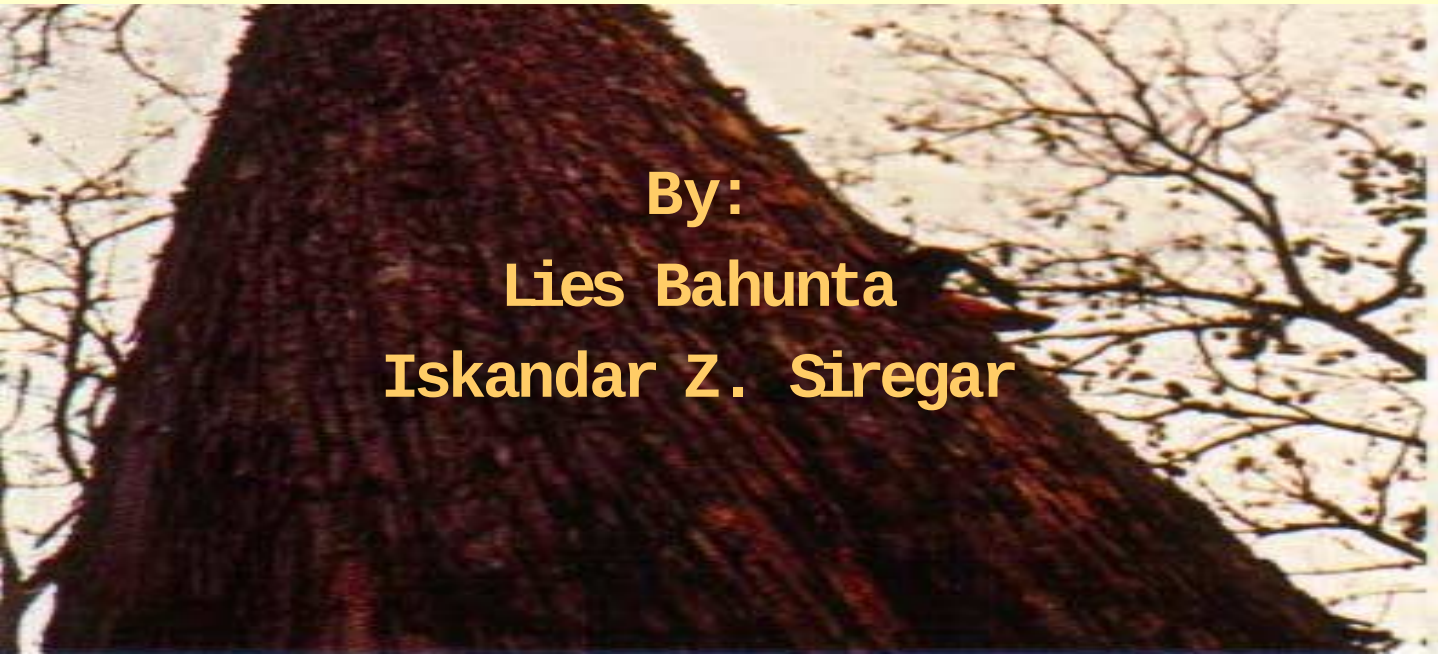
Welcome to International Symposium-cum-workshop, Los Banos August 27-31, 2001

"Public-Private Partnership and Knowledge Sharing"

"Teak Improvement Program in Perhutani Area"



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Introduction

WHY TREES SHOULD BE IMPROVED?

Introduction

- Tree Improvement is a process of managing genetic resources
- These activities involve conservation, selection, breeding and propagation
- Tree improvement components: *the genotypic portion* and *the environmental fraction*

A glance at Perhutani

- PT. Perhutani (Persero) is one of the private forest companies in Indonesia
- Mainly working area is in Java island ± 2.5 million ha
- In charge with the service of social welfare and profit earning based on economic principles and management of forest resources

Perhutani working area

Tree improvement program in Perhutani started in 1981

1. Seed Production Area (SPAs)
2. Plus Trees
3. Clone Bank
4. Clonal Seed Orchards (CSO)
5. Seedling Seed Orchards (SSO)
6. Developed the propagation technique

Why Teak (Tectona grandis Lf)?

- Good quality of wood (teak is moderately hard and extremely durable, fungi and weather resistance)
- Economic reason (good price).
- The important uses are furniture, interior construction, parquet flooring, heavy exterior construction, and shipbuilding.
- Almost 50% Perhutani area cover by teak (“plantation”).

Unimproved Teak Stand

- Planted and managed since the Dutch Colonial Times (1874): one of the best examples of forest management system in the world

Provenance Trial

Site is very important for teak growing:

- ✓Light
- ✓Soil-aeration
- ✓Soil moisture
- ✓Weed-growth and grazing

Provenance test (established in 1932):

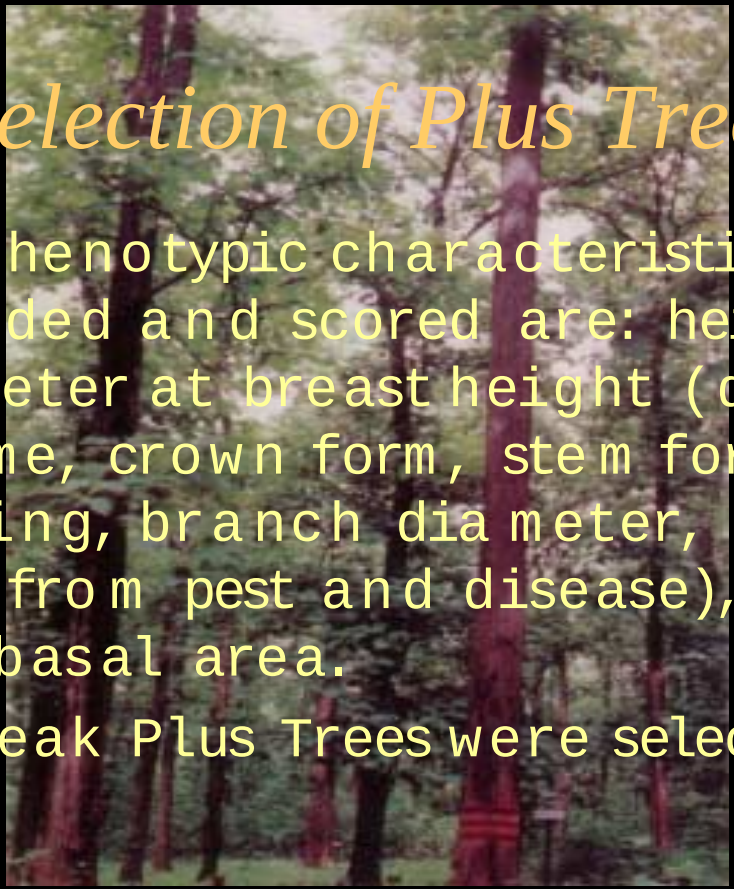
Malabar provenance was found the best provenance

Seed Production Area (SPAs)

- Natural populations and plantation may be converted to SPAs
- Establish within region which proved to be suitable for the procurement of seeds
- Base on phenotypic criteria
- 400,000 trees were selected (in more than 4,000 ha of teak SPAs)
- Produce ± 200 mill teak seeds

Seed Production Area

Selection of Plus Trees



- The phenotypic characteristic recorded and scored are: height, diameter at breast height (dbh), volume, crown form, stem form, self-pruning, branch diameter, health (free from pest and disease), age, and basal area.
- 600 teak Plus Trees were selected

Clonal Seed Orchards (CSO)

- Number of clones represented in the orchard
- Perhutani has established more than 1300 ha CSO involving 143 number of clones
- Improved teak seeds production 6 tons/year (7 mill seedling annually)

Seedling Seed Orchard (SSO)

- Combined with a test of progenies
- 2 times progenies test:

  1987 and 1999
- The result should wait at least 1/3 teak life time (about 20 years)

Genetic Conservation

- Important for preserving the existing genetic materials from unwanted loss (illegal cutting, fire, and disease)
- Perhutani established an arboretum and Clone Bank

Clone Bank

- Clone Bank = copy of Plus Trees
- The genetic material multiplied by bud grafting
- Target to conserve all the copy of Plus Trees (± 600) until 2002

Clone Bank area

Center of Forest Research & Development

- Established in 1997 in Cepu,Central Java
- The main purpose is to managed and organized all the activities of research related to developing forest resources
- Vision & Mission :

  the best R & D center of teak on the world (in 10 years)

Center of Forest Research & Development
PT. Perhutani (Persero)

Annual target of seedling production is 10 million

Conclussion

Perhutani is committed to carry out the teak improvement program through several activities such as provenance trial, selected of Plus Trees etc in order to achieve the good quality and quantity of wood

Thank You