

# Forestry and natural disasters: theory and practice in Asia and the Pacific

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#### FAO's areas of experience



- Forests and tsunamis
- Forests and floods
- Forests and landslides







#### **Structure**



- Beliefs The common perception
- "Never underestimate the difficulty of changing false beliefs by facts" Henry Rosovsky

#### Forests and tsunamis: **Beliefs**



- Coastal forests protect land and lives from the impacts of tsunamis
- Planting mangroves anywhere and everywhere is a good way to protect coastal communities





# Forests and tsunamis: Facts



- Wide belts (~100m+) of moderately dense mixed forest with undergrowth and no gaps can mitigate tsunami impacts
- Sparse trees without low branches (e.g. coconut plantations) do little
- Isolated patches of mangroves also help little

### Forests and tsunamis: Practice

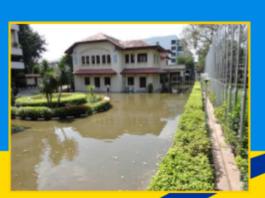


- People often do not want to live behind a coastal forest
- Governance may be inadequate to enforce regulations or implement coastal forest belts
- Tsunami early warning systems are a primary means of protection but often not maintained
- Tsunamis are infrequent in Indian Ocean
- Survival rates of many planted mangroves are very poor

# Forests and floods: Beliefs



- Forests act as 'sponges' in soaking up water and preventing flooding, and increasing dry season water flow
- Banning logging and increasing forest cover reduces incidence of floods





## Forests and floods: Facts



- Forests can reduce flooding in small and medium catchments by:
  - drying soil, increasing infiltration, intercepting rainfall and slowing run-off
- Forests have little effect on extreme basin-wide events where volumes of water far exceed holding capacity of forests and forest soils

### Forests and floods: Practice



- Blanket logging bans can adversely affect upland communities while failing to mitigate extreme flooding events
- Large-scale flooding is likely to take place at unpredictable intervals in some areas and locating settlements outside high-risk areas should be considered

### Forests and landslides: Beliefs



- Forests prevent landslides
- Maintaining forests on steep slopes is a good way to protect lives and assets





# Forests and landslides: Facts



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#### Forests and landslides: Practice



- Protection forests are often degraded and poorly managed
- Land-use zoning and reducing landdisturbance in sloping areas should be a primary focus
- People may knowingly accept risk associated with slope alteration and forest degradation

#### **Conclusions**



- Good technical information is essential
- People need to be educated accordingly
- Practical considerations sometimes outweigh the importance of technical considerations
- People should have the opportunity to live lower risk lives (poverty reduction) – although they may not choose to do so
- Government can create incentives/regulations where externalities are involved

#### **Conclusions**



- Climate change may bring greater threats from natural disasters and adaptation measures should include forestry
- Technical information is essential given that environmental shocks have the potential to result in major policy shifts
- Consider broad implications of policy statements:
  - Avoid statements based on marginal effects where downside risk is large
  - Ensure risk is not raised by lack of information

### **FAO** publications



- Forests and floods: Drowning in fiction or thriving on facts?
- Forests and landslides: the role of coastal forests in the prevention of landslides and rehabilitation of landslide affected areas
- Policy brief on 'Forests and climate change adaptation in Asia'

### **FAO** publications



- The role of coastal forests in the mitigation of tsunami impacts
- Coastal protection in the aftermath of the Indian Ocean tsunami: what role for trees and forests?
- Forests beneath the grass

