

PROFITABILITY OF EUCALYPTUS GROWING FOR VARIOUS PRODUCTS IN WESTERN KENYA: David Langat²

2.2.1 Introduction

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

There is high demand for tree and non-timber products and these markets remain 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; and encourages farmer to grow trees on commercial principles.

The changing supply and demand conditions for various trees products have motivated farmers to enter into commercial; tree farming in western Kenya. 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

As farmer grows trees they need assurance that tree growing is viable alternative land use and therefore financial viability is not only an incentive but also a justification for tree planting

Therefore the key reasons why farmers need financial analysis for tree growing enterprises are mainly:

- Farmers need assurance that tree growing is viable alternative land use
- Need to compare returns from alternative land use options

To do a financial analysis of tree growing you need to know:

1. Costs of establishing, maintenance a unit size of land from planting to maturity
2. Expected productivity in volume or size
3. The expected future revenue at maturity
4. Discount rate: Because the value of money is affected by time, it is important to do what is called discounting i.e. converting future value of costs, income to the present.
5. Investment analysis criteria-in most analysis net present value is used to gauge the profitability of investments.

2.2.2 Productivity of Eucalyptus trees

The volume of wood that can be achieved from 1 ha of land depends on:

- Site quality
- Quality of seedlings,
- Silvicultural operations
- Competition and
- Use of fertilizers.

From research experiences the productivity of *Eucalyptus* is between 16 and 75 m³ha⁻¹ with slowest growth being realized in marginal areas and highest achieve high potential marginal areas to high potential areas with intensive management regimes.

For this analysis productivity of lowest 20, 35 and 45 m³/ha are used to calculate the potential volume from one hectare of *Eucalyptus* of each productivity scenario.

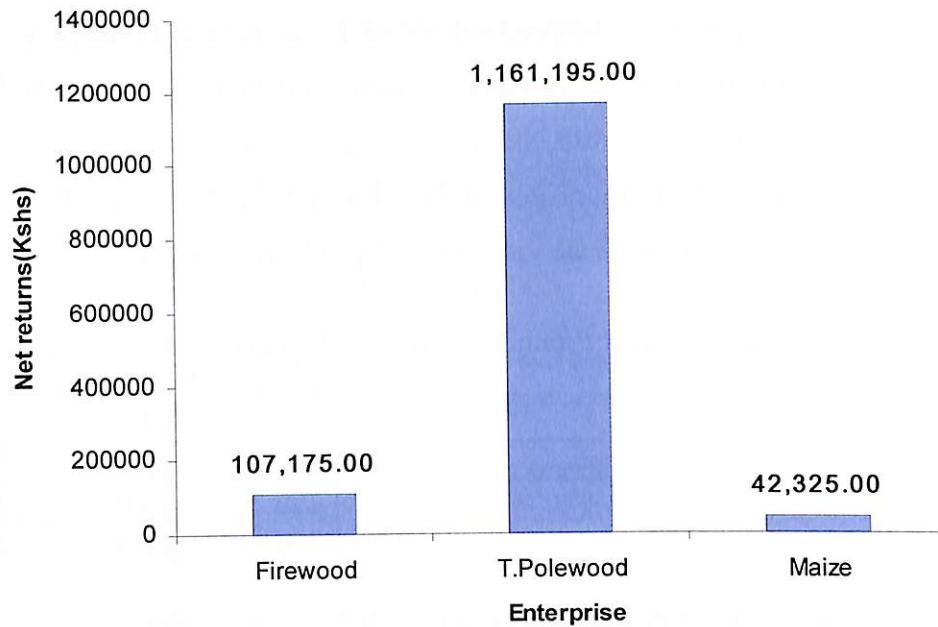
Table : The Potential Productivity of *Eucalyptus Grandis* in high potential zones

Age (Years)	Potential Volume (m ³ ha ⁻¹)		
	V ₂₀	V ₃₅	V ₄₅
8	160	280	360
9	180	315	405
10	200	350	450

Table : Comparison of *Eucalyptus grandis* enterprises with maize.

Costs and Incomes in Ksh	Firewood	Transmission poles	Maize
Total production costs	132805	302805	37675
Total Revenue	240000	1440000	80000
Net revenue	107175	1161195	42325
Net Present Value(NPV)	32398	570551	42325
Equivalent Annual Earning (EAE)	5637	99275	42325

Comparison of net returns from Eucalypts and maize



Assumptions

- Price of firewood in cubic meters at Kshs 1000
- Price of transmission pole wood is Kshs 1200
- Maize is sold at Kshs 1600 per 90kg-bag

2.2.3 Summary

- Eucalyptus enterprises are more profitable than Maize;
- Transmission pole wood enterprise is the most profitable and farmers are encouraged to target this market
- Annualized income from pole wood is more than twice the return from maize
- Tree growing is less intensive in terms of inputs but the returns are comparable or exceed other agricultural crops

2.2.4 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