



Forest Invasive Species and its management in the Republic of Maldives

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Existing Invasives

- Over 50 diseases causing microorganisms
- **Over 53 insects species**
- More than 60 percent of the flora of Maldives is composed of exotic species
- **Majority of them are invasive species**

Major concerns

- Affects agricultural productivity
- **Impact on economy, biodiversity & environment**
 - Some invasions have the potential to become irreversible.
- **Detrimental to human health – pesticide residues**
- lack of awareness on the damages due to invasive species



Concerns ... (cont)

- **Increased degradation and fragmentation of Natural habitats due to development activities**
- **Current highly threatened status of many endemic species and their habitats**

Invasive species - Pests

Gypsy moth (*Euproctis fraterna*)



Social pest - Outbreaks every year cause social problems

Coconut



Pest: Coconut hispid beetle



Damage

Direct economic losses between June 2000 - Feb 2003 at USD 259,350

Coconut



Pest: Rhinoceros beetle



Damage

Spread country wide and affect the yield

Lime

**Pest: Bacteria
citrus canker**



Wiped out local lime varieties

Mango & breadfruit

PEST: Stem borer



Spread country wide and affect the yield

Banana



Banana weevil borer



Damage

During the early 1990's banana production in some major islands was severely affected

Water & rose apple



Pest: psyllid insect

No direct damage to the fruits but reduce yield by reducing the photosynthetic ability of the plant

Field & ornamentals



Spiraling whitefly



Whitefly

Nuisance pest of many crops

Weeds

Touch-me-not (*Mimosa pudica*)



Forms a dense ground cover, preventing reproduction of other species

Weeds

Lead tree
(*Leucaena leucocephala*)



This seedy thorn less tree can form dense monospecific thickets and is difficult to eradicate once established

Weeds



Wollastonia biflora

Degraded & replace natural vegetations and interfering with natural regeneration.



Cassytha filiformis

Transform natural vegetation and difficult to eradicate once established

Naturalized trees

Red sandalwood:
Pterocarpus indicus



Golden shower:
Cassia fistula



Grown all over the country as a shade tree

Replace many endemic species

Pathways of Forest Invasive Species

Through imports of:

- **Agricultural commodities**
- Timber
- **Horticultural species**
- Animals and animal products
- **Organic manure**
- Untreated packaging materials



How do we address the issue? -- Mofa

Strengthening plant quarantine & inspection

Plant protection bill in

1. Regulation : Live plants and plant products import permit application

- An original State Phytosanitary Certificate is required for the live plants and planting materials except seeds
- Any shipment without valid original State Phytosanitary Certificate is detained until further notice
- It must not include dried parts in any of the live plant and plant product

How do we address the issue? ..MoFA

Strengthening plant quarantine & inspection

1. Inspection
2. **Control programs – biological**
3. Monitoring & surveillance
4. **Human resource development**
5. Training & awareness

How do we address the issue? ..MoFA

Strategic action plan

Policy 6: Strengthen legal framework to regulate the use of agriculture natural resources and develop services related to agriculture development

- **Regulate the provision of uninhabited islands for community based agriculture development at provincial level in accordance with the Agriculture Land Act**
- **Strengthen laws and regulations to create a conducive environment for sustainable agriculture and forestry development**

THANK YOU!