



THE SECOND NATIONAL WORKSHOP

ON

**SETTING OF FORESTRY RESEARCH PRIORITIES
FOR KENYA**

AT

KEFRI HEADQUARTERS, MUGUGA

14TH - 16TH JULY, 1997

EXECUTIVE SUMMARY

1.0 INTRODUCTION

The First National Workshop on Setting Forestry Research Priorities in Kenya was held in Nyeri in 1989. KEFRI was then barely three years old. The Nyeri Workshop was attended by 74 participants and 41 papers were presented. The workshop recommendations formed the basis for the preparation of KEFRI's current Strategic Plan 2000. Between 1990 and 1997 two external and one internal reviews were carried out on KEFRI's research programmes. The reviews have highlighted some major weaknesses in the priorities identified at the Nyeri Workshop as being discipline oriented and lacking relative ranking.

The second National Workshop was therefore organized to provide outputs for preparation of a revised strategic plan with emphasis on prioritized and ranked user-oriented research activities; the implementation of which is proposed to be multi-disciplinary. Eighty six (86) participants attended the three day workshop. The participants were drawn from a large spectrum of stakeholders including Research Institutions, Training Institutions, Universities, Forest Department, Government Ministries, Forest industry, NGOs, Farmers, JICA and GTZ. Fifteen (15) papers were presented and discussed. The Workshop programme ran for three days and was divided into sessions which addressed the following themes

- Forest Development and Research Overview
- Forest Management Issues
- Review of on-going Research Activities
- Research Implementation and Dissemination Strategy
- Group Work

The participants were divided into six groups to discuss pertinent issues, problems and their priorities in the following topics:

- Natural Forest Conservation and Management
- Farm Forestry
- Industrial Forest Plantations
- Dryland Forestry
- Research Programmes
- Rationale and Prioritization of KEFRI Stations

2.0 OBJECTIVES

The main objective of the Workshop was to provide outputs for preparation of a revised strategic plan with emphasis on prioritized user-oriented research activities.

The specific objectives were to:

- (a) Review Forestry research and development in the last decade.
- (b) Rank the four major forestry research programmes: Farm Forestry, Industrial Forest Plantations, Natural Forest Conservation and Management and Dryland Forestry in their relative importance to the national development needs.
- (c) Identify and prioritize research problems and activities in each of the four programmes.
- (d) Recommend key research centres and outstations for implementing the identified research programmes and activities.

3.0 PROBLEMS AND ISSUES

The following major problems and issues were raised during the paper presentation and subsequent discussions.

3.1 Review of Forest Development, Management and Conservation Issues

3.1.1 National Goals and Forestry Development Objectives in Kenya

Goals of the Forestry Sector

- To increase forest cover
- To conserve existing natural forests
- To alleviate poverty through employment and community participation
- To efficiently manage the forest resource bearing in mind environmental impact
- To promote forest industry
- To honour Kenya's relevant international commitments

Issues and Challenges facing Forestry Sector

- Recognition of farm forestry as an alternative source of forest products
- Over-reliance on a few exotic species
- Obsolete technology in wood industries
- Inefficient raw material utilization e.g. sawmill recovery of 10-30%
- Loss of forest cover due to agricultural activities resulting in loss of biodiversity
- Lack of information on composition and utilization of closed canopy forests.

Strategies to mitigate the identified problems

- The new forest policy is expected to be adopted soon
- Appropriate forestry legislation for implementation of policy has been developed and forwarded to Attorney General's Chambers
- Managerial capabilities to be improved through training of personnel
- Institutional re-organization of Forest Department to be done
- Forest excision to be reduced or eliminated
- Ecotourism as a means of forest utilization to be encouraged
- Role of adjacent communities in forest conservation and management to be enhanced.

Remarks

- Harmonization of policies and laws on land use is being done
- New data is necessary to up-date records e.g. on domestic energy supply and demand
- Government policy on taxation and importation should be reviewed in order to encourage investment in new technology

3.1.2 Natural Forest Conservation and Management

Issues/Problems

- Unsustainable nature of forest management due mainly to timber poaching and licensed over-exploitation
- Forest protection against pests, diseases, animals, people and fires needs to be stepped up
- Conservation of soil, water and biodiversity to be enhanced
- Technical guidelines on regeneration, recruitment and seed viability of indigenous forests are not available

- Policy research to support management decisions is lacking
- There is inadequate dissemination of research findings to extension and other users.

Discussion

- Serious human problems including poaching, grazing and excisions abound at ground level and need urgent action
- There is need to quantify soil loss against benefits accrued from natural forests
- Forest Policy and Forest Act are not well implemented by managers due to lack of political goodwill.

3.1.3 Farm Forestry

Issues/Problems

- Inadequate quantity and poor quality of seed and other regeneration material
- Lack of documentation and incorporation of indigenous knowledge and systems in farm forestry development
- Ineffective extension methods
- Unavailability of appropriate tree species and inadequate technology development for their management in various eco-zones countrywide
- Insufficient participation of local communities and other stakeholders in farm forestry technology development
- Undeveloped markets for farm forestry wood and non-wood products
- Inadequate knowledge on various integrated Pest Management (IPM) systems resulting in poor survival of farm forestry trees

3.1.4 Industrial Forest Plantations

Issues/Problems

- Over-reliance on few species
- Inadequate tree seed and other regeneration material
- Poor field seedling survival due to bad nursery practices and inadequate silvicultural operations
- Low sawmill recovery due to obsolete technology
- Extensive damage of plantations by pests, diseases, animals and fires continues annually
- Lack of political goodwill to implement relevant policy statements has resulted in large excisions and forest degradation
- Lack of integrated harvesting has resulted in big losses during logging and utilization of forest materials

3.1.5 Forests and Woodlands in Drylands

Issues/Problems

- Adverse climatic conditions resulting in very low tree survival
- Inadequate information on indigenous knowledge on woodland management and conservation
- Lack of participation by local communities in woodland management and conservation
- Lack of information on appropriate tree species for drylands
- Termite remains the most critical pest problem in tree planting
- Lack of investment by forest industry in woodland development

3.2 Review of On-Going Research Activities

3.2.1 Farm Forestry Research Activities

- Screening, management and utilization of agro-forestry tree and shrub species
- Enhancing nutrient capture and retention
- Domestication of tree crops as an emerging area
- Cost/benefit analysis of agroforestry systems

3.2.2 Industrial Plantation Research Activities

- Seed technology with special emphasis on collection, handling, storage and distribution
- Tree Improvement, specifically species selection and progeny testing
- Wood and non-wood Forest Products, focussing on timber grading and structural testing, properties of *E. Saligna* for transmission poles, production of laminated products, low cost treatment of poles and posts and research on resins and oils.

3.2.3 Natural Forest Conservation Research Activities

- Socio-economic studies that include
 - Forest utilization by adjacent countries
 - Impact of game damage, human activities and grazing
 - Ecotourism as a potential future commercial activity

- Conservation:
 - Soil, water and biodiversity conservation
 - Growth and yield studies
 - Regeneration of degraded forests
- Non-wood forest products
 - Documentation of traditional uses and values of indigenous plants
 - Inventory and enrichment of indigenous bamboo resources

3.2.4 Dryland Forestry Resources Research Activities

- Irrigated forestry in Hola/Bura focussing on tree species selection and water use efficiency
- Dryland tree species and provenance trials
- Woodland conservation and management technology development
- On-farm research trials and extension activities
- Non-wood forest products development

3.2.5 Moi University Forestry Research Activities

- Farm Forestry: Gum extraction from *Grevillea robusta*, creosote/used engine oil treatment for posts and mycorrhizal association
- Industrial Forestry: development of non-wood pulp from pineapple etc; sap ringing to reduce cracking in eucalyptus poles
- Natural Forests: seed germination trials for cedar; extraction of oil from camphor
- Dryland forestry: underground termite treatment

4.0 IMPLEMENTATION AND DISSEMINATION STRATEGIES

4.1 Strategies for Dissemination of Research Findings

- Print media: pamphlets, journals, newspapers
- Farm visits: general visits, Training and Visit (T & V) system
- Groups: women groups, schools
- Mass media: radio, TV, drama
- In-service training at various levels
- Emerging strategies: local level initiatives, farmer based research initiatives

4.2 Alternatives for Improved Networking Between Forest Research and Extension Services

- Working out a concept for forestry extension
- Improvement of new institutional linkages between Forest Extension Services Division (FESD) and KEFRI
- Training of Forest Department (FD) and KEFRI personnel to meet clients' needs
- Unified approach to extension

4.3 Rationale and Mandate of KEFRI's Centres/Outstations and Their Distribution

There are 17 research stations as follows:

- Headquarters: Muguga
- Forest Product Research Centre: Karura (FPRC)

- Regional Centres: Muguga, Gede, Kitui,
Londiani, Maseno
- Out-stations: Nyeri, Turbo, Turkana,
Kibwezi
- Outposts: Kuja River, Kitale, Kakamega,
Ramogi, Marigat, Bura, Hola.

5.0 RECOMMENDATIONS

The following are the ranked forestry research priorities:

5.1 Research Priorities in Natural Forest Conservation and Management

Problem Ranking

1. Inadequate information to support policy decisions on management and conservation of natural forests.
2. Kenya's natural forests are undervalued.
3. Over-reliance on few indigenous species for wood and non-wood products and services.
4. Inadequate information to develop management plans for sustainable multiple-use of natural forests.
5. Large areas of Kenya's natural forests are undergoing degradation.
6. Insufficient information on biodiversity inventory and conservation.
7. Lack of knowledge of measurable indicators of sustainably managed natural forests and degradation.
8. Certification methods for natural forest products not developed.

5.2 Research Priorities in Farm Forestry

Problem Ranking

1. Inadequate technologies and lack of clear management guidelines for farm forestry.
2. Under-developed market systems and opportunities for products.
3. Inadequate supply of high quality propagation material.
4. Ineffective extension approaches.
5. Insufficient recognition of indigenous knowledge and practices.
6. Weak institutional capacity to implement farm forestry.
7. Unclear policy and inappropriate legislation for farm forestry

5.3 Research Priorities in Industrial Forest Plantations

Problem Ranking:

1. Inadequate supply of high quality propagation material.
2. Large losses of plantations due to pests, diseases, human interference and game damage.
3. Insufficient economic/financial analysis of silvicultural operations.
4. Inefficient harvesting and utilization of wood products.
5. Under-utilization of non-timber forest products.
6. Over-reliance on few exotic species.

5.4 Research Priorities in Dryland Forestry

Problem Ranking

1. Large areas of Kenya's drylands are undergoing degradation/deforestation.

2. Inadequate information on availability and utilization of wood and non-wood dryland resources.
3. Inadequate technologies and lack of clear management guidelines for dryland forest resources management and conservation.
4. Insufficient validation and documentation of indigenous knowledge and practices in dryland forest resource management and conservation.
5. Serious constraints to tree establishment.
6. Unclear land and tree tenure arrangements in dryland forest resource management and conservation.

5.5 KEFRI Research Programme Prioritization

Ranking of the main programmes

1. Farm Forestry
2. Natural Forest conservation and management
3. Dryland Forestry
4. Industrial Forest plantations

6.0 RESEARCH CENTRES

Rationale and Prioritization of KEFRI's Centres

It was agreed to adopt the name "centre" instead of 'station'

KEFRI has 17 centres located in different ecological zones and whose status with regard to staff level, physical facilities and equipment varies from centre to centre. The list was adopted as presented but with minor changes. The following is a list of the centres according to ranked priority:

Headquarter: Muguga - planning and co-ordination, monitoring and evaluation.

Regional Centres: Muguga, Kitui, Maseno, Gede, Londiani.

Karura remains with national focus on forest products research to backstop the KEFRI research programmes and Marsabit was proposed as a future regional centre to address research problems for northern drylands

Sub-centres: Nyeri, Turbo, Turkana, Kibwezi

Field Centres: Kuja River, Kitale, Kakamega, Ramogi, Marigat, Bura, Hola