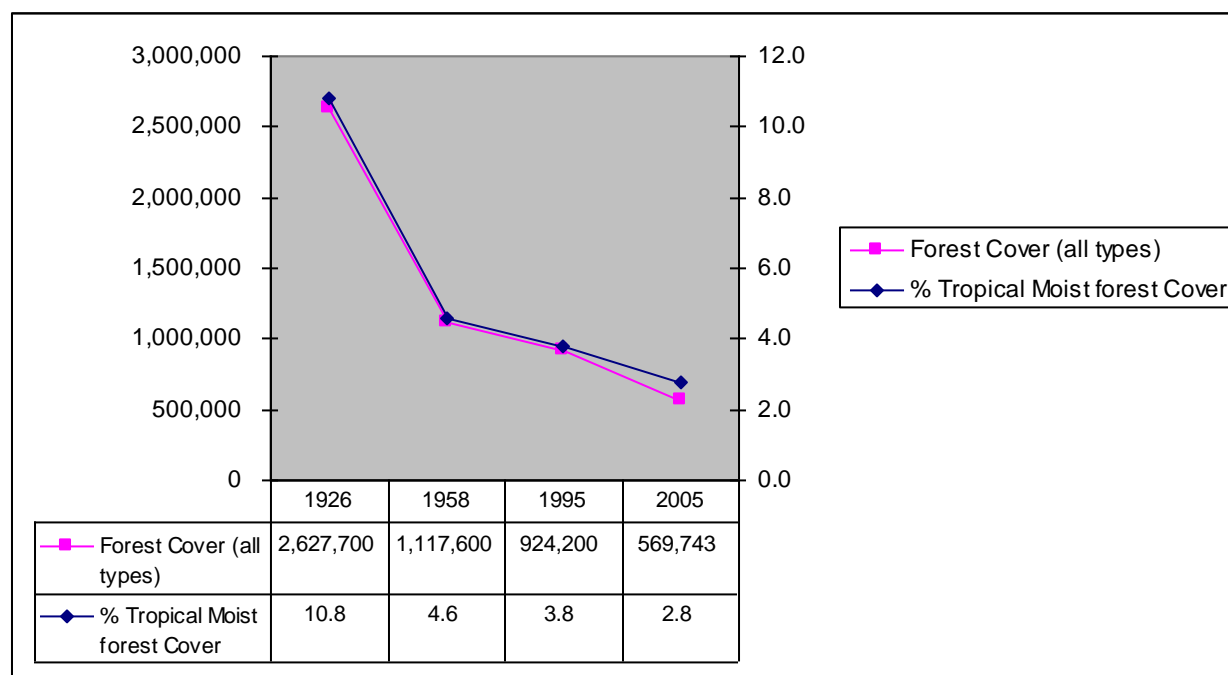
2.2.1 Performance against the National Forest Plan indicators

The assessment below is based on the NFP, which provides indicators to monitor impacts under PEAP 2 (2002/03–2004/05). The assessment also includes the indicators in PEAP 3 (2005/06–2007/08). Annex 2 is an analysis of the previous performance of the forestry sub-sector, and Annex 3 shows a matrix of performance based on the NFP and SIP indicators.

(i) Indicator: Percentage of land under quality forests cover increasing

The historical trend in Uganda’s forest cover is a downhill spiral. Figure 4 shows that the rate of deforestation in tropical moist forests (TMFs) is slowing down more than the other forest types. This has occurred because priority has been placed on the management of these forests, especially those in the protected areas, due to their richness in biological diversity.

Figure 4: Trends in Tropical Moist Forest Cover in Uganda, 1926–2005



Preliminary data (NFA, 2007a) indicates that the percentage of land under forest cover reduced from 24 percent in 1990 to 17 percent in 2005. The data indicates that an average of 26 percent of the forest cover has disappeared from 1990 to 2005 (Table 4). More serious degeneration of forest cover has been observed in the central districts of Uganda where there are intense economic activities, such as agricultural expansion, brisk firewood and charcoal trade, furniture industry, and small-scale manufacturing industries (bakeries, brick making, etc.). Almost the only forests in these districts are those remaining in CFRs.

Table 4: Forest Cover Change, 1990–2005

Year/ land cover/use	Broad-leaved plantations	Conifer plantations	Tropical moist forest (well-stocked)	Tropical moist forest (low stocked)	Woodland	Total forest cover
1990 (ha)	18,682	16,384	650,150	274,057	3,974,102	4,933,375
2005 (ha)	14,593	17,174	616,307	187,420	2,719,102	3,554,594
Change in area (ha)	-4,089	790	-33,843	-86,637	-	-1,378,781
					1,255,000	
Annual change (ha)	-273	53	-2,256	-5,776	-83,667	-91,919

% change in area	-22	5	-5	-32	-32	-28
% change per year	-1.5	0.30	-0.3	-2.1	-2.1	-1.9

Source: National Forestry Authority, 2007

Over this 15-year period, the average rate of deforestation was 1.9 percent, with well-stocked TMF registering the lowest rate at 0.3 percent. However, there was recovery in the forest cover within the CFRs, where there was sustained activity by the former Forestry Department and later, NFA. For example, NFA inventory records show that overall gross volume for trees of dbh 50 cm and above in the production zones of Budongo Central Forest Reserve increased from 86.9 m³/ha in 1992 to 88.5 m³/ha in 2006. In Mabira, the formerly encroached areas were substantially restored with a young forest consisting of 46 tropical moist forest species, within 16 years after the encroachers left (about the same period referred to in the Budongo Inventory above). This scenario is corroborated by the Wildlife Conservation Society (WCS) studies on Budongo and Bugoma, which show that forest loss in the Albertine Region was primarily “outside the protected area” (Plumptre *et al.*, 2004) and later by National Biomass data (2007).

As the forests on private lands disappear, pressure is now on protected areas. For example, the trend in number of encroachers (for rural settlements, agriculture and urban expansion) in CFRs increased from 180,000 in 2004/05 to 220,000 one year later (NFA, 2006). Forest management has been made difficult by encroachment in some CFRs, such as in south Busoga and in Mubende and Kiboga Districts. This has led to their serious degradation.

The drive to improve the management of forests on private lands is reflected in the development of technical guidelines for the management of private and community forests. However, more could be done to promote their management, because this is where the looming domestic energy crisis can be effectively reversed, nutrition and health improved, pressure on highly biodiverse forests relieved, and implementation of the Government’s water for production strategies supported. Unfortunately, the capacity of the District Forestry Services (DFS) to provide the require leadership is still inadequate.

Limited capacity in districts has also contributed to poor control of access to and exploitation of the private and community forests, and a lack of systems for marketing timber trees through open tendering, which is currently operational in plantation CFRs. Therefore, overexploitation and creaming off of high value timber species are very common in these forests.

(ii) *Indicator: Area of forest reserves under productive forest management by the National Forestry Authority and local governments increasing through better control and management*

Forest management plans (FMPs) covering all the 506 CFRs have been prepared in a participatory manner, but they have not yet been approved by the Minister responsible for forestry according to the law. However, some parts of these FMPs are being implemented. Similarly, Community Action Plans, District Forest Development Plans and FMPs for all local forest reserves are being prepared with support of the Farm Income Enhancement and Forest Conservation Project (FIEFOC) Project.

Much work has been done on forest management technologies for plantation and natural forests (nurseries, plantation establishment, restoration of degraded natural forests and yield regulation). However, more work needs to be done in technologies for processing forest products (adding value) and in the management and processing of non-timber forest products.

In most of the TMFs, the nature conservation zones have been demarcated on the ground, but nothing has been done for these zones in northern Uganda.

Outside Buganda, no forest reserves are shown on cadastral maps, although they have been described in the legal instruments and most have been demarcated on the ground.

(iii) Indicator: Value of commercial investment in forestry businesses increasing

Forests and trees are increasingly recognized as an investment avenue for income generation. The number of seedlings sold by the National Tree Seed Centre alone has grown by 330 percent from 2003/04 to 2007/08. Eighty percent of the seedlings raised are for industrial forest plantations. There are other nurseries in the country that supply seedlings for industrial forest plantations, encroachment planting and other planting activities by the private sector and local communities.

During the 2004/05–2006/07 period, 21,000 ha of new, quality timber plantations worth US\$37.5 million were established by NFA and the private sector. Investment in tree growing is a long-term business (over 20 years for industrial plantations) and therefore requires incentives. An initial step has been taken through the Sawlog Production Grant Scheme (SPGS) funded by the European Union (EU). The scheme aims at promoting private investment in timber production in Uganda. It started in 2003 and in three years, it promoted the establishment of some 15,000 ha of industrial timber plantations throughout the country.

SPGS provides financial and technical support to investors in plantation establishment. The financial assistance comes in the form of a direct subsidy or grant paid in the first two years after planting. The total grant is U Sh600,000 per ha (US\$330), but the money is only paid when planters meet the standards as set out in the agreed contracts.

The other complementary incentive is providing forest reserve land to private sector investors under licence. Over the last ten years, the forestry sub-sector has seen a surge in private investment in growing industrial forest plantations. To date, nearly 149,000 ha have been licensed to private tree growers in CFRs, 69 percent of which were licensed by NFA alone over the last three years starting 2005.

(iv) Indicator: Volumes and values of forest products traded (domestic and international) increasing

The volume of recorded timber harvested and moved by licensed pitsawyers jumped from 55,000 m³ during fiscal year (FY) 2004/05 to 100,000 m³ during FY 2005/06 (*NFA Annual Report, 2005/06*). When unrecorded timber is factored in, timber consumption in the country in 2005/06 reached around 300,000 m³. This was equivalent to approximately 900,000 m³ of trees annually generating about US\$50 million.

As effectiveness in law enforcement and governance increased, official revenue collection progressively rose nearly 16 times from 1995/96 to 2005/06. On the other hand, revenue from impounded timber sold by public auction progressively dropped from 25 percent of total revenue in 1995/96 to 8 percent in 2005/06. This shows that people reverted to legitimate business as law enforcement and governance improved.

Most of the charcoal is consumed in urban centres. In 1995, charcoal consumption in all urban centres was estimated at 270,000 tonnes annually (Forestry Department, 1995), valued at U Sh 31.4 billion (US\$31.4 million). In 2006, estimates based on population growth indicated that charcoal consumed in all urban centres was 463,437 tonnes, valued at U Sh141.8 billion (US\$79 million). This indicates growing production and trade in both volume and value of charcoal.

The market for high quality **transmission poles** is increasing: their annual consumption has risen from 7,500 in 1999 to 25,000 in 2008, valued at U Sh225 million (US\$141,000) and U Sh1 billion (US\$606,000), respectively.

(v) Indicator: Number of people and wage rates (by gender, socio-economic group, geographic location) in forestry-related employment increasing in the formal sector

The forest sector is an important employer in Uganda, especially in rural areas. The Government estimates that the forest sector employs about 1 million people, 100,000 of whom are in the formal sector (Forest Policy 2001). During the period 2004–2007, 21,000 ha of plantation have been established, leading to an additional 10,000 permanent jobs and another 15,000 part-time jobs, which translates into U Sh20 billion (US\$12.1 million).

(vi) Indicator: Value and percent contribution of forestry to GDP increasing through higher production and value addition

The National Forestry Policy (2001) estimates the contribution of forestry to GDP at 6 percent. The forestry sector grew at an average of 5.7 percent from 2002 to 2006 (*Background to the Budget 2006/07*).

(vii) Indicator: Number of effective collaborative forest management agreements in forest reserves increasing

From 1999 to 2008, the number of signed collaborative forest management (CFM) agreements has increased from 1 to 11. The CFRs with CFM arrangements are Budongo, Mabira, Kasyoha-Kitomi, Sango, Bay, Kalinzu, Bugoma, West Bugwe, Mpanga and Echuya. The communities have started implementing forest-based enterprises that include beekeeping, craft making and fruit growing.

(viii) Indicator: Number and areas of community forests increasing

Pilot programmes were initiated in Masindi District under the provisions of the Communal Land Associations in the Land Act, 1998. *National Guidelines on the Establishment and Management of Community Forests* have been put in place by the Forestry Sector Support Department.

(ix) Indicator: Open access to public information on forestry increasing through improved communications and popular participation

There has been increased participation of civil society in forestry information gathering and dissemination. The establishment of the Forestry Working Group, an alliance of NGOs/community-based organizations (CBOs) with forestry-related mandates, has simplified, reproduced, translated and disseminated the Uganda Forestry Policy, the National Forest Plan, the National Forestry and Tree Planting Act, and *CFM Guidelines*, among others. In addition, a number of NGOs have carried out studies on, for instance, management of private forests, CFM and forest-based enterprises, among others.

Access to public information, which was highly controlled under the then Forestry Department, has been made easier with the reforms in the forestry sector. It is now easier to obtain information from the semi-autonomous NFA than it was under the Forestry Department, which

was a line government department. For example, during the struggle for Mabira Central Forest Reserve, NGOs accessed technical information from NFA, including maps, social economic and environmental benefits, management plans, etc. This strengthened the effectiveness of their lobbying and advocacy. In addition, NFA staff are now more accessible to the media to discuss forestry-related issues, which would have required prior clearance from the relevant Permanent Secretary under the Forestry Department.

(x) Indicator: Percent of household income derived from different forestry-related enterprises increasing

Bush and Nampindo (2004) established that 11–27 percent of household cash incomes of communities around forest reserves were derived from forestry (Table 5). However, there has been no subsequent study to establish the trend in forest-related incomes.

Table 5: Contribution of forestry to household income

Forest (n)	Mean total income (U Sh per year)	Mean income from the forest per household (U Sh per year)	Mean income from the forest (percent)
Budongo (154)	1,411,655	118,672	8.4
Bugoma (175)	1,963,407	320,049	16.3
Kasagala (151)	1,714,746	182,512	10.6
Rwenzori (159)	2,040,622	727,104	35.6
All forests (639)	1,790,495	339,696	19.0

Source: Bush and Nampindo, 2004

(xi) Indicator: Number of National and Agricultural Advisory Services (NAADS) contracts for forestry advisory services increasing

Prior to 2003, very few forestry-based enterprises funded through the NAADS Programme. By 2007, the Forestry Services Support Department (2007) established that an average of 3 percent of the National Agricultural Advisory Services at the local community level is targeted at forestry-related enterprises. There has been slow progress due to limited awareness of the economic returns of forestry, the long-term nature of tree growing and lack of demonstrable successes in forest-based investment.

(xii) Indicator: Number of poor people with tree-growing permits in forest reserves increasing

NFA has promoted tree growing by providing land to private investors as an incentive for tree growing. To date, nearly 149,000 ha of CFRs have been licensed to private tree growers. However, the actual area planted so far is about 10 percent. Also the poverty /wealth status of the tree growers is not recorded.

(xiii) Indicator: Number of farmers using improved agroforestry technologies increasing

Accordingly to the *FIEFOC Baseline Survey Report* (FSSD, 2007), only 20.7 percent of the households in the sample taken tried modern agroforestry practices (systematically planting trees among crops and in pasture) on their farms, especially with respect to integrating food crops with fruit trees such as jackfruit, avocado, mango, papaw, oranges and coffee. Other trees include

musizi, fig trees, eucalyptus and neem trees. There was little deliberate inclusion of animals in the farming system recorded in this study. Annex 7 shows the use of agroforestry technologies in each district sampled.

The most practised agroforestry technology is traditional agroforestry (used by 35 percent of the households); in which farmers leave mainly large trees in their gardens. This is followed by boundary planting (10.2 percent), woodlot establishment (7.4 percent), alley cropping (1.4 percent) and hedgerow planting (1.2 percent).

The districts with the highest number of households practising agroforestry include Kumi (91.7 percent), Sironko (88.3 percent), Rakai (77.8 percent), Kiboga (75 percent), Tororo (75 percent) and Kisoro (75 percent). The districts with the least households that did not practise any form of agroforestry include Kitgum (80 percent), Kamwenge (67 percent), Nebbi (64 percent), Adjumani (64 percent), Nakasongola (61 percent) and Kamuli (61 percent).

(xiv) Indicator: Tree cover, biodiversity and water flows from natural forests in forest reserves and private forests;

In a baseline survey conducted by the Forestry Sector Support Department (2007), 49 percent of the respondents indicated that the quantity of water in their area has reduced over the last ten years (Annex 8). The most affected districts are Masaka, Kumi/Bukedea, Nakasongola, Kabale, Sembabule and Luwero/Nakaseke. Districts where households travel the longest distances to access water (2–4 km) were Nakasongola, Rakai, Kumi and Kasese. The people interviewed attributed the reduction in water quantity to deforestation along river valleys and water catchment areas (FSSD, 2007). The long distances result in increased time taken to collect water, especially by women and children. This in turn reduces time for other economic and welfare activities, or for children in attending school.

Poor water quality (with deposits of soil particles) was cited by 32.5 percent of households, mainly from the districts of Nakasongola, Mbarara, Ibanda, Isingiro, Kiruhura, Lira, Dokolo, Amolatar and Sembabule. This indicates that soil erosion is occurring, due to deforestation combined with poor agricultural practices. The households interviewed indicated that conversion of forests into farmland is the greatest threat to the catchment/watersheds.

(xv) Indicator: Distance to collect fuelwood halved within ten years

Fuelwood is the major source of energy in the country for domestic cooking, heating and lighting. It is also the main energy used for small-scale industries and services such as baking, brick manufacture, brewing, hotels and schools.

The National Biomass Study (Forest Department, 2003) indicated that 73 percent of all the districts in Uganda are experiencing a deficit of accessible woody biomass for fuelwood. On average, from 2000 to 2007, the distance travelled to collect firewood increased from 0.73 km to more than 1 km per day (FSSD, 2007). In some districts, such as Kitgum, Nebbi, Gulu/Amuru, Nakasongola, Lira, Sironko and Adjumani, households travel more than 4 km per day to collect firewood, which is done largely by women and children.

The FIEFOC Baseline Survey further reveals that 3.4 percent of the people used plant residues for cooking, mainly in eastern Uganda, particularly in the districts of Iganga and Kamuli. This has far-reaching effects on soil fertility, because nutrient recycling through these residues is hampered. With these residues now used for cooking, soil nutrient status will quickly drop, with

the expected agricultural yield reduction, and the need for the application of expensive artificial fertilizers will unfortunately increase. This constitutes a threat to both food security and income-earning opportunities of households. If adequate fuelwood supplies were made available, such risks would be reduced.

(xvi) Indicator: Number of households and businesses using improved biomass energy technologies

According to the *FIEFOC Baseline Survey Report*, on average, a household uses 150 kg (2–3 m³) of fuelwood per month: 58.9 percent of the firewood used for cooking is obtained from natural forests and trees growing naturally on farm, and 34.6 percent is collected from plantation/planted forests. Twenty percent of the households use fuel-saving technologies, including energy-saving stoves for firewood and charcoal. This reduces fuelwood consumption by up to 50 percent, thus saving about US\$3,375,000 per household per year.

2.2.2. Performance against Annual Plans

Table 6 summarizes performance of the forestry sub-sector against the annual plans over the 2004–2006 period. **Annex 4** provides the details of performance against annual plans.

Table 6: Summary of Forestry Sub-sector Annual Performance

Capacity of Forestry Inspection Division (FID) / Forestry Sector Support Department (FSSD) to oversee performance of the forest sector	<ul style="list-style-type: none"> ○ FID/FSSD has gradually increased, from 3 to 9 permanent staff, but only 7 positions are filled to date. This level of staffing is still insufficient for the roles of policy and legislation reviews, coordination, supervision, monitoring, technical support, and development of guidelines and standards. ○ Their capacity to deliver is hampered by inadequate resourcing.
Capacity of District Forestry Services (DFS) to deliver decentralized forest services	<ul style="list-style-type: none"> ○ Performance in the districts (delivery of forest advisory services and community capacity building) is largely attributed to the NGOs and CBOs, with little contribution of District Forestry Departments. ○ The poor performance of the District Forest Departments is, largely due to under-resourcing (staff, equipment and operational funds). ○ There is very little attention being paid to management of natural forests. As a result, the rate of forest destruction outside protected areas is very high (2.9 percent annually).
Management of CFRs	<ul style="list-style-type: none"> ○ Management of CFRs improved during the first years of NFA. However, the physical and legal integrity of CFRs has been affected following the institutional instability caused by resignation of the Board and top management of NFA. This has caused lack of continuity and of institutional memory in the management of the CFRs. ○ There is increased investment in commercial timber plantation by NFA

	<p>and the private sector. Over the last five years, approximately 21,000 ha have been planted, which is more than what was planted during the previous 40 years.</p> <ul style="list-style-type: none"> ○ Collaborative forest management has taken root, with local communities increasingly participating and benefiting from management of CFRs.
Forest resource use and marketing	<ul style="list-style-type: none"> ○ Some progress has been made in improving timber harvest licensing in CFRs and the harvesting practices themselves. ○ Little progress has been made in developing processing technologies. ○ Little has been done in terms of managing forests for non-timber forest products, including their processing and marketing.
High quality seed supplied	<ul style="list-style-type: none"> ○ There has been improvement in the quality and quantity of seed and planting materials supplied to meet the growing demand for timber, agro-forestry, medicinal and ornamental tree species. ○ There is increasing investment in tree nursery production by the private sector. However, the quality is still low in most of the private nurseries. ○ Efforts are being made to establish local seed sources for sustainable supply and to reduce imports.

Sources: Ministerial Policy Statements 2004–2006

2.3 Achievements made and underlying reasons

The forestry sub-sector has made commendable progress in natural forest management, biodiversity conservation, development of plantations, improvement of community participation in forest management, and promotion of private sector investment in forestry. Transformation of the forestry sub-sector was successfully carried out in 1998– 2004. Today, the key institutions responsible for managing the PFE, sector regulation and monitoring are well established. Successful transformation of the sub-sector, together with sustained funding by development partners have led to progress in the following areas:

General sector achievements

- 1) **Planning and management of forest resources:** Plans include the Forestry Policy (2001), the National Forest Plan (2002), The Forestry Nature Conservation Master Plan (2002), District Forest Development Plans and forest management plans. These plans have been developed and linked to other plans in the sector such as PEAP, the Plan for Modernization of Agriculture, the National Environment Action Plan and District Development Plans.
- 2) **Revision of Uganda’s Forest Policy** in line with the ongoing United Nations forestry policy dialogue. The Policy has incorporated aspects of international forestry policies relating to forests, which include instruments such as the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC) and the non-legally binding Forest Principles of the United Nations.
- 3) **A great deal of training has been carried out**, especially for staff of the Forest Sector Support Department, District Forestry Services , National Forestry Authority, CSOs, local communities in CFM areas and clients of the SPGS. As a result, there is a shift in attitude towards quality management (e.g. use of quality planting materials, inventories before harvesting).

Achievements within the permanent forest estate

- 4) **About 5,000 ha of timber plantations have been established** by the NFA, largely through donor funding, to demonstrate good practices in plantation forestry and to lay the foundation for future revenues, thus ensuring financial sustainability for management of CFRs. This is equivalent to U Sh105 billion at age 20 years.
- 5) **The protected areas have been zoned into various conservation areas.** All national parks and wildlife reserves have been categorized as strict nature reserve zones or buffer zones, while CFRs have been categorized as strict nature reserves (241,200 ha), buffer zones (239,300 ha), and the remaining (785,300 ha) as production zones. This ensures the wise use of Uganda's forest biodiversity.
- 6) In production zones in CFRs of the tropical moist forests, **inventory, harvesting and the subsequent silvicultural practices have been vastly improved** to take advantage of information technologies available in this computer age.
- 7) The Uganda National Tree Seed Centre (NTSC) has increased the **supply of good quality tree seed and seedlings**, and continues to train private seed suppliers and nursery owners. The annual seed sales have increased from 200 kg in 1999/2000 to over 3,500 in 2008. Seedling production in NFA nurseries increased from about 60,000 in 2003/04 to more than 3 million, valued at U Sh700 million in 2007/08.
- 8) **A system for independent verification of legal sources of timber** has been developed and is being used. NFA is now ready to implement international standards for certification of sustainable management of selected forests. This will make it possible for Ugandan forest products to access local and international niche markets.
- 9) Big private companies are looking for opportunities to invest in the environment, especially forestry, as part of their corporate social responsibility. This initiative provides an opportunity for **public-private partnerships to operate in forest management.**
- 10) **Boundaries of many CFRs have been re-opened** to ensure effective protection of the forest reserves, and consequently the flow of benefits to the economy.
- 11) **Forest management plans for all CFRs have now been prepared.** The drafts will soon be submitted to the Minister for approval as provided for in the law.
- 12) **Collaborative forestry management with communities living near natural forests has finally become a reality.** To date, there are ten signed CFM agreements in natural forests and two signed in plantation forests; 11 draft CFM agreements are being reviewed and 33 CFM negotiations have been initiated.
- 13) **Conservation education is undertaken in the surrounding communities neighbouring the five major tropical moist forest CFRs.** The main targets have been primary school children and local communities.

Achievements in Private Forests

- 14) Since 2004, the NFA demonstration plantations have galvanized the private sector into **establishing about 15,000 ha of quality timber plantations**. The main drivers for this increased private sector investment included:
- sustained public education, which intensified during the consultation phase of the forestry sector transformation;
 - the SPGS, which provided seed money to catalyze investment. The scheme put emphasis on quality management as a basis for the investor to obtain the grant money;
 - a more legally secure licensing environment provided by the NFA, which created confidence in using central forest reserve land;
 - provision of technical support and guidance to farmers by NFA and the SPGS staff.
- 15) NGOs and community-based organizations (CBOs) are playing a key role in **providing forestry advisory services** in the districts. They are also highly active in piloting community-related forestry practices such as FBEs, advocacy and building community institutions. Their efforts have supplemented the DFSs, which are currently poorly resourced.
- 16) Farmers are increasingly engaged in forestry-related activities at various levels, including commercial investments, small FBEs and subsistence activities. As a result, there is a wide exchange of ideas leading to a **growing participation of farmers in forestry activities**.
- 17) **A nationwide programme to improve the livelihoods of the rural communities through forestry has been launched under the FIEFOC project**. The major outputs are expected to be an enabling environment for the households to participate in tree planting and watershed management as community groups.

2.4 Failures in attaining the sector outcomes and underlying reasons

There have been many challenges, such as encroachment, under-resourcing of the District Forestry Service, institutional inadequacies, inadequate understanding and limited skills in operating the forestry-related business, limited incentives for conserving or establishing forests, and inadequate political will to deal with illegal activities, which have all led to the continuing loss of forest cover in Uganda.

Intense social tension between the institutions managing forests and the local people has escalated after a government directive to halt removal of encroachers from forest reserves. As a result, people have been encroaching on forest reserves, responding with hostility to efforts at stopping them. This has led to serious conflicts, including running battles between government institutions and local people, often encouraged by local politicians. Staff and local people have sometimes been injured in the scuffles. Due to the uncertainty of the Government's position on forest reserves, even the alliance between forest management institutions and law enforcement agencies has started to disintegrate.

Local governments used to raise most of their revenues from graduated tax. When it was abolished, the Government promised to compensate the districts for this loss in revenue, but it turned out that the amounts given in compensation were far below what they had been collecting from graduated tax. Consequently, most district programmes such as forestry, which are not funded from conditional grants, are in the situation where they can barely pay staff salaries.

While formation of the NFA was properly thought out and subsequently well funded (at least for the first four years), the DFDs and private forest owners were not given due consideration and funding. In the absence of good forest management by the latter two, the forests outside the protected areas will continue to deteriorate and ultimately, the NFA will find it increasingly difficult to hold on to the CFRs. Other institutional inadequacies include, but are not limited to, corruption among some staff, inadequate staffing and low motivation.

Most of the forestry revenue that could be collected by the districts has not been, because the DFDs are under-resourced. For example, the District Forest Officer (DFO) of Masindi District, estimated that in 2005/06, he collected only 42 percent of the revenue that had been estimated by District Finance Committee. On the other hand, even the revenue being collected is not reinvested in forestry. For example, only about 5 percent of the revenue generated from forestry in Masindi District was reinvested in 2006/07.

There is very little management in private natural forests and many are being converted into agricultural lands. The main reason is that the private forest owners are receiving little or no financial returns for keeping their lands under natural forest cover. While initial steps have been made to provide incentives for exotic species plantation development, nothing has been done to encourage private natural forest management.

2.5 Constraints and challenges faced

The key challenges facing the forestry sub-sector include:

- (i) Uganda's human population and economy are growing, leading to an ever-increasing demand for forest products. The challenge is how to step up the supply of forest products to meet the rising demand, which currently exceeds supply.
- (ii) Given the current population and economic trends, most of Uganda's energy needs will continue to be met from woody biomass for many years to come. Therefore, the challenge is how to more efficiently use the current biomass energy resources and their potential productivity.
- (iii) Enforcement of laws, regulations and standards relevant to forestry is a challenge to forest management, largely because of political positions that depend on voting in times of elections.
- (iv) Deforestation and degradation of natural forests is largely due to the cutting down of forests to meet financial and domestic energy, and food needs of the people. The challenge is how to transform forest management and conservation, as well as trees on farms into profitable enterprises.
- (v) Deforestation and forest degradation are not seen as urgent problems that need priority attention by the Government. Therefore, the challenge lies in changing the attitudes of decision-makers so that due priority is given to forestry.
- (vi) Inadequate managerial and technical expertise, and low levels of technology in forest resource management and use are constraints to the expansion of the forestry sector; some of the main areas where more expertise is needed include establishment and management of profitable natural regeneration, tree growing and forestry enterprises, processing of forest products and research.

- (vii) Forests provide direct and indirect benefits to the local people, the country and the international community at large, and yet most of the values associated with these benefits are not reflected in the national accounts. The challenge is how to attach acceptable financial values that can also be included in the national accounts.
- (viii) Commercial timber growing is a long-term investment, with poor cash flows for most of the investment period (15–30 years for timber plantations). It is prone to unique problems such as fires and disease, which remain risks to investments for a long time. For the same reasons, accessing investment finance from financing institutions is difficult. Therefore, the challenge is how to create and sustain an enabling environment that attracts investment in tree growing.
- (ix) There is little investment in forestry in northern Uganda, largely due to the insecurity that has persisted for a long time. This has been a major constraint and will continue to be so until full peace returns to the region.
- (x) The fact that DFDs and the Forestry Sector Support Department have been grossly under-resourced has continued to be a key constraint, especially in regulating and supervising forestry activities in the country.
- (xi) In many cases, investment in timber tree growing has been made without due understanding of the market forces and trends. As a result, market requirements such as product type, quality and quantity have been compromised for populist reasons.
- (xii) One of the key constraints to profitable forest management is availability of relevant information in a timely manner and in formats that can readily be used by investors.
- (xiii) The widespread perception of forestry as mainly the monoculture plantation of timber species leads to neglect of the potentials of the diverse native as well as exotic, multipurpose, multi-stage tree growing. These potentials are more attractive to the rural people who tend to hedge against risks through multi-purpose production from their small parcels of land.

3. ANALYSIS OF THE SUB-SECTOR'S LINKAGE TO NATIONAL DEVELOPMENT

The linkages between the forestry sub-sector and national development are shown in Annex 5.

3.1 Status of forestry resource stock, trends and implications for sustainability

Box 2: Uganda's population growth compared to other countries

In 1991–2002, Uganda's average annual population growth rate of 3.2 percent was higher than that of the Republic of Tanzania (2.9 percent), Kenya (2.9 percent) and Rwanda (2.5 percent), making it one of the countries with the highest average annual growth rates in the Eastern Africa Region.

During the same period, the average growth rate of Africa's population was 2.1 percent and the global rate was 1.3 percent.

Source: Extract from 2002 Uganda Population and Housing Census – Analytical Report: Population Size and Distribution (UBOS, 2006).

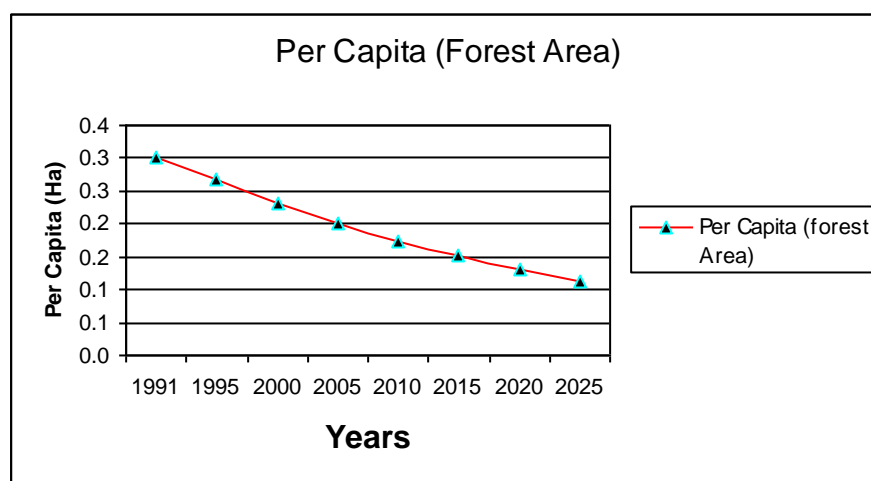
Uganda's forests and woody biomass resources are under severe pressure from a fast growing population and a growing economy. The government's target rate of real economic growth is 7 percent per annum (GoU, 2007) and the average population growth rate from 1991 to 2002 was 3.2 percent (UBOS, 2002). This makes

it the highest growth rate in the Eastern African Region (Box 2), creating substantial demand for timber and wood products. Forest land is being rapidly cleared for household food production and commercial agriculture, and also to provide for timber and energy needs. Even the protected areas have been seriously affected by encroachment and indiscriminate timber harvesting.

The *National Biomass Study* (2003) projected a decline in the per capita forest area from 0.3 ha in 1991 to 0.1 ha in 2025 (Figure 5). If this trend in forest loss continues and there is no substantial investment in forestry, it will result in:

- ✓ increased hardships for the poor who directly derive their livelihoods from forests and trees for their energy needs;
- ✓ reduced energy supply: over 97 percent of the energy needs of Ugandans come from woody biomass;
- ✓ decreased quantity and quality of water for domestic and industrial use;
- ✓ reduced raw materials for construction;
- ✓ increased global temperatures;
- ✓ silting of rivers and lakes;
- ✓ adverse effects on the forestry-related sectors such as fisheries and livestock;
- ✓ spending the scarce foreign currency to import forest products or substitutes for timber.

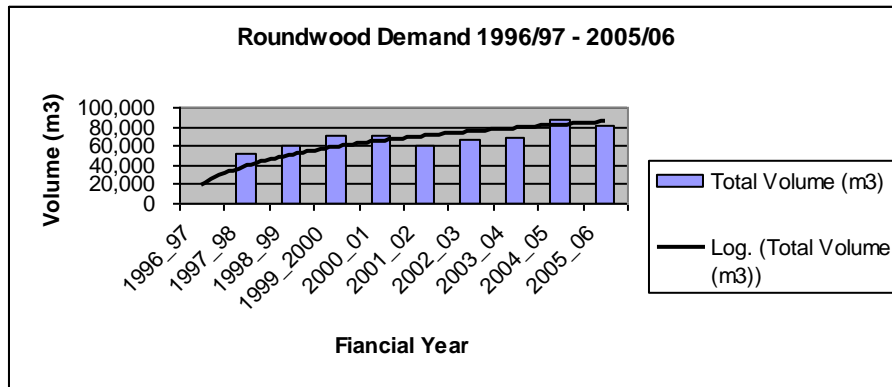
Figure 5: Per Capita Forest Area in Uganda



Source: Forest Department, 2003

Currently, timber harvesting is at unsustainable levels. Statistics from the NFA show that the volume of timber harvested and moved by licensed pitsawyers jumped from 55,000 m³ during FY 2004/05 to 100,000 m³ during FY 2005/06 (NFA, 2005/06). See Figure 6.

Figure 6: Roundwood Demand, 1996/97–2005/06



Source: Processed from NFA Database

Almost all the timber from natural forests comes from outside protected areas, and the mature forest plantations are almost depleted.

Industrial Forest Plantations

Investment in industrial forest plantations is important for meeting the growing demand for forest products. Figure 7 shows that the deficit of timber from plantations will continue to become pronounced until the current four-year crop reaches maturity in 14–16 years. In the meantime, this will mean increased pressure on the current natural forests. Today, this pressure is more intense in forests on private land, but this is shifting to protected areas as the private natural forests get exhausted.

Figure 7: Available Supply of Plantation Timber Resources



Source: National Forestry Authority, 2008

It has been estimated that Uganda's internal market will need about 1.5 million m³ of timber per year by 2025 (NFA, 2005). To meet this demand, an average of 13,000 ha of mature crop will be required annually, which means a total of nearly 200,000 ha of industrial forest plantations (Annex 9).

Natural forests

Timber trees on private lands and mature timber plantations in CFRs are likely to be exhausted within 3–5 years (by 2011–2013). In addition, the available stock in natural forests (Table 7) will not be able to meet the demand for timber after 2011, given the sustainable harvesting levels of 53,000 m³/year.

Table 7: Stocking of Timber Trees in Production Zones of Uganda's Five Main Central Forest Reserves with Tropical Moist Forests

Forest	Stocked area	Net volume (m ³)/ha	Net volume (m ³)	Harvestable volume (m ³) in 30 years	Annual sustainable harvest (m ³)
Itwara	4,496	60	266,056	89,920	2,997
Budongo	29,445	63	1,839,826	588,900	19,630
Bugoma	24,550	77	1,699,447	491,000	16,367
Mabira	13,640	75	1,028,045	272,800	9,093
Kalinzu	7,035	70	490,262	140,700	4,690
Total	79,166	69	5,323,636	1,583,320	52,777

Source: National Forestry Authority, 2008

3.2 Millennium Development Goals

MDGs are an important step to increase the focus on the poor and bring them out of the poverty trap. The forestry sub-sector is increasingly seen as a cross-cutting contributor in achieving them, as outlined below.

MDG 1: Eradicate extreme poverty and hunger.

Most Ugandans depend on forest and tree products for energy, building materials, medicine, wild foods, supply of clean water and maintenance of soil fertility. FBEs (e.g. crafts, beekeeping, fuelwood production, poles, charcoal, fruits, and fodder) are gaining prominence in raising the cash incomes of the poor.

MDGs 2 and 3: Achieve universal primary education / Promote gender equality and empower women.

Availability and access to forest resources can greatly contribute to the achievement of Universal Primary Education. From 1996 to 2004 in Uganda, primary school enrolment more than doubled, from 3.1 million pupils to 7.4 million; this required a corresponding expansion of infrastructure. Forestry products have played a key role in expanding this infrastructure by providing timber and furniture.

Firewood for domestic use is usually collected by women and children. As stated earlier, the average distance walked per day in search of firewood is now more than 1 km (in some places,

over 4 km) and is still increasing. This has far-reaching implications for women and children in terms of time and energy for carrying out other productive work and for accessing education. The establishment of about 7,000 ha of fuelwood plantations (Forestry Department records, 2002) in the urban and peri-urban areas between 1990 and 2000 (Forestry Department Records, 2000) has greatly contributed towards reducing this distance for women and children who live in these areas, by allowing them free access to collect dry wood for domestic use.

MDGs 4 (Reduce Child Mortality) MDG 5 (Improve Maternal Health) and MDG6 (Combat HIV/AIDS, Malaria and Other Diseases)

In Uganda, many people still depend on herbal medicine. Data on the population segment that uses herbal medicine in Uganda is scarce. However, the World Health Organization (2003) estimates that in Ghana, Mali, Nigeria and Zambia, the first line of treatment for 60 percent of children with high fever resulting from malaria is the use of herbal medicines at home; the situation is similar in Uganda. As a result, there are many palliative and curative herbal medicines from forests and trees for HIV/AIDS, maternal health care, malaria control, treatment of children's diseases and other human ailments. The National Chemotherapeutics Research Laboratory is now taking the lead role in the development of herbal medicine from Uganda's forests.

MDG 7: Ensure environmental sustainability.

Since forests, trees and other ecosystems based on woody vegetation are a key component of the environment, sustainable forest management (SFM) is important for ensuring environment sustainability. The principles of SFM have been integrated into the Constitution of Uganda, forestry sector policies and laws, and other land and environment related policies and laws. The macro-economic policies such as PEAP and the Plan for Modernisation of Agriculture have also integrated the principles of SFM. However, the implementation of the policies, laws and programmes remains a challenge.

In Uganda, forests play a key role in protecting water catchments, ensuring sustainable supply of water for domestic consumption, industrial use and generation of energy. Access to safe drinking water, is 61 percent (UBOS, 2006) due to drilling of boreholes, protection of wells and springs and treatment of water from open reservoirs. All these sources depend on watersheds protected by forests.

MDG No. 8: Develop a global partnership for development.

Because of its cross-cutting nature, forestry provides a platform for global partnerships in biodiversity conservation, climate change, conservation of water resources, sustainable land management and improvement of governance.

Uganda subscribes to the Paris Declaration on Aid Effectiveness, 2005, in which governments, multilateral and bilateral development institutions commit themselves to the following, among others:

- strengthening partner countries' national development strategies and associated operational frameworks (e.g. planning, budget and performance assessment frameworks);

- increasing alignment of aid with partner countries' priorities, systems and procedures and helping to strengthen their capacities;
- enhancing donors' and partner countries' respective accountability to their citizens and Parliaments for their development policies, strategies and performance;
- eliminating duplication of efforts and rationalize donor activities to make them as cost-effective as possible;
- reforming and simplifying donor policies and procedures to encourage collaborative behaviour and progressive alignment with partner countries' priorities, systems and procedures;
- defining measures and standards of performance and accountability of partner country systems in public financial management, procurement, fiduciary safeguards and environmental assessments in line with broadly accepted good practices and their quick and widespread application.

3.3 Forests and trees as a core asset for national development and prosperity

Economic growth

Forests, trees and woodlands, important natural resources in the country, are capable of producing numerous products and services to support economic growth, create jobs and contribute to the livelihoods of most of the people. Whereas the contribution of the agricultural sector has continued to decline, the forestry sub-sector has been growing at an average rate of 5.7 percent for FY 2001/02–2005/06, thus contributing directly to the growth of the economy, which has also grown at the rate of 5.7 percent for the same period (UBOS, 2006).

Fuelwood, timber, poles, and other derivatives from trees are among the products contributing to this growth. They have been important in the history of mankind, providing for people's energy needs, domestic comfort, health, security and development. In addition, they play a wider role of environmental protection and biodiversity conservation. The forest resources also have great potential for increasing exports and generating products such as paper, plywood and parquets. This is in line with the Government's objectives of increasing exports from the non-traditional sources and diversifying production.

Employment and prosperity

The contribution of forestry to the income of the people living near forests will shift from the use of raw resources to processing, as the economy continues to grow and investment in the forestry sector increases (e.g. industrial plantations, timber, plywood, veneer processing and ecotourism). This will create more avenues for improving people's livelihoods through trade and employment.

Future trends show that employment in the forestry sector will increase considerably in plantation establishment. By 2025, about 100,000 jobs are expected to be created (Table 8) from forest plantations alone.

Table 8: Future Trends in Job Creation from Industrial Forest Plantations, 2008–2025

Year	Area to be planted (ha)	No. of Jobs	Value in U Shs
2008	6,100	3,050	5,490,000,000
2009	6,200	3,100	5,580,000,000
2010	6,760	3,380	6,084,000,000
2011	7,390	3,695	6,651,000,000
2012	8,020	4,010	7,218,000,000
2013	8,650	4,325	7,785,000,000
2014	9,280	4,640	8,352,000,000
2015	9,910	4,955	8,919,000,000
2016	10,540	5,270	9,486,000,000
2017	11,170	5,585	10,053,000,000
2018	11,800	5,900	10,620,000,000
2019	12,430	6,215	11,187,000,000
2020	13,060	6,530	11,754,000,000
2021	13,690	6,845	12,321,000,000
2022	14,320	7,160	12,888,000,000
2023	14,950	7,475	13,455,000,000
2024	15,580	7,790	14,022,000,000
2025	16,210	8,105	14,589,000,000
	196,060	98,030	176,454,000,000

Source: National Forestry Authority, 2007

3.4 Backward and forward linkages of forestry and climate to other sectors' performance

The forestry sub-sector provides linkages with other sectors. When forests are created (e.g. when a forest plantation is established), many urban centres and the businesses associated with them are also created. This also occurs where there is active management of natural forests. On the other hand, forest management creates markets for products and services that are necessary for their management, thus spurring the pace of development. Examples of linkages are given below.

Manufacturing industry

Forestry provides markets for tools and equipment manufactured locally by the formal manufacturing firms and the artisans, including polythene tubes and sheets for nurseries, hoes, pangas, wheelbarrows, slashes and papyrus mats, among others. Tools and equipment worth U Sh700 million will be required to produce the planned 20 million seedlings over a five-year period.

Food production and processing

Forestry is predominantly rural-oriented and labour-intensive. This tends to create food processing businesses such as maize mills (e.g. around Budongo Central Forest Reserve), making of local brews and restaurants. The trading centres around CFRs, including Budongo, Kalinzu, Oruha, Mafuga, thrive due to the labour that the forests attract. For example, when the

sawmilling industry stopped in Budongo, Nyakafunjo Trading Centre collapsed and others such as Nyabyeya, Nyabigoma and Kinyala stagnated.

Ecological services

Forests, woodlands and trees provide ecological services and support to other sectors, principally agriculture, livestock production, industry, water, energy, health, wildlife, and tourism, although they are often taken for granted or poorly understood. Almost all forest reserves (over 1 million ha) serve the important functions of protecting biodiversity, water catchments, riverbanks, lakeshores and stabilizing of steep slopes.

Forests are important for their role in ameliorating climatic conditions, thus making it possible for sustained crop production. The *Uganda National Household Survey 2005/06* (Agriculture Module) revealed that 43 percent of all national crop plots suffered from damage, mainly due to rain shortage (19 percent), followed by crop disease (10 percent) (Kazooru, 2007).

Forests and woodlands maintain high water table levels, enabling the country to rely on underground water supplies. The Government's Water for Production Programme in support of the PEAP would be rendered unviable since it requires these natural regulators and reservoirs of water flow. The entire country would be rendered unviable for cattle grazing and agriculture if these CFRs were destroyed (Box 3).

Box 3: Impact of Forest Degradation on Water Supplies

“There are over 1.3 million people in Mubende, Kiboga and Kibale Districts. They depend on the water caught [captured?] by the forests in the Mubende–Kiboga hills, which constitute an important part of the Kafu River watershed. The forests in these hills and valleys ensure that the boreholes, wells and dams in the area are constantly refilled for all these people and even others beyond. Today, the leaders in Mubende and Kiboga admit that water has become a major concern, following forest clearances. Boreholes and dams constructed recently at great expense to the Government of Uganda are drying up. In the eastern part of the country, the 5,800 ha of West Bugwe and Igwe Luvunya Central Forest Reserve lies between the harsh weather in the Karamoja Region and the more mild weather of the Central Region, which are badly degraded. The forests and wetlands ringing Lake Victoria stand between the survival and extinction of the fish in the lake. Millions of people depend on this lake for their livelihoods. Fish exports account for a significant part of Uganda's national revenues. Millions of people live along the Nile. We cannot guarantee their survival when the lake becomes a death trap. In Masindi and Hoima Districts, private forests are being exterminated to grow sugarcane and tobacco. Money in the pocket today, but tomorrow may not be guaranteed. Remember the children of Israel who complained to God that they were tired of manna without meat. When He gave them quail, they were so greedy that they ate it until they grew sick and many died (Numbers 11:31-34)”.

Source: Brief to His Excellency, the President, on Encroachment and Functions of Central Forest Reserves in Uganda, NFA June 2005.

Biomass energy

Wood is by far the most important source of energy in Uganda. Most of this energy is consumed as firewood and charcoal at the domestic level and by small- and medium- scale processing enterprises. Although the importance of petroleum and hydro-electric power is growing, it is

expected that woodfuel will continue to be the dominant source of energy in Uganda for the foreseeable future.

Today, the per capita fuelwood consumption is about 1 m³, for a total national consumption of about 30 million tonnes of woody biomass energy; this puts a severe strain on the available forest resources. Moreover, IUCN (2001) estimates that when kerosene is substituted for charcoal in urban households, it would result in an increase in the national import bill by US\$180 million (U Sh324 billion) annually. Such an action would also lead to a loss of jobs by the poor who are involved in woodfuel (charcoal and firewood) income-generating activities.

Although the Government and civil society are promoting energy-efficient technologies, such interventions are still insignificant, and hence have not had any significant effects on reducing the trend of consumption of woody biomass. The increasing electricity tariffs have further contributed to increased demand for biomass energy, especially in urban areas.

The construction industry

Forests and trees are an important source of construction materials by providing timber, poles, ropes and other construction materials. Over 98 percent of dwelling units in Uganda use timber or poles for roofing (UBOS, 2006). The construction industry, which has grown at a rate of about 10 percent annually since Financial Year 2001/02, is directly linked to the increasing demand for forest products.

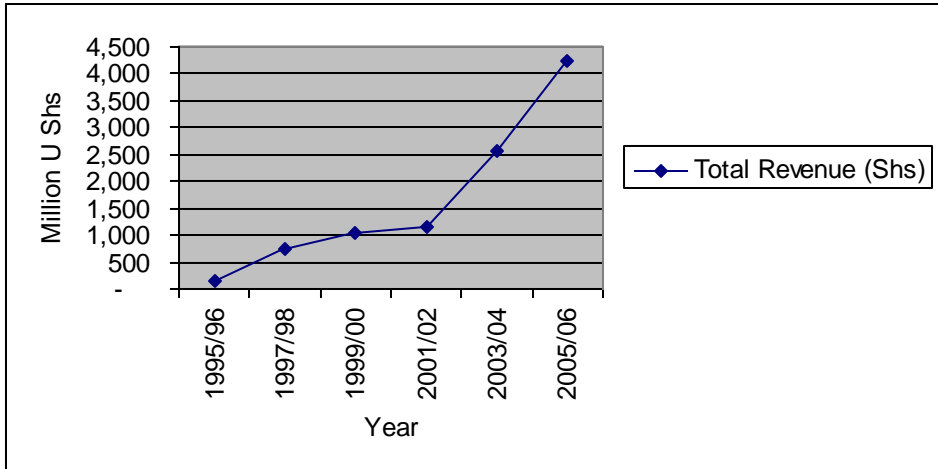
Trade in forestry products and services

The total economic value including all marketable and non-marketable values of Uganda's forests has been estimated at U Sh593.24 billion, roughly equivalent to 5.2 percent in GDP terms (Bush and Nampindo, 2004).

Currently, forest products are consumed largely for domestic purposes or are traded on the local market, although some products like plywood, block-board, flush doors, decorative veneers, chipboard, and ceiling boards are exported within the East African region. Given the decreasing supply of raw materials, the volumes exported are likely to decrease until the forest plantations established over the last four years are ready for harvesting, starting around 2015.

The revenue from timber has been increasing significantly from 1995 to 2006 (**Figure 8**).

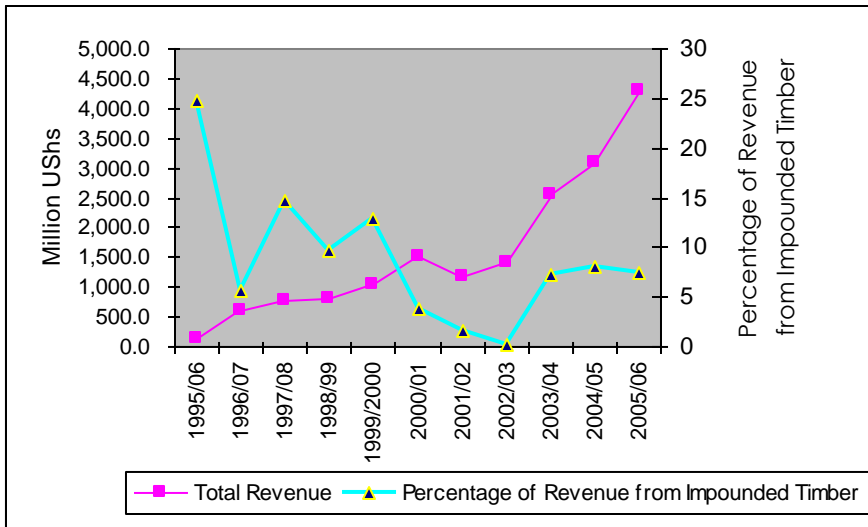
Figure 8: Revenue from Timber, 1995/06–2005/06



Source: National Forestry Authority, 2007b

Effectiveness in revenue collection is directly related to the degree of law enforcement and governance in forest management. Therefore, as effectiveness in law enforcement and governance increased, official revenue collection progressively rose (Figure 9).

Figure 9: Effect of Forest Law Enforcement and Governance on Revenue Collection, 1995/06–2005/06



Source: National Forestry Authority, 2007b

Support to the industrial sector

Forests are important in the protection of water catchment areas. Deforestation in the Lake Victoria catchment areas has resulted in the reduction of the water levels in the lake, which has in turn led to lowering of hydro-power output. This has severely affected industrial production, with growth in industrial output declining from 10.8 percent in 2004/05 to 4.5 percent in 2005/06 (MoFPED, 2006). Most manufacturers have been either forced to reduce production or to continue using generators at a higher unit cost.

Charcoal is an important input in the manufacture of steel, cement and lime. Recently, efforts have been made by local companies to establish partnerships with foreign companies to invest in energy plantations for industrial purposes. It was estimated that 1,600,000 m³ of woodfuel would be needed annually for the steel industry alone (NFA Records, 2005). This would be equal 4,000–5,000 ha of energy plantations per year, corresponding to an annual investment of U Sh6 billion (US\$3.3 million).

Support to the services sector

The services sector has grown substantially over the recent years with an estimated growth of 9.6 percent in 2005/06, contributing about 45 percent of the overall GDP (MoFPED, 2006). This growth is attributed mostly to the expansion of hotels and restaurants, which use charcoal and firewood for their energy requirements. As urbanization increases, the services sector is most likely to continue growing and therefore consumption of firewood and charcoal will rise accordingly.

3.5 Forest degradation and cost implications to other sectors and the economy

Deforestation and forest degradation have far-reaching cost implications for the economy, for example:

- When kerosene is substituted for charcoal in urban households, it would result in an increase in the national import bill by US\$180 million annually (IUCN, 2001). Such an action would also lead to a loss of jobs by poor people involved in woodfuel (charcoal and firewood) income-generating activities.
- Mabira Central Forest Reserve alone has captured 17.1 million tonnes of carbon dioxide, equivalent to US\$1.4 billion, which is what a polluter would have to pay to clean the air of the carbon released if the forest were destroyed.

4. EMERGING ISSUES, OPPORTUNITIES AND LESSONS LEARNED

4.1 Investment in industrial timber plantations

Studies have shown that investment in forest management can have an internal rate of return (IRR) of 12–16 percent, and when there is value addition in furniture, the IRR can increase up to 25–30 percent (UNIQUE Forestry Consultants, 2005). Future development of these business areas is predicted to expand. This provides a good opportunity for investment.

The expansion of plantation area will have future consequences of encouraging the development of processing industry.

Oil discovery in the Albertine Rift Region

The discovery of oil in western Uganda is an emerging issue that will affect forestry development in the region. Lessons learned from other countries such as Nigeria, Bolivia, Ecuador and Cameroon have shown that oil exploitation can have far-reaching impacts on the forest resources through deforestation, increased demand for biomass energy, pollution and forest fires. Oil exploration and exploitation will attract more people in the area, which will result in problems for natural forest resource security and sustainability.

The demand for timber and associated products will increase, which will provide an opportunity for investment in forestry. In addition, the oil revenues will provide an excellent opportunity to increase public investment in SFM.

Climate change and disaster risk reduction

Over the last decade, the country's climate has experienced changes resulting in rising temperatures, floods, landslides, increased droughts, reduced water volumes in surface water bodies and lowering of water tables. For example, in 2006, the water level in Lake Victoria drastically decreased. Largely as a result of these climatic problems, the Government has recognized the current and potential effects of climate change on the growth of the economy.

The relationship between climate change and insurance policy is an emerging issue. Climate change will have adverse impacts on insurance affordability and availability. For example, when natural disasters such as floods increase, the premiums rise, potentially slowing the growth of the insurance industry, and thus shifting more of the burden to governments and individuals. Thus, insurance companies will find investment in SFM a profitable venture.

But while climate change poses potential threats to the insurance industry, it also offers enormous opportunities for forestry. Insurance and pension funds can be available for long-term lending and thus can be a good source of investment finance. The forests established then play a major role in mitigating the effects of climate change.

Tree planting, woodland and forest establishment help mitigate the effects of climate change. Companies and individuals operating industries that produce greenhouse gas (GHG) emissions could be required to pay into a fund to be used for tree growing and good forest management. Legal provisions have already been made for such a fund in the NFTP, 2003 and the National Environment Management Act, 1995. Moreover, market-led opportunities for mitigation of the effects of climate change and the use of carbon sinks, carbon credits and taxation are available on the global market. Uganda can greatly benefit from tree planting through these opportunities.

The return of peace in northern Uganda and security in the Great Lakes Region

The war in northern Uganda has had mixed impacts on trees, forests and woodlands. According to a study by WCS/USAID (Nampindo, Phillipps and Plumptre, 2005), the areas that were occupied by rebels for a long time have not been used extensively due to insecurity, whereas the other areas, particularly those around the internally displaced people's camps have been seriously degraded. Forestry resources are very important for the implementation of the Northern Uganda Peace, Recovery and Development Plan. Specifically, forestry resources are vital for:

- timber for the booming construction industry;
- timber for other secondary industries such as carpentry and joinery;
- opportunities for export of forest products to south Sudan;
- attracting forest investment, because of the good rainfall and soils in the region;
- woody biomass for energy supply, both domestic and industrial
- medicines, fruits and other food;
- fibres for construction and woven domestic and tradable products.

This will create forest-based industries and employment. The Peace, Recovery and Development Plan therefore provides opportunities for:

- promoting investment in restoration of the degraded forest and the establishment of industrial forest plantations;
- ensuring that all development programmes include forestry support as one of their objectives.

Investment incentives in stimulating private sector-led growth

A number of incentives can be designed to promote investment, employment, product mix and other aspects of forest industry. The forestry sub-sector can take advantage of the following incentives provided for under the national policy and legal instruments:

- the Tree Fund, as established by the NFTPFA;
- the Environmental Fund, as provided for by the National Environment Management Act;
- the Uganda Investment Code, which provides for tax incentives for investments of US\$50,000 and over in processing of forest products, paper production, tourism, energy conservation, construction, and building (GoU, 1991). Such investments qualify for tax exemptions and credit opportunities, among others;
- tax-free incentives on agricultural produce, including the importation of tree seeds.

Forestry is recognized as an investment priority by the Uganda Investment Authority, with an office dedicated to the promotion of forestry investments.

Regional trade in the Eastern Africa Region

The fast tracking of the East African Federation is creating an economic block with an expanding market of about 120 million people. This market is becoming even larger with the return of peace in southern Sudan and eastern Democratic Republic of the Congo (DRC). The niches for forest enterprise in Uganda are eco-tourism, and forest products.

The global market for handicrafts is expanding, which Uganda is just beginning to tap, with contacts in Denmark, the United States of America, United Kingdom, Japan and China. Other forest products such as honey and other bee products are also in high demand, especially in China, which provides a huge market of about 1.3 billion people and an economy that has been growing at an average rate of 10 percent per annum.

Many large companies dealing in forest products in the global market today are increasingly demanding products from certified forests. This provides an opportunity for Ugandans to work towards certifying their forests in order to tap this market. The early African entrants in this market stand to sell at a higher premium.

The United Nations Climate Change Conference, held in Bali, Indonesia, 29–30 November 2007 agreed to include reducing emissions from deforestation and forest degradation (REDD) in the Clean Development Mechanism (CDM), which had previously been dominated by forest plantations. Uganda plans to take advantage of this to benefit from the restoration of natural forests and other SFM activities.

Payment for Ecosystems Services (PES) is a practice now emerging from the international forestry policy dialogue, especially from the multilateral environment agreements (MEAs) and the United Nations Forum on Forests (UNFF). Developing countries in South America and Asia are increasingly adopting this innovative source to fund SFM. For example, hydro-power companies are paying farmers to manage their lands within watersheds in order to ensure sustainable water supply for their hydro-power plants. In a similar way, Uganda is beginning to explore such possibilities through the United Nations Environment Programme (UNEP), the Global Environment Facility (GEF) and the Global Mechanism (GM) of the United Nations Convention to Combat Desertification, among others.

4.2 Lessons learned

Over the last 20 years, many programmes, projects and activities have been carried out in the forestry sector. The main lessons learned over this period include:

1. Restoration of the integrity of the CFRs is of national importance, and if encroachment is not firmly addressed, it will only escalate and lead to the complete destruction of the remaining forests.
2. Investment in forest management for timber is a long-term venture, often paying back over a period of 15–30 years for timber plantations and even longer periods for natural forests. Nonetheless, people are willing to invest, but financial support and other incentives, such as security of land tenure and tax breaks, are often necessary to catalyze this investment.
3. The Sawlog Production Grant Scheme (SPGS) has shown that public-private partnerships (PPPs) are very important for the success of timber plantation enterprises. It is even more important to attract PPPs into management of natural forests since most of the forest values are in services of public interest (e.g. climate amelioration, protection of water catchments and soil stabilization, which provide crucial support for agriculture, domestic and industrial water supplies, and hydropower).
4. For any programmes to succeed, it is important to align them with the political agenda of the Government. This would make it possible to place the programmes within the priorities of the political leadership.
5. Past experiences have shown that when some measures were put in place to fight corruption:
 - revenue collection increased over 16 fold over a period of ten years;
 - returns on legitimate investment increased when prices rose as cheap illegal forest products were removed from the market;
 - interest of the private sector in investing in industrial plantations surged from almost nothing to U Sh12 billion between 2004 and 2007;
 - degraded natural forests started to recover.
6. In addition, instruments such as the Constitution, the Forest Policy, and the forestry and land laws provide for reliable security of rights of local communities, particularly in communally owned forest/woodland areas.
7. Uganda needs diverse tree, woodland and forest habitats and species to prepare for the effects of climate change and the extremes of weather and concomitant physical events such as floods.
8. Diversity of tradable products is a key means for poor people to hedge their bets, and woodlands can provide them with a set of options in times of crisis.

9. At times, it takes a disaster for people to appreciate the importance of natural resources such as forests. For example, as a result of the recent environmental disasters including flooding, landslides and fluctuating weather patterns, there is now widespread understanding of the need for increasing the forest and tree cover, especially for environmental reasons.
10. Woody biomass will continue to be a leading source of domestic and commercial energy requirements in the foreseeable future, supporting over 90 percent of both urban and rural populations.
11. Wood and non-wood forest products are an important resource that supports the development of competitive FBEs among the poorer sections of society.
12. Sustained engagement of the local communities in tree, forest and woodland management decision-making can have far-reaching positive impacts on people's lives and on forests.

5. PRIORITIES, STRATEGIES AND KEY ASSUMPTIONS

This section establishes the forestry sub-sector priority interventions for the next five years under the National Development Plan. It includes the vision, goal, sub-sector priorities, strategies and activities, and the necessary investment plan. The roles and responsibilities of different stakeholders during the implementation of the Plan are also clarified. Key assumptions and risks that are crucial to its implementation have also been identified.

5.1 Vision and goal/mission for the forestry sub-sector

The vision of the forestry sector is stated in the Forestry Policy as: ***“A sufficiently forested, ecologically stable and economically prosperous Uganda”***. The policy also sets out the overall goal for forestry development as ***“an integrated forest sector that achieves sustainable increases in economic, social and environmental benefits from forests and trees by all the people of Uganda, especially the poor and vulnerable”***. In line with these strategic directions, the priorities during the next five years are described below.

5.2 Forestry sub-sector priorities

In contributing to national economic growth, employment and prosperity, the forestry sub-sector will deliver on the following priority interventions in the NDP, based on the issues and concerns raised through the assessment undertaken:

- Strengthening the District Forestry Service
- Improving community livelihoods from forest, tree and woodland resources
- Expanding and increasing economic productivity of forestry resources
- Promoting PPPs to increase economic returns from forests and trees
- Promoting forestry-based industries and trade
- Improving forestry information management
- Improve forest governance and management.

i. Strengthening the District Forestry Services

The District Forestry Services are poorly facilitated in terms of local government forestry staff (numbers and skills) and funding. This has made them ineffective in the management and supervision of the 70 percent of the forests in Uganda found outside protected areas. Priority will therefore be given to enabling the local government forestry offices at all levels to carry out their responsibilities.

ii. Improving community livelihoods from forest, tree and woodland resources

The local communities, especially in the rural areas, greatly rely on forest and tree products, biomass energy, human food and soil nutrient supply. Therefore, there is need to empower the communities at the lowest possible levels to get secure access to, and manage and use, their forestry resources optimally. Therefore, priority will be put on management of all types of forests to increase benefits to communities.

iii. Expanding and increasing the economic productivity of forestry resources

Today, unit production levels in natural and plantation forests are low. For industrial plantations, great efforts have been put into promoting the use of quality seed, matching species to sites, early planning, and the development of technical guidelines and standards. With these production practices, the private sector and the communities will increase the productivity of industrial timber plantations from the current 200–300 m³/ha to 400–600 m³/ha. Similar practices will be applied to increase on-farm tree productivity.

Products from natural forests will continue to be important for their high-grade furniture timber, ecotourism, genetic resources for production of medicines, and species improvement for agriculture, among others. Since Uganda's natural forests are relatively small, it is feasible to increase unit productivity through actions such as induced regeneration, assisted regeneration (enrichment planting) and forest protection.

iv. Promoting private-public partnerships in forestry developments

The PPP approach under the SPGS has spurred investment in the establishment of industrial timber plantations. PPPs are even more important for the management of natural forests, since most of their values are in services of public interest. Therefore, focus will be put on promoting PPPs in forestry developments, such as forest management, processing of forest products and the establishment of forest-based enterprises in the sub-sector. All efforts will be made to ensure that the PPP initiatives benefit the poor and vulnerable.

v. Promote forestry-based industries and trade

Uganda will run out of industrial timber plantations during the next 3-5 years. It should also be noted that industrial resources from natural forests on private land will run out at about the same time. It is estimated that the requirements for the local market will grow to approximately 1.5 million m³ of roundwood annually by 2025. In addition, the markets for other forest products such as honey, fruits and medicines are rapidly expanding.

Production and processing capacity will therefore be increased to meet the market requirements (in terms of volumes and quality). This will be particularly important for the local communities, who will be encouraged to produce for the market in addition to subsistence.

vi. *Improving forestry information management*

Inadequate information is one of the major obstacles to good planning and subsequent investment. In some cases, information is available, but it is scattered and not readily available. In other cases, there is no up-to-date information (e.g. state of the non-timber forest resources). Given the wide range of interests in the forestry sector, priority will be placed on data collection, processing and dissemination, including information sharing and networking.

vii. *Improving governance in forest management and administration*

Governance in forest management has immediate and far-reaching implications for investment. The key issues in governance are corruption and limited government commitment to implement the relevant policies and laws. Corruption cuts across all levels of society, which has often led to forest crime and growing conflicts between forest managers and communities. This has in turn frightened away investors in the forestry sub-sector. However, civil society has played a big role in flagging cases of poor governance to the extent that the public is prepared to demand and fight for preservation and sustainable management of forests.

To improve forest governance, the private sector and civil society will play dominant roles.

5.3 Major sub-sector strategies for implementation of the priority interventions

Arising out of the above priorities and in line with the SIP, the following strategic objectives will be pursued:

- a) Improve the ability of forests and trees to yield increases in economic, social and environmental benefits for all people, especially the poor and vulnerable, now and in the future.
- b) Make positive changes in the restoration of environmentally degraded ecosystems.
- c) Promote research for the improvement of the productivity of the natural resource base.
- d) Establish comprehensive laws, policies, regulations, standards and guidelines, and ensure that they are enforced for efficient and effective management of the ENR.
- e) Strengthen the capacities of lead agencies and other institutions, including NFA, District Forest Services and Forestry Sector Support Department to implement programmes for environmental management.
- f) Build the capacity of the Ministry of Water and Environment to coordinate planning and monitoring, and account for the public resources provided for the management of the ENR.

Annex 6 provides the detailed forestry sub-sector plan matrix. However, the following is a description of the strategic interventions under the various objectives.

Strategic Objective 1: Improve the ability of forests and trees to yield increases in economic, social and environmental benefits.

Strategy 1.1 Improve the management of the permanent forest estate.

In order to meet the growing timber needs, the private sector and local communities will be licensed to grow industrial forest plantations in forest reserves. The Government will play supporting roles in promotions, demonstrations and information dissemination, among others.

The quality of forest management and processing of forest products will be improved to take full advantage of emerging local and export markets. Certification of forest products and better processing will facilitate access to profitable markets and result in higher incomes. International buyers are looking for forest products sourced from certified forests³ in developing countries. This development will aim at taking advantage of the market opportunities in the Eastern Africa Region. Although Uganda does not export many forest products, this is bound to change as it pursues a private sector-led development path enshrined in its forestry policy.

Private sector investment will focus on improving technologies for processing forest products, such as timber, resin, furniture and bee products. There will also be deliberate actions to expand and diversify the range of forest products from forest reserves.

Additionally, CFM will be promoted, building on the achievements of the last ten years. CFM is now beginning to yield substantial results in terms of expanding the horizons of local people to earn income from the forest, introducing forest-based enterprises, and eventually protecting the forests. This approach to forest management will be scaled up in terms of area of forest covered and number of households involved.

This strategy will be implemented through the following activities:

- managing natural forests for production according to sustainable forest management principles;
- increasing and maintaining forest plantation area in the PFE;
- improving the protection of the PFE;
- remove encroachers from forest reserves.
- re-demarcating and maintaining forest reserve boundaries;
- reviewing and updating Forest Management plans;
- expanding CFM;
- promoting private sector enterprises dealing in forest products and services from the PFE.

Strategy 1.2 Improve the management of forests on private and communal land.

Small-scale forest plantations will be established on private and communal lands with the Government playing the supporting roles of promotion, demonstration, and information dissemination among others.

³ Certified as a sustainable source by internationally recognized certification bodies such as the Forest Stewardship Council (SFC)

Focus will also be placed on ensuring that management of natural forests and woodlands yield financial returns on investment. It will entail increasing the stock of marketable tree species through enrichment planting of degraded areas and replanting of harvested areas. Harvesting practices will be improved to ensure higher income returns from products and services. Guidelines will be developed and disseminated to ensure the application of good practices in natural forest management.

This strategy will be implemented through the following activities:

- Increase and maintain forests on private/communal land.
- Support community livelihood initiatives.
- Develop guidelines for the management of private and customary natural forests and woodlands.
- Manage private and communal natural forests according to sustainable forest management principles.

Strategy 1.3 Improve the quality of tree seed and planting materials.

High quality tree seed and planting materials will be produced to meet the increasing demand for afforestation, reforestation, agro-forestry, and improvement of woodlands. This strategy will be implemented through the following activities:

- Improve tree seed collection, testing, storage and distribution.
- Establish and maintain quality tree seed sources.
- Maintain quality tree seed sources.
- Produce quality tree seedlings and planting materials.
- Develop and implement a tree improvement programme.

Strategy 1.4 Increase economic benefits of forests, woodlands and trees to communities

This strategy will support the flow of economic, social and environmental benefits from forests and trees to local communities, as well as contribute to improved conservation of the forest resources. Increased incomes will be created at the household level by increasing wood stocks on farm through agro-forestry and other farm forestry technologies. Some of the opportunities for this are:

- selling fuelwood and charcoal;
- growing of trees for transmission poles – the Ministry of Energy estimates that about 150,000 electricity transmission poles will be needed over the next five years;
- development of ecotourism – this is one of the fastest growing sectors in the world;
- growing or management of the forest for non-traditional tree products such as *Prunus africana* bark (medicinal), bamboo and gum Arabic;
- beekeeping for domestic use and trade in bee products;
- fruit, nuts and other foods, such as wild coffee.

Forestry Advisory Services will provide technical and professional advice. This will enable local people to develop small-scale forest-based enterprises and to increase incomes from forest and trees. The thrust will be in production of commodities that can attract processing industries and quick direct returns to communities so that they can earn meaningful value from their investments. People will be supported to invest in forest-based enterprises at sufficient levels (quantity and quality) to access good markets and realize a return on their investment. To this

end, the capacity of service providers to provide more advisory services will be developed at the same time.

This strategy will be implemented through the following activities:

- Increase wood stocks on farm.
- Improve capacity of the service providers to deliver quality Forestry Advisory Services
- Provide effective forestry services.
- Increase forestry based enterprises among local communities.
- Increase capacity to process timber products.
- Promote forest product certification to access niche markets.

Strategy 1.5 Expand the capacity and quality of harvesting and processing timber and non-timber forest products.

Forestry-based industries will be promoted by constructing a high-capacity sawmill, and hence increase the capacity to process timber and related products, provide a market for the industrial plantations, and support increased productivity, which is vital for economic growth and employment creation. The current sawmillers will be trained to increase their timber recovery from 25 to 40 percent.

The capacity to process non-timber forest products such as gums, resin, charcoal, bee products and fruits will be boosted. The focus will be placed on processing for markets which promote sustainable forest management.

This strategy will be implemented through the following activities:

- Improve harvesting practices for higher revenue.
- Improve forest products processing practices for higher revenue.

Strategy 1.6 Promote biodiversity conservation and its sustainable use

Natural forests on protected and private land will be managed for biodiversity conservation and increased economic returns to the Government, the private sector and local communities. Focus will be placed on protecting the integrity of the CFRs and promoting the improvement of the natural forests, especially those within important biodiversity corridors. Eco-tourism will be promoted to tap into the growing eco-tourism industry and demonstrate the financial returns that accrue from the non-consumptive use of these forests.

This strategy will be implemented through the following activities:

- Demarcate biodiversity conservation zones.
- Affirmative action to increase the abundance of threatened / endangered tree species.
- Develop eco-tourism.
- Improve management of biodiversity corridors.

Strategy 1.7 Promote business partnerships between public and private sector for forestry-based investments

The role of PPPs in increasing economic returns from forests and trees will be stepped up, building on the experience from the current initiatives such as SPGS. Incentive schemes for

private sector investment will be developed because they are crucial for ensuring increased forest productivity. Small-, medium- and large-scale investments in enterprises dealing in forest products and services will be encouraged. PPPs will also be used to boost household-level, forestry-based economic initiatives.

This strategy will be implemented through the following activities:

- Develop incentive schemes for private sector investment.
- Develop business partnerships between public and private sector for forestry based investments.

Strategy 1.8 Promote urban forestry

Tree growing in urban and peri-urban areas will be enhanced to increase aesthetic and environmental values, and provide opportunities for environmental education. In addition, the growing tree nursery enterprises in these centres will be supported to produce better quality planting materials.

This strategy will be implemented through the following activities:

- Mainstream forestry in urban development plans.
- Increase urban tree cover.

Strategic Objective 2: Make positive changes in the restoration of environmentally degraded ecosystems.

Strategy 2.1 Restore/Rehabilitate deforested and degraded watersheds.

This will take the landscape approach to planning and management. It will include protection, afforestation and re-forestation of the degraded and fragile landscapes like river banks, lakeshores, steep slopes (bare hills) and biodiversity hotspots and corridors. This strategy will be implemented through the following activities:

- Rehabilitate/restore degraded CFRs and local forest reserves.
- Rehabilitate/restore the degraded private and communal natural forests and watersheds.
- Rehabilitate fragile ecosystems (river banks, bare hills, lakeshores).

Strategic Objective 3: Promote research for the improvement of the productivity of the natural resource base.

Strategy 3.1 Conduct objective-driven forestry research

This strategy will target increasing the productivity and profitability of forests, and improving processing and marketing of forest products.

It is a crucial support strategy, especially in technology development, generating new information to facilitate management and production and improving practices. This will be carried out mainly through mainstream research institutions. However, emphasis will also be placed on informal research at the field level where stakeholders will be encouraged to question the reasons for the situation. In many cases, this will lead to finding local solutions to local problems or raising questions for formal research.

It is important to develop appropriate technologies that can propel forest management and improved use. To this end, current technologies will be improved, indigenous forest management practices adapted and new ones developed/adapted. Technology development will proceed together with research and training.

This strategy will be implemented through the following activities:

- Undertake social-economic impact assessments of forest management.
- Undertake applied research on key forest management issues.
- Undertake total economic valuation of key forest ecosystems.

Strategic Objective 4: Establish comprehensive laws, policies, regulations, standards and guidelines.

Strategy 4.1 Increase good governance and public accountability in forest management

Good governance in the forest sub-sector will be promoted as the basis for achieving economic, social and environmental benefits from forests and trees. This will be done through rigorous demonstration of integrity, transparency, accountability and professionalism, and the honouring of commitments in line with established policies and laws. Improved governance will ultimately lead to control of illegal activities, removal of forest encroachers, forest owners receiving their rightful benefits, and re-demarcation and maintenance of forest reserve boundaries.

Further, to enhance accountability within the sub-sector, the forestry legislative cycle started with the Forestry Policy in 2001, the National Forestry Plan (2002) and the National Forestry and Tree Planting Act (2003) will be taken to its completion. This will entail:

- gazettelement of Forestry Regulations to support policy implementation and enforcement of the NFTP;A;
- preparation and gazettelement of local government ordinances and by-laws;
- development and gazettelement of guidelines and standards;
- training of relevant stakeholders including the justice, law and order sector.

Additionally, in line with supporting good governance, CSOs and political organizations and/or leaders have increasingly become active in their role as the watch dogs of society with respect to how forests are managed, especially those held in trust by the Government. The aim here will be to promote a common understanding of the need to govern the forest in accordance with the policies and the law, and to provide for increased participation of the people in the affairs of forest management and administration. An understanding of the functions of forests in supporting water for production, municipal and domestic supplies, wildlife, fisheries and adaptation to climate change will be promoted through intra- and inter-sectoral coordination.

This strategy will be implemented through the following activities:

- Bring the legislative cycle to its completion.
- Enact and enforce forestry management by-laws and ordinances at all local government levels.
- Improve intra- and inter-sectoral cooperation.
- Deliberate engagement of the CSOs and political leaders in forestry sub-sector.

Strategic Objective 5: Strengthen the capacity of lead agencies and other institutions.

Strategy 5.1 Develop and implement a user-friendly information management system

Efforts will be put in gathering, processing and disseminating forestry-related information to address the current serious information gap in the forestry sub-sector. The information will be produced in formats that can easily be accessed and used by a wide spectrum of stakeholders. This will provide the basis for raising awareness of the contribution of forestry to growth, employment and prosperity.

Public education will be conducted to raise the profile of forestry in the Government, the private sector and farmers to promote investment in the forestry sub-sector.

This strategy will be implemented through the following activities:

- Develop an easy-to-use information management system for forestry sub-sector.
- Conduct public education.

Strategy 5.2 Strengthen the capacities of stakeholder institutions to supervise and effectively deliver forestry services

The resources (staff, budget, skills) available to government institutions (MWE, FSSD, local governments/ District Forest Departments, NFA) responsible for oversight of activities in forestry will be increased to a level where they can meaningfully tackle their responsibilities. NGOs, CBOs and service providers will also be supported to improve their skills in advocacy, lobbying and service delivery.

Particular attention will be paid to strengthening the capacity of DFS, and advocating for a local government organizational review to provide for more staff, establish sustainable funding mechanisms (e.g. conditional grant, re-investment of forestry revenues, PES) and firmly entrench forestry activities into the District Development Plans (DDPs).

In order to generate sufficient funds for implementing this NDP, the capacity of stakeholders will also be built to develop income sources from forestry.

In terms of improving skills, training institutions will be equipped to produce skilled workers that need re-training only when changing their field of production. Therefore, the approaches will range from training on the job, vocational training and exchange programmes to raising the skills content of curricula at formal forestry training institutions.

This strategy will be implemented through the following activities:

- Improve the staffing level of forest sub-sector for the implementation of the NDP.
- Improve staff skills to deliver forestry products and services.
- Develop motivation mechanisms for institutional staff and partners.
- Procure and operate vehicles.
- Expand the infrastructure for effective management of the forestry sub-sector.
- Improve skills of NGOs/CBOs to implement forestry programmes.

Strategic Objective 6: Build the capacity of the Ministry of Water and Environment to coordinate planning and monitoring, and account for the public resources provided for management of the ENR.

Strategy 6.1: Mobilize Investments for growth of the forestry sub-sector

To address the financial constraints related to the long pay-back period of forestry-for-timber investments, there will be efforts to mobilize funds to stimulate investments in forestry developments. The funds will be mobilized through:

- the establishment of the Tree Fund;
- innovative financing mechanisms for forestry developments, e.g. payment for environmental services (PES), carbon financing;
- increased capacity to generate revenues from the forest reserves;
- plans and budgets for government institutions;
- government instruments such as guaranteeing loans and provision of tax relief;
- PPPs;
- purely private initiatives in lucrative investment areas such as plantation establishment and sawmilling;
- official development assistance.

This strategy will be implemented through the following activities:

- Develop innovative financing mechanisms for forest development (e.g. trading in carbon, and PES).
- Implement the innovative funding mechanisms.

5.4 Estimated investment costs

Total estimated cost for implementing this plan is U Sh745 billion. It is expected that 42 percent (U Sh316 billion) will be provided by the Government of Uganda, while 58 percent (U Sh429 billion) will come from the private sector and NGOs. Table 9 shows a summary of the annualized costs of implementation. However, if the financial ceilings of the MTEF are not revised to take this budget into consideration, the priorities in Table 10 will be implemented. In this case, government contribution will be U Sh215 billion (47 percent) and the private sector and NGOs will contribute U Sh239 billion (53 percent).

Table 9: Summary of Investment Costs (Revised MTEF)

Sub-sector Objectives and Strategies	Annualized Costs					Total	Government	Private sector and NGOs
	Year 1	Year 2	Year 3	Year 4	Year 5			
1 Improve the ability of forests and trees to yield increases in economic, social and environmental benefits for all people, especially the poor and vulnerable, now and in the future.								
1.1 Improve the management of the permanent forestry estate.	26,830	40,700	35,400	46,400	42,400	191,730	89,697	102,033
1.2 Improve the management of forests on private and communal land.	10,600	12,770	14,740	16,670	18,700	73,480	750	72,730
1.3 Improve the quality of tree seed and planting materials.	4,675	4,775	4,475	4,475	4,475	22,875	14,900	7,975
1.4 Increase economic benefits of forests, woodlands and trees to communities.	30,460	35,500	35,500	38,000	37,960	177,420	107,424	69,996
1.5 Expand the capacity and quality of harvesting and processing timber and non-timber forest products.	-	150	100,100	-	-	100,250	250	100,000
1.6 Promote biodiversity conservation and its sustainable use.	495	525	555	585	625	2,785	1,805	980
1.7 Promote business partnerships between public and private sector for forestry-based investments.	8,400	11,400	13,400	18,400	23,400	75,000	13,300	61,700
1.8 Promote urban forestry.	95	95	96	96	96	478	437	41
Subtotal	81,555	105,915	204,266	124,626	127,656	644,018	228,563	415,455

Sub-sector Objectives and Strategies	Annualized Costs					Total	Government	Private sector and NGOs
	Year 1	Year 2	Year 3	Year 4	Year 5			
2 Make positive changes in the restoration of environmentally degraded ecosystems								
2.1 Restore/rehabilitate deforested and degraded watersheds.	4,500	6,501	8,501	10,502	12,502	42,505	31,503	11,002
Subtotal	4,500	6,501	8,501	10,502	12,502	42,505	31,503	11,002
3 Promote research for the improvement of the productivity of the natural resource base								
3.1 Conduct objective-driven forestry research.	100	200	200	200	100	800	800	-
Subtotal	100	200	200	200	100	800	800	-
4 Establish comprehensive laws, policies, regulations, standards and guidelines, and ensure that they are enforced for efficient and effective management of the environment and natural resources								
4.1 Increase good governance and public accountability in forest management.	310	260	255	255	255	1,335	1,335	-
Subtotal	310	260	255	255	255	1,335	1,335	-
5 Significantly strengthen the capacities of lead agencies and other institutions to implement programmes for environmental management								
5.1 Develop and implement a user-friendly information management system.	200	600	550	550	550	2,450	1,260	1,190
5.2 Strengthen the capacities of stakeholder institutions to supervise and effectively deliver forestry services.	10,670	11,300	10,545	9,811	10,643	52,968	52,268	700
Subtotal	10,870	11,900	11,095	10,361	11,193	55,418	53,528	1,890

Sub-sector Objectives and Strategies	Annualized Costs					Total	Government	Private sector and NGOs
	Year 1	Year 2	Year 3	Year 4	Year 5			
6 Build the capacity of MWE to coordinate planning and monitoring and account for the public resources provided for management of the ENR.								
6.1 Mobilize investments for growth of the forestry sub-sector.	200	200	100	-	-	500	260	240
Subtotal	200	200	100	-	-	500	260	240
Total	97,535	124,976	224,417	145,943	151,706	744,576	315,989	428,587

TABLE 10: SUMMARY OF INVESTMENT COSTS WITHIN THE CURRENT MEDIUM-TERM EXPENDITURE FRAMEWORK

Sub-sector objectives and strategies	Annualized costs					Total	Government	Private sector and NGOs
	Year 1	Year 2	Year 3	Year 4	Year 5			
1 Improve the ability of forests and trees to yield increases in economic, social and environmental benefits for all people, especially the poor and vulnerable, now and in the future.								
1.1 Improve the management of the permanent forest estate.	24,830	34,400	27,300	36,500	30,700	153,730	78,697	75,033
1.2 Improve the management of forests on private and communal land.	10,600	12,770	14,740	16,670	18,700	73,480	750	72,730
1.3 Improve the quality of tree seed and planting materials.	4,675	4,775	4,475	4,475	4,475	22,875	14,900	7,975
1.4 Increase economic benefits of forests, woodlands and trees to communities.	8,460	8,500	8,500	8,500	8,460	42,420	19,424	22,996
1.5 Expand the capacity and quality of harvesting and processing timber and non-timber forest products.	-	150	100	-	-	250	250	-
1.6 Promote biodiversity conservation and its sustainable use.	495	525	555	585	625	2,785	1,805	980
1.7 Promote Business	5,000	8,000	10,000	15,000	20,000	58,000	11,600	46,400

Sub-sector objectives and strategies	Annualized costs					Total	Government	Private sector and NGOs
	Year 1	Year 2	Year 3	Year 4	Year 5			
partnerships between public and private sector for forestry-based investments.								
1.8 Promote urban forestry.	95	95	96	96	96	478	437	41
Subtotal	54,155	69,215	65,766	81,826	83,056	354,018	127,863	226,155
2 Make positive changes in the restoration of environmentally degraded ecosystems.								
2.1 Restore /rehabilitate deforested and degraded watersheds.	4,500	6,501	8,501	10,502	12,502	42,505	31,503	11,002
Subtotal	4,500	6,501	8,501	10,502	12,502	42,505	31,503	11,002
3 Promote research for the improvement of the productivity of the natural resource base.								
3.1 Conduct objective-driven forestry research.	100	200	200	200	100	800	800	–
Subtotal	100	200	200	200	100	800	800	–
4 Establish comprehensive laws, policies, regulations, standards and guidelines and ensure that they are enforced for efficient and effective management of the environment and natural resources.								
4.1 Increase good governance and public accountability in forest Management.	310	260	255	255	255	1,335	1,335	–
Subtotal	310	260	255	255	255	1,335	1,335	-
5 Significantly strengthen the capacities of lead agencies and other institutions to implement programmes for environmental management.								
5.1 Develop and implement a user-friendly	200	600	550	550	550	2,450	1,260	1,190

Sub-sector objectives and strategies	Annualized costs					Total	Government	Private sector and NGOs
	Year 1	Year 2	Year 3	Year 4	Year 5			
information management system.								
5.2 Strengthen the capacities of stakeholder institutions to supervise and effectively deliver forestry services.	10,670	11,300	10,545	9,811	10,643	52,968	52,268	700
Subtotal	10,870	11,900	11,095	10,361	11,193	55,418	53,528	1,890
6 Build the capacity of MWE to coordinate planning and monitoring and account for the public resources provided for management of the ENR.								
6.1 Mobilize investments for growth of the forestry sub-sector.	100	100	-	-	-	200	200	-
Subtotal	100	100	-	-	-	200	200	-
TOTAL	70,035	88,176	85,817	103,143	107,106	454,276	215,229	239,047

Source: Budget Framework Paper, 2007

5.5 The role of the different stakeholders in the Implementation of priority interventions

The roles of various stakeholders in implementing this sub-sector NDP are the same as those outlined in the Forestry Policy, 2001 and elaborated in the NFP, 2002. These roles are summarized below.

Role of the Central Government

The key guiding principle in defining the role of central government institutions is that the Government will increasingly direct implementation of field activities to the private sector, CSOs and community institutions. However, it will continue to catalyze investment through PPPs, demonstrations, policy and legal reforms and technical guidance. Central government institutions will also lead the way in long-term investment where the private sector is hesitant to invest.

The operations of the ENR Sector Secretariat will involve the review and approval of reports, project proposals and plans from the various central government institutions in the sector. The key institutions directly involved in implementing the forestry sub-sector NDP are under the MWE. They include the Directorate of Environmental Affairs (DEA), which is composed of Forestry Sector Support Department (the key Central Government Line Department responsible for implementing this sub-sector NDP), the Department of Environment Affairs (general oversight of environmental management matters in the country) and the Planning and Quality Assurance Department (PQAD). These Departments will carry out the responsibilities of MWE.

As the seat of the ENR sector and thus, the forestry sub-sector, the MWE will be responsible for:

- Reviewing policies and legislation to facilitate investment and engender SFM.
- Setting and monitoring performance standards.
- Coordinating the activities of stakeholders within the forestry sub-sector, promoting synergies and avoiding unnecessary duplication of work.
- Supporting other players in the sub-sector to mobilize funds and other resources for the implementation of this sub-sector NDP.
- Chairing the ENR Sector Secretariat.

The main responsibility of the Secretariat is to facilitate implementation of the SIP, and thus the forestry sub-sector NDP. To this end, the ENR Secretariat will ensure that:

- Commitments of the forestry sub-sector as contained in this NDP are included in the ENR Sector Budget Framework papers to be submitted to MoFPED.
- Project/programme proposals are prepared in line with the commitments in the sub-sector NDP and submitted to MoFPED.
- Monitoring and evaluation of the SIP leads to reviews that enhance delivery of outputs in line with the NDP theme of ‘Growth, Employment and Prosperity’.

On the other hand, the NFA, a central government statutory organization directly charged with implementation of the provisions of the sub-sector NDP within the CFRs, will be mainly responsible for sustainable management of CFRs and the promotion of private sector involvement in forestry, especially investment in CFRs. As the institution with the highest concentration of technical skills in forest management, NFA will also provide technical assistance and training to other actors in this NDP in accordance with NFA functions outlined in the Act. It will continue to be the lead agency in the sector in accordance with the NFP, 2002.

Roles of the local governments

The local governments have the statutory role of supervising management of forests outside central government protected areas. Accordingly, the NFTP provides for a District Forest Officer (DFO) to manage local forest reserves, provide advisory services to private forest owners, and generally enforce the Act in the district. But because there are many players at the local government level in terms of delivery of forestry services to the people, the NFP, 2002 provides for the District Forestry Service (composed of local governments, service providers and farmers) to:

- implement government policies and enforce laws on forestry.
- develop district forestry development plans and integrate them into the overall DDPs.
- manage local forest reserves in partnership with communities and private investors.
- provide Forestry Advisory Services to private forest owners and farmers.
- mobilize resources for investment.

Therefore, with respect to this sub-sector NDP, the DFS will be responsible for implementing all activities outside the CFRs and national parks/wildlife areas. Although it is not expressly stated in the law, the DFS coordinating institution of the DFS is the DFD.

Role of the private sector

As stated earlier, the Government is working towards increased participation of the private sector in forestry. Therefore, in line with the NFP, 2002, the private sector under this sub-sector NDP will be encouraged to invest in:

- the management of private forests on forest reserve and/or private land;
- processing of wood and non-wood forest products;
- trade in forest products;
- providing Forestry Advisory Services to local communities.

The role of civil society organizations

CSOs include NGOs, CBOs, private companies playing a public role, e.g. the media and think tanks. CSOs also include international bodies such as IUCN, Wildlife Conservation Society (WCS), World Wide Fund for Nature (WWF) and CARE. In implementing this sub-sector NDP, the CSOs will be responsible for:

- advocacy for increased understanding of the role of forests in national and local development;
- promotion of government accountability with regard to use of resources and delivery of services;
- participating in partnership arrangements for forest management and use;
- public education, information dissemination and training of local people.

Role of the development partners

Development partners in this context include organizations through which official development assistance is channelled, international and regional technical cooperation agencies, and international private sector organizations entering into PPP with government institutions. Their main roles will include the following:

- funding development activities;
- providing technical assistance;
- providing links to other financing and technical cooperation agencies;
- supporting compliance with international agreements.

5.6 Major assumptions

- (i) The current Medium-Term Expenditure Framework ceilings will be revised to take into account the provisions of this sub-sector NDP, because the ceilings were established long before the SIP was prepared.
- (ii) The current levels of the PFE will remain stable to strengthen the confidence of the private sector and other financing and technical cooperation partners.
- (iii) Total peace will return to northern Uganda to take advantage of the investment opportunities emerging in the region.
- (iv) The Government will legally adopt arrangements for payment of ecosystem services.
- (v) Owners of private natural forests will perceive the benefits of registering their forests as a step towards responsible forest management.
- (vi) International goodwill and commitment to the cause of ENR protection will be sustained, especially through the adoption of the international arrangements on reducing emissions from deforestation and forest degradation (REDD) and through the Clean Development Mechanism (CDM).
- (vii) International and local markets for products from responsibly managed forests in developing countries will continue to grow.
- (viii) A conducive investment climate and incentives to support forestry developments will be created and sustained.

5.7 Risks and strategies to overcome them

Encroachment

Encroachment remains one of the most important risks for investment in development and management of forests. Investors are reluctant to take on licences in CFRs where there is running conflict. This is particularly so today when investors are striving to certify their forest management operations and to demonstrate good corporate social responsibility. In order to deal with this risk, the Government will consider the current strategies proposed by the Minister to Cabinet so that the encroachers can be peacefully removed from forest reserves.

Instability/insecurity

There are still pockets of insecurity in some parts of the country. Some of the insecurity stems from local actions such as cattle rustling in, local community hostilities and demonstrations for political reasons and spill-over conflicts from neighbouring countries.

The risks associated with instability will be handled through the standard government security systems while striving for a more democratic and equitable society.

Forest fires

In view of the planned expansion of forest plantations, forest fires will become a major risk to investments. The Government, in partnership with the tree growing associations, will consider options for incentives, including encouraging insurance companies to leverage insurance cover for these long-term investments.

Influx of illegal forest products from neighbouring countries

The fact that some of the countries neighbouring Uganda continue to show signs of inadequate control of their forest resources increases the risk of cheap, illegal forest products such as timber reaching the regional markets. To deal with this, the Government will promote cross-border arrangements (bilateral and multilateral) in which forest governance activities will be jointly implemented.

6. MONITORING AND EVALUATION FRAMEWORK

6.1 Monitoring and evaluation indicators

Monitoring and evaluation will be important in the delivery of the strategies outlined above. **Table 11** provides a set of minimum indicators against which progress in forestry developments will be measured in the first phase of the NDP. They will be used to measure the resource base, access to the resource, and how the forestry goods and services are used for economic growth, employment and prosperity.

Table 11: Broad Indicators for Monitoring Implementation of the Forestry Sub-sector Plan

	Priority	Indicator
1	Strengthening the District Forestry Service to enable it develop forests outside government protected areas.	All approved staff positions in the local government forestry departments filled by End of Year 2 (EOY 2)
		Annual non-wage budget is 5 percent of total DDP budget
2	Improving community livelihoods through forest, tree and woodland resources.	10,000 households supported to improve livelihoods by EOY 5
3	Expanding and increasing economic productivity of forestry resources	Current forest unit productivity raised by an average 25 percent by EOY5
4	Promoting public-private partnerships (PPPs) to increase economic returns from forests and trees.	Commercial investments valued at US \$ 500 million worth of PPP arrangements by EOY 5
5	Promoting forestry-based industries and Trade.	The formal forestry sector contribution to GDP raised by 20 percent by EOY 5
6	Improving forestry information management.	A clear system of information processing and dissemination established by EOY 3
7	Improving forest governance and management.	The permanent forest estate is 90 percent free from encroachment by EOY 2
		Threat Reduction Index in CFRs stands at 80 percent by EOY 5.

7. CONCLUSION

Investments in the forestry sub-sector will result in the creation of about 321,000 jobs in the formal sector and another 3 million jobs in the informal sector. It will also lead to maintaining or increasing the 6 percent forestry contribution to GDP. Indirectly, investment in forestry will lead to the growth of other sectors, especially agriculture, hydropower, the construction industry and tourism. The FBEs will lead to increased cash incomes to the rural poor.

However, if the Government (including local governments and official development assistance) does not fund this Forestry Sub-sector Development Plan, the trend in forest loss will escalate leading to:

1. **Negative impacts of climate change** evidenced by increasingly dry to desert conditions, high incidences of floods and droughts, and the attendant health and nutritional problems.

2. **Reduced energy supply** for the manufacturing industry, the service sector and domestic use, such as lowering of hydro-power output, scarcity of woodfuel for the small-scale processing industries such as brick-making, bakeries, and pottery, hotels and schools. This will lead to increased costs of production and thus lower Uganda's competitive edge in the region.
3. **Increased hardships for the poor** who directly derive 27 percent of their cash income from forests that they can access.
4. **Reduced and low quality water supply for domestic and industrial use** as the water reservoirs (lakes, rivers and wetlands) become polluted and eventually silt up. Water tables would become lower, leading to drying up of wells, springs and boreholes, and the consequent increased costs of providing water to the population and livestock.
5. The **Government's Water for Production Programme** in support of the PEAP would be rendered unviable, because it requires forests as natural regulators and reservoirs of water flow. The entire country would therefore be rendered unviable for cattle grazing and agriculture. For example, the *Uganda National Household Survey 2005/06* (Agriculture Module) revealed that 43 percent of all national crop plots suffered from damage, mainly due to rain shortage (19 percent), followed by crop disease (10 percent).
6. **Reduced raw materials, especially timber for construction**, would undermine the fast-growing construction industry. This would directly affect economic growth and employment opportunities.
7. **Escalating import bills**. For example, IUCN (2001) estimated that if kerosene is substituted for charcoal in urban households, it would result in an increase in the national import bill by US\$180 million (U Sh324 billion) annually. Such an action would also lead to loss of jobs by poor people involved in woodfuel (charcoal and firewood) income-generating activities.
8. The environment in the fast-growing urban areas would become more polluted, and a **danger to people's health**. This would lead to increased costs of providing health care, higher incidences of respiratory diseases and the consequent increased misery for the poor living in urban areas.

Some of the effects of the Government not funding this Forestry Sub-sector Development can be mitigated through promotion of private sector investment. However, since the effects are of a public nature, it will not be possible to attract sufficient private sector investment in the next five years. Therefore, the Government and its development partners will need to invest directly or to show the way through public-private investment programmes.

Despite the declining government investment in forestry, the sub-sector has registered growth, but this could easily be neutralized by the negative impacts of sustained declining investment in the sub-sector. When the planned investment under this Development Plan is done well, it will reverse the negative ecological trends and result in higher growth rates in the sector and thus a bigger contribution to GDP.

REFERENCES

- Bush, G. and Nampindo, S. 2004. *The Value of Uganda's Forests: A Livelihoods and Ecosystems Approach*. National Forestry Authority, Kampala
- Forest Department. 2003. *National Biomass Study*. Technical Report. Ministry of Lands, Water and Environment. November 2003, Kampala
- Forestry Services Support Department 2007. *Farm Income Enhancement Forestry Component Project*. Baseline survey report. Ministry of Water and Environment, Kampala
- Ministry of Finance, Planning and Economic Development. 2005. Background to the Budget for Financial Year 2005/06. June 2005, Kampala
- Ministry of Finance, Planning and Economic Development. 2006. Background to the Budget 2006/07 Fiscal Year. Enhancing Economic Growth and Household Income through Increased Production and Productivity. June 2006, Kampala
- Ministry of Finance, Planning and Economic Development, 2007, National Budget Framework Paper for Financial Years 2007/08 – 2009/10. March 2007, Kampala
- Ministry of Lands, Water and Environment. 2001. The Uganda Forestry Policy. March, 2001, Kampala
- Ministry of Lands, Water and Environment. 2002. *National Forest Plan*. October 2002, Kampala
- Ministry of Water and Environment. 2007. Environment and Natural Resources Sector investment Plan, 2008/09 – 2017/18. December 2007, Kampala
- Nampindo, S., Phillipps, G.P., and Plumptre, A. 2005. *The Impact of Conflict in Northern Uganda on the Environment and Natural Resource Management*. June 2005, Kampala
- National Forestry Authority. 2006. *Annual Report 2005/06*. National Forestry Authority, Kampala
- National Forestry Authority, 2007a. *National Biomass Study: Preliminary Report*. National Forestry Authority, Ministry of Water and Environment, Kampala
- National Forestry Authority. 2007b. Forest Produce Movement Database 1999–2005. National Forestry Authority, Ministry of Water and Environment, Kampala
- National Forestry Authority. 2008. *Managing Forest Reserves for the People of Uganda, Volume 2: Functions of Central Forest Reserves in Uganda*. August, 2008, Kampala

- Plumptre, A.J 2002, Extent and Status of the Forests in the Ugandan Albertine Rift. Project Development Financing (B) Study Report. Wildlife Conservation Society, Kampala
- Republic of Uganda. 1991. *Investment Code*. Statutory Supplement to the Uganda Gazette No. 4 Volume LXXXIV. January 1991, Entebbe
- Uganda Bureau of Statistics Uganda. 2007. *National Household Survey: Agricultural Module, 2005/06*. Ministry of Finance, Planning and economic Development, Kampala
- Uganda Bureau of Statistics Uganda. 2007. National Household Survey: Socio-Economic Module), 2005/06. Ministry of Finance, Planning and Economic Development, Kampala, April 2007
- Uganda Bureau of Statistics. 2002. *Uganda Population and Housing Census: Analytical Report – Population Size and Distribution*. Ministry of Finance, Planning and Economic Development, 2006, Kampala
- Uganda Bureau of Statistics. 2002. *Uganda Population and Housing Census Report*. Ministry of Finance, Planning and Economic Development, Kampala
- Uganda Bureau of Statistics. 2006. Statistical Abstract. Ministry of Finance, Planning and Economic Development, Kampala
- UNIQUE Forestry Consultants. 2005. *Reducing the Uncertainty of Forest Investors in Uganda. Value Chain Assessment for Timber and Timber Products*. Sawlog Production Grant Scheme, Ministry of water and Environment. April 2003, Kampala
- World Health Organization. 2003. Fact Sheet on Traditional Medicine, <http://www.who.int/mediacentre/factsheets/fs134/en/> (accessed 22 April 2008)

ANNEX 1: ONGOING AND PLANNED PROJECTS IN THE FORESTRY SUB-SECTOR

	Programme /project	Implementing Agency	Total Cost	NDP's objective met by the programme/projects						Location	Donor	Status
				Lift living standards	Enhance gainful employment (quality and availability)	Improve social, economic and trade infrastructure	Develop efficient, innovative and international standards	Develop and optimally exploit the natural resource base and ensure environmental and economic sustainability	Strengthen good governance and improve human security			
1	Forestry Resources Management and Conservation Project (FRMCP)	Forestry Department/NFA	€12 million	√	√	√	√	√		Mainly CFRs	EU	Ended in December 2008
2	SPGS	Forestry Sector Support Department	€2.5 million	√	√	√	√	√		Entire country	EU	Ending in Dec 08
3	NORAD	NFA		√	√	√	√	√	√	Kampala	NORAD	
4	ADB (Forestry)	MWE				√		√		33 districts (100 subcounties)	ADB	Started 2007
5	FAO	Forestry Sector Support Department					√			Kampala		
6		UFWG						√	√			
7		WCS						√		Albertine Rift, Northern Uganda		
8	Uganda/Sudan	MWE				√	√	√	√	Northern Uganda	USAID	Just starting
9	Prime West							√		Western Uganda		
10	Danish Association for International Cooperation Uganda	NFC								NFC		
11	Collaborative Forest Management	Nature Uganda								Echuya, K-Kitomi		
12	Research	NaFORRI										
13	Research	ITFC										
14	Research	BFP										
15	Research and training	MUK										
16	Agroforestry	UGADEN										
17	Mt. Elgon Conservation	NFA									Norway	
18	Biodiversity	WWF										

	Programme /project	Implementing Agency	Total Cost	NDP's objective met by the programme/projects						Location	Donor	Status
	Conservation (3 projects)											
19	Jane Goodal Projects (2 projects)	JGI									GEF	
20	CARE	CARE										
21	EMPAFORM	CARE	EU €2.8 million					√	√	East Africa	EU	Ending in 2009
22		Greenwatch							√			

ANNEX 2: ASSESSMENT OF PREVIOUS PERFORMANCE IN THE FORESTRY SUB-SECTOR

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
1	Value of commercial investment in forestry businesses increasing	Forests and trees are increasingly being recognized as an investment avenue for income generation. The number of seedlings sold by the National Tree Seed Centre alone, which has grown by 330 percent from 2003/04 to 2007/08. Eighty percent of the seedlings raised are for industrial forest plantations. There are other nurseries in the country that supply seedlings for industrial forest plantations.	Projected scarcity of timber, subsidy by SPGS, demonstration of quality plantations and confidence in NFA tree growing licenses in CFRs, rising prices in timber.	Mostly due to the sub-sector interventions.	Macro: Limited incentives for long-term investment in forestry; long gestation period of investment fund (timber), limited large parcel of land for large investors; limited access to finance investment. Meso: Encroachment in CFRs, inadequate supply of quality planting stocks, inadequate skills to operate a full-scale, commercial, forest-based enterprise.
		During the financial years 2004/05–2006/07, about 5,000 ha of forest plantations and 10,000 ha of new quality timber plantations were established by NFA and the private sector respectively, worth US\$37.5 million over the period of three years.	Same as above.	Same as above.	Same as above and Macro insecurity in northern Uganda.

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
2	Volumes and values of forest products traded (domestic and international)	Volume of timber harvested and moved by licensed pitsawyers jumped from 55,000 m ³ during FY 2004/05 to 100,000 m ³ during FY 2005/06 (<i>National Forestry Authority Annual Report, 2005/06</i>). When the unrecorded timber is factored in, timber consumption in the country during 2005/06 reached around 300,000m ³ . This was equivalent to about 1,200,000 m ³ of trees annually generating US\$50 million.	Growing economy (especially in the construction sector), but the volumes traded are much higher than the sustainable harvesting level; District Forestry Services are poorly facilitated to control illegal activities.	Influenced largely by the market forces. Over-harvesting is a result of illegal activities.	Meso: Low recovery, illegal activities. Macro: low investment in the forestry sector.
		As effectiveness in law enforcement and governance increased, official revenue collection progressively rose nearly 16 times from 1995/96 to 2005/06. On the other hand revenue from impounded timber sold by public auction progressively dropped from 25 percent of total revenue in 1995/96 to 8 percent in 2005/06. This shows that people reverted to legitimate business as law enforcement and governance	Effective law enforcement, improved governance.	Mostly due to the sub-sector interventions such as sector reform.	Meso: Ineffective District Forestry Services.

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
		improved.			
3	No. of people and wage rates (by gender, socio-economic group, geographic location) in forestry-related employment increasing in the formal sector	During the period 2004–2007, 15,000 ha of plantation have been established leading to additional 7,500 permanent jobs and another 10,000 part-time jobs.	Increased investments in industrial plantations, and Foreign Direct Investment (FDI).	Mostly due to the sub-sector interventions.	Meso: encroachment in CFRs, inadequate supply of quality planting stocks, inadequate skills to operate a full scale commercial forest based enterprise; Macro: Long gestation period of investment fund (timber), limited large chunk of land for large investors, limited access to finance investment,
4	Value and percent contribution of forestry to GDP increasing through higher production and value addition.	The forestry sector is shown to have grown at an average of 5.7 percent from 2002-2006 (<i>Background to the Budget 2006/07</i>).	Increased demand for forest products and services.	Mostly because of the growing economy.	Meso: Growing shortages of forestry products.
5	Area of forest reserves under productive forest management by the NFA and local governments (NFA/local governments) increasing, through	Recent preliminary figures by NBS indicate a more serious degeneration of forest cover in the central districts of Uganda where there is intense economic activity. An average of 50 percent of the forest cover has disappeared between 1990 and 2005.	Forestry is not considered among the priority sector and therefore is poorly funded.	Most of the under-achievements have been attributed to factors outside the forestry sub-sectors.	Macro: Major forestry values (services and subsistence) are not integrated into the national accounts.

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
	better control and management.				
			Forest reserve lands are perceived and treated as common property (free access).	Same as above.	Meso: Poor policy implementation due to uncertain political will.
		FMPs covering all the 506 CFRs have been done in a participatory manner. Similarly, Community Action Plans, District Forest Development Plans, and FMPs for all local forest reserves are underway.	Funding, will and skills available within the sector.	Mostly sub-sector inputs.	Meso: Participatory management process is a slow process.

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
		<p>Improved management in some CFRs, e.g. Budongo, overall gross volume for trees of dbh 50 cm + in the production zones increased from 86.9 m³/ha in 1992 to 88.5 m³/ha in 2006 (NFA Inventory Records). In Mabira, within 16 years of the encroachers leaving (about the same period referred to in the Budongo inventory above), a young forest with 46 tropical moist forest species grew again in the formerly encroached areas. This is corroborated by the Wildlife Conservation Society (WCS) studies around Budongo and Bugoma which show that forest loss in the Albertine Region was primarily “outside the protected areas”.</p>	<p>Improved forest governance in those CFRs with good management results.</p>	<p>Mostly sub-sector inputs.</p>	<p>Meso: Sustainable management.</p>
		<p>In some CFRs, e.g. South Busoga, CFRs in Mubende and Kiboga Districts, forest managements were inadequate.</p>	<p>Major constraint faced has been low level of political support (during elections).</p>	<p>Not significant.</p>	<p>Macro: Limited political support.</p>

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
6	Number of effective CFM agreements in forest reserves (NFA) Increasing; virtually none exist now.	Signed CFM agreements have increased by 250 percent from 1999 to 2008	Continued awareness-raising; Improved governance in the sector that recognizes the role of communities in forest management.	Mostly sector initiative	Meso: Facilitation of the process requires funding and skill, which have been limited.
7	Number and areas of community forests (local governments) Increasing, none exist now	Pilot programmes initiated in Masindi under CLA; Guidelines on establishment and management of CF in place.	Lack of incentives for the communities to conserve natural forests on private and communal lands.	Mostly a sub-sector initiative.	Meso: Operationalization of policy and legal provisions for incentives.
8	Open access to public information on forestry (MWLE) Increasing, through improved communications and popular participation.	Increased participation of the civil society in forestry information gathering and dissemination; Improved access to public information.	The sub-sector reforms of 1998–2004 devolved the authority and decision making to various stakeholders.	Government decision to restructure the sub-sector; sector stakeholders willing to participate.	Macro: Sustainability of open access to information. Meso: Commitment of the stakeholders to provide information freely.
9	Percent of household income derived from different forestry-related enterprises (UBOS) increasing.	11–27 percent of household cash income of communities around forest reserves is derived from forestry (Glenn, Bush <i>et al.</i> , 2004).	Most of the forest products are not sold for cash but used for subsistence purposes.	Mostly sub-sector.	Micro: Low disposable income to buy forest produce; limited access to markets.

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
10	Number of National Agricultural Advisory Services contracts for forestry advisory services increasing.	An average of 3 percent of the advisory services are targeted to forestry-related enterprises (FSSD, 2007).	Limited awareness about the economic benefits from forests and trees.	Very low; focus is largely on agricultural enterprises.	Micro: Promoting the understanding of the economics of tree growing.
11	Number of poor people with tree-growing permits in forest reserves increasing.	By August 2008, nearly 149,000 ha had been licensed to private tree growers in CFRs. This is about 100 percent of the area targeted by 2025. However, the actual planted to date is 10 percent.	Projected scarcity of timber, subsidy by SPGS, demonstration of quality plantations, confidence in NFA tree growing licences in CFRs, rising prices in timber.	Mostly due to the sub-sector interventions.	Meso: Encroachment in CFRs, inadequate supply of quality planting stocks, inadequate skills to operate a full scale commercial forest based enterprise; Macro: Long gestation period of investment fund (timber), limited large parcel of land for large investors, limited access to finance investment, and macro insecurity in northern Uganda.
12	Number of farmers using improved agroforestry technologies increasing.	From the Farm Income Enhancement and forest Conservation <i>Baseline Survey Report</i> (FSSD, 2007), only 20.7 percent of the households attempted modern agroforestry practice on their farms, especially with respect to integrating food crops with fruit trees.	Limited awareness of the economic benefits from forests and trees.	Very low; focus is largely on agricultural enterprises.	Micro: Promotion of the understanding of the economics of tree growing.

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
13	Tree cover, biodiversity and water flows from natural forests in forest reserves and private forests; Reversed rate of deforestation, increasing on-farm tree cover.	Assessment of water quantity was made and 49 percent of the respondents indicated that the quantity of water in their area has reduced over the last ten years.	Crop production is accorded higher priority than forest management.	Mostly outside the sub-sector.	Micro: Economic decisions at the household level.
14	Distance to collect fuelwood halved within ten years.	On average, the distance moved to collect firewood has increased from 0.73 km (in 2000) to more than 1 km (in 2007). In some districts, the households move more than 4 km to collect firewood. Today, the per capita fuelwood consumption is about 1 m ³ totaling to a national consumption of 27 million m ³	Increased deforestation.	Partly sub-sector inadequacies and exogenous factors.	Macro: Failure to implement policy provisions for increasing the forest resource base in tandem with the growing population.
15	Number of households and businesses using improved biomass energy technologies.	The Farm Income Enhancement and forest Conservation <i>Baseline Survey</i> Report indicates that 97.4 percent of the households use firewood for cooking. 58.9 percent of the firewood used is obtained from woodland, and 34.6 percent is collected from plantation/planted forests; 20	Low adoption of the technologies is due to the culture of "three stones"; expensive alternatives, energy saving technologies are expensive.	Interventions by NGOs, CBOs.	Macro: Provision of policy and economic incentives to encourage use of energy-saving technologies.

	Indicators of impact on PEAP (source of information)	Current levels of achievement	Reasons for success/ constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges, i.e. macro, meso, micro
		percent of the households use fuel-saving technologies.			

ANNEX 3: MATRIX OF SUB-SECTOR PERFORMANCE BASED ON THE NATIONAL FOREST PLAN AND SECTOR INVESTMENT PLAN INDICATORS

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
1.	Proportion of land under forests cover increasing	Preliminary data (2007) indicates that the proportion of land under forest cover decreased from 24 percent in 1990 to 15 percent in 2005.	Forestry is not considered among the priority sector and therefore is poorly funded.	Most of the under-achievements have been attributed to factors outside the forestry sub-sectors.	Macro: Major forestry values (services and subsistence) are not integrated into the national accounts.
			Forest Reserve lands are perceived and treated as common property (free access) and therefore prone to abuse, e.g. encroachment, illegal settlement and illegal charcoal burning.	Same as above.	Meso: Poor policy implementation due to lack of political will.
2.	Area of forest reserves (FRs) under productive forest management by the National Forest Authority (NFA) and local governments increasing through better control and management	Forest Management Plans (FMPs) covering all the 506 CFRs have been carried out in a participatory manner. Similarly, community action plans, district forest development plans, FMPs for all local forest reserves are underway.	Funding, the will and skills available within the sector.	Mostly sub-sector inputs.	Meso: Participatory management process is a slow process.

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
		Improved management in some CFRs, e.g. in Budongo, overall gross volume for trees of dbh 50 cm + in the production zones increased from 86.9m ³ /ha in 1992 to 88.5 m ³ /ha in 2006 (NFA Inventory Records). In Mabira, within 16 years of the encroachers leaving (about the same period referred to in the Budongo inventory above), a young forest with 46 tropical moist forest species had come back to the formerly encroached areas. This is corroborated by the Wildlife Conservation Society (WCS) studies on Budongo and Bugoma, which show that forest loss in the Albertine Region was primarily “outside the protected areas”.	Improved forest governance in those CFRs with good management results.	Mostly sub-sector inputs	Meso: Sustainable management
		In some CFRs, e.g. South Busoga, CFRs in Mubende and Kiboga Districts, forest managements were inadequate.	Major constraint faced has been low level of political support (during elections)	Not significant.	Macro: Limited political support.
3	Value of commercial investment in	Forests and trees are increasingly recognized as an investment avenue for income	Projected scarcity of timber, subsidy by SPGS, demonstration	Mostly due to the sub-sector interventions	Macro: Limited incentives for long-term investment in

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
	forestry businesses increasing	generation. The number of seedlings sold by the National Tree Seed Centre alone has grown by 330 percent from 2003/04 to 2007/08; 80 percent of the seedlings raised are for industrial forest plantations. There are other nurseries in the country that supply seedlings for industrial forest plantations.	of quality plantations, confidence in NFA tree growing licenses in CFRs, rising prices of timber.		forestry; long gestation period of investment fund (timber), limited large chunk of land for large investors, limited access to finance investment, Meso: Encroachment in CFRs, inadequate supply of quality planting stocks, inadequate skills to operate a full scale commercial forest based enterprise;
		During the period 2004/05–2006/07, about 5,000 ha and 10,000 ha of new quality timber plantations were established by NFA and the private sector, respectively, worth US\$37.5 million over the period of three years.	Same as above.	Same as above.	Same as above and macro insecurity in northern Uganda.

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
4	Volumes and values of forest products traded (domestic and international)	Volume of timber harvested and moved by licensed pitsawyers jumped from 55,000m ³ during FY 2004/05 to 100,000m ³ during FY 2005/06 (<i>NFA Annual Report, 2005/06</i>). When the unrecorded timber is factored in timber consumption in the country during 2005/06 reached around 300,000 m ³ . This was equivalent to about 900,000 m ³ of trees annually generating US\$50 million.	Growing economy (especially in the construction sector) but the volumes traded are much higher than the sustainable harvesting level, DFS are poorly facilitated to control illegal activities.	Influenced largely by the market forces. Over-harvesting is done through illegal activities.	Meso: Low recovery, illegal activities; Macro: Low investment in the forestry sector,
		As effectiveness in law enforcement and governance increased, official revenue collection progressively rose nearly 16 times from 1995/96 to 2005/06. On the other hand, revenue from impounded timber sold by public auction progressively dropped from 25 percent of total revenue in 1995/96 to 8 percent in 2005/06. This shows that people reverted to legitimate business as law enforcement and governance improved.	Effective law enforcement, improved governance.	Mostly due to the sub-sector interventions such as sector reform.	Meso: Ineffective DFS.

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
5	Number of people and wage rates (by gender, socio-economic group, geographic location) in forestry-related employment increasing in the formal sector.	During the period 2004–2007, 15,000 ha of plantation have been established leading to additional 7,500 permanent jobs and another 10,000 part-time jobs.	Increased investments in industrial plantations, Foreign Direct Investment (FDI)	Mostly due to the sub-sector interventions	Meso: Encroachment in CFRs, inadequate supply of quality planting stocks, inadequate skills to operate a full-scale commercial forest-based enterprise. Macro: Long gestation period of investment fund (timber), limited large chunk of land for Large investors, limited access to finance investment..
6	Value and percent contribution of forestry to GDP increasing through higher production and value addition.	The forestry sector is shown to have grown at an average of 5.7 percent from 2002 to 2006 (<i>Background to the Budget 2006/07</i>).	Increased demand for forest products and services.	Mostly due to the growing economy.	Meso: Growing shortages of forestry products.
7.	Number of effective CFM agreements in forest reserves increasing.	Signed CFM agreements have from 1999 to 2008.	Persistent awareness raising; improved governance in the sector that recognizes the role of communities in forest management.	Mostly sector initiative.	Meso: Facilitation of the process requires funding and skills, which have been limited.

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
8.	Number and areas of community forests increasing.	Pilot programmes initiated in Masindi under CLA; guidelines on the establishment and management of CF in place.	Lack of incentives for the communities to conserve natural forests on private and communal lands.	Mostly a sub-sector initiative.	Meso: Operationalization of policy and legal provisions for incentives.
9.	Open access to public information on forestry increasing, through improved communications and popular participation.	Increased participation of the civil society in forestry information gathering and dissemination; improved access to public information.	The sub-sector reforms of 1998–2004 devolved the authority and decision making to various stakeholders.	Government decision to restructure the sub-sector; sector stakeholders willing to participate	Macro: Sustainability of open access to information Meso: Commitment of the stakeholders to provide information freely.
10.	Percent of household income derived from different forestry-related enterprises increasing.	11–27 percent of household cash incomes of communities living around forest reserves is derived from forestry (Bush and Nampindo, 2004)	Most of the forest products are not sold for cash, but used for subsistence purposes.	Mostly sub-sector.	Micro: Low disposable income to buy forest produce; limited access to markets.
11.	Number of National Agricultural Advisory Services contracts for forestry advisory services increasing.	An average of 3 percent of the advisory services are targeted to forestry-related enterprises (Forestry Sector Support Department, 2007)	Limited awareness of the economic benefits from forests and trees.	Very low; focus is largely on agricultural enterprises.	Micro: Promotion of the understanding of the economics of tree growing.

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
12	Number of poor people with tree-growing permits in forest reserves increasing.	To date, nearly 149,000 ha have been licensed to private tree growers in CFRs. This is about 100 percent of the area targeted by 2025. However, the actual planted to date is 10 percent.	Projected scarcity of timber, subsidy by SPGS, demonstration of quality plantations, confidence in NFA tree growing licences in CFRs, rising prices in timber.	Mostly due to the sub-sector interventions.	Meso: Encroachment in CFRs, inadequate supply of quality planting stocks, inadequate skills to operate a full scale commercial forest based enterprise; Macro: Long gestation period of investment fund (timber), limited large parcels of land for large investors, limited access to finance investment, and macro insecurity in northern Uganda.
13	Number of farmers using improved agroforestry technologies increasing.	20.7 percent of the households attempted modern agroforestry practices on their farms, especially with respect to integrating food crops with fruit trees (FSSD, 2007).	Limited awareness about the economic benefits from forests and trees.	Very low; focus is largely on agricultural enterprises.	Micro: Promoting the understanding of the economics of tree growing.
14	Tree cover, biodiversity and water flows from natural forests in forest reserves and private forests; reversed rate of	Assessment of water quantity was made; 49 percent of the respondents indicated that the quantity of water in their area has reduced over the last 10 years.	Crop production is accorded higher priority than forest management.	Mostly outside the sub-sector.	Micro: Economic decisions at the household level.

	Indicators of impact on the Poverty Eradication Action Plan (PEAP) (source of information)	Current levels of achievement	Reasons for success /constraints faced	Level of achievement accounted for directly by sub-sectors' inputs and/or other indirect contributions	Categorization of constraints/challenges , i.e. macro, meso, micro
	deforestation, increasing tree cover				
15	Distance to collect fuel wood halved within 10 years.	On average, the distance walked to collect firewood has increased from 0.73 km (2000) to more than 1 km (2007). In some districts, the households move more than 4 km to collect firewood. Today, the per capita fuelwood consumption is about 1 m ³ for a national consumption of 27 million m ³ .	Increased deforestation.	Partly sub-sector inadequacies and exogenous factors.	Macro: Failure to implement policy provisions for increasing the forest resource base in tandem with the growing population.
16	Number of households and businesses using improved biomass energy technologies.	The <i>Farm Income Enhancement and Forest Conservation Baseline Survey Report</i> indicates that 97.4 percent of the households use firewood for cooking; 58.9 percent of is obtained from woodland, and 34.6 percent is collected from plantation/planted forests. 20 percent of the households use fuel-saving technologies.	Low adoption of the technologies is due to the culture of 'three stones'; expensive alternatives, energy-saving technologies are expensive.	Interventions by NGOs, CBOs.	Macro: Provision of policy and economic incentives to encourage use of energy-saving technologies.

ANNEX 4: PERFORMANCE AGAINST ANNUAL PLANS

Planned output	Performance indicator/ target	Achievements	Reasons for variance
2004/05			
Forestry Inspection Capacity strengthened.	3 established staff positions filled.	3 positions filled.	
	4 additional staff positions approved.	2 additional positions approved.	
National Forestry Authority launched and monitored.	Forestry legislation passed.	The National Forestry and Tree Planting Act gazetted.	
	National Forestry Authority launched.	National Forestry Authority launched.	
District Forest Services launched and supported.	Local governments recruit staff.	Awareness raised of local governments.	
	District Forest Services budget included in Ministry of Water, Lands and Environment Budget Framework Paper.	U Sh408 million provided.	
Management of CFRs improved.	Boundaries (9,000 km of cut-line) re-demarcated in 50 percent of CFRs.	2,000 km of forest boundaries re-opened.	Hostilities from local communities.
	Illegal activities reduced by 90 percent.	Registration of encroachers completed and illegal trade in timber substantially reduced.	Absence of District Forestry Services staff.
	Forest Management Plans developed for 20 zones (total 51 Forest Management Plans)	17 Forest Management Plans drafted.	Budget based on Forestry Department estimates was inadequate.
Partnership arrangements developed.	5 Collaborative Forest Management agreements implemented.	4 Collaborative Forest Management agreements negotiated.	Negotiations took longer than planned.
	10 agreements / memoranda of understanding developed with local governments.	3 local governments expressed interest to collaborate.	
	5 memoranda of	3 memoranda of	

Planned output	Performance indicator/ target	Achievements	Reasons for variance
	understanding developed with national institutions and NGOs.	understanding signed; 2 were negotiated but not signed.	
Forest plantation area increased.	1,040 ha of commercial plantations planted.	1,450 ha planted.	
	40 private tree growers benefiting from SPGS.	1,490 ha licensed under SPGS.	
Forest resource use improved.	3 technologies in tropical high forest management, harvesting and use applied.	A system of Integrated Stock Survey and Management Inventory established.	
		Use of less known species increased.	
Marketing of forest products enhanced.	Competitive licensing and revenue collection systems established.	New harvesting licensing system (open tendering) introduced.	
	Impounded timber sold through public auction.	Target achieved.	
Capacity for Sustainable Forest Management built.	80 percent of the staff trained.	All staff were trained in various forest management skills.	
		30 middle-level managers mentored.	
Infrastructure for forest management developed.	Office buildings established in 20 zones.	4 zonal offices established.	
		Renovation of buildings ongoing.	
High quality seed supplied.	2,000 kg of seed available for sale.	More than 2,000 kg sold.	
		9 seed sources marked in various parts of the country.	
GIS lab established and functional.	Map production in progress.	GIS lab capacity improved and functional.	
	Biomass monitoring in progress.	10 percent land cover mapping done.	
Private sector and local government advisory services supported.	20 private sectors persons trained.	180 private sector persons trained.	

Planned output	Performance indicator/ target	Achievements	Reasons for variance
	Educational documentary produced.	3 documentaries produced on various forestry practices.	
2005/06			
Forest Inspection carried out in 56 districts.	Inspection reports for districts.	Coordinated establishment of DFS in 56 districts.	
Technical support and training provided to local governments.	300 participants from local governments trained.	<i>Facilitators Training Manual</i> prepared.	
Proper and effective management of CFRs effected.	Number of NGOs/CBOs assisted technically.	Forestry Policy and Act disseminated.	
Appropriate and effective national forests management policies, standards and legislations implemented.	Number of policies, standard and legislations reviewed or formulated.	Forestry integrated into local government National Agricultural Advisory Services programmes.	
		Draft regulations ready for signature.	
Coordination and collaboration meetings held.	Minutes/reports.	Stakeholders who have participated in over 50 meetings.	
The non-timber forest products reviewed.	Revised investment plan.	Nil.	No funds
15 international/regional meetings attended.	15 reports.	Over 15 international meetings attended.	
One divisional study tour for staff conducted.	Study tour report.	Nil.	Limited resources.
Management of CFRs improved.	1,000 km of Central Forest Reserve boundaries demarcated.	2,235 km of boundaries re- opened.	President's directive to stay eviction stalled many activities in CFRs.
	Illegal activities reduced by 70 percent.		Absence of DFS undermined the efforts to combat illegal activities.
	FMPs developed for 7 Ranges.	Draft FMPs for 506 CFRs prepared.	

Planned output	Performance indicator/ target	Achievements	Reasons for variance
Partnership arrangements developed.	5 collaborative forest management agreements implemented.	6 CFM agreements negotiated and signed.	
	5 memoranda of understanding developed with national institutions and NGOs.	6 memoranda of understanding finalized.	
	15 NGOs/CBOs supported to implement forestry based livelihoods projects.	13 NGOs/CBOs supported.	2 CBOs had proposals awaiting approval.
Forest plantation area increased.	1,200 ha of commercial plantation established.	3,000 Ha planted by National Forestry Authority and the private sector.	
Forest resource use improved.	One technology improved for THF management and one for harvesting and use.	Exploratory inventory carried out in key natural forests.	
		Technical guidelines for timber log grading developed.	
Marketing of forest products enhanced.	Competitive licensing of harvesting in plantation held twice.	48,878 m ³ of standing timber sold.	
	Traded logs being sold rather than standing trees introduced.	1,710 m ³ of graded logs sold in tropical moist forest.	
Capacity for sustainable forest management built.	90 percent of staff trained in different aspects of forest management.	285 staff trained (81 percent).	
Infrastructure for forest management developed.	Office buildings established in 20 sectors.	20 sector offices established.	
	342 km of roads maintained.	430 km of road maintained.	
High quality seed supplied.	2,000 kg of high quality of seeds available for sale.	2,000 kg sold.	
GIS lab established and	Biomass monitoring	Draft report ready.	

Planned output	Performance indicator/ target	Achievements	Reasons for variance
functional.	report compiled.		
		900 plots measured and data analysed.	
Private sector and local government advisory services supported.	4 training courses in nursery management.	4 nursery training courses done.	
	4 district awareness campaigns carried out.	2 district awareness campaign completed.	
	Environmental impact assessment for forestry- related activities carried out.	Environmental impact assessment reports completed.	

ANNEX 5: LINKAGES OF THE FORESTRY SUB-SECTOR WITH NATIONAL DEVELOPMENT

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
1	Growth Domestic Product (percent)	Growth of 5.7 percent between 2001/02–2005/06.	Capital inflows to support development of forest plantations.	Political positions that tend to relegate forestry to a low priority rating.	Internal rate of return for industrial timber plantations is 12–16 percent.	The rate of population growth (3.2 percent) is the highest in the East African region.
			Sector reforms of 1998–2004 improved governance.	Inadequate managerial and technical expertise.	New sources of investment financing such as oil discovery, insurance and pension funds, carbon markets, international conventions and protocols.	Carrying out effective law enforcement and governance.
			Construction industry growing at average of 10 percent creating demand for forestry products.	Low levels of technology in forest management and use.	Peace in northern Uganda and southern Sudan.	Reflecting all forestry values in financial terms acceptable in the national accounts.
			Biomass energy deficit in many areas of the country, ready market for fuelwood and charcoal.	Poor understanding among investors that forestry pays.	East African Community, peace in Sudan and the Democratic Republic of the Congo creates a bigger trading block.	Creating an enabling environment for long-term investment in forestry.
				Difficulties in accessing investment financing.	Increasing demand for forest products.	

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
				Unavailability of relevant information to inform investment.		
2	Employment (no.)	Industrial plantations created 12,000 new permanent and 15,000 semi-permanent jobs between 2003 and 2007.	Establishment of 15,000 ha of industrial forest plantations.	Forest encroachment discouraging investors.	Emerging markets in China, the Far East and southern Sudan.	See reasons for 'Growth' above.
				Insecurity of tenure in CFRs.	See reasons for 'Growth' above.	
				Difficulties in accessing investment financing.		
3	Food security	Quality - 30 million tonnes of fuelwood.	Availability biomass energy.	Failure to manage natural forests on private lands.	Political understanding of the importance of forestry to other sectors is slowly emerging.	Readjusting the development agenda to recognize the vital roles played by forests.
		Fluctuating weather patterns as a result of climate change due to	Forest cover still intact in some parts of the country.	Uncontrolled clearing of forests.		Reflecting all forestry values in financial terms acceptable in the national accounts.

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
		Deforestation have led to lowering of food production levels.				
		Floods in eastern Uganda destroyed food crops as a result of deforestation.	Forests supply wild foods to over 50 percent of Uganda's households who live adjacent to forests.	Poor skills in management of woodlots (e.g. native and eucalyptus regeneration) on private lands.		Balancing the need of landowners of forestland with the needs for protecting it.
		The soil conservation values of forests were valued at U Sh100 billion (Bush and Nampindo, 2004).		District Forestry Services grossly under-resourced.		
				Failure of people to appreciate the link of woody vegetation /forestry to agriculture and water for production.		
4	Other	11-27 percent				

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
	livelihoods (especially rural people).	of incomes of people living near forests comes from forests.				
		See also (2) and (3) above on 'Employment' and 'Food Security', respectively.	See also (2) and (3) above on 'Employment' and 'Food Security', respectively.	See also (2) and (3) above on 'Employment' and 'Food Security', respectively.	See also (2) and (3) above on 'Employment' and 'Food Security', respectively.	See also (2) and (3) above on 'Employment' and 'Food Security', respectively..
5	Provision of regulatory and supporting services.	Not directly applicable.				
6	Contribution to trade.	The monetary values of traded forest products has been growing at an average of 5.7 percent from 2001/02 to 2005/06	Improved forest law enforcement and governance in forestry.	Forest Law Enforcement and Governance (FLEG) not yet up to the required level.	Growing need for certified forest products internally, but especially on the international market.	Diversifying tradable products from natural forests.
		Official recorded revenue from forest	Government drive to diversify sources of revenue, especially from non-tax sources.	District Forestry Services grossly under-resourced.	Return of peace in northern Uganda and southern Sudan.	Increasing the volume of tradable products on the market.

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
		products rose 16 times from 1995/96 to 2005/06.				
				Quality of processing still below international standards.	East African Community, peace in Sudan and Democratic Republic of the Congo creates a larger trading block.	
					Increasing appreciation of forest-based enterprises among local communities.	
7	Potential to capitalize on emerging new markets	Increasing area of quality forest plantations (15,000 ha planted between 2004-2008).	As for (1) above for 'Growth'.	Inadequate understanding among many decision-makers of the importance of certification for forestry in Uganda.	Same as for (6) above for contribution to trade.	Same as for (6) above for contribution to trade.
		Nearly 580,000 ha (2005 estimates) of well stocked natural forests.	Technical guidelines and standards being developed in conformity with international forest certification and chain-of-custody requirements.	Same as for (1) above for 'Growth'.	Emerging innovative sources of funding such as carbon, payment for ecosystem services.	Domesticating international forest management and chain-of-custody certification.
8	Contribution to foreign exchange (\$)	Goods and services from forests saved US \$ 190 million in	An expanding local market.	Failure to produce for the international market.	Emerging international financing mechanisms such as carbon, payment for ecosystem services.	Same as for (6) and 7 above on trade and emerging markets.

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
		2004 (Bush and Nampindo, 2004)				
					Increasing appreciation of forest-based enterprises (for products such as honey, genetic material, organic products) among local communities.	
9	Contribution to competitive industrial-ization	350,000 ha of land is available for establishment of high- value industrial forest plantations.	Rich biodiversity in forest ecosystems.	Same as in 1 above.	Same as in 1 above.	Same as in 1 above.
		Over 2 million ha in a variety of forest ecosystems in protected areas to provide unique eco-	A fast-growing tourism industry worldwide.	Insecurity in some parts of the country and regional instability.	Eco-tourism is the fastest growing industry in the world.	Raising sufficient investment to provide quality services.

	Parameters	Quantifiable/physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
		tourism industry.				
10	Other backward/forward linkages	Watershed values worth U Shs 61 billion; biodiversity values worth U Shs 6 billion; soil conservation values worth U Shs 99 billion.	Over 1.2 million ha of forest reserve land and about 3 million ha of forests on private land.	Clearance of forests in primitive agricultural practices.	Growing understanding of the role of forests in watershed protection and soil conservation.	Readjusting the development agenda to recognize the vital roles played by forests.
					Growing interest in the Nile Basin by downstream countries that depend on the River Nile Watershed.	Balancing the needs of owners on forestland with the needs for protecting it
		Construction industry worth U Sh1.5 trillion in 2005/06.	Growing construction industry (average of 10 percent since 2001/02).	Same as in 1 above.	Same as in 1 above.	Same as in 1 above.
		Furniture industry.	Growing affluence of some Ugandans.	Imported furniture (mainly mass produced) that is cheaper than quality wooden	External markets for furniture from certified forests.	Increasing competition from plastics and steel.

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
				furniture.		
				Inadequate enabling environment to encourage investment in the furniture industry.		
		Tourism industry.	Growing tourism industry.	Insecurity in some parts of the country and regional instability.	Eco-tourism, which is the fastest growing industry in the world.	Raising sufficient investment to provide quality services.
11	Economic empowerment of vulnerable groups	11-27 percent of incomes of the mainly poor people living near forests comes from forests.	See (2), (3) and (4) above.	See (2), (3) and (4) above.	See (2), (3) and (4) above.	See (2), (3), and (4) above.
12	Support to the growth of SMEs/ private sector development	Forestry businesses are predominantly SMEs (e.g. sawmilling, forest plantations, honey processing, charcoal burning).	A permanent forest estate of 1.2 million ha composed of natural forests and grasslands.	Illegal activities (encroachment, harvesting).	A high population growth rate, which provides a larger market for products.	

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
				Inadequate understanding of the business opportunities involved.	East African Community, peace in Sudan and Democratic Republic of the Congo creates a bigger trading block.	
				See (1) on 'Growth'.	See (1) on 'Growth'.	See (1) on 'Growth'.
13	Potential to contribute to technological innovation.	Machines and spare parts used in sawmilling and furniture industries.	High costs of imported technology.	Corruption.	Population growth.	Attracting skilled Ugandans to develop forestry technology.
				Flight of skills from the country of would-be technological innovators.	General growth of the economy.	Putting innovation on the political agenda.
				The bulk of businesses being in petty trade and not in production and processing.	Ongoing international forestry policy processes on technology transfer.	
				Poorly equipped and under-resourced forestry research institutions.		
14	Potential to contribute to the recovery of peace in northern Uganda.	658,600 ha of CFRs for forestry development.	Availability of land.	Uncertainty about peace.	Donor money earmarked for the north.	Finding lasting peace, especially in the Karamoja Region.

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
				People are not yet settled in their homes.	Government has prioritized northern Uganda for recovery and development.	
					Markets in southern Sudan.	
15	Contribution to regional cooperation and peace.	722,000 ha of protected areas.	Presence of cross-border ecosystems.	Instability in the region.	Fast tracking of the East African Federation.	
					Increasing interest of development agencies to fund cross-border peace parks.	Marshalling regional cooperation, especially with countries outside the East African Community.
16	Contribution to health.	30 percent of Ugandans depend on herbal medicine.	Only 69.6 percent of Ugandans have access to health facilities (UBOS, 2005).	Inadequate technology for processing and refining herbal medicine.	Emerging national and global market for herbs and herbal medicines, e.g. from <i>Prunus Africana</i> .	Patent rights for genetic resources.
				Expertise for processing herbal medicine,	Increased acceptance of use of herbal medicine.	
17	Contribution to resilience to vulnerability, e.g. from climate change	Carbon sequestration value worth U Sh56 billion annually (estimated in	Physical attributes such as rainfall and temperature are excellent for growth and thus capturing carbon.	High rate of deforestation and degradation,	Expanding global market for carbon.	Accessing the market due to complex and expensive procedures.

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
	impacts.	2004).				
	The degree of self-financing (U Sh).	The private sector in plantation establishment and processing are self-financing to some extent.		Most of the natural forests cannot be economically viable without factoring in service values such as soil conservation and water catchment.	New and innovative sources of funding such as PES,	Generating political commitment to properly using innovative sources of funding, e.g. debt-for-nature swaps.
				Inadequate technical and business skills in production and processing.		
		The furniture industry is entirely self-financing.				
19	Contribution to the implementation of multilateral environment agreements (MEAs).	Forestry is a central component of CBD, UNCCD, and UNFCCC.	Uganda has ratified all the MEAs.	Inability to prepare quality financing proposals.	Growing global concerns for biodiversity, climate change and desertification.	Negotiating project proposals through the financing systems of the MEAs.

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
				Poor capacity to network within the negotiating processes.		
20	Overall sustainability of resource use/ environmental quality.	Decreasing forest cover.		Political positions that tend to relegate forestry to a low priority rating.	New sources of investment financing such as oil discovery, insurance and pension funds, carbon markets, and international conventions and protocols.	High rate of population growth (3.2 percent) is the highest in the region.
				Inadequate managerial and technical expertise.	Peace in northern Uganda and southern Sudan.	Carrying out effective law enforcement and governance.
				Low levels of technology in forest management and use.	Slowly emerging political understanding of the importance of forestry to other sectors.	Reflecting all forestry values in financial terms acceptable in the national accounts.
				Poor understanding among investors that forestry pays.	Growing need for certified forest products internally but especially on the international market.	Creating an enabling environment for long-term investment in forestry.
				Difficulties in accessing investment financing.		Readjusting the development agenda to recognize

	Parameters	Quantifiable/ physical evidence	Factors promoting the attainment of the NDP goal	Factors holding back the attainment of the parameter	Emerging opportunities to further improve the parameter	The challenges that have to be addressed in the next five years
						the vital roles played by forests.
				Unavailability of relevant information to inform investment.		Reflecting all forestry values in financial terms that are acceptable in the national accounts.
						Balancing the need of forest landowners with the needs for protecting these lands.
						Domesticating international forest management and chain-of-custody certification.
						Marshalling regional cooperation, especially with countries outside the East African Community.

ANNEX 6: PROPOSED SECTORAL PLAN MATRIX

<i>Key for National Development Plan Objectives:</i>																	
<ol style="list-style-type: none"> 1. Lift living standards 2. Enhance gainful employment (quality & availability) 3. Improve social, economic & trade infrastructure 4. Develop efficient, innovative & international standards 5. Develop & exploit the natural resource base & ensure environmental & economic sustainability 6. Good governance & human security 																	
Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
01: To improve the ability of forests and trees to yield increases in economic, social and environmental benefits for all people, especially the poor and vulnerable, now and in the future																	
		1.1 Improve the management of the permanent forest estate															
			1. Manage natural forests for production according to sustainable forest management principles.	√	√	√	√	√	√	National Forestry Authority, private sector, local governments	150,000 ha of natural forest production area managed in a phased approach to sustainable forest management by	2,400	3,600	3,600	4,500	4,500	18,600

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
											the end of the year (EOY) 5.						
	Increased forest cover in the permanent forest estate (PFE)		2. Increase forest plantation area in the PFE.	√	√	√	√	√	√	National Forestry Authority, private sector, local governments	30,000 ha of profitable and productive forest plantation planted by EOY 5	12,000	12,000	12,000	12,000	12,000	60,000
			3. Maintain forest plantations in the PFE.	√	√	√	√	√	√	National Forestry Authority, local governments	45,000 ha of young plantations maintained by thinning and pruning, etc. by EOY 5	7,500	10,500	13,500	16,500	19,500	67,500

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
	Increased forest products and services from the PFE		4. Improve protection of the permanent forest estate	√	√	√	√	√	√	National Forestry Authority, local governments	1 million ha of CFRs and local forest reserves effectively protected (excluding natural forests covered under activity 1)	1,000	,000	1,000	1,000	1,000	5,000
			5. Remove encroachers from forest reserves.	√	√	√	√	√	√	National Forestry Authority, local governments	50,000 ha reclaimed from encroachers by EOY 5	2,500	10,000	500	7,500	4,500	25,000
			6. Re-demarcate and maintain forest	√	√	√	√	√	√	National Forestry Authority, local government	6,000 km of forest reserve boundaries re-	1,000	3,000	4,000	4,000	-	12,000

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			reserve boundaries.							ts	demarcated and put on cadastral maps by EOY 4						
			Review and update Forest Management Plans.	√	√	√	√	√	√	National Forestry Authority, local governments	forest management plans covering 500,000 ha reviewed by EOY 5	50	50	50	50	50	250
	Forests being managed according to established guidelines and standards		Expand collaborative forest management (CFM).	√	√	√	√	√	√	local governments, service providers	250,000 ha of CFRs managed in partnership with forest adjacent to communities by	300	500	700	800	800	3,100

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
											2014.						
			Promote private sector enterprises dealing in forest products and services from the permanent forest estate.	√	√	√	√	√		National Forestry Authority; private sector; local governments	Information pack on forest investment opportunities in the permanent forest estate developed and disseminated.	80	50	50	50	50	280
												26,830					
													40,700	35,400	46,400	42,400	191,730
			1.2 Improve the management of forests on private and communal land														
	Increased forest products and services from private and communal forests		Increase forest plantation on private / communal	√	√			√		Local governments, private sector, communities	20,000 ha of profitable and productive	8,000	8,000	8,000	8,000	8,000	40,000

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			land.								forest plantation planted by EOY 5.						
	Forests managed according to established guidelines and standards		Maintain forest plantations on private and communal land.	√	√			√			26,000 ha plantations maintained by thinning and pruning, etc.	2,500	4,500	6,500	8,500	10,500	32,500
			Support community livelihood initiatives as corporate social responsibility.	√	√	√	√	√	√	Private forest owners	10,000 households supported to improve livelihoods	100	100	100	100	100	500
			Develop guidelines for the management of private and customary natural forests and woodlands.				√	√		Ministry of Water and Environment / Forest Sector Support	Guidelines for managing natural high	-	150	100	-	-	250

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
										Department	forests and woodlands developed and disseminated.						
			Manage private and communal natural forests according to sustainable forest management principles.	√	√	√	√	√	√	Private sector, CBOs	1,000 ha of private and communal natural forests being managed in a phased approach to sustainable forest Management (SFM) by the end of year (EOY) 5.	-	20	40	70	100	230
													12,770				

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
											10,600		14,740	16,670	18,700	73,480	
		1.3 Improve the quality of tree seed and planting materials															
	Quality tree seed and planting material used		Improve tree seed collection, testing, storage and distribution.	√	√	√	√	√			20,000 kg of quality tree seed produced from identified seed sources annually.	1,000	1,000	1,000	1,000	5,000	
			Establish and maintain quality tree seed sources.	√	√	√	√		National Forestry Authority, local governments, private sector	80 new seed sources of minimum standards established by EOY 5.	400	400	-	-	-	800	
			Maintain quality tree seed sources.	√	√	√	√		National Forestry Authority, local government, private sector	150 seed sources of minimum standards maintained	175	275	375	375	375	1,575	

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
											by EOY 5.						
			Produce quality tree seedlings.	√	√	√	√	√		National Forestry Authority, local government, private sector	20 million quality tree seedlings produced annually.	3,000	3,000	3,000	3,000	3,000	15,000
			Develop and implement a tree improvement programme.	√	√		√	√		National Forestry Authority, National Forestry Resources Research Institute.	Tree improvement for 5 priority species developed and implemented by EOY 5.	100	100	100	100	100	500
												4,675	4,775	4,475	4,475	4,475	22,875

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
<i>1.4 Increase economic benefits of forests, woodlands and trees to communities</i>																	
	Increased household monetary incomes from forest-based activities		Increase wood stocks on farm.	√	√	√	√	√		Local government, private sector.	5,000 ha of on-farm woodlots grown annually.	7,500	7,500	7,500	7,500	7,500	37,500
	Improved environmental benefits		Improve capacity of the service providers to deliver quality forestry advisory services.	√	√	√	√	√	√	Local governments, service providers.	8,000 service providers given induction course to enhance their capacity to provide forestry advisory services.	960	960	960	960	960	4,800
	Employment opportunities in commercial forestry sector increased.		Provide effective forestry services.	√	√	√	√	√	√	Local governments, service providers	20,000 households effectively receiving advisory	2,000	2,000	2,000	2,000	2,000	10,000

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
											services.						
			Increase forestry based enterprises among local communities.	√	√	√	√	√	√	Local governments, service providers.	At least five forest-based enterprises developed (e.g. honey, charcoal, fruits and crafts, gum).	10,000	10,000	10,000	10,000	10,000	50,000
			Increase capacity to process timber products.	√	√	√	√	√		National Forestry Authority, private sector.	Train sawmillers to increase timber recovery to 40 percent by EOY 5.	-	40	40	40	-	120
	Forests managed according to agreed standards		Promote forest product certification	√	√	√	√	√	√	National Forestry Authority, private sector	Guidelines and infrastructure for	10,000	15,000	15,000	17,500	17,500	75,000

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			to access export markets.								forest certification of 150,000 ha developed by EOY 5						
												30,460	35,500	35,500	38,000	37,960	177,420
1.5 Expand the capacity and quality of harvesting and processing timber and non-timber forest pr																	

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
	Increased forest productivity		Improve harvesting practices for higher revenue.	√	√	√	√	√	√	Private forest owners, DFS	Guidelines for harvesting natural high forests and woodlands developed and disseminated.	-	150	100	-	-	250
	Value and percent of contribution of forestry to GDP increased		Improve forest products processing practices for higher revenue.	√	√	√	√	√			Modern sawmills constructed.	-	-	100,000	-	-	100,000
												-	150	100,100	-	-	100,250
		1.6 Promote biodiversity conservation and its sustainable use														0	
	Sustained forest biological diversity		Demarcate biodiversity conservation	√	√	√	√	√	√	Ministry of Water and Environment,	500 km of conservation zones	250	250	250	250	250	1,250

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			n zones.							National Forestry Authority; local governments	demarcate d annually						
			Take affirmative action to increase the abundance of threatened / endangered tree species.	√	√	√	√	√	√	National Forestry Authority, private forest owners.	10,000 seedlings of threatened / endangere d species planted in harvested gaps and maintained annually.	25	35	45	55	75	235
			Develop eco- tourism.	√	√	√	√	√	√	National Forestry Authority, private forest owners	10 new eco- tourism sites developed by EOY 5.	200	200	200	200	200	1,000
			Improve managemen t of biodiversity	√	√	√	√	√	√	Private forest owners, local governments	5,000 ha of private natural forests	20	40	60	80	100	300

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			corridors.								managed for increased economic benefits.						
												495	525	555	585	625	2,785
1.7 Promote business partnerships between public and private sector for forestry-based investments																	0
	Increased and sustained investment in the forestry sub-sector		Develop incentive schemes for private sector investment.	√	√	√	√	√	√	Ministry of Water and Environment	A Tree Fund established and operationa l.	5,000	8,000	10,000	15,000	20,000	58,000
			Develop business partnerships between the public and private sector for forestry- based investments.	√	√	√	√	√	√	Ministry of Water and Environment, National Forestry Authority, local governments, the private sector	Commerci al investment s valued at US\$500 million worth of PPP arrangeme nts by EOY 5.	170,000	170,000	170,000	170,000	170,000	850,000

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)	
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5		
												175,000	178,000	180,000	185,000	190,000	908,000	
		1.8 Promote urban forestry																0
	Improved urban environmental health.		Mainstream forestry in urban development plans.	√	√	√	√	√	√	Local governments, urban authorities.	20 Urban Development Plans Forestry mainstreamed by EOY 5.	75	75	75	75	75	375	
			Increase urban tree cover.	√	√	√	√	√	√	Local governments, urban authorities.	100 ha in 25 urban centres planted with trees along avenues, recreational areas and other gazetted public areas by EOY 5.	20	20	21	21	21	103	

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
												95	95	96	96	96	478
02 To make positive changes in the restoration of environmentally degraded ecosystems																	
2.1 Restore / Rehabilitate deforested and degraded watersheds																	
			Rehabilitate / restore the degraded Central Forest Reserve and local forest reserves.	√	√	√	√	√	√	National Forestry Authority, local governments	15,000 ha of degraded CFRs/local forest reserves rehabilitated by EOY 5.	3,000	4,500	6,000	7,500	9,000	30,000
	Increased forest cover on private and communal land		Rehabilitate / restore the degraded private and communal natural forests and	√	√	√	√	√	√	Private forest owners	1,000 ha planted and maintained annually.	1,000	1,500	2,000	2,500	3,000	10,000

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			watersheds.														
	Increased forest and tree cover outside government protected areas		Rehabilitate fragile ecosystems (river banks, bare hills, lakeshores).	√	√	√	√	√	√	National Forestry Authority, local government, private sector, NGOs	2,500 ha of riverbanks, lakeshores and bare hills rehabilitated by EOY 5.	500	501	501	502	502	2,505
03 To promote research for the improvement of the productivity of the natural resource base												4,500	6,501	8,501	10,502	12,502	42,505
		3.1 Conduct objective-Driven Forestry Research															
			Undertake socio-economic impact assessments of forest management.	√	√	√	√	√	√	Research institutions	Studies undertaken on 5 forest management units by EOY 5.	50	50	50	50	50	250

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)	
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5		
			Undertake applied research on key forest management issues.	√	√	√	√	√	√	Research institutions	At least 5 forestry-related research issues / themes studied by EOY 5.	50	50	50	50	50	250	
	Increased tax and non-tax revenue and income to forest owners, processors and local people		Undertake total economic valuation of key forest ecosystems.	√	√	√	√	√	√	Research institutions	3 forest evaluation studies undertaken by EOY 5.	-	100	100	100	-	300	
												100	200	200	200	100	800	
04 To establish comprehensive laws, policies, regulations, standards and guidelines and ensure that they are enforced for efficient and effective management of the ENR																		
		4.1 Increase good governance and public accountability in forest management																
			Bring the legislative cycle to its completion.	√	√	√	√	√	√	Ministry of Water and Environment	Forest rules finalized and gazetted	50	-	-	-	-	50	

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
											by EOY 1.						
			Enact and enforce forestry management by-laws and ordinances at all local government levels.	√	√	√	√	√	√	Local governments, Ministry of Water and Environment, NGOs.	20 by-laws / ordinances enacted by EOY 5.	80	80	80	80	80	400
			Improve intra- and inter-sectoral cooperation	√	√	√	√	√	√	Ministry of Water and Environment.	10 memoranda of understanding (MoUs) developed and implemented by EOY2.	5	5	-	-	-	10

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			Deliberately engage the CSOs and political leaders in forestry sub-sector.	√	√	√	√	√	√	Ministry of Water and Environment, National Forestry Authority, local governments, CSOs.	1 national consultative stakeholder meeting and 5 sub-national meetings held annually.	175	175	175	175	175	875
												310	260	255	255	255	1,335
05 To significantly strengthen the capacities of lead agencies and other institutions to implement programmes for environmental management																	
5.1 Develop and Implement a user-friendly information management system																	
	User-friendly digital-based information systems for CFRs, local forest reserves and forests and trees on private lands		Develop an easy-to-use information management system for the forestry sub-sector.	√	√	√	√	√	√	Ministry of Water and Environment, National Forestry Authority, local governments	Fully operational database producing and distributing 10 information packs annually.	100	100	50	50	50	350

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
	70% of Ugandans aware of economic opportunities available in forestry by 2014		Conduct public education.	√	√	√	√	√	√	Ministry of Water and Environment, National Forestry Authority, local governments	A public awareness strategy developed and implemented by EOY 5.	100	500	500	500	500	2,100
												200	600	550	550	550	2,450
		<i>5.2 Strengthen the capacities of stakeholder institutions to supervise and effectively deliver forestry services</i>															
			Improve the staffing level of forest sub-sector for the implementation of the	√	√	√	√	√	√	Ministry of Water and Environment, National Forestry Authority, local governments	All the approved vacancies in the Forestry Sector Support Department	5,000	5,500	6,050	6,655	7,321	30,526

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
			NDP.								t, DFS and NFA filled and all salaries paid.						
			Improve staff skills to deliver forestry products and services.	√	√	√	√	√	√	Ministry of Water and Environment, National Forestry Authority, local governments	25% of staff in the key government institutions trained annually.	150	150	150	150	150	750
			Develop motivation mechanisms for institutional staff and partners.	√	√	√	√	√	√	Ministry of Water and Environment, National Forestry Authority, local governments	An operational motivation mechanism in place by EOY 2.	500	550	605	666	732	3,053
			Procure and operate vehicles.	√	√	√	√	√		Ministry of Water and Environment,	100 vehicles procured	2,880	2,960	1,600	200	300	7,940

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
										National Forestry Authority, local governments	by EOY 3.						
			Expand the infrastructure for effective management of the forestry sub-sector.	√	√	√	√	√	√	Ministry of Water and Environment National Forestry Authority, local governments	Sufficient basic infrastructure provided to facilitate delivery of services.	2,000	2,000	2,000	2,000	2,000	10,000
			Improve skills of NGOs/CBOs to implement forestry programmes.							CSOs	200 people from NGOs/CBOs provided with skills annually in practical forestry.	140	140	140	140	140	700
												10,670	11,300	10,545	9,811	10,643	52,968

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/Target	Annualized Costs (U Sh million)					Total (U SH)
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
06 To build the capacity of MWE to coordinate planning and monitoring and account for the public resources provided for management of the ENR																	
6.1 Mobilizing Investments for Growth of the Forestry Sub-sector																	
			Develop innovative financing mechanisms for forest development (e.g. carbon, payment for environmental services).	√	√	√	√	√	√	Ministry of Water and Environment	4 studies on innovative sources of funding undertaken by EOY 2.	100	100	-	-	-	200
			Implement the innovative funding mechanisms	√	√	√	√	√	√	Ministry of Water and Environment	US\$150 million of new funds invested in the forestry sub-sector by EOY 5.	-	42,500	51,000	61,200	73,440	228,140
												100	42,600	51,000	61,200	73,440	228,340

Key for National Development Plan Objectives:

1. Lift living standards
2. Enhance gainful employment (quality & availability)
3. Improve social, economic & trade infrastructure
4. Develop efficient, innovative & international standards
5. Develop & exploit the natural resource base & ensure environmental & economic sustainability
6. Good governance & human security

Sector Dev. Obj.	Forestry sub-sector outcomes	Sub-sector Strategies	Activities	NDP's objective met by the sector's priorities						Responsible Agency	Measurable Output/ Target	Annualized Costs (U Sh million)					Total (U SH)		
				1	2	3	4	5	6			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5			
																			40
			Total									264,035	333,976	441,917	373,743	391,746			1,805,416

ANNEX 7: USE OF AGROFORESTRY TECHNOLOGIES AT THE DISTRICT LEVEL

District	Agroforestry Technology (%)						No agroforestry system (%)	Total (%)
	Boundary planting	Woodlots	Traditional agroforestry	Hedgerows	Alley cropping	Others		
Kitgum	0.0	0.0	19.4	0.0	0.0	0.0	80.6	100
Kamwenge	8.3	0.0	25.0	0.0	0.0	0.0	66.7	100
Nebbi	5.6	22.2	8.3	0.0	0.0	0.0	63.9	100
Rukungiri	5.6	19.4	11.1	0.0	0.0	0.0	63.9	100
Adjumani	2.8	11.1	13.9	5.6	0.0	2.8	63.9	100
Hoima	16.7	2.8	16.7	0.0	0.0	0.0	63.9	100
Nakasongola	8.3	13.9	16.7	0.0	0.0	0.0	61.1	100
Kamuli/Kaliro	0.0	2.8	36.1	0.0	0.0	0.0	61.1	100
Mbarara/Isingiro/Kiruhura	10.4	8.3	14.6	2.1	2.1	2.1	60.4	100
Sembabule	11.1	0.0	30.6	0.0	0.0	0.0	58.3	100
Bushenyi	2.8	0.0	33.3	0.0	8.3	0.0	55.6	100
Bugiri	11.1	0.0	33.3	0.0	0.0	0.0	55.6	100
Gulu/Amuru	0.0	11.1	38.9	0.0	0.0	0.0	50.0	100
Palisa/Budaka	5.6	8.3	41.7	0.0	0.0	0.0	44.4	100
Masaka	30.6	0.0	25.0	0.0	0.0	0.0	44.4	100
Kabale	2.8	0.0	47.2	2.8	2.8	0.0	44.4	100
Iganga/Namutumba	2.8	16.7	33.3	0.0	2.8	5.6	38.9	100
Ntungamo	13.9	0.0	36.1	0.0	11.1	0.0	38.9	100
Arua/Koboko/Maracha-Terego	0.0	30.6	27.8	0.0	5.6	0.0	36.1	100
Mbale/Manafwa/Buduuda	5.6	16.7	38.9	0.0	0.0	2.8	36.1	100
Kasese	19.4	11.1	33.3	0.0	0.0	0.0	36.1	100
Jinja	19.4	2.8	38.9	0.0	5.6	0.0	33.3	100
Lira/Dokolo/Amoratar	13.9	8.3	47.2	0.0	0.0	0.0	30.6	100

District	Agroforestry Technology (%)						No agroforestry system (%)	Total (%)
	Boundary planting	Woodlots	Traditional agroforestry	Hedgerows	Alley cropping	Others		
Soroti	2.8	25.0	33.3	5.6	2.8	2.8	27.8	100
Luwero/Nakaseke	5.6	2.8	61.1	0.0	2.8	0.0	27.8	100
Tororo/Butaleja	0.0	5.6	69.0	0.0	0.0	0.0	25.0	100
Kisoro	16.7	2.8	36.1	19.0	0.0	0.0	25.0	100
Kiboga	16.7	0.0	58.3	0.0	0.0	0.0	25.0	100
Rakai/Lyantonde	28.2	0.0	44.0	0.0	0.0	2.8	25.0	100
Sironko	41.7	0.0	41.7	0.0	0.0	0.0	16.7	100
Kumi/Bukedea	5.6	5.6	80.6	0.0	0.0	0.0	8.3	100

Source: FIEFOC Baseline Survey Report (FSSD, 2007)

Annex 8: Quantity/flow of water, 1997–2007 (%)

	District (s)	Water quantity/flow		
		Increase d	Reduce d	No significant change
Group A	Masaka	0	94	6
	Kumi/Bukedea	8	92	0
	Sembabule	6	75	19
	Nakasongola	8	72	20
	Kabale	0	69	31
Group B	Luwero/Nakaseke	0	64	36
	Rakai/Lyantonde	8	64	28
	Kisoro	0	64	36
	Kamwenge	3	61	36
	Gulu/Amuru	0	61	39
	Kasese	3	61	36
	Tororo/Butaleja	11	58	31
	Soroti	3	61	36
	Mbarara/Ibanda/Isingiro/Kiruhur a	4	42	54
	Lira/Dokolo/Amoratar	17	53	30
	Adjumani	3	53	44
	Nebbi	3	53	44
	Hoima	0	53	47
	Group C	Palisa/Budaka	33	47
Kitgum		31	44	25
Bugiri		3	44	53
Sironko		6	39	55
Bushenyi		3	39	58
Rukungiri		0	39	61
Kiboga		17	31	52
Arua/Koboko/Maracha-Terego		19	25	56
Mbale/Manafwa/Buduuda		0	25	75
Ntungamo		22	19	59
Jinja		0	14	86
Iganga/Namutumba		0	8	92
Kamuli/Kaliro		8	6	86

Source: FIEFOC Baseline Survey Report (FSSD, 2007)

ANNEX 9: PROJECTIONS FOR TIMBER NEEDS AND CORRESPONDING INVESTMENT, 2008–2025

Year	Area (ha)			Cost of establishment, first 3 years (U Sh)
	Govern-ment (NFA)	Private Investment	Total Annually	
2008	2,100	4,000	6,100	7,320,000,000
2009	2,200	4,000	6,200	7,440,000,000
2010	2,260	4,500	6,760	8,112,000,000
2011	2,390	5,000	7,390	8,868,000,000
2012	2,520	5,500	8,020	9,624,000,000
2013	2,650	6,000	8,650	10,380,000,000
2014	2,780	6,500	9,280	11,136,000,000
2015	2,910	7,000	9,910	11,892,000,000
2016	3,040	7,500	10,540	12,648,000,000
2017	3,170	8,000	11,170	13,404,000,000
2018	3,300	8,500	11,800	14,160,000,000
2019	3,430	9,000	12,430	14,916,000,000
2020	3,560	9,500	13,060	15,672,000,000
2021	3,690	10,000	13,690	16,428,000,000
2022	3,820	10,500	14,320	17,184,000,000
2023	3,950	11,000	14,950	17,940,000,000
2024	4,080	11,500	15,580	18,696,000,000
2025	4,210	12,000	16,210	19,452,000,000
	56,060	140,000	196,060	235,272,000,000

Source: NFA, 2005

UNDP-UNEP Poverty-Environment Initiative
P.O. Box 30552 (00100)
Nairobi/Kenya

Fax: + 254-20-7624525
Email: facility.unpei@unpei.org
www.unpei.org