



Sustainable Teak Management in Brazil: Long-Term Modelling



July - 2025



TRC is the world's largest manager of certified Teak wood (*Tectona grandis*) plantations;

More than **35,000 hectares of planted Teak** over more than **73,000 hectares of land**, including **35,000 hectares of conservation areas**;

Pioneer on **Teak genetic R&D and clonal plantations** of this species in Brazil, with proven higher results;

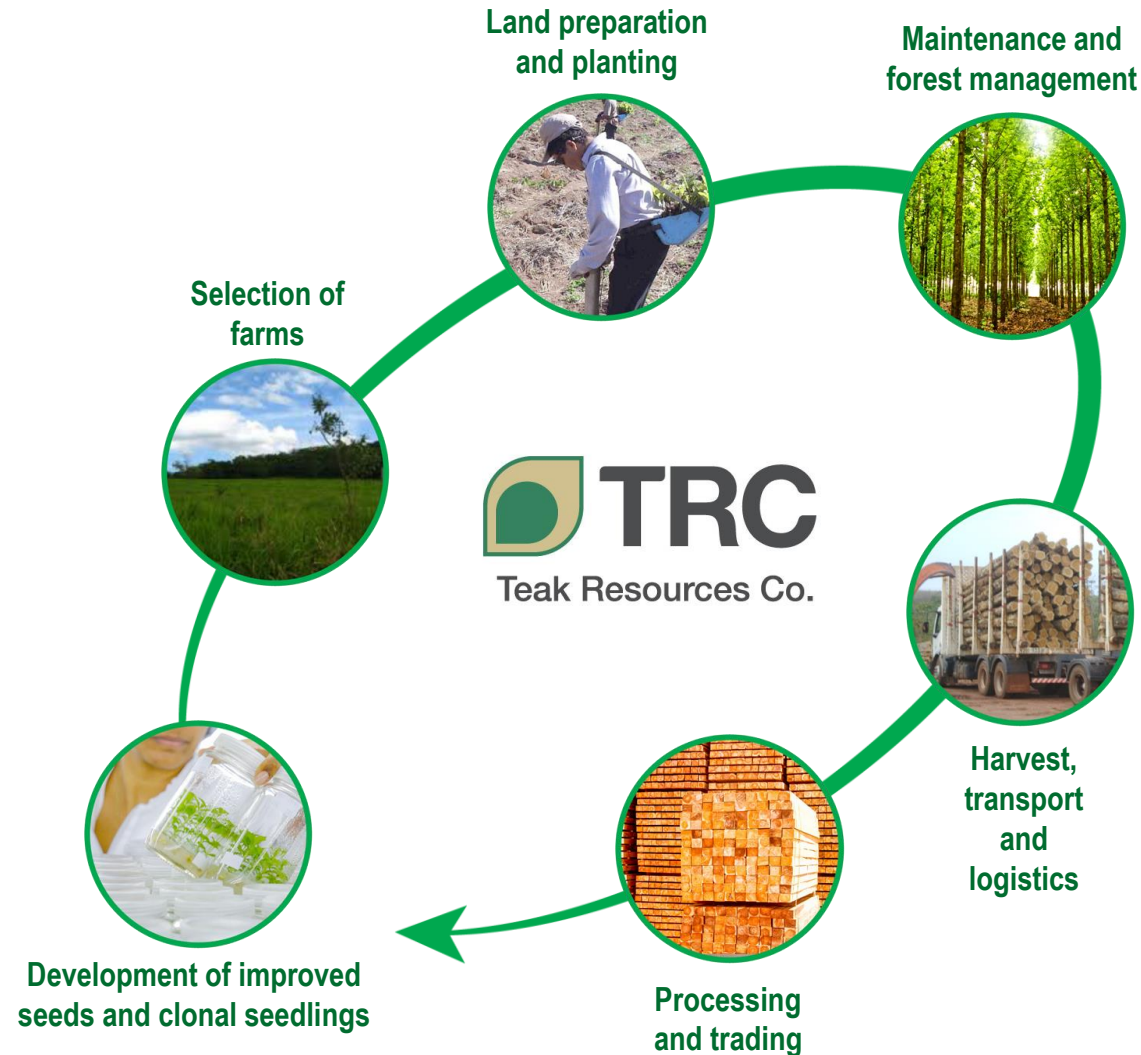
Operations in **31 individual farms** in Pará and Mato Grosso with over **600 direct employees**;

FSC® certification since 1998 (Forest Stewardship Council®);

Asset manager for institutional investors, including insurance companies, pension, endowment and investment funds.

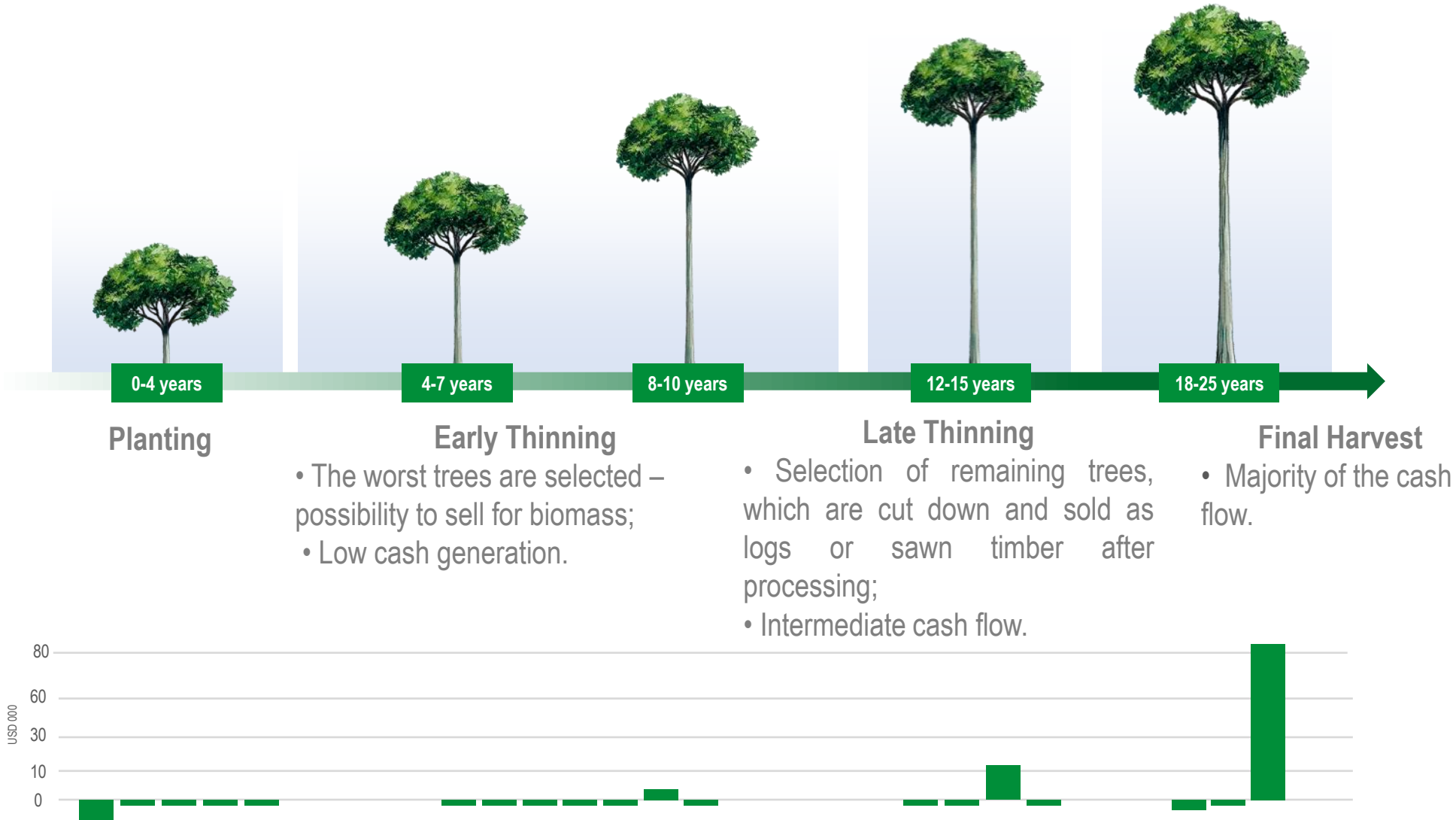
TRC Exporting share among Brazilian Competitors





TRC operations span the complete Teak plantation cycle, from seedling and clonal development, land sourcing and selection, forest management, harvesting, processing, sales and logistics.

Teak Plantation Cycle



- Teak plantations offer attractive returns with low volatility;
- Long-term investment, with the majority of the cash flow returning only at the final harvest.

Forest Production



Teak Plantation Cycle

Seedlings



0-4 years



4-7 years



Teak Plantation Cycle



12-15 years

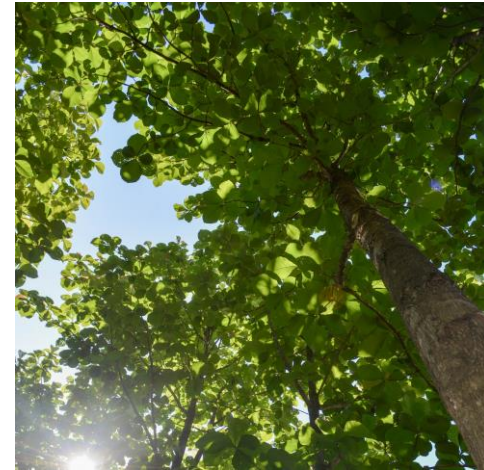


18-25 years



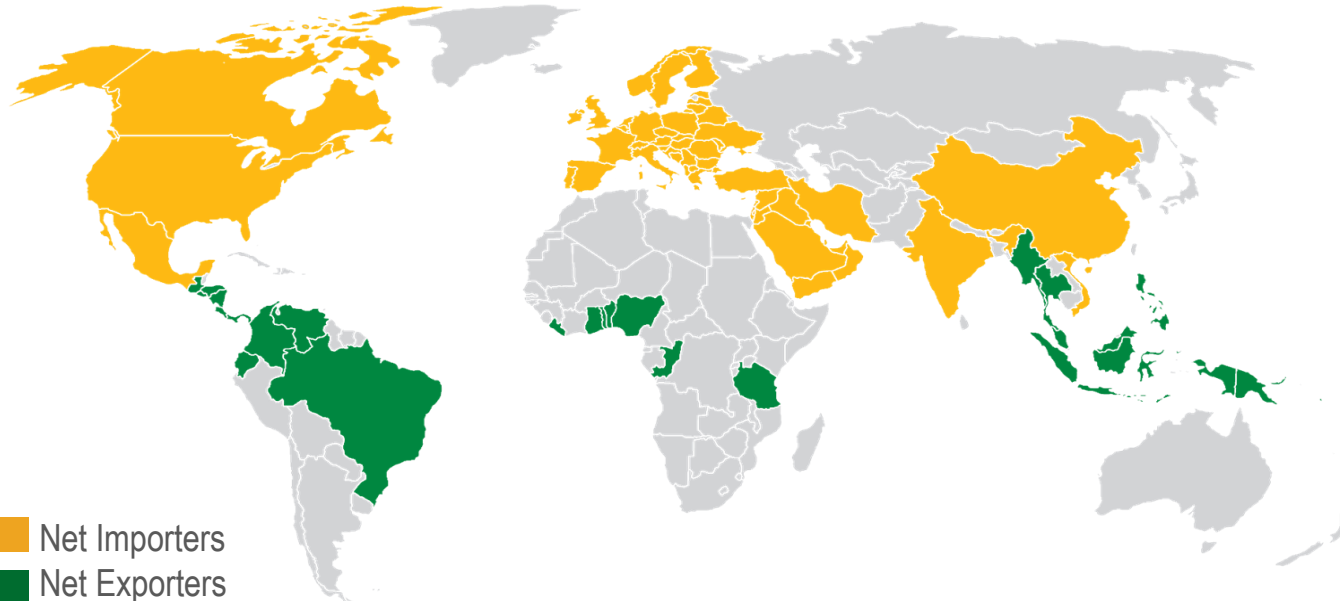
Assets Management

- Investors have different characteristics and interests:
 - Varied risk profiles and return expectations;
 - Need for cash generation – Constraints to the model specific by investor;
 - Different strategies – Does it allow replanting? Land sale?
- Shared operational capacity and market;
- There is no clear production objective, such as supplying a factory.

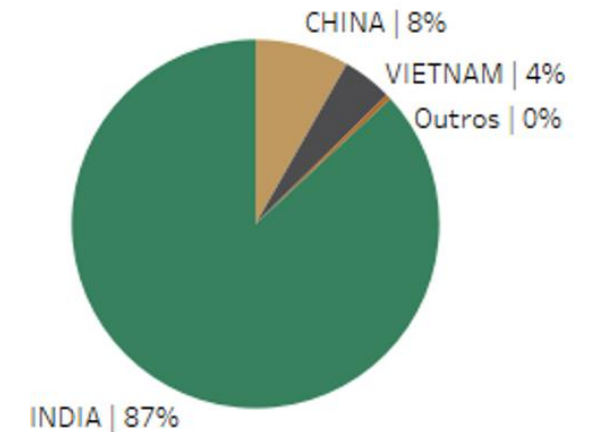


Multiple markets and customers

- Export sales – several destinations, with different prices and logistics cost structure.
- Multiple Products – variation of lengths, diameter classes and quality (age, taper, presence of channel,...).



Brazilian Teak Exporting Destination Share





Dynamic Product List

- Space in the model for up to 30 products (Short Logs, Medium logs and Long logs);
- Automatic yield generation (SQL);
- Dependence on a well-tuned tapering model.

Production Table

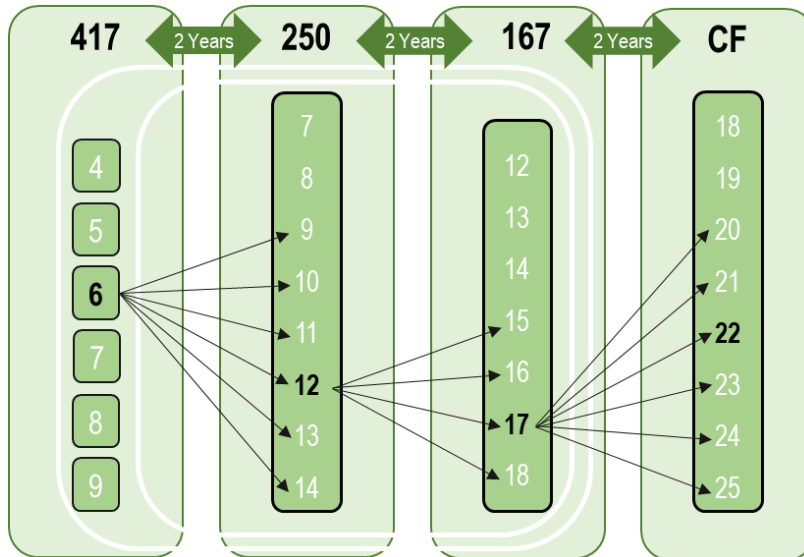
YVOLTOT	Total Volume - Final Harvest	(m ³ /ha)
YVOLDBT	Total Volume - Thinning	(m ³ /ha)
YVDP1	Volume - SL 0-56	(m ³ /ha)
YVDP2	Volume - SL 56-63	(m ³ /ha)
YVDP3	Volume - SL 63-72	(m ³ /ha)
YVDP4	Volume - SL 72-80	(m ³ /ha)
YVDP5	Volume - SL 80-90	(m ³ /ha)
YVDP6	Volume - SL 90-100	(m ³ /ha)
YVDP7	Volume - SL 100-110	(m ³ /ha)
YVDP8	Volume - SL 110-120	(m ³ /ha)
YVDP9	Volume - SL 120-130	(m ³ /ha)
YVDP10	Volume - SL 130-140	(m ³ /ha)
YVDP11	Volume - SL 140-150	(m ³ /ha)
YVDP12	Volume - SL 150-160	(m ³ /ha)
YVDP13	Volume - SL 160-170	(m ³ /ha)
YVDP14	Volume - SL 170-180	(m ³ /ha)
YVDP15	Volume - SL 180-190	(m ³ /ha)
YVDP16	Volume - SL 190-400	(m ³ /ha)
YVDP17		
YVDP18		
YVDP19		
YVDP20		
YVDP21		
YVDP22		
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YVDP28		
YVDP29		
YVDP30		



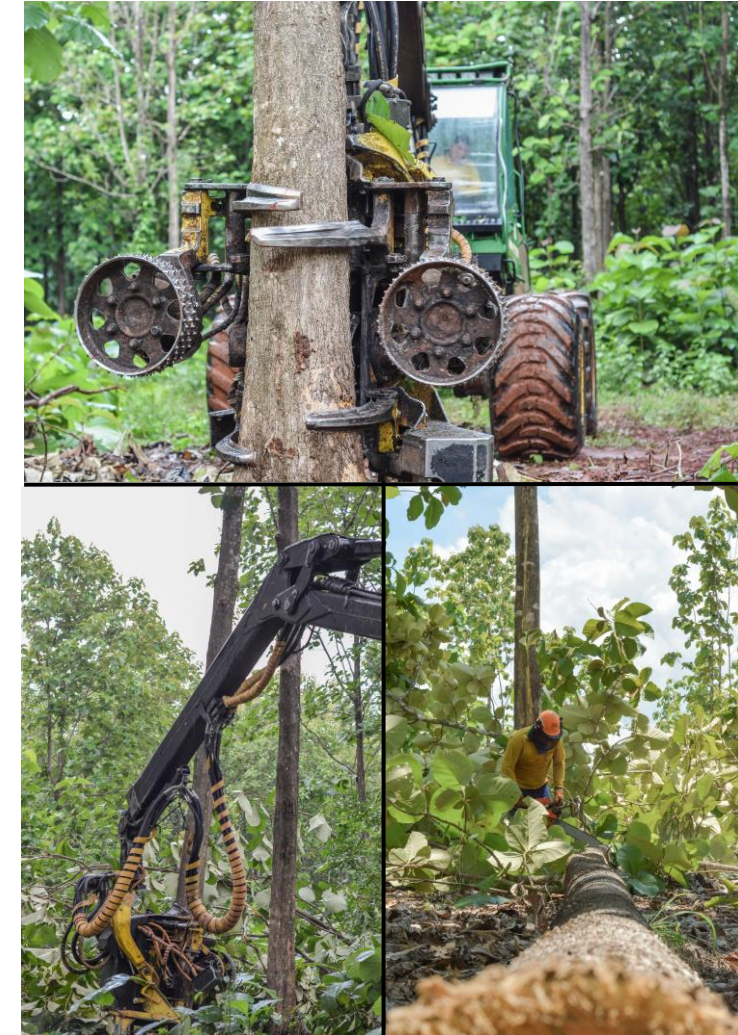
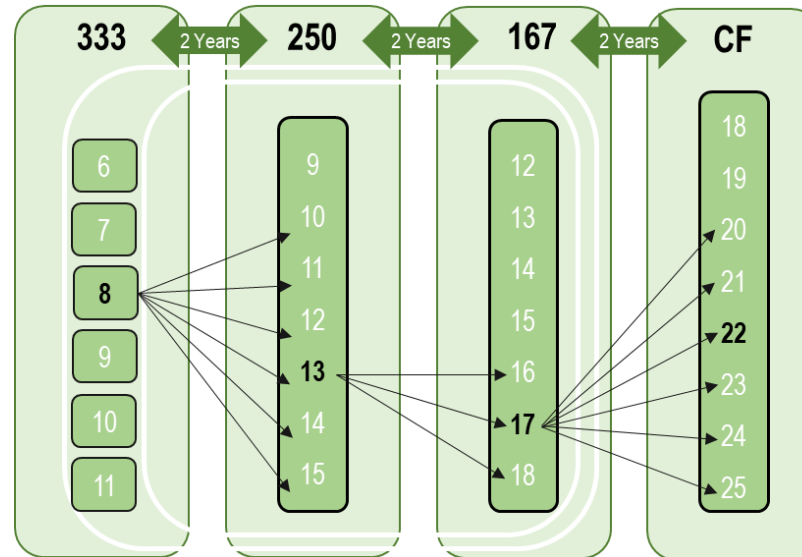
Interventions

- Thinning – retaining the best trees for the final harvest;
- Initial spacing groups:
 - Specific number of remaining trees (417, 250, ...);
 - Distinct possibility of ages.

4 x 3 m



5 x 4 m



Interventions

- Multiple options affecting the optimization
 - Postponing thinning influences growth;
 - Higher volume of thicker logs;
 - Potential loss of volume due to disease.



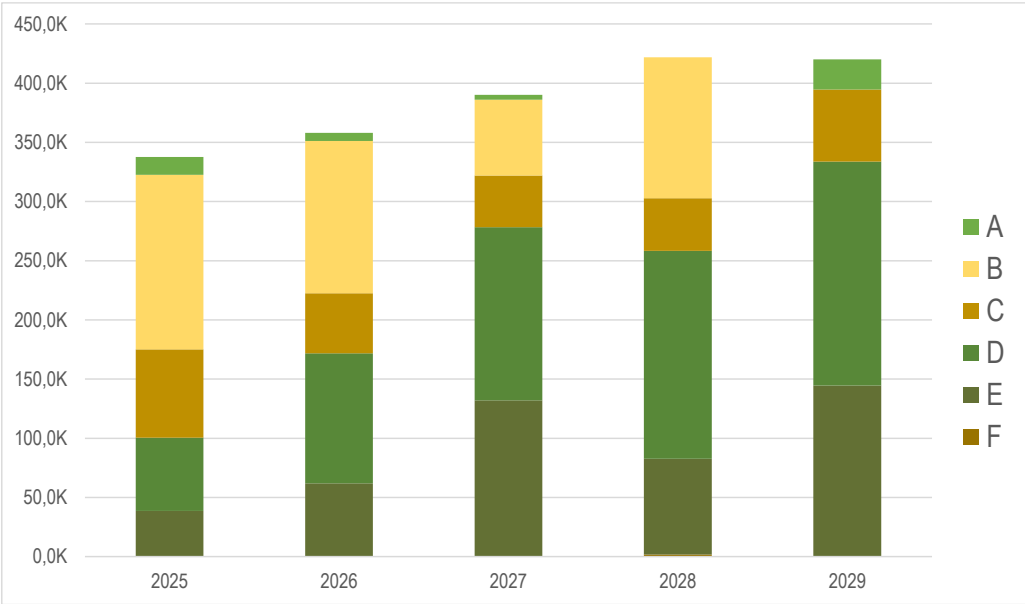
Scenarios

- Market constraints
 - Sawmill demand (thin logs);
 - Markets outside India (ticker logs > 100 cm girth);
 - Global market capacity.
- Price variation
 - Expected decreasing supply on the long term.
- Extend Cycle
 - Final harvest ages after 25 years.



Investor	Unconstraint	Current Production Level	Higher Production Level
A	0%	-4.0%	-3.6%
B	0%	-2.5%	-2.3%
C	0%	-1.2%	-1.5%
D	0%	-3.4%	-3.5%
E	0%	-3.0%	-2.9%

Change in NPV of assets under different scenarios.



Production flow per investor.

- Optimization as if it were a single asset;
- The fact that TRC manages multiple assets allows for significantly greater flexibility than if they were managed individually, because otherwise, operational constraints would have to be addressed at a lower level, which would move them further away from optimum.



TRC – Excellence in Sustainable Teak

Thank you!



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