



# **Investments and Financing Mechanisms in Commercial Forest Plantations**

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# Species: Gmelina arborea / Eucalyptus deglupta / Acacia mangium

ACTIVITIES	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Hectars for planting/harvest</b>	<b>200</b>	<b>300</b>	<b>500</b>					<b>200</b>	<b>300</b>	<b>500</b>
<b>1. Field Survey, Planning &amp; Mobilization</b>	<b>8,000</b>	<b>12,000</b>	<b>20,000</b>							
<b>2. Nursery Operation</b>										
<b>a. Seedbed Preparation &amp; Tending</b>	<b>2,400</b>	<b>3,600</b>	<b>6,000</b>							
<b>b. Seedling Purchase</b>	<b>40,000</b>	<b>60,000</b>	<b>100,000</b>							
<b>3. Site Preparation &amp; Planting</b>										
<b>a. Stripbrushing</b>	<b>12,000</b>	<b>18,000</b>	<b>30,000</b>							
<b>b. Hole Digging &amp; Seedling Transport</b>	<b>16,000</b>	<b>24,000</b>	<b>40,000</b>							
<b>c. Planting</b>	<b>12,000</b>	<b>18,000</b>	<b>30,000</b>							
<b>4. Plantation Maintenance</b>										
<b>a. Weeding/Underbrushing</b>	<b>12,000</b>	<b>30,000</b>	<b>48,000</b>	<b>30,000</b>						
<b>b. Replanting</b>	<b>8,000</b>	<b>12,000</b>	<b>20,000</b>							
<b>c. Pruning</b>	<b>12,000</b>	<b>26,000</b>	<b>42,000</b>	<b>12,000</b>	<b>20,000</b>					

**COMMERCIAL FOREST  
PLANTATION PROJECT**

**PRE-FEASIBILITY COST &  
REVENUE CALCULATIONS**

**Total Area for Development : 1,000  
ha**

5. Maintenance & Protection										
a. Fireline Construction & Maintenance	16,000	24,000	40,000							
b. Patrolling	5,760	14,400	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800
c. Insurance Cover	5,000	12,500	25,000	20,000	12,500					
d. Fertilizer Application	20,000	30,000	50,000							
6. Infrastructure										
a. Bunkhouses, Staff Quarters, etc.	50,000			50,000			50,000			
b. Watch Towers	30,000			30,000			30,000			
c. Construction & repairs of Road & trails	80,000	120,000	200,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
SUB-TOTAL:	329,160	404,500	679,800	200,800	91,300	58,800	138,800	58,800	58,800	58,800
7. Supervision, Monitoring & Control (10%)	32,916	40,450	67,980	20,080	9,130	5,880	13,880	5,880	5,880	5,880
SUB-TOTAL:	362,076	444,950	747,780	220,880	100,430	64,680	152,680	64,680	64,680	64,680



<b>YIELD, REVENUES AND IRR ESTIMATES:</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>
1. Timber Yield										
Sawtimber (cu.m.) (@ 385 cu.m./ha)								77,000	115,500	192,500
Revenue (US\$) (at stump) @ \$60/cu.m.								4,620,000	6,930,000	11,550,000
	(499,665)	(564,031)	(1,031,936)	(304,814)	(138,593)	(89,258)	(210,698)	4,530,742	6,840,742	11,460,742

**IRR: 38%**

## Assumptions Made for the Pre-feasibility Calculations

### A. Labor Man-days in Plantation Development:

1. Field survey, planning & mobilization - 10 MD/ha.
2. Nursery Preparation
  - a. Seedbed preparation and Tending of Seedlings - 3 MD/ha (for 5 months)
3. Site Preparation & Planting
  - a. Stripbrushing - 15 MD/ha.
  - b. Hole digging & seedling transport - 20 MD/ha.
  - c. Planting - 15 MD/ha.
4. Plantation Maintenance
  - a. Weeding / Underbrushing - 15 MD/ha (Yr. 1) 10 MD/ha (Yr. 2)
  - b. Re-planting - 10 MD/ha
  - c. Pruning - 15 MD/ha (Yr. 1) 10 MD/ha (Yr. 2)
5. Maintenance & Protection
  - a. Fireline construction & maintenance - 20 MD/ha
  - b. Patrolling - 1440 MD/year

## B. timber yield estimate:

- |   |                    |
|---|--------------------|
| a. No. of trees/ hectare                      | - 400 trees        |
| b. Diameter at Breast Height (DBH) in 8 years | - 40 cm.           |
| c. DBH inside bark (DIB) in 8 years           | - 38 cm.           |
| d. Merchantable height                        | - 10 meters        |
| e. Taper allowance                            | - 15%              |
| f. Volume per hectare                         | - <u>385 cu.m.</u> |

## Round Wood Imports of Three Countries

	2010 Predicted Consumption (cu.m.)	Round Wood Imports (as % of consumption)	Round Wood Imports (cu.m.)
PR China	193,587,000	5.6%	10,956,000
Japan	82,724,000	63.7%	52,740,000
S. Korea	7,814,000	81%	6,336,000
		Total Imports:	70,032,000





**Coppice growth of *Gmelina arborea***



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# INITIATIVES

- **an official directive (either from the Central Bank or Department of Finance) for commercial banks to recognize and evaluate land given under long-term lease or awarded to indigenous cultural minorities, as collateral for loans to tree plantations projects;**
- **a similar directive for banks to accept growing trees (properly evaluated) also as collateral for loans;**
- **grant of tax holiday for at least 8-10 years to investment in commercial plantations;**

# INITIATIVES

- **Grant of tax holiday for at least 8-10 years to investment in commercial plantations;**
- **Grant of tax exemptions to import of equipment and machineries to be used in plantations;**
- **Require insurance cover at a reasonable premium for planted trees;**
- **Allow the declaration of stock dividends based on the estimated growth in volume and value of trees in plantations;**
- **Establish a system of monitoring and certification of coppice re-growth in the plantations for the purpose of imposing on the plantations substantially reduced taxes.**