KENYA FORESTRY RESEARCH INSTITUTE

EARN MORE BY INVESTING IN *EUCALYPTUS GRANDIS* FOR POLES OR FIREWOOD

The opportunity

- *Eucalyptus grandis* is the most popular and most preferred species for plantation establishment in Kenya. This is because of its fast growth, good height (25 - 55 m tall), stem form, coppicing ability, reasonably durable wood, tolerance to water logging, multipurpose use and ready markets for its products

Where to establish woodlots

- The best planting areas are western Kenya, Rift Valley and Central highlands
- Altitude range of 1800 m and 2700 m
- Mean annual Rainfall of 750 mm to 1800 mm per year.
- Mean annual temperature: of 12-25 °C
- Soil: clay loam, heavy clay, light to medium clay, loam, sandy loam, sandy clay loam or sand

Important attributes of *Eucalyptus grandis*

Rotation: Low, medium to long depending on the products desired

- Growth rate: fast
- Root system: moderate to deep
- Erosion control potential: excellent for clayey sites or sandy sites
- Carbon sequestration potential: high

Uses

- Potential farm use: Wind break or shelterbelt or shade for stock
- Honey production: Good for honey production
- Urban use: good as an ornamental or amenity plant
- Wood products: pulpwood (wood chips for paper pulp), boxes, crates, flooring, heavy construction, high quality firewood, industrial charcoal, panelling, poles (building, transmission, piling), speciality timber for quality furniture

How your investment grows

- You get good returns from your investments
- The potential for growth of your investment is determined by the number of trees per acre/hectare, climatic and soil conditions, management practises and costs of the products.

Quotation for Establishment and Maintenance of 1 Ha (2.5 Acres) of *Eucalyptus Grandis* Plantation for 8 Years

Year	Item/activity	Unit	Quan-tity	Unit Price (KES)	Amount (KES)	Net Pre-sent Value (10%)
	Inputs					
1	Seedlings Purchase	No	1,600	10	16,000	16,000
1	Transport of seedlings	No	1,600	3	4,800	4,800
1	**Land preparation**					
1	1st ploughing	Ha	1	7,410	7,410	7,410
1	2nd ploughing	Ha	1	6,175	6,175	6,175
1	Harrowing	Ha	1	6,175	6,175	6,175
1	Staking	Man days	10	250	2,500	2,500
1	Pitting	Man days	20	250	5,000	5,000
1	Planting	Man days	15	250	3,750	3,750
1	Fertilizer - DAP	50 Kg bag	1	3,000	3,000	3,000
1	*Termiticide* (GLADIATOR or METRO 200SC)	Litres	1	2,000	2,000	2,000
1	Fencing (Barbed wire + Posts + Nails +Labour)	Metres	1		50,400	50,400
1	Seedlings replacement	No	400	10	4,000	4,000
2 to 8	General maintenance and harvesting costs	Man days	56	250	240,000	163,920
	Total Costs				**(251,210)**	**(275,130)**
	Revenues					
1	Revenue from maize during 1st year	bags	17	2,400	40,800	40,800
2	Sale of poles at end of year 2	No	400	100	40,000	33,056
3	Sale of poles at end of year 3	No	200	200	40,000	30,052
8	Sale of poles at end of year 8	No	800	3,000	2,400,000	1,119,600
Total Net Revenue				2,269,590	948,378	

Firewood Production

Quotation for Establishment And Maintenance of 1 Ha (2.5 Acres) of *Eucalyptus Grandis* Plantation for 6 Years

Year	Item/activity	Unit	Quantity	Unit Price (KES)	Amount (KES)	Net Present Value (10%)
	Inputs					
1	Seedlings Purchase	No	1,600	10	16,000	16,000
1	Transport of seedlings	No	1,600	3	4,800	4,800
1	Land preparation					
1	1st ploughing	Ha	1	7,410	7,410	7,410
1	2nd ploughing	Ha	1	6,175	6,175	6,175
1	Harrowing	Ha	1	6,175	6,175	6,175
1	Staking	Man days	10	250	2,500	2,500
1	Pitting	Man days	20	250	5,000	5,000
1	Planting	Man days	15	250	3,750	3,750
1	Fertilizer - DAP	50 Kg bag	1	3,000	3,000	3,000
1	Termiticide (GLADIATOR or METRO 200SC)	Litres	1	2,000	2,000	2,000
1	Fencing (Barbed wire+Posts+Nails+Labour)	Metres	1		50,400	50,400
1	Seedlings replacement	No	400	10	4,000	4,000
2 to 6	General maintenance and harvesting costs	Man days	42	56	240,000	163,920
	Total Costs				**(351,210)**	**(275,130)**
	Revenues					
6	Sale of firewood at end of year 6	M^3	390	2,500	975,000	550,387
	Total Net Revenue				**502,580**	**275,257**

Cost Benefit Anaysis for Pole Production

Details	Ksh
Initial Investment year 1	351,210
Returns	
Revenue from maize during 1st year	40,800
Sale of poles at end of year 2	40,000
Sale of poles at end of year 3	40,000
Sale of poles at end of year 8	2,400,000
Total Net Revenue at end of year 8	**2,169,590**
Net present Value	**948,378**
Internal Rate of Return	**25.56%**

Cost Benefit Anaysis Summary for Firewood Production

Details	Ksh
Initial Investment year 1	351,210
Returns	
Sale of firewood at end of year 6	975,000
Total Net Revenue at end of year 6	**502,580**
Net present Value	**275,257**
Internal Rate of Return	**6.15%**

Key details & Assumptions

- The survival rate for the planted seedlings is 75% (Seedling losses is 400)
- Task rates per Manday; Kshs 250 per manday,
- Initial spacing of 2.5x2.5m
- Thinning crop 800 stems
- Final crop density is 800 stems/ha,
- Rotation is 8 years for pole production and 6 years for firewood
- Transmission pole farm gate price Ksh3,000
- Additional revenue is obtained from growing maize during the first year
- General yearly maintenance cost involves: spot weeding, slashing, Vermin and pest control, Security/tree guarding/fire protection and general tree growth observation

Contacts
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