

## **EXECUTIVE SUMMARY**

**The comparative advantages of Indonesia Pulp Industry :**

- 1. Its tropical forest area of 143.9 million hectares of which 94.9 million hectares are suitable for pulp's raw material under HTI program (Industrial Forest Plantation), and growth of trees in warm tropical climate is faster than in non-tropical countries.**
- 2. The availability of skilled labors to process woods and pulp as well as forestry development and cultivation.**
- 3. The possibility to develop forest plantation together with transmigration program.**
- 4. Good opportunity to enter the world market.**
- 5. The availability of other cellulose sources beside woods.**

**The annual growth rate in domestic market size is 22.3% over the last five years (1987-1991). 1991 Indonesian consumption is around one million ton pulp. Most of the pulp consumed for paper production and some consumed by textile industry. Paper consumption in Indonesia is around 6 kgs in 1989 compared to Thailand of 17 kgs, Philippines of 10 kgs, Malaysia of 44 kgs and Singapore of 191 kgs.**

**In production category, pulp production in Indonesia was 800.000 tons in 1991 compared with USA of 57.6 million tons, Canada of 22.8 million, and Japan was 11.7 millions ton, meanwhile Indonesia ranks 22nd among the world's pulp producers.**

**By late 1993 total pulp mills capacity installed will be 2.2 millions tons. In 1995, with the commencement of operations of another three large-scale pulp producers, Indonesian's total annual pulp production capacity will increase become 4.3 million tons.**

**Strong and good management team is required to run a pulp mill industry as this industry is a long term investment and required at least US\$540 millions for a capacity of 600.000 tons pulp per year.**

**A pulp mill has three basic requirements which are raw materials (wood) from HTI, water supply and infrastructure.**

**The biggest investment for a pulp mill is on the machinery and utilities and pollution treatment equipments which counted for 77% of total investment.**

Environment control is an important factor in the pulp industry. First is to maintain the ecosystem balance of the forest with its environment, second is having good treatment equipment for the pollution either liquid pollution or gas toxin, third is maintaining good and harmony interstrata balance with the community around the factory area.

Average price of pulp in 1987 was US\$477/ton, increased to US\$686/ton in 1989, reduced to US\$465/ton in 1991 and still lower in 1992 at US\$424/ton up to September 1992.

In this feasibility study, the 10 years financial projection use a conservative approach of selling price as follows :

Year 2 - 3 = \$420/ton  
Year 4 - 5 = \$460/ton  
Year 6 - 10 = \$500/ton

Average cost composition of pulp COGS :

Raw material (woods)	=	51%
Supplies (chemical)	=	13%
Direct Labor (wages)	=	1%
Depreciation	=	23%
Factory Overhead	=	<u>12%</u>
TOTAL	=	<u>100%</u>

Labor input is very low, only 1%. The biggest portion is raw material + supplies which is 64%.

On the financial aspect, this study showing a profit gained starting with its second year with 80% capacity utilisation.

The cash flow schedule showing that the long term loan is fully paid by the year 7 and the financial ratios also support that this project is feasible.

Liquidity ratio more than 100% especially starting year 6. profitability ratio with its Return on Investment and Return on Equity provide excellent returns, meanwhile break-even analysis tell us that the project can run on 36% on its full capacity on year 4 reduced to 14% starting year 7 onwards.

The Net Present value (NPV) calculation shows that the Discounted cash Flow is positive, it means the project is feasible financially.

The Return On Investment (ROI) schedule tells us that the project will provide 15.07%, ROI which is much higher than the market interest deposits, again this prove that the project is feasible.

On the sensitivity analysis, the most influence factors are the changes on the Sales Price, then Sales Volume, followed by production Cost and finally Interest rate Changes.

The limit of changes allowed are :

Sales Price	:	15% maximum decreased (from average ofUS\$450/ton)
Production Cost	:	50% maximum increased
Sales Volume	:	17% maximum decreased
Interest Rate	:	14 point maximum increased (from 10% assumed in this study on US Dollar base)

Based on the above, we can conclude that the prospect of pulp industry in Indonesia is still goods with its comparative and competitive advantage.