

Tree seed supply for forest restoration and industrial plantations

K M A Bandara, PhD
Forest Department, Sri Lanka



Outline

- Introduction
- Forest restoration target
- Restoration methods and seed supply strategy
- Commercial forestry program and seed supply strategy
- Issues and remedies through regional effort

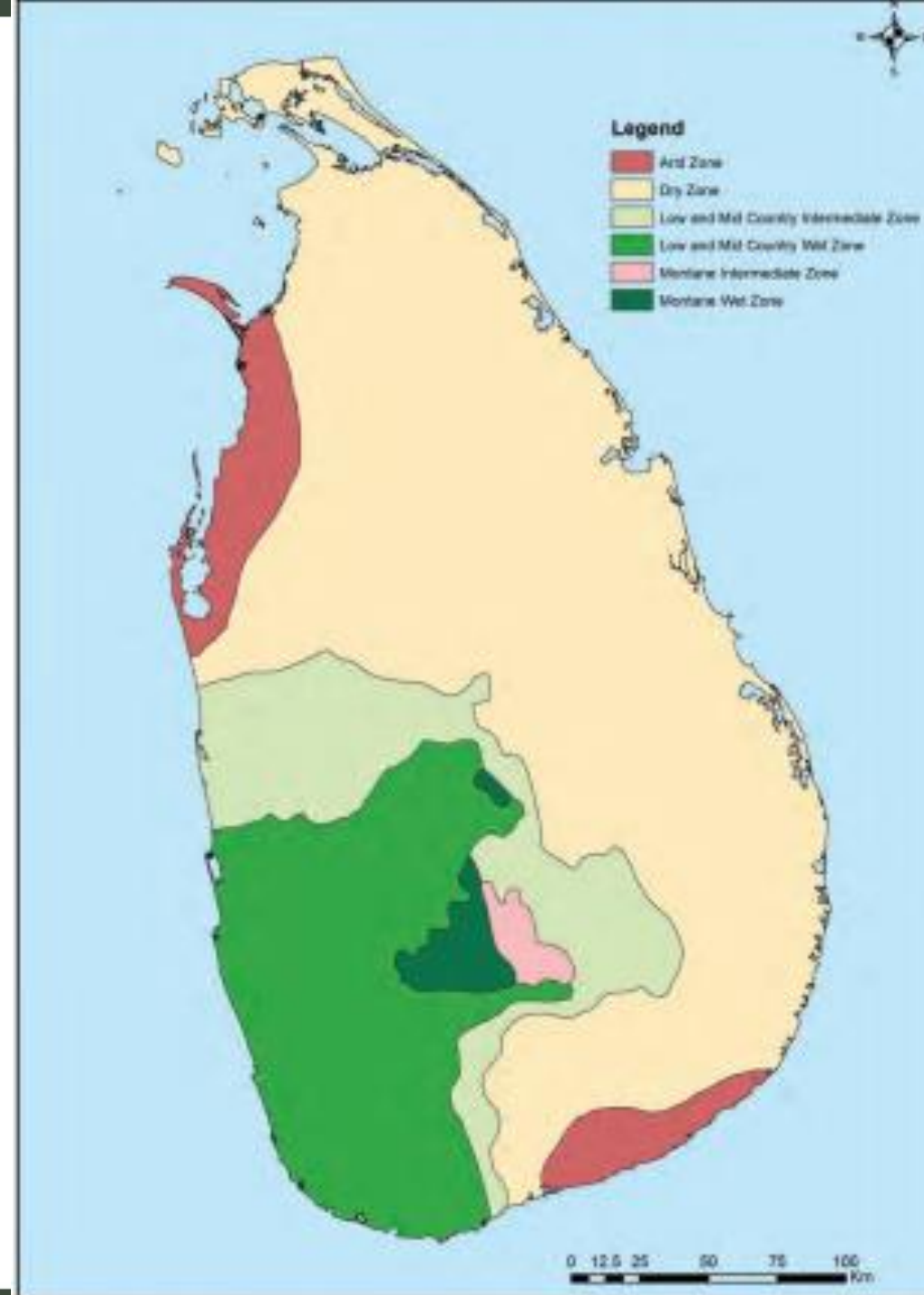
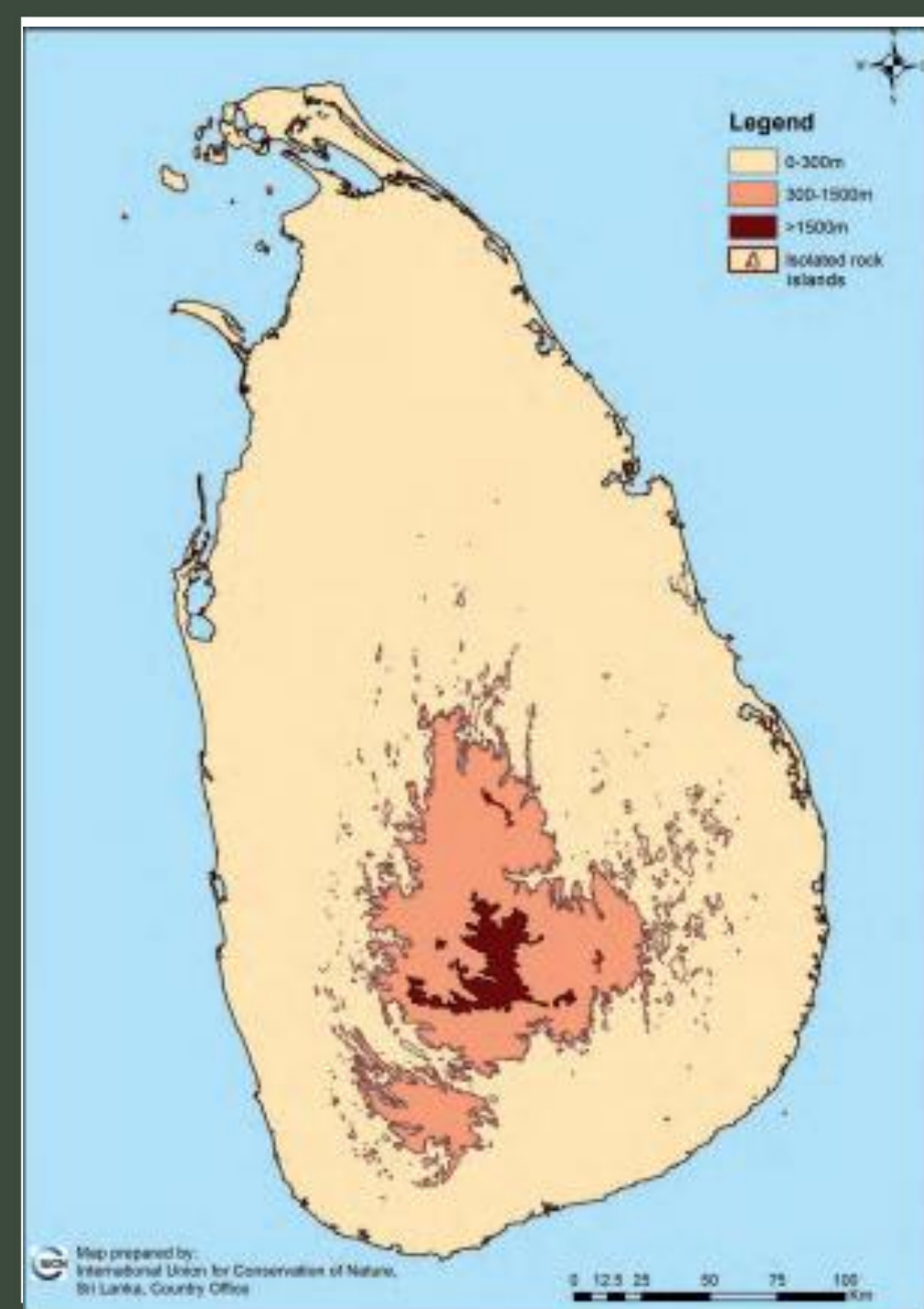


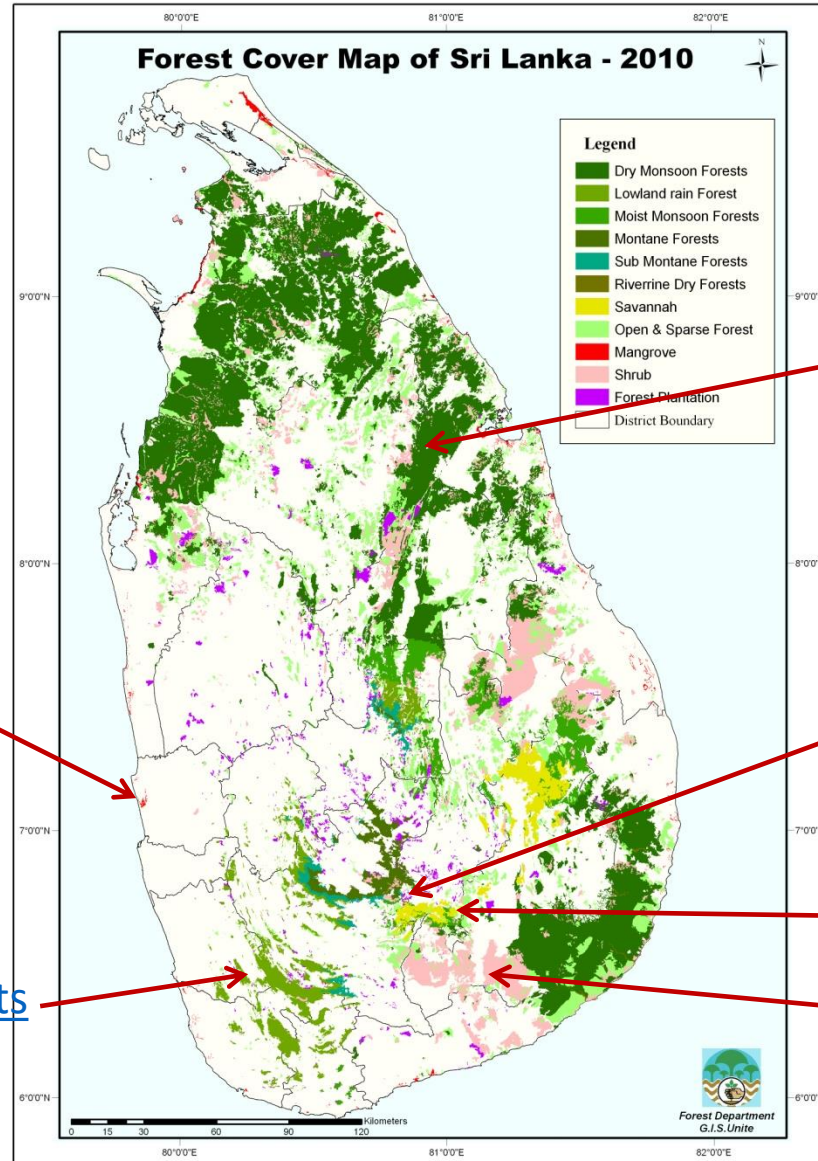
Forest restoration program

- Current forest cover of the country is **29.2%, 1.9m ha**
- Forest cover increment target **32% by 2030** to **improve** the ecosystem services
- **Extent over 150000ha**
- Though the country is small, rainfall pattern and the topography lead a **heterogeneous landscape**
- Identified 16 floristic regions
- **Land available** in each floristic zone is **small**, therefore, need to **focus a large number of species** for restoration programs



Topography and Rainfall distribution





Dense forest 22%
Sparse 7 %

Dry Monsoon

Montane Forests

Montane Forests

Savannah

Mangroves

Lowland rain Forests



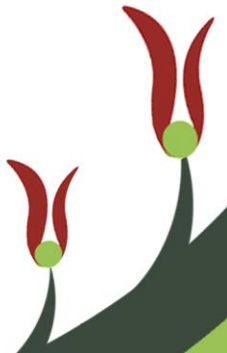
Strategy used for restoration program

- Planting in Degraded Forest Areas
 - Plant indigenous species
 - Promote natural regeneration
 - Prevent Forest Fires
 - Prevent cattle damages
- Promotion of Natural Regeneration (ANR)
 - Remove disturbing vegetation
 - Promote the growth of desired species
 - Protect from fires, cattle damages, human interventions
 - Seed sowing or scattered tree planting where necessary



Seed supply system for restoration program

- Use **selected seed sources** of native tree species
- Tree species in the **periphery of the natural forest** are selected assuming there are the most **suitable pioneer species** for the given region.
- Incorporate selected **few fast growing tree species**, seeds are derived from **CSO** – i.e. *Khaya senegalensis*



Species selected from the edge of the natural forest- pioneer species



Selected fast growing species
for restoration program,CSO
Khaya senegalensis



Khaya CSO – seed supply for the restoration program



Seed supply for commercial plantation program

- **Teak, Mahogany, eucalypts, Pine** are the main plantation tree species
- **Tree volume, straightness and the wood density** are the main selection criteria
- seed sources for plantation establishment
 - Seed production areas (**SPA**),
 - Progeny tested seedling seed orchards (**SSO**),
 - Progeny tested (**CSO**)
 - Clonal (experimental stage)



Progeny tested seedling seed orchard (SSO)- *E. grandis*



A mature teak clonal seed orchards, Kurunegala



A teak clonal seed orchard- 8 years

Ethgala, Kurunegala



Issues and regional support

- Seed collection and conservation mechanism of large number of species for restoration projects
- Assistance/regional approach for advance level tree breeding and seed sources development (including clonal forestry) program for commercial species



Thank you.

