



# 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 perceptions that objectively are the same.

■ "Never underestimate the difficulty of changing false beliefs by facts"

Henry Rosovsky

In practice

## 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



- Landslide incidence is much greater after



instances

# Forests and landslides: Practice



- Protection forests are often degraded and poorly managed
- Land-use zoning and reducing land-disturbance 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*





**THANK YOU!**