CAPACITY BUILDING IN TREE PRODUCTS MARKET CHAINS AND TRADE ARRANGEMENTS IN WESTERN KENYA

THE PROCEEDINGS OF STAKEHOLDERS WORKSHOP HELD ON 17TH, 23TH, AND 30TH NOVEMBER 2006 IN MOI UNIVERSITY, LONDIANI AND MASENO.

SUPPORTED BY KENYA FORESTRY RESEARCH INSTITUTE, TREES ON FARM NETWORK (TOFNET) AND MOI UNIVERSITY

Trees on Farm Network

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1.0 PROCEEDING OF STAKEHOLDERS WORKSHOP FOR WESTERN AND NOTH RIFT REGIONAL WORKSHOP 17TH NOVEMBER, 2006

OFFICIAL OPENING ADDRESS BY PROF. ERIC KOECH

Dean, School of Natural Resource Management: AG. Principal, Chepkoilel Campus, Moi University, P.O. Box 1125, Eldoret, Kenya.

1.1.1 IMPORTANCE OF FARM FORESTRY

There is a growing interest on farm forestry and there is need to manage and support the growing interest of farmers in growing commercial tree crops in Kenya. Through sale of seedlings or tree products, such as Eucalyptus, Bamboo or even wattle trees is not well established farm forestry has proved to be more profitable than maize or wheat enterprises.

It is now a true fact that tree growing is a viable investment (it is like putting money in a bank and getting interest over time and again with minimal risks). Sale of improved bamboo seedling, for instance, currently is going for Kshs 200.00 and if you have only Kshs 5000.00 seedlings, you are actually already a millionaire!

1.1.2 Farm Forestry Problems

Tree growers are not currently benefiting adequately from their tree growing efforts because of various challenges such as:

- Poor species-site matching and lack of quality seeds
- Poor management practices and
- Weak tree product marketing strategies.

Thus overcoming these challenges will go along way to improve contribution of trees on farms on the livelihoods farmers and environmental sustainability.

1.1.3 Proposed Solutions

First, as regards the issue of availing site appropriate genetically improved germplasm, baseline studies to get information on site characteristics and species preferences should be addressed, in addition to developing plans through stakeholder workshops to identify species for different sites and sources of improved germplasm. Good quality planting materials should also be addressed. Practical and simple methods for raising germplasm should reach more farmers.

Secondly, as regards the issue of technologies for on-farm tree management, baseline surveys to get information on current tree management practices and opportunities for improvement should be carried

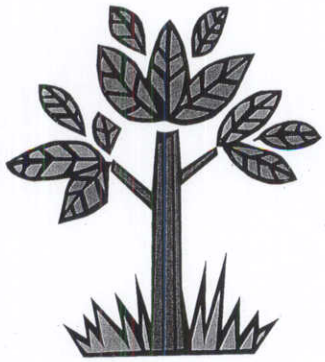
out so that farmers adopt appropriate farm tree management. Also extension staff and farmers should be trained by institutions with capacity such as a Moi University.

Thirdly, as regards marketing structures for tree and tree products, base line study to assess the current marketing structures and channels should be done and gaps identified. Further, appropriate marketing structures should be identified and marketing intelligence to identify preferences and opportunities for processing and value addition should be carried out.

There are opportunities in these areas given the fact that the New Forest Act 2005, support farm forestry through provision of incentives to farmers and support for marketing of farm forestry products. Farmers should not only be supported technically but also financially. Financial institutions such as AFC or KCB should take a bold step and give credit to farmers to growing trees like it is currently being done for agricultural crops like cereals (wheat/maize) or sugar cane. It more credit worth compared to dealing with conventional crops.

Finally, for the future of wood based industries, there is need to establish and sustain dialogue between primary forest production and the industry, identify ways for adequate supply of raw materials (quality and quantity) for the industry and build capacity at all levels in the industry.

- Thank You. The workshop is officially declared open.



CROSS CUTTING PRESENTATIONS DONE IN REGIONAL WORKSHOPS

1.2.0 REVIEW OF FARM FORESTRY IN KENYA: Joshua K. Cheboiwo

1.2.1 Evolution of Farm Forestry

- Farm forestry has long history since 1930s
- Main purpose was for amenity, boundary marking and subsistence use
- Limited commercial purposes orientation except for *A. mearnsii*
- The 1968 policy paper introduced RAES to spearhead rural tree planting activities
- The RAES and other agencies efforts in 1970s realized up to 10 million seedlings were raised in nurseries countrywide per year.
- The main purpose remained largely environmental and subsistence
- Limited entry into lucrative market
- It is estimated that by 2006 up to I million ha in medium and high potential areas are under trees in diverse formation on farms.
- It is widely acknowledged that Kenyan are gifted with tree planting culture

1.2.2 Recent Developments

- During the KEFRI R&D priority setting in 1997 farm forestry emerged no. 1
- Forest Policy and Law 2005
- Ban on harvesting in public forests
- Wonder SA *E. grandis*
- High market demand and good incomes

1.2.3 The problems identified were:

- Lack appropriate technologies and mgt skills
- Weak marketing and utilization systems
- Weak supply of quality planting materials
- Ineffective extension system and approaches
- Conflicting policy and legal framework

1.2.4 KEFRI Tree Product Market and Marketing studies for 1999-2004 and 2005-2010 Strategic Plans

- Carry out research and document potential markets and marketing systems for FF products
- Develop strategies for marketing of tree products
- Develop biophysical and economic models for proven FF systems

- Research and promote uptake of value adding improve income and marketability
- Work in all above been implemented since 1999
- National workshop on markets and marketing in 2003
- KEFRI/TOFNET ECA regional market chains and trade arrangements 2005-2006: 5 countries: Kenya, Ethiopia, Rwanda, Tanzania and Uganda
    - Tree product market niches and partnerships
    - Farm HH and market chain surveys done by MU students in western Kenya
    - Stakeholder capacity building in tree product market chain and trade arrangements

1.2.5 Challenges

- Poor quality of mature materials
- Dispersed production systems
- High cost of FF materials
- Small land sizes and direct competition with agricultural crops: Food security
- Poor knowledge on market specifications
- High transactions costs related to permit systems
- Threat from pests and diseases

1.2.6 Issues addressed by the tree products and trade arrangement workshops

- Brief review on potential markets for tree products in western Kenya
- Present finding of Farm and Market surveys
- Evaluate profitability of FF enterprises vs crops
- Evaluate potential markets and specifications
- Experiences from Model partnerships and out-grower schemes
- Exchanges experiences from other stakeholders in the sector
- Explore the potentials for financing FF enterprises
- Some way forward suggestions

1.3.0 MARKET OPPORTUNITIES FOR SMALLHOLDER TREE PRODUCTS IN WESTERN KENYA: Joshua K. Cheboiwo

Market chain stakeholders

- Production: Farmers and companies

- Processing: Farmer, merchants, industry
- Marketing: Farmers, Merchants, industry
- Trade Regulators: FD, KWS,EMCA, MOA
- Facilitators: FESD, KEFRI, CO, NGOs, CBOs, ICRAF, MOA, FAN, FOA, Banks
- Buyers: Merchants, Firms,

1.3.1 Survey Results: Market Niches for Tree products in western Kenya

The presenter elaborated on various markets niches for tree in western Kenya ranging from industrial firewood for textile, paper and food processing industries, sawlog for saw mills and panel industries, semi-processed poles for transmission pole treatment plants, and poles for construction sectors. The market niches are summarized in the following tables.

Table 1: Firewood Demand by Food and Textile Industries in western Kenya

Name	Return distance in km	Demand in tonnes	Unit price	Total vakue
Rupa Mills	120	2000	800	1,600,000
KenKnit	100	1700	1000	1,700,000
Corn Products	120	18,200	1250	22,750,000
Lessos creameries	100	4700	1500	7,050,000
Arkay Industries	120	600	1100	660,000
Kabras Mills	100	1,000	1300	1,300,00
Western Sugar Mills	160	15,840	1300	20,592,000
Homalime	100	14,500	1000	14,500,000
Muhoroni Sugar	-	-	-	-
Total		58,540		70,152, 000

Table 2: Potential industrial firewood demand by Tea factories in Western Zone

ZONES	Factories	Green Leaf intake in kgs	Black tea output in kgs	Firewood demand in m3/yr	Firewood values in Ksh
Zone 8	Tegat	10,173,642	2,218,096	40,695	40,694,568
	Momul	10,584,952	2,505,145	42,340	42,339,808
	Litei	9,397,168	2,207,157	37,588	37,588672
	Kapkatet	8,210,473	1,971,028	32842	32,841,892
ZONE 9	Kapset	9,344,246	2,218,033	37,376	37,376,984
	Kapkoros	12,614,340	3,218,033	50,457	50,457,360
	Mogogosiek	12,965,021	3,141,362	51,860	51,860,084
Zone 10	Sanganyi	10,690,383	2,573,970	42,761	42,761,532
	Nyansiongo	7,640,007	1,888,203	30,560	30,560,028
	Kebiriko	6,225,391	1,487,927	24,901	24,901,564
	Tombe	7,288,780	2,236,985	29,155	29,155,120
	Nyankoba	7,288,780	1,744,891	29,155	29,155,120
Zone 11	Ogembo	11,679,221	2,809,673	46,716	46,716,884
	Nyamache	12,040,517	2979,100	48,162	48,162,068
	Kiamokoma	8,394,425	2,017,802	33,577	33,577,700
Zone 12	Chebut	9,305,521	2,178,603	37,222	37,222,000
	Mudete	8,132,592	1,962,421	7,850	7,850,000
	Kapsara	226,681	33,414	906	906,000
Total		90,990,078*	39283010	363,960	363,960,3120

Table 3: Industrial Firewood Demand by Pulp and Paper Industries

Industry	Capacity in m^3	Current gate price Ksh/ m^3	Total Cost in Ksh/yr
Highland Paper Mill	4000	1200	4,800,000
Pan African Paper Mills	250,000	1500	375,000,000
Total	254,000		379,800,000

Table 4: Semi-processed transmission polewood by Treatment Plants in western Kenya

Enterprise	Location	Annual Capacity in pieces	Unit price in ksh	Current value in Ksh
TTI-EATEC	Eldoret	100,000	2000	200,000,000
TTI-EATEC	Londiani	40,000	2000	80,000,000
TELKOM-GTI	Gilgil	72,000	2000	144,000,000
Timsales	Elburgon	50,000	2000	100,000,000
EA Cabro	Gilgil	50,000	2000	100,000,000
Typsy Ltd	Eldoret	-	-	-
Total		312,000	2000	624,000,000

Table 5: Sample survey Demand for construction poles in Kisumu

Market	Number of merchants	Monthly stock in pieces	Estimate stock value in Kshs	Market share(%)	Annual turnover Ksh
Kondele	9*	25,200	1,400,000	60	16,800,000
Nyalenda	2	12600	567,000	30	6,804,000
Others	-	4200	189,000	10	2,268,000
Total					25,872,000

1.4.0 FARM LEVEL PRODUCTION AND TRADE ARRANGEMENTS SURVEY RESULTS: Joshua K. Cheboiwo and Joseph Hitimana

The presenters presented findings on tree growing and marketing tree products from farms. The key issues were purpose for tree planting, tradable trees products, farm gate buyers, access to market related information, pricing mechanisms, marketing and trade problems, government support needs and future of tree farm forestry as an enterprises. The surveys were done in Uasin Gishu, Marakwet and Kericho districts. The findings of farm level surveys are presented in another report and the summary of the findings are presented in the following bullets:

- The priority tradable tree products from farm were sawnwood, firewood, poles/posts and charcoal in the order of ranking.
- The main buyers of tree product from farms were merchants, industries and other farmers in the order of ranking

- The main source of information for setting prices for tree products by tree growers were bargain, Forest Department prices and local market prices in that order of importance.
- The main purposes for planting trees on farms were subsistence, commercial and aesthetic in the order of impotance.
- The proportion of the sample farmers that sold tree products in the last one year were 82%.
- The tree growers that had sufficient information on the potentials buyers of tree products from their farms were 30% as compared to 70% who were not.
- The marketing problems reported by sample farmers were low prices, high transport costs and lack of markets in that order of importance.
- The sample farmers who reported that harvesting and movement permits negatively affected trade in tree products from farms were 47% as compared to those that had problems.
- The priority requests by tree growers to the government to facilitate vibrant trade in tree products from farms were provision of extension services, facilitate better prices, and provision of regular market information in that order of importance.
- The tree product forms that tree growers preferred to their tree products were sawnwood, firewood, sawlogs, poles and charcoal in the order of importance.
- In future plans to plant trees on their farms 88% had plans to plant more trees in the next five years.

1.5.0 RESULTS FROM SURVEYS ON MARKETS CHAIN AGENTS: Joshua K. Cheboiwo and Joseph Hitimana

The presenters presented findings on the study on tree product market chain and trade in trees products in western Kenya. The issues presented include sources of traded products, suppliers of products, product turnovers, selling price determination, customers, marketing efficiency, farm forestry development schemes trade arrangements and tree product market linkages. The report on the findings is contained in another report and the summary of the findings are presented in the following bullets:

- The main sources traded tree products were farms (93%) and public forests (7%).
- The main suppliers of tree products to the outlets in major urban centres were wholesalers/retailers themselves (64%), transfer merchants (22%) and farmers (13%).
- Tree products with high turn over in value were sawnwood (42%), charcoal(17%), firewood (16%), poles (14%), and posts (11%).

- The key factors used in the determination of selling prices in market outlets were use of local market prices and bargains (81%), use own prices (12%) and mark up margins (7%).
- The main buyers of tree products from wholesalers and retailers in major urban centres were individuals (57%), others retailers merchants (32%) and industries/construction firms(11%).
- The comparative analysis of the share of consumers price among the key players in the market chains for selected tree products were as follows:
- In the charcoal trade for charcoal from Uasin Gishu sold in Kisumu the farmers received 26%, conractors (18%), burners (10%), transporters (20%), transfer merchants (13%) and wholesaler/retailer (13%).
- In sawnwood trade for sawnwood produced in Uasin Gishu and sold in Kisumu the farmers received 20%, processors (33%), transporters (16%), transfer merchants (17%) and wholesaler/retailer (14%).
- In construction polewood trade for poles produced from Vihiga District and sold in Kisumu the farmers received 45%, transporters (20%), transfer merchants (35%) and wholesaler/retailer (55%).

1.6.0 TREE PRODUCTS DEVELOPMENT, TRADE ARRANGEMENTS AND MARKET LINKAGES IN WESTERN KENYA. Joshua K. Cheboiwo.

1.6.1 Stakeholders, Roles and Arrangements

The presenter highlighted findings of trade arrangements and linkages survey in western Kenya in which several stakeholders that in one way or another relate to tree growing. The relationship ranged from provision of subsidized seedlings, credit support, technical services, market facilitation, regulation, transport subsidy, market guarantee, lease of land joint woodlot development to taxations. The type of relationships between farmers and various stakeholders are presented in Table 4.1

Table 4.1. Marketing and Trade Arrangements

Agents /services	Seedling subsidy	Credit support	Technical support	Marketing facilitation	Transport subsidy	Market guarantee	Lease land	Joint Deve.	Support FOA	Taxes licenses
Homa	√	-	√	√	√	√	√	√	-	-
PPM	√	-	√	-	√	√	-	-	-	-
TTI	-	-	-	-	√	√	-	-	-	-
KTDA	√	-	√	-	√	√	√	-	-	-
Corn prod	√	-	-	-	-	√	-	-	-	-
KENKNIT	-	-	-	-	-	√	-	-	-	-
FAN	√	√	√	√	-	-	-	√	√	-
COSOFA	-	-	√	-	-	-	-	-	√	-
KEFRI	√	-	√	√	-	-	-	-	-	-
FD	√	-	√	√	-	-	-	-	√	√
KVDA	√	-	√	-	-	-	-	-	-	-
LVEMP	√	-	√	√	-	-	-	-	-	-
Councils										√

1.6.2 Out-grower Scheme Experiences

Some institutions in western Kenya had developed out-growers schemes shared experiences mostly problems encountered and innovative solutions put in place to counter them elaborated by the notes. The experiences are summarized in Table 4.2

Table 4.2: Some problems Encountered by selected out-grower Schemes

	Permits	Transport cots*	Seed Quality+	Standard measure**	Seedling Targeting=	Expectations#	Extension costs @	Products Quality$	Seasonal&
Homaline	√	√	√	√	√	√	√	√	√
PPM	√	√	√	√	√	√	√	√	√
KTDA	√	√	√	√	√	√	√		

√ All complained of permit systems that frustrated farmers effort to harvest and sell trees to industry.
* Favoured merchants:
+ Low seed germination lower seedling targets(KEFRI)
**Farmers who sell products to merchants: Agreement to use factory weigh bridge and split cheque (PPM)
= Seedling diversion from stated use and dishonest
Too much financial support expectations from stakeholders (farmers, groups, FD)
@ All experienced high extension costs in form of inputs, staff, transport etc: They were thinking of a collaborative structure: FD, KEFRI, LVEMP, KARI etc to assist in extension work
$ Poor quality and small supplies or misspecifications & Seasonal harvesting to avoid crop damage

1.7.0 PROFITABILITY OF EUCALYPTUS GROWING IN CENTRAL AND SOUTH RIFT VALLEY: David Langat[1]

1.7.1 What makes tree growing attractive in Kenya?

The government through favorable policies is giving emphasis to farm forestry (the Economic Recovery strategy for wealth and employment creation paper (2003), new forest policy encourages farm forestry and Forest Act 2005) and market based pricing –the proposed forest policy intends to entrench forest products trade liberalization

- Tax incentives for trees grown on farms-fiscal policy in the 2005-6 budget
- Leasehold and concessions in the government forests-provisions in the forest policy and Forest Act 2005
- There is high demand for tree and non timber products and these markets remains unexploited
- 70% of the rural population uses firewood –therefore there is a growing demand for biomass energy
- The dependence on biomass energy –will continue to grow because of costs of substitutes (oils, gas, paraffin) are not affordable
- The new forest policy –promotes the creation of out-grower schemes through appropriate funding mechanisms
- The policy encourages promotion of value addition in forest products
- There is a desire farmers to grow trees on commercial principles
- This is mainly targeting fast growing exotic tree crops e.g. Eucalyptus, cypress and Pines
- In recent years-farmers have planted and continue to plant Eucalyptus trees
- Eucalypts are the most preferred tree species planted by the farmers because of fast growth, good stem form, coppicing ability, reasonable durable wood, tolerance to water logging, multipurpose use, ready markets for its products and easy working characteristics
- Farmers desire to grow trees on commercial principles. In recent years-farmers have planted and continue to plant Eucalyptus trees
- As farmer grows trees they need assurance that tree growing is viable alternative land use and hence financial viability is not only an incentive and justification for tree planting
- Viability is not only an incentive and justification for tree planting. Therefore, evaluations are necessary to ascertain the financial viability. This is mainly targeting fast growing exotic tree crops e.g. Eucalyptus, cypress and Pines
- Therefore economic evaluations are necessary to ascertain the financial viability of forestry enterprises.

[1] Senior Research Officer, Kenya Forestry Research Institute, Londiani Regional Resaerch Centre

1.7.2. Potential Productivity of Eucalyptus grandis

Table 5.1: Potential for growing *E. grandis* for firewood

Age	Vol/m^3/Ha	Price in Ksh/m^3	Net returns Ksh/Ha
8	434	440	190,960
9	555	510	283,050
10	668	500	334,000
11	1049	530	555,970
12	1211	530	641,830
13	1576	540	851040

Notes:
The estimated volume is based on growth model developed for Young eucalyptus in medium potential area (Kiriinya 2004)
The price is based on FD 2005/6 royalty rates for eucalyptus plantation

Table 5.2: Potential revenue from Sale of *Eucalyptus grandis* as Power transmission poles (Ages 8-10)/Ha

Age (yrs)	Gross Revenue in Ksh[2]	Total costs in Ksh[3]	Net returns in Ksh
8	1,200,000	150,000	1,050,000
9	1,1360,000	180,000	1,180,000
10	1,600,000	210,000	1,390,000

Table 5.3:Net returns for E. grandis and agricultural Enterprises (8 years).

Crop	Gross Margins in Ksh/ha
Maize (L)	88000
Maize (M)	96000
Maize (H)	376000
Eucalytus (F)	540000
Eucalytus (P)	1,050,000
Tea	630,000

Notes:

(i) Maize costs, revenues are projected based on three levels of intensification (low, medium and high) in a typical maize growing area;

[2] This is based on prices per pole of Kshs 800, 900 and 1000 for ages 8,9,10 respectively
[3] This is total costs from land preparations, planting, tree management, security maintenance to maturity with harvesting costs

(ii) Net revenue for eucalyptus firewood is based on volumes yields and the current price as advised by FD royalty rates for 2005/6 year less the costs of establishing eucalyptus plantation to eight years

(iii) Tea revenues are based on estimates provided by Tea Research Foundation (TRF)

(iv) The net returns are based on one hectare of each of the enterprise

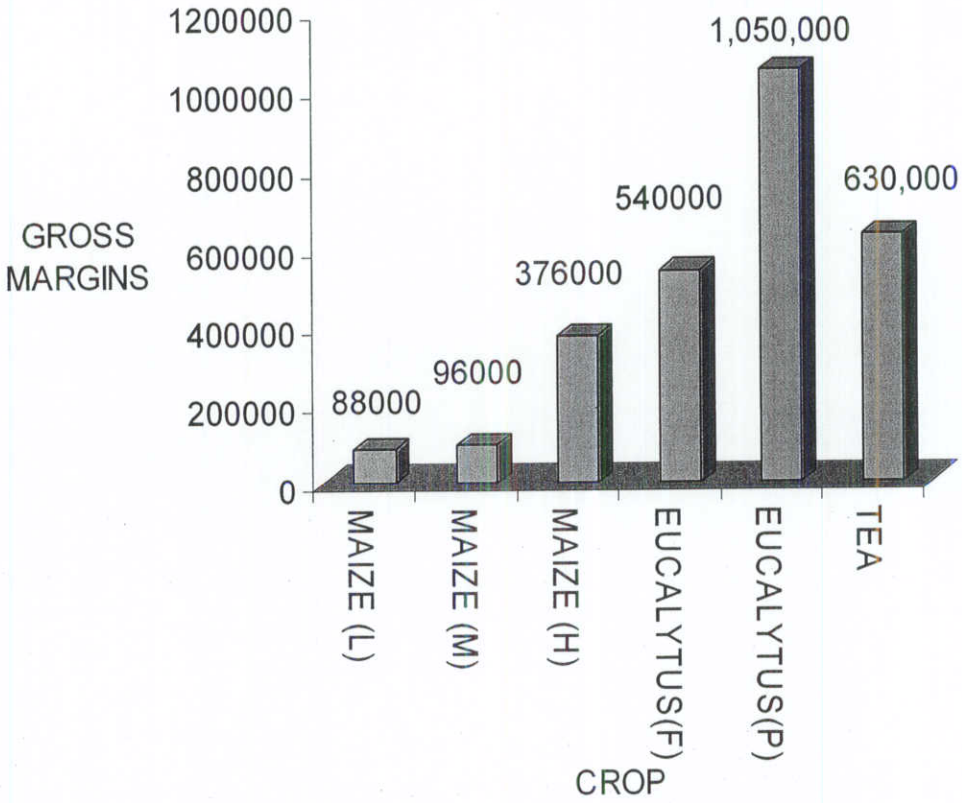


Figure 1: Comparison of E. grandis with maize and Tea

1.7.3 Summary

- Net benefits from Eucalyptus is greater than all maize enterprise
- Tea is slightly profitable to eucalyptus firewood enterprise but less than transmission pole wood enterprise
- The returns from of maize growing are less than half the returns from eucalyptus pole wood enterprise.
- Tree growing is less intensive in terms of in puts but the returns are comparable or exceed other agricultural crops

1.7.4 Conclusion

- Eucalyptus growing is a competitive land use
- Farmers should grow and manage trees like other land use enterprise

- The high return from eucalyptus growing over long term is its ability to coppice i.e. less costs on establishment
- The profitability of eucalyptus growing is dictated by various factors e.g. Market demand and supply (which dictate farm gate price), transportation costs and costs of processing, changing market conditions for alternative crops and important management practices

1.8.0 PARTNERSHIPS WITH SMALLHOLDER TREE GROWERS

PAN PAPER MILLS EXPERIENCES: Philip Diro, Deputy Director, Forestry Division, PPM EA Ltd, Webuye

1.8.1 Introduction

- PPM carried out survey on potentials for farmer to supply rounwood
- It has settled on Eucalyptus
- It has two nurseries at Kaptagat and Webuye: 2Million seedlings /year
- High quality seeds from KEFRI
- It sells seedlings for Ksh 3 per seedling

1.8.2 Objectives

- To keep the country green
- To increase raw material availability for wood based industries
- To empower the farmers economically

1.8.3 Field Experiences

- Integrating trees with crops ensures that trees are weeded
- Technical services ensures proper planting and maintenance
- Ready market of up to 250,000m3 per year mostly firewood and pulpwood

1.8.4 Challenges

- Planting season coincides with labour intensive agricultural activities
- Request by farmers for support in land preparation and seedlings delivery to farms
- Lack of cost benefit analysis of tree enterprises in comparison with competing agricultural crops
- Farmers preferences for gate prices for their trees
- Dispersed distribution of trees high cost
- Threats from pests and diseases

1.8.5 Conclusion

- Farm forestry provides vast opportunities to increases forest cover and improve the socioeconomic conditions of our rural communities
- It is now upon all stakeholders to take up the challenges

1.9.0: EXPERIENCES FROM KTDA TEA FACTORIES IN INDUSTRIAL FIREWOOD PROCUREMENT FROM FARMS: Mutuku, Chebut Tea Factory- Kapsabet, North Nandi

1.9.1 Introduction

The Factory uses 100 % firewood as source of energy to process tea products due to increased cost of Furnace oil. With firewood, the production cost is reduced by 50% as compared by use of Furnace oil. Eucalyptus is used with less knowledge whether it is E. grandis or E. saligna.

1.9.2 Opportunities in support to farm forestry:

KTGA provides free seedlings and free extension services to farmers
KTGA also bought own land and targets to create 10 ha of Eucalyptus annually

1.9.3 Challenges:

- E. grandis has problem as firewood (softish) – calorific value is lower as compared to E. saligna. It burns very fast; can clear many hectares in a single day.
- Getting wood firewood from other regions e.g. around Webuye would be very expensive due to competition with PPM
- Pests and diseases: - often herbicides (chemicals) are used in treating Eucalyptus stands.Tea and Eucalyptus are perceived as crops leading to pollution of environment. Firing of tea lead to emissions of carbon dioxide by industries (increased Green house gases)
- Certification challenge - tea products to be certified for international markets as environmental friendly (90% of tea produced is consumed outside the country, only 10% is consumed in Kenya) may oppose the use of firewood
- Transportation cost of firewood is high due to scattered trees on farms
- Brokers sell the products expensively and exploit the tree growers
- The consumption is higher than production – deforestation as a result of tea production using firewood

1.9.4 Conclusion

There is a plan to extend services of promoting tree planting to semiarid areas such as Baringo.

1.10.0 FOREST ACTION NETWORK MODEL PRIVATE SECTOR PARTNERSHIP INITIATIVE EXPERIENCES IN WESTERN KENYA: Volga Lipwoni, Project Officer

1.10.2 Introduction

Forest Action Network is a leading Non Government Organization (NGO) working in natural resources management and the environment with a focus on forests. It has three major programmes areas:

- ❖ Management of trees and forests;

- Policy research and analysis;
- and, environment protection and conservation

The Forest Policy and the Forests Act No. 7 of 2005 envisage and provide for partnership in the management of forests and in the growing of trees on private farms.

In an effort to put to test the applicability of the provisions of the Policy and Act, FAN has in 2006 initiated a tree-partner arrangement between Private sector, Tree framers and even the Civil Society aimed at:

- Turning tree growing into a business like any other permanent crop
- Creating jobs and income for rural communities
- Providing material for forest based industries
- Using the pilots as demonstration sites for individuals and communities interested in tree growing.

FAN mobilized tree-growing farmers in six districts in Western Kenya resulting in the formation of WEPTA with the objective of entering into partnerships with PPM and other private companies to supply pulpwood and wood fuel to them.
In 2005 we supported 20 farmers each to grow 10 giant bamboo seedlings in Mt. Elgon District.
As a result of the private sector meetings organised in wattle tree (*Acacia mearnsii*) growing areas, FAN was able to negotiate with the Kenya Vegext (EPZ) Ltd for better markets for the farmers in the North Rift and Western Kenya (Lugari, Nandi South, Trans Nzoia and Uasin Gishu districts).

Kenya Vegext (EPZ) Ltd., is a private company that manufactures vegetable tanning extract in powder form. It was established in 2002 and is now already experiencing a shortage of raw material (wattle bark).

In the last few months the farmers have supplied about 60 tonnes of bark to the Kenya Vegext (EPZ) Ltd, which has resulted in an income of KES 180,000 to the farmers.
Early 2006, FAN embarked on a pilot tree farmer out-grower scheme in six districts in the North Rift and Western Kenya with a target of possible consumers like the Tea Factories under KTDA and Pan Paper Mills in Webuye.
The pilot at the start aimed at setting up a total of 25 acres of demonstration sites but this has risen to 19 hectares by May 2006. The pilots have been set up the following districts with a total of 18 farmers:

- Bungoma district - 5.2 hectares
- Lugari district – 2.8 hectares.
- Trans Nzoia district – 4.9 hectares
- Uasin Gishu district – 2 hectares
- North Nandi district – 2 hectares
- South Nandi district – 2 hectares

1.10.2 Criteria of Selecting Farmers

Proximity to a possible market (Pan paper mills or tea Factory)

- Willingness to place at least 0.2 hectares under trees
- Willingness to sign a partnership with FAN or the private sector
- Appropriateness of land for growing a selected tree species
- Availability of other land to grow food crops
- Willingness to use the *shamba system* for the initial years of establishment.

1.10.3 FAN – Farmer Contract

- That the farmer agrees to grow an agreed species of trees on his/her farm in line with the market demand
- That the farmer agrees to let FAN, other farmers and visitors to access the land planted with trees, provided the farmer is given the agreed notice
- That FAN will provide the farmer with resources to prepare land for planting trees and even provide the farmer with appropriate tree seedlings
- That the farmer agrees to use the *shamba* system *to* establish the trees
- That the farmer agrees to let the trees remain on his or her land until they are ready for harvesting
- That the Farmer agrees to have the sign post announcing this partnership to be erected on his or her farm
- That the farmer allows the private sector extension staff to offer him/her advice on how best to manage his/her trees

The contract documents contain details of district, division, location, size and the elevation above sea level as well as the geographical GPS coordinates.

1.10.4 Lessons Learnt

- That it is possible to grow trees for the market on individual farms
- It is an expensive venture for most farmers to grow trees on-farm due to high cost of establishment
- Promoters of tree growing should be ready and prepared for new lessons in this area
- There is need for a long term funding mechanism to support farmers to grow trees supported by donors and the private sector.
- Preparation of a farmer's farm in Bumula Division

Photo1: Preparation of a farmer's farm in Bumula Division

1.11.0 KERIO VALLEY DEVELOPMENT AUTHRORITY: FARM FORESTRY PROMOTION:
Daniel Rotich, Forester

1.11.1 Introduction

- KVDA is a Regional Development Authority (RDA) established in 1979 by an Act of parliament
- It has a wide mandate including e.g conservation and development of existing natural resources within its area of operation.
  Conservation Programme
- The Conservation programme implements some specific project e.g. Upper Turkwel Dam Conservation project
- KVDA employs various strategies inits conservation activities including farm forestry

1.11.2 Forestry Activities

- Tree nursery projects (Number: 21)
- (Both fruit and tree seedling propagation)
- Average of 0.5 M seedlings annually
- Liaise with other stakeholders on conservation of gazetted forests
- Support community conservation Groups (inputs &training)

1.11.3 Promotion of Farm Forestry

Why Farm Forestry?

- Reduce pressure on existing gazetted forests
- Socio-economic development income for farmers)
- More impact than just raising seedlings
- Environmental conservation
- Increase forest cover

1.11.4 Potential for Farm Forestry

- Very high both in the highlands and lowlands (land availability)
- Indication of high demand for on- farm woodlot by farmers

Farm owner	Land size in Ha	Species	District
School	0.32	C. lusitanica	Keiyo
Farmer	0.2	G. robusta	Marakwet
Farmer	0.25	C. lusitanica	Keiyo
School	0.4	G. robusta	Marakwet
Farmer	0.2	C. lusitanica	Keiyo
Farmer	0.7	C. lusitanica, robusta,P. patula	Baringo

1.12.0 MARKET OPPORTUNITIES IN TRANSMISSION POLEWOOD TRADE. Kimani, TTI – EATEC, Eldoret.

1.12.1 Introduction

- TTI-EATEC is the oldest player in the business of tree products.
- The main buyer is KPLC. Other orders come as far as from Uganda and Sudan. Tanzania is self-reliant. Generally, most tree crops from farms are not yet mature and prices of trees from farms are very high. Current main suppliers are Tea Estates such as Sotik and Kericho.

- Trees are bought at Kshs1200 – 1500 per tree. Transport is expensive and its cost is higher than that of the raw material itself – it takes over 50% of total cost.
- The market for trees is good for the farmer; all treatment plants in the country have received Order to supply power transmission posts to KPLC e.g. 50,000 to TTI. The annual demand by KPLC is 150,000 connections. Assuming each connection requires a tree, then the demand for trees by KPLC is high. The major challenge is now to get enough supply from within the country. Currently, the market is subsidized by South African supply of posts.
- Farm Forestry is the way for the future; however commercial farm forestry started 5 years ago and mature trees from farms to supply wood-based industries are expected in 8 years from now.
- TTI supports farm forestry through partnering with farmers to whom they sell nursery seedlings at Kshs 5/ seedling instead of Kshs 7. Only large scale farmers are assisted and a follow up is carried out.

1.12.2 Market specifications

- Power transmission posts:- Eucalyptus e.g. E. grandis with straight stem and prime bole with 150 mm diameter at top, 165 mm diameter at breast height and 260 mm at the base. KPLC is not keen on big poles; the rotation age of 10 years could be enough.
- Railway sleepers:-It is better for farmers to diversify tree species on farms to address the challenges from Environmental requirements such as NEMA directives which discourage planting of Eucalyptus in catchment areas. High value species include *Prunus Africana* and *Eucalyptus paniculata* for railway sleepers; Kenya Railways is the buyer and orders are given to TTI. Prices and profit margins are better for the sleepers than for posts.
- Fencing posts and droppers are also in high demand and the supply is less than the market demand.

1.12 Conclusion

The wood industry is bright but the major challenge is the shortage in supply of the raw materials.

1.13.0 CHALLENGES TO SMALL SCALE FARMER IN COMMERCIAL TREE GROWING. Dr Kireger, Moi University

A survey done by the in Uasin Gishu, TransNzoia, Lugari, Nandi, Keiyo revealed that farmer's faced the following challenges:

- Access to good quality planting materials is one of the major challenges.
- Not getting wanted species
- Not getting superior quality species (genotypes)
- Mixture of species confused with the South Africa Clones (unknowingly)
- Town nurseries cheating about clones
- Cost of the material is high (10-14 Kshs / seedling of *Eucalyptus grandis*)
- Farmers targeting transmission power posts – target *Eucalyptus grandis* (fast growing but TTI is reported to prefer *E. saligna* for its superior properties as posts).
- Pay 500 Kshs to acquire permit to cut own trees from farm regardless of number of trees to be cut.

1.14.1 FARMERS EXPERIENCE IN COMMERCIAL TREE GROWING: John Kipyego: Farmer North Nandi and Uasin Gishu

- **The farmer owns 100 acres of Eucalyptus.**

1.14.2 Primary problems / challenges:

- Quality of seedlings
- Seedlings were expensive and the farmer preferred buying seeds and raising own seedlings in a tree nursery. The challenge was that only 300 seedlings were obtained from 1 kg of Eucalyptus.
- No technical advice was obtained during planting – complain about non availability / ineffective extension work in the area. Advice was only obtained from other farmers and friends
- The problem of moles in farmers' farms despite application of poison to control has resulted in irregular (uneven-aged) age groups stands due to continuous replanting to fill in gaps.
- Theft of planted seedlings

1.14.3 Lessons Learnt:

- topdressing improved growth rate significantly during the 1st year after planting
- Eucalyptus trees intercrop very well with tea (planting trees between rows of tea)
  It is better (more economical) to intercrop trees with old tea plantations rather than uprooting tea completely at once.

- Selling of trees from the farm - the farmer prefers farm gate selling price rather than incurring transport cost to supply trees to buyers.

1.15.0 OPPORTUNITIES AND CONSTRAINTS TO TRADE IN TREE PRODUCTS FROM FARMS

1.15.1 EXPERIENCES TREE PRODUCT TRADERS, General Timber Merchant: William Wanjihia, Eldoret

- Get goods from Uasin Gishu, Marakwet, Keiyo and Bungoma.
- Buy raw material (unprocessed trees) and process them into various products (firewood, timber and posts).

1.15.1.2: Products and Sources

- Getting materials from farmers is not a problem as most farmers especially in Marakwet have trees such as Podo (Podocarpus spp), cedar (Juniperus procera) and other softwoods.
- Semi-processed products are easily sold in various destinations such as Nairobi, Kisumu and Eldoret towns as main markets.
- No problem at all in getting the market for the products except for blue gum (Eucalyptus) which is not preferred in Eldoret, does not have a good market in Nairobi BUT the best market for Eucalyptus timber in Mombasa.

- For the Rosewood tree (*Hagenia abbysinica*)s, timber is not liked because many do not know how good it is. For example, furniture like tables from this species looks beautiful though most traders are not aware.

1.15.1.3 Challenges:

- Government policies e.g. getting permit from the Forest Department is difficult (a lengthy process - from Chief to District Environmental committee. Official papers / documentation are often doubted by Traffic officers. This long processing of documents for marketing of tree products make the business unattractive. Often, DFOs are not in hurry to assist and the process takes 2-3 days or even 7 days.
- Transportation is another major impediment to market tree products due to poor state of the road network in areas of wood production. At times, dates indicated on the transport permit expire while still on the road due to breakdowns or poor transportation conditions e.g. experience in Marakwet District when bridges are destroyed. The whole process of acquiring a permits will start all over gain for it cannot be altered once issued.
- Transporters are reluctant to invest in dealing with tree products due the challenges involved
- Transport cost is very high when all factors are taken into consideration.

1.16.0 EXPERIENCES OF IMPORTERS OF TREE PRODUCTS INTO KENYA FROM UGANDA AND ZAIRE

1.16.2.1 Procedures for importation of tree products into Kenya

1. Obtain no objection letter from CCF: No fees charged
2. Acquire import license from ministry of trade
3. Move to border to meet with exporters from Uganda/Tanzania.
4. Seek clearance from customs to import at the border and pay Ksh 13,000 to 15,000 VAT
5. Get disease free certificate from KEPHIS at the border.
6. Pay stamp duty
7. Seek from DFO a movement permit and pay Ksh 500
8. Others costs include high patrol and weighbridge bribes along the road to final destination.

1.16.2.2Others conditions

Most of the clearing work is done by clearing agents based at the border that are well connected and conversant with all procedures at a fee.

In most cases the merchants send their lorry drivers or employees to do the clearing for them.

1.16.2.3: Some details costs for timber imports at Busia

- Ten tonnes of Mahogany is bought at Kshs 80,000. Other expenses at the border and on the road to Kisumu include:
- Customs :75,000 Kshs (official amount – Kshs. 26,000)
- Kenya Bureau of Standards: Kshs 1000
- KEPHIS: Kshs 1000
- Forester: Kshs 1000
- Traffic Police: Kshs 1000
- Clearing: Kshs 5000

The statistics show that prices of imported timber in the country is still high and Farm forestry products are still the best alternative to tree products from forests in Kenya.

1.17.0 POTENTIALS FOR FINANCING TREE GROWING IN WESTERN KENYA BY AGRICULTURAL FINANCING CORPORATION: J.K. Lagat, Manager, North Rift.

1.17.1 Introduction

AFC has several products it funds including Agroforestry. It can finance the following activities:

- Seedbed preparation
- Seed purchase
- Planting operations
- Fertilizer purchase
- Chemicals
- Weed control operations
- Harvesting
- Transportation and processing etc

1.17.2 Requirements to secure loan from AFC include:

- Character of the person
- Financial conditions to meet other needs so as not to divert loaned finances to secondary uses
- Repayment capacity of the farmer
- Personal contribution (at least 30%)
- Security (assurity)

1.17.3 The process involves the following stages:

- Submitting business proposal
- Appraisal
- Processing and approving the loan
- Disbursing the loan in one bit

1.17.4 Conclusion:

AFC money is demand driven but so far, applications from tree growers are not there.

1.17.5 Other Banks

Cooperative Bank, Kenya Commercial Bank and Equity Banks did not have a product for funding tree growing and could not present opportunities during the session.

1.18.0 Potentials for Trade in tree products in East and Central Africa: Joshua K. Cheboiwo

- Marketing of tree products is a multi-billion industry in Kenya, dominated by firewood.
- Most deficit countries in tree products within the ECA-Region are Ethiopia and Rwanda. However, current statistics on tree products in the region are largely lacking or need to be updated.
- Based on forest resource adequacy perception, resource scarcity is high in Kenya, Ethiopia and Rwanda. Farm forestry is ranked as highly developed only in Kenya.
- Major traded tree products are dominated by firewood, charcoal and sawnwood.
- Marketing agents were dominated by merchants and lesser extent timber manufacturers association. It is highly regarded that retailers, transfer merchants and wholesalers were the major beneficiaries in the tree product market value chain in the region. Farmers get the least share of consumer price and the most disadvantaged in market related information.
- Major marketing problems for tree products from farms are dominated by low prices and dispersed production.

1.19.0 PANEL DISCUSSIONS

1.19.1 Profitability of Eucalyptus Growing

- Profitability of maize may be lower than it is reported in the paper.
- Methodologies and assumptions underlying the analysis were not quite clear in the paper BUT generally, it is true that Eucalyptus is more profitable than maize in the study area.
- Farmers must be keen to look for good quality seedlings as some street suppliers of seedlings are known to cheat on source of their seeds

1.19.2 Market Opportunities for Smallholder Tree Products in Western Kenya:

- Pan Paper Mills started Farm Forestry programme targets small and large scale farmers, schools and institutions in 100 km radius, that is, in 11 districts.
- A baseline study found that fast growing species of economic importance are preferred and PPM settled on *Eucalyptus grandis* from KEFRI and the clones.
- Tree nurseries in Webuye and Kaptagat have been expanded to support Farm Forestry and a Farm Forestry Department was created to provide extension services. Seedlings are sold to farmers at a subsidized cost of Kshs 3/ seedling.
- Some farmers don't plant seedlings (even after paying 3 Kshs!)
- Competing activities – agriculture competes with forest activities and tree planting is given second priority.
- Farmers and their partners need to know / to be informed about the relatively higher profitability of tree planting vis-à-vis agricultural crops based on facts / figures. PPM would fund such studies (feasibility studies) based on MoU with e.g. Universities.
- Harvesting trees on farms is challenging due the following factors:

- Areas not easily accessible
- Scattered trees
- Timing harvesting with reference to agricultural crops on farms

Need for harmonization (management plans) for on farms tree planting programmes

- Farmers shy off to grow trees such as Eucalyptus due to pest and diseases. Control measures are expensive to farmers. Need for e.g. KEFRI to assist in informing farmers on appropriate control measures.
- Costs for site preparation and maintenance of planted trees are incurred by farmers themselves.
- Players in the out-growers schemes are blamed not to use forest extension officers. They need to link up (network) with these officers to ensure greater successes.
- Integrating trees with food crops up to 2 years (*Shamba system*) is applied and ensures food availability. Initial spacing is 2.5 m x 2.5 m.
- Free technical services are offered to farmers and many farmers show interests but some seedlings are taken for re-sale! The solution would be to work/ network with Forest Department and Ministry of Agriculture Extension Officers.
- There is market for tree products e.g. PPM uses 250,000 m^3 for firewood. For paper, the capacity is 50, 000 m^3/year of which 10-20% is Eucalyptus. Total wood requirement at PPM is 300,000 m^3.
- Only 3% of wood used in PPM for pulp is from Farm Forestry and less than 5% firewood.
- Purchase prices (subject to review) are Firewood: 1500 – 1600 kshs / tonne at delivery (Factory Gate Price) and Pulpwood: 1700 Kshs/ tonne. However, farmers prefer farm gate prices that currently stand at Ksh 700 per tonne. It was reported that 60% of total income for factory gate price goes to transport and reduces the profit margins to farmers.
- Assistance to farmers in seedling delivery and site preparation can improve the yield. PPM uses decentralized distribution of seedlings and collective delivery for groups.

1.19.3 Market Opportunities and products specifications for transmission poles

- Products from *Eucalyptus grandis* developed by KEFRI are of superior quality than those from South Africa Clones (TTI experience).
- Market intelligence is well developed for the multinationals and their tree products are sold at higher prices as compared to farmer's scenario. Farmers are not well informed about market trends, thus brokers often take advantage of this ignorance.
- Tree growers need to organize themselves to overcome this challenge.
- There is more business (profit margin) in investing in buying standing trees, felling them, stocking poles or posts and selling them rather than investing in treatment.

1.19.4 Challenges of small-scale farmer in commercial tree growing

- Need for information transfer to help farmers to plant right species / varieties in the right place (i.e. proper site-species matching).
- To review policies and laws which discourage farmers from planting trees e.g. process to acquire permits to cut trees on farms is cumbersome. Reflection on certification system for tree products.

1.19.5 Opportunities and constraints to trade in tree products in Kenya: Brief experiences from tree farmers, traders and consumers

- Extension officers must interact with farmers to advice them in addressing challenges in tree growing e.g. control of moles – use of cow dung, tephrosia etc.

- Farmers outside the PPM region wish to see the PPM system of supplying seedlings at subsidized price scaled up. Distribution of free seedlings would however encourage laziness and misuse of seedlings.
- Farmers wish that partners in out-growers schemes would also support in site preparation, which they consider more expensive than seedling itself.
- Field excursions / visits to farmers' farms must be enhanced to improve farm forestry practices.
- Tea should not be sprayed by any chemical. Where intercropped with trees, pests or disease control methods must exclude use of chemicals.
- Tree planting programmes must be organized to avoid tree resource depletion due to deforestation / overexplotation of trees e.g. for firewood in tea estates
- Extension manuals / materials such as publications on nursery management, tree planting exist in KEFRI and at Moi University. Research institutions and Universities are challenged to produce more extension aids to promote farm forestry. Mechanisms to be put in place to have extension materials reach right beneficiaries in good time.
- Research is needed to quantify tree products intended for various end uses e.g. use energy-related units for firewood instead of volume units (working on conversion factors). Tea industries are challenged to fund topical studies e.g. Work for James Finley is going on to determine wood fuel quality/ characteristics
- There is need to support and enhance the role of the Farm Forestry Development Centre (to gather documentation on Farm forestry) being established at Moi University (Department of Forestry and Wood Science).
- Farmers felt that much effort is needed to make tree planting truly competitive as compared to other land uses such as planting of grass (harvested twice a year and fetches Kshs. 1000/acre/harvest), growing of sunflowers etc. More economic studies are needed to even consider challenges in land reclamation when converting a forest site into another land use.
- KEFRI is requested to decentralize distribution of its good quality seeds (e.g. through Forest Department Offices) to make them more available/accessible to tree farmers who wish to establish their own tree nurseries.
- Presently, the demand for tree seed by farmers is higher than the ability of KEFRI to supply. However, strategies are being put in place through establishment of more seed stands and orchards; the crisis will be averted in few years to come. Meanwhile, there is need to train farmers how to identify mother trees from which to collect their own seeds and basic seed handling techniques.
- In the out-growers schemes, can promoters organize how to advance farmers payments and get monthly revenue as is the case with KTDA with tea farmers? Pay bonus on harvest as well. – Tree farmers support this idea!
- KTDA should connect farmers to the bank to secure loan, can't Forest Department or Partners in out-growers schemes connect tree farmers to Commercial Banks to get loan?
- Forest extension is challenged by tree farmers to be result-oriented with targets (Performance indicators) in order to promote farm forestry as desired.
- Why can't there be Tree Growers Board (as is the case for Wheat Board, Maize Board, Coffee Board, Tea Board, Sugar Board etc) to organize the marketing for tree products?

1.19.6 Potential for financing tree growing in western Kenya

- AFC fund on-going projects, but farmers organized in groups will stand better chance to acquire loan easily e.g. Youth groups interested in tree nursery establishment.
- AFC was challenged to publicize its agroforestry product more effectively and employ forest professionals (for viability analysis of tree planting projects) to benefit farm forestry development. There is good business in tree growing contrary to traditional thinking.
- AFC funds also electricity projects (under infrastructure product) e.g. to pump water to irrigate planted trees. AFC requested to consider land value as part of farmers contribution when seeking for loan.
- As of now, it is cheaper to get loan for maize (annual crops) than trees (8 years crop). Interest rate is 10% and repayment period is 5 years maximum.

1.20.0 Way forward

The following are key elements making the way forward:

1. Subsidiary legislations are needed to address upcoming challenges facing farm forestry
2. AFC to rethink and consider the uniqueness of the farm forestry product as an incentive to the farmer to plant trees
3. Regularly supply scientific information to the Farm Forestry Development Centre in order to assist farmers access the same information easily
4. Interpret and disseminate information from the New Law governing the Forestry sector
5. Data / information on farm forestry are still sketchy but it is better today than it was three years ago. Stakeholders need to continue to come together, share information in Kenya and the region. In January 2007, Kenya Forestry Service (KFS) will be functional and there is hope that more funding to support such workshops will be possible.
6. Experts exist, yet financing organizations / institutions are lacking in capacity. It is high time that such institutions e.g. AFC employ professionals in forestry to promote farm forestry in their policies and programmes.
7. The Forest Department is initiating a consultancy on out-growers schemes, FAO is in partnership with FD to improve plantation management. All these initiatives will give us more recent data to rely on and promote Farm Forestry.

1.21.0 Closing Remarks : Dr. Ngugi,

Head of Department Fisheries and Aquaculture Science on behalf of Principal Chepkoilel Campus, Moi University

The Dean, School of Natural Resource Management invited Dr Ngugi, Head of Department Fisheries and Aquaculture Science to close the workshop on behalf of the Principal of Chepkoilel Campus of Moi University.

In his closing remarks, Dr. Ngugi appreciated the initiative to meet and deliberate on tree products going in the markets. With the assumption that those products are there, the major challenges are the quality, sustainability, link with consumers of the products and marketing / lobbying.

Most farmers are planting trees focusing on profit. However the main concern in the country is also the decline in tree cover from 7% to 1% is worrying and people are concerned with tree cover when talking in terms of climate change. He pointed out that whatever leaves fall in the catchment is what the fish feed on. Those leaves are the nutrients. Therefore, death of forests kills fish and people, and impoverishes them. As we address the problem of water in the Lakes, the problem lies in the Catchments. As we talk of markets, let us also think of indigenous forests. The recent economic survey gives a sad story about forests decline in the country: 12,000 ha of indigenous forests lost since 2000! However, plantation forests increased (may be individual forests).

USAID (see Kenya Business Development Services Magazine, September Issue 2006) is offering funding opportunities for farm forestry. It should be among new Financial Institutions to go to. It targets "cluster farmers" that is group of farmers whom it links to markets.

Finally, Dr. Ngugi hailed the Department of Forestry and Wood Science together with KEFRI for organizing the workshop. It fits in the mission of Moi University to be the source of wealth, not only in education but also in taking trials on farmers' land and simplify findings in user-friendly Manuals to encourage farmers to produce quality products. Dr Ngugi declared the workshop closed at 4.40 pm.

2.0 PROCEEDING OF STAKEHOLDERS WORKSHOP FOR CENTRAL AND SOUTH RIFT REGIONAL HELD ON 23RD NOVEMBER, 2006 IN LONDIANI CENTRE: REGIONAL SPECIFIC ISSUES

2.1 Market Opportunities for industrial firewood in KTDA factories. P. G. Kamanu[4]

2.1.1 Kenya Tea Production

2.1.1.1 Tea Production in Kenya –Current Situation

- Kenya contributes 10% of the world tea production.
- 66% of which id produced by KTDA under the smallholder farms which covers 92,681 hectares.
- 34% is produced by the KTGA who are the large scale (plantation) producers covering 29,373 hectares.

2.1.2 Kenya Tea Development Agency Production (KTDA)

- There are currently 55 operational factories under KTDA but the number expected to increase to 60 with the commissioning of new factories under construction
- 36 of the factories are on the East of Rift 19 are on the West of Rift.
- In central rift we have 8 operational factories and 3 under construction and 1 proposed giving total of12 factories.
- These are distributed in the Kericho, Bomet and Buiret districts.

2.1.2.1 Fuel Usage

- In the KTDA factories the fuel used in the process of drying tea are:-
  - Fuel oil which is imported from the oil producing countries
  - Firewood with conversion of the factories to fuel wood recently.
  - Annual fuel oil consumption is on average 1,400,00.00lts. This is equivalent to kshs 45,122,000.00 per annum per factory.
  - The use of the fuel is being replaced by the conversion to fuel wood.
  - The annual consumption of 13,000 Cubic meters pa. This is about kshs 12,818,000.00. per factory.

2.1.2.3 Market Opportunities

[4] Factory Unit Manager, KTDA-Kapkatet Tea Factory Co. Ltd.

- The annual demand for fuel wood is currently 104,000 cubic meters worth kshs. 93,600,000.00 pa. in the region.
- This fuel wood can be supplied by the small scale farmers as the wood is currently sourced from them.
- If the fuel wood is not available it normally substituted with fuel oil which is about 3.5 times more expensive.

2.1.2.4 Use of fuel oil:

- Means more of the foreign exchanged will be committed to the importation of fuel oil thus denying same from other sectors of the economy. Tea earns 22% of the total foreign exchange and contributes 3% of GDP (2005).
- The profit margin of the factories will be reduced due to higher production costs and accord ling the farmers earnings.

Thus tea factories have market opportunities that farmers can tapd by supplying continuously firewood. This ensures more foreign exchange is retained in the economy.

2.1.2.5 Firewood Delivery Specifications

- The recommended varieties are the Eucalyptus species due to their calorific value and fast growth. Black wattle is also acceptable.
- Other woods like Gravillia and cypress can be used but not highly recommended due to low calorific value and competition from timber industries.
- The wood is normally delivered by the supplier or collected by the factory and there are different rates applicable.
- The wood is sourced from mature trees with a minimum and maximum diameter between 4.5'' and 9'' respective for easy of feeding the same in the boiler. If diameter bigger than specified splitting is done
- The logs are 1 meter long. This facilitates the measurement for the wood which in volume after stacking in the factory yard.
- Moisture content (dryness) is not considered as unit of measure is volume which is little affected by volume. The wood is cured in the factory to the desired M.C.

2.1.3 Kapkatet Tea Factory Seedling Production

- The factory has a tree nursery where blue gum seedlings are availed at subsidized price to the farmers and any other interested party.
- The nursery has a capacity of producing 150,000 seedling pa.
- The farmers are encourage to set a parcel of land and establish a wood lot
- The farmers are provided with technical advice on tree planting.
- It expected that the farmers will sell the wood to the factory once it mature although there is no bidding contract.
- With the continuous planting taking place it is our expectation the will be sustainable of the firewood.

2.2.0 EXPERIENCES FROM PRIVATE TEA ESTATES: George Williamson: Mr Solomon Koech, Manager.

- ❖ All its factories changed from furnace oil to firewood in 1970
- ❖ It cuts its woodlots between 8-10 years when calorific values are high
- ❖ Firing ration for firewood and tea by weight is 1kg:1kg

- Its plantation establishments were based on the ratios of 1Ha woodlot to 4 Ha tea but have since improved to 1:5 and currently have excess for sell as transmission polewood and firewood.
- The cost of growing is Ksh 300-350 per m^3
- The drying period for firewood before use was 6 months but innovative use of green house has reduced it to 3 months.
- It has also expanded its forestry activities to plantations of cypress and pines. It already has a commercially operated saw milling enterprise in one its tea estates. It uses the timber for pallets and building repairs.
- It is thinking of going to seed supply business once the ongoing cooperation with KEFRI in selection and making of elite trees and establishment of selected seed stands will follow. Requested KEFRI to expedite the work.
- In has already initiated a fair trade certification process that will see its tea prices have premium prices when its meets the set condition and given certification.

2.3.0 FINANCIAL AND FUNDING INSTITUTIONS: Maina Equity Bank Molo.

- Equity bank was established 22 years ago
- It is owned by 2500 shareholders
- It has various products for different clients ranging from salaried, farmers, business people, etc.
- It requires an ID and Ksh 400 to open a savings account and Ksh 5000 for current account.
- It does many other financial services money transfers etc
- It has several agricultural products for farmers including seasonal maize, wheat, potato, tea and dairy.
- It is open to all farmers including tree growers but payment should be at the end of the year a grace period of 12 months.
- Criteria is evaluation of the borrower on integrity and ability to pay
- Since they finance an ongoing activity where the borrower has invested and need some boosting resources
- The tree grower need to present a business plan indicting its enterprise, costs and pay back schedules that will be evaluated and if found to be viable and meets loan conditions loans will be advanced.

2.4.0 PANEL DISCUSSIONS IN CENTRAL AND SOUTH RIFT

2.4.1 Eucalyptus Growing

- Adverse effect of growing Eucalyptus on the general environment?
- Profitability of growing Eucalyptus
- Information of Eucalyptus and its environmental impacts especially wetlands?
- The costs of growing *E. grandis* up to 8-10 years?
- Spacing recommendations for Eucalyptus growing?(1.8,2,2.5,3m)
- Information on growing trees especially options for smallholder farmers in terms species depending on ecological conditions?

2.4.2 Demand and specifications for Firewood in the tea sector

- Why have the factories not gone 100% firewood given that it is more cost effective to do so? Answer: Shortage if firewood
- What is the recommended ratio for Eucalyptus woodlots and tea? Answer: one Ha Eucalyptus woodlot to 5 hectares of tea.
- What is your farm and factory gate prices for firewood? Answer: Ksh 700 and 1000.\
- What is the weight of wet and dried firewood? Answer: m^3=800-1000kgs and 420-470kgs respectively.

3.0 PROCEEDING OF STAKEHOLDERS WORKSHOP FOR NYANZA REGIONAL WORKSHOP 30TH NOVEMBER, 2006

3.1.0 Introductory Opening Speeches

Welcome & Keynote Address, Dr. Daniel Nyamai

Regional Coordinator
Trees On-Farm Network (TOFNET)
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Good morning and a very warm welcome to Tree Products Chains and Trade Strategies workshop in KEFRI Regional Research Centre, Maseno, Kenya.

Today we are going to be engaged in information sharing and seek common solutions towards addressing many issues regarding the tree cultivation as a commodity for sustainable development in our region.

Tree cultivation today is generating tremendous global interest especially in light of the increasing global challenges such as environmental degradation (climate change being one of them) and poverty. These challenges present remarkable opportunities for the advancement of tree resources in our region. For instance, we know that tree resources are offering significant opportunities in all sectors of the economy, leave alone conservation of the environment and biodiversity.

A fundamental question then arises- how can priority tree species (for various market segments) which we have identified be profitably combined or integrated with other agricultural enterprises and other land use options? This is the particular focus of Agroforestry and trees on farm research for development.

We must aspire to help smallholder householders attain through tree crop production security in food and nutrition, health, energy, fodder, shelter and income as well as a regenerated environment.

In today's world we continuously hear discouraging developments that deforestation is increasing particularly in our region and elsewhere in the tropics. However, the good practices we do not hear often enough is that millions of our farmers plants tens of millions of trees on their farms every year for their own purposes and interest taking pressures off the forest. We in tree cultivation business have already stated that the "future of tree is on farm" what does this mean"? to give an example in a survey of 64 communities in Uganda our research has found, that agricultural land is rapidly replacing forested land. In

the last 3 decades the proportion of land under forest declined by half, whereas the land under agriculture increased by 23% most interestingly, the proportion of agricultural land under tree cover increased by 22%, what valuable lesson have we learnt? Most Africa farmers do not need to be pursued to plant trees they are already doing it for their own needs.

Our critical entry point would be to strengthen their capacity by providing diversified options in terms of species / cultivars, techniques and innovations and above all in empowering them by exposing them to knowledge and information, including value chain.

Am glad to note that our R & D approaches have taken care of the balance between research and capacity building as two important pillars for the development of tree resources based industry.

With this comments, I look forward to a very successful deliberations, am particularly glad that this meeting exhibits a departure from formal workshops / seminar noting the diversity of stakeholders, especially public-private, including farmers and civil society. The workshop aims at developing clear directions on critical areas of tree cultivation; in particular we must enhance support for public – private sector partnership to move swiftly in taping the tremendous potential that exists from tree resources in our region. There is no going back but move forward in sustainable cultivation, management and utilisation of tree resources for improved household income amongst millions of rural poor in our region.

THANK YOU!

3.2.1 PARTNERSHIPS WITH SMALLHOLDER TREE GROWERS AND MARKET OPPORTUNITIES FROM HOMALINE CO. LTD., Ezekiel Okeyo-Forester.

- Homalime extension activities in Nyanza are strategic through creation of the Nyando Valley Development Trust which in turn supports Farm Forestry Development in Nyando, Kericho and South Nandi. Partnership with smallholder tree growers involves signing of contracts between the Trust and land owners. Support is provided for tree seedling production in both group and individual nurseries through provision of tubes and quality seeds. There is also central nursery with a capacity of 100,000 seedlings.

- Challenges include high cost production, high expectations by farmers, less/insignificant support from Forestry Department, conflict between farmers and environmental activists and NEMA over planting of Eucalyptus.

- Homalime also promote farm forestry (tree planting on farms) through the policy discouraging the harvesting of indigenous trees.

3.2.2 MARKET OPPORTUNITIES AND PRODUCT SPECIFICATIONS FOR FIREWOO, KTDA-Mudete Tea Factory

Mudete tea factory receive 12 million kg of green tea leaves for curing every year and firewood is becoming the main source of energy. The use of furnace oil is being replaced by wood due the relatively low cost of wood. Cost of production is about Kshs 3 per kilo of made tea when using firewood as compared to Kshs 10 per kg of made tea when using furnace oil. The demand for firewood stands at 900-1000 m^3 / month and 11,000 m^3 / year. Firewood is bought on cubic metre basis (1000 kshs/m^3).

3.2.2.1 Challenges

- The challenge is how the volume of trees is estimated with the tree owner. There is need for research on proper conversion factors and develop other needed standard measurements to be used so as not to undervalue trees and discourage tree growers. Buying on weight basis e.g. tones or kg will reflect the pay for calorific value.
- There is a problem of lack of constant supply of required wood from small scale tree growers. The Company opted to create its own woodlots and to enter into contracts with farmers (Tree Out-grower scheme).
- Problem of tactic withdrawal by farmers to supply wood and create artificial scarcity and increase prices.

3.3.0 POTENTIAL FOR FINANCING TREE GROWING IN WESTERN KENYA. Mr Mutanda, AFC –Bungoma Branch

Agricultural Finance Corporation (AFC) was established in 1963 through the Act of Parliament to assist in the development of agriculture and agro-industry in Kenya. A list of products/enterprises that are financed was presented (cfr. Proceedings W/S of 17.11.2206 at Chepkoilel Campus). Three categories of loans offered are:

- Short Term Loans (6 months-3years)
- Medium Term Loans (3-5 years)

- Seasonal Crop Loans (One Crop Season)

Proposal in farm forestry can be financed within the indicated conditions. As it stands now, the mandate of AFC may need expansion to benefit tree farmers and boost tree planting on farms in the country.
AFC Bungoma has already advanced loan to two tree growers in Bungoma District on experimental basis. The two are earning salary and thus can afford to pay monthly but non salaried tree growers with good proposals will be considered based on their ability to pay and their work plan cycles that fit into AFC conditions.

6.0. PANEL DISCUSSIONS FOR NYANZA.

During plenary discussions, various pertinent issues were raised by stakeholders in the market chains for the promotion of farm forestry in general and marketing of farm forestry products.

- BAT (British American Tobacco) to be included on the list of key stakeholders in farm forestry in Nyanza. They use a lot of firewood and are involved in the promotion of tree planting in the region.
- Scientific evidence on the issues speculated about Eucalyptus must be sought and high level discussions undertaken in the country to give non-contradicting direction to farmers about the planting of eucalyptus trees on people's farms. Clear (unambiguous) guidelines are needed in order to put the species in its right position in the landscape (e.g. proper siting of the species in the agricultural landscape).
- In promoting farm forestry, there is need to address the balance between tree and food security concerns at household level.
- There is need to value farm forestry also in terms of carbon-sequestration and explore avenues to benefit tree farmers from carbon-trading opportunities.
- The need to promote non-wood tree products in farm forestry such as bee keeping (apiforestry) by looking at trees as source of pollen and nectar. In this way, services of trees in environmental protection such as desertification control, carbon sequestration will be enhanced.
- The proposed loans for tree growing should be repaid once trees are harvested.
- The financial benefits for investing in trees may not benefit smallholders if viable technologies and mechanisms are not identified and disseminated to them.
- Tree seed availability for popular species is a problem and there is urgent need to to train interested stakeholders in farm forestry in the basics of seed technology to improve on local seed collection and use.
- Smallholder tree growers generally feel that they are exploited by middlemen in the tree products market chains.
- Pests and diseases of Eucalyptus are still worrying to many farmers given recent outbreaks of Blue Gum Chalcid (BGC) in parts of Nyanza and western region.
- Research institutions, Universities, industries and Farmers associations need to partner to address systematically and comprehensively challenges facing farm forestry in the country such as the Eucalyptus dilemma. A Technical Note on growing Eucalyptus in Kenya is needed.
- It is high time that research and extension in farm forestry be demand-driven and result-oriented. Topics of interest include tools to quantify tree products from farms, farm forestry management plans, site-species matching, sources of planting materials etc.

- Forest credits with special terms e.g. in the Out-growers schemes that provide advance payment to farmers and deduct the cost at harvest this is to assist tree growers escape fixed poverty for the 6-7 years before start harvesting trees.
- To review extension approaches towards income-generating activities. There is need to strengthen partnership with AFC to support farmers. Supporters to Farm Forestry can use AFC structures/experience to channel Funds to beneficiary-tree farmers.
- Dissemination of information to fill the gap between Researcher and Farmer
- Farmers field schools to be introduced and enable tree farmers to learn from one another
- Formation of tree marketing groups / cooperatives and train them in basic marketing strategies to avoid being exploited by middlemen.
- To undertake comprehensive value analysis in marketing tree products e.g. think of planting trees for charcoal and use of modern kilns may probably shorten rotation period and increase the scope of species to plant including small trees or even shrubs if they can produce good quality charcoal
- Explore existing global opportunities that can benefit farmers
- Introduction of mobile processors of the raw materials on the farms would optimize harvesting of trees on farms and increase revenues to the farmers
- Market for firewood is wide/big and there is need to work out how to minimize its competition with the pole industry.
- A big question: "Whose responsibility is to teach and organize tree farmers"? Once the farmers' needs and issues are known, "who is to do what?" is the major challenge.
- Environmentalists, NGOs, Government, Police are key players in promoting Farm forestry and Tree Products Market Chains but seem to work / act in isolation and a times pulling in opposite directions."Whose responsibility to bring together all these actors?"
- There is a need to form Association of Tree Growers to have a high bargaining power.
- There is need for tree farmers to forge strong partnerships with companies and institutions.
- Tree planting on farms also improves the environment. "Who is responsible of this program? There are people who own a lot of idle land in the region and can trade well in carbon but due to lack of information they are not aware of what is going on and what to do. An example is given of 60 acres being underutilized in grazing.
- There is a challenge to people with land near river beds and swamps vis-à-vis planting Eucalyptus. What other options for them?
- There is need for research on and suggest modern kilns to go charcoal way in case firewood is not consumed due to failed market.
- A lot of land is available for farm forestry but there is lack of capacity to develop it e.g. lack of seeds for on-farm tree nurseries. There is need to work out how to build capacity of the farmers.
- People plant trees any without proper plan and trees end up having negative impact instead of being beneficial. Experts/professionals are challenged to take technologies down to people.
- The New Forest Act empowers communities in forest issues. People are used to look at the Forestry Department as a Provider. How are we to change this attitude?
- There is to diversify tree species on farms and choose the right planting patterns to minimize land degradation and optimize production.

Final Remarks by Organizers: Joshua K. Cheboiwo

The Forestry Department through a Consultancy is working on feasibility of growing Eucalyptus in the country to address the issue of where to plant this Eucalyptus. KEFRI is doing a lot of work to provide

high yielding species and looking forward to get more seed producers. KEFRI through TOFNET Project has been enhancing the sharing of ideas about farm forestry but the implementation is mainly by the Forestry Department and Ministry of Agriculture. In this TOFNET project, marketing and market chains of wood products are used as a catch to motivate farmers in improving farm forestry, however non-wood forest products are also important. He thanked participants for attending the workshop and sharing their experiences.

8.0. Closing Remarks by the Centre Director-KEFRI Maseno: Dr Ndufa

Dr Ndufa stressed the need for partnership to realize full benefits from farm forestry. Linkages are required even among farmers. There is need for an integrated approach among different stakeholders to assist the farmer in optimizing production from the farm. No actor will work alone and succeed to uplift livelihoods of farmers. There is also need to empower the farmers and give them technical advice. Dr Ndufa outlined three basic types of partnerships or collaboration which are needed to succeed in farm forestry:

- Individual –to-individual
- Institution – to-institution
- Individual – to- institution

The workshop was declared closed at 4pm.

ANNEX 1: TREE PRODUCTS MARKET CHAINS AND TRADE ARRANGEMENTS CAPACITY BUILDING STAKEHOLDERS WORKSHOP FOR NYANZA ON 17TH NOVEMBER 2006

TIMETABLE

Time	Activity
	SESSION I: Chairman: Dr. Donald Ogweno; Rapporteur J. Hitimana
9.00-9.30	Registration and Self-introduction
9.30-9.45	Welcome Remarks: Centre Director – Londiani: Joshua Cheboiwo
9.45-10.00	Official opening: Prof E. Koech, Dean School of Natural Resource Management
10.00-10.30	The market opportunities for smallholder tree products and tree arrangements in Western Kenya: Joshua K. Cheboiwo
10.30-11.00	Profitability of Eucalyptus growing for various products in Western Kenya: David Lang'at
11.00-11.30	Tea break
	SESSION II: Chairman: Dr. K. Senelwa; Rapporteur J. Hitimana
11.30-11.50	Wattle Bark Out-grower Scheme: FAN-Farmer-Vegext Kenya Partnership arrangement: Mr Volga Lipwoni
11.50-12.20	Partnership with Smallholder tree growers and market opportunities from PPM: Philip Diro
12.20-12.40	Market Opportunities and products specifications for transmission poles: TTI - EATEC
12.40-13.00	Presentation from Moi University: Dr Kireger
13.00-13.30	Brief experiences from 3 traders: Opportunities and constraints to trade in tree products in Kenya: (Local and importors)
13.30-14.00	Lunch Break
	SESSION III: Chairman: Prof. Lazare Etiegni; Rapporteurs J. Hitimana and David Lang'at
14.00-14.30	Potential for financing tree growing in western Kenya: AFC/KCB
14.30-15.45	Panel Discussions and Way forward
15.45-16.00	Closing Remarks: Principal Chepkoilel Campus
16.00	Departure of Participants

ANNEX 2: LIST OF PARTICIPANTS FOR WESTERN AND NORTH RIFT REGION

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ANNEX 3: TREE PRODUCTS MARKET CHAINS AND TRADE ARRANGEMENTS CAPACITY BUILDING STAKEHOLDERS WORKSHOP FOR NYANZA ON 23TH NOVEMBER 2006 TIMETABLE

	SESSESION I : Chairman:DFO: Rapporteurs R. Siko and David Langat
9.00-9.30	*Registration and Self Introduction*
9.30-9.45	**Welcome Remarks: Centre Director-Londiani: Joshua Cheboiwo**
9.45-10.00	**Opening Remarks: DFO: Kericho**
10.00-10.30	**The Market Opportunities for smallholder tree products and Trade arrangements in Western Kenya: Joshua K. Cheboiwo**
10.30-11.00	*Tea break*
11.00-11.20	**Profitability of Eucalyptus Growing for various products in Western David Lang'at**
11.20-12.40	**Partnership with smallholder tree growers and market opportunities from TIMSALES: Ogada**
11.12.00	**Market opportunities and products specifications for transmission poles : EA Cabro**
12.00-12.30	**Market opportunities and products specifications for industrial firewood in Central Kenya: KTDA- Zonal Manager Litein**
12.30-13.00	**Brief Experiences from 3 traders: Opportunities and constraints to trade in tree products in Kenya: (Local and importers)**
13.00-14.00	*Lunch Break*
	SESSESION II : Chairman:KFC: Rapporteurs: David Langat
14.00-14.20	**Potentials for financing tree growing in western Kenya : AFC/Equity**
14.20-14.40	**The potentials of farm forestry participation in the saw milling sector in Central Rift Kenya: Saw miller: Mr. Koigo**
14.40-15.40	*Panel Discussions*
15.40-16.00	Closing Remarks: DO Londiani
16.00	*Tea Break and Departure by participants*

ANNEX4: LIST OF PARTICIPANTS FOR CENTRAL AND SOUTH RIFT

Names	Organization	Telephone	Address	Email
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Leah Nganga	Field Officer-Braka			
Kipngetch Cheruiyot	Farmer-Sirikwa			
Francis Mwaura	TRF-Kericho			
Moses Ngeno	Baraka			
Kiplagat Siele	Farmer-Barsiele			
P.G Kamanu	Kapkatet-Factory			
P.W Gichina	Equity Bank-Molo			
John K Rono	James Finlay			
Solomon Koech	George Williamson Tea			
S.N. Thumbi	George Williamson Tea			
Edwin Maina	TRF-Kericho			
Peter Waititu	Equity Bank			
Samuel Kosgei	Secodo-Bomet			

ANNEX 5: TREE PRODUCTS MARKET CHAINS AND TRADE ARRANGEMENTS CAPACITY BUILDING STAKEHOLDERS WORKSHOP FOR NYANZA ON 30TH NOVEMBER 2006

TIMETABLE

Time	Activity
9.00-9.30	*Registration and Self Introduction*
9.30-9.45	Welcome Remarks: Centre Director-Londiani: Joshua Cheboiwo
9.45-10.00	Key Note Address : Coordinator Trees On Farm Network: World Agroforestry Centre : Dr Daniel Nyamai
10.00-10.30	The Market Opportunities for smallholder tree products and Trade arrangements in Western Kenya: Joshua K. Cheboiwo
10.30-11.00	*Tea break*
11.00-11.20	Profitability of Eucalyptus Growing for various products in Western David Lang'at
11.20-12.40	Partnership with smallholder tree growers and market opportunities from PPM: Philip Diro
11.40-12.00	Market opportunities and products specifications for construction poles in Nyanza: Trader Kondele -Kisumu
12.00-12.20	Partnership with smallholder tree growers and market opportunities from Homalime Co. Ltd: Mr. Ouko Okeyo
12.20-12.40	Market opportunities and products specifications for industrial firewood in western Kenya: KTDA- Mudete Tea Factory.
12.40-13.15	Brief Experiences from 3 traders: Opportunities and constraints to trade in tree products in Kenya: (Local traders and importers)
13.15-14.00	*Lunch Break*
14.00-14.20	Potential for financing tree growing in western Kenya: AFC/Coop Bank
14.20-14.40	Partnerships forestry and environmental enterprises in western Kenya: Green Planet: Open to stakeholder Experiences
14.40-15.40	Panel Discussions
15.40-16.00	Closing Remarks: Centre Director-KEFRI: Maseno
16.00	Tea Break and Departure by participants

ANNEX6: LIST OF PARTICIPANTS FOR NYANZA REGION

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65. Mark Shakamiri				
66. Jones Uguto