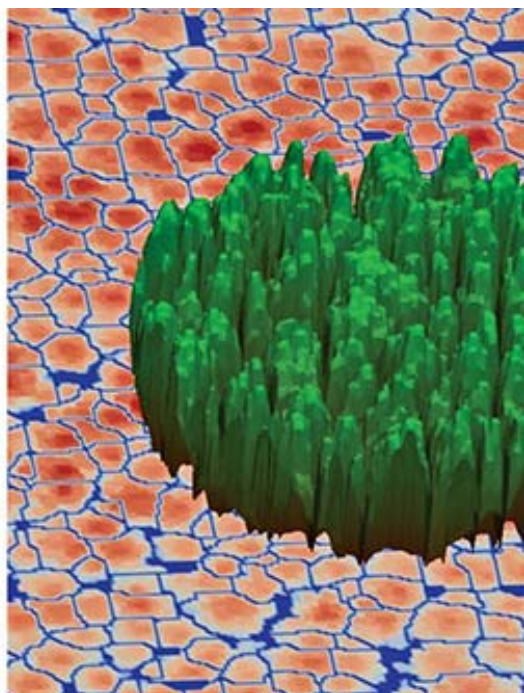


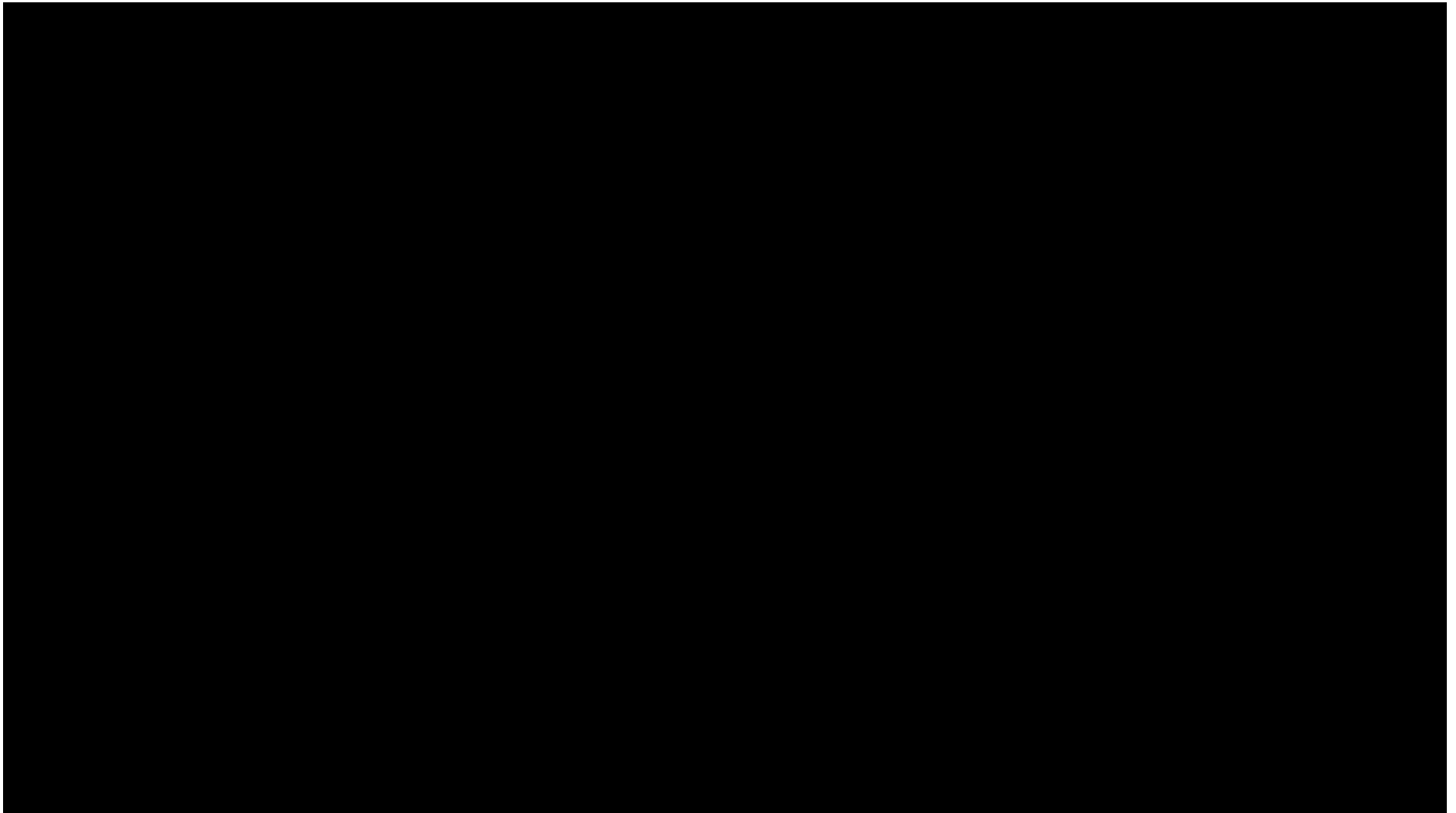
Perceptions of Erosion

Authors:

Duncan Harrison, Chris Phillips, Les Basher, Marie Heaphy



Why do this? Everybody knows that erosion and debris flows are a big problem in Planted Forests



Problem Statement

- “...I’ve heard it has happened in other areas...”
- **What is the true scale of the problem?**
- “...How can we make sure that everybody upstream is doing their job...”
- **What is being done?**
- “...How can we stop this from happening again...”
- **What could be improved?**

Methodology

- Semi structured interview process – leading on from pilot project completed through FFR/SLMACC

Collect nationwide data:

- Landslides and debris flows
- Rainfall conditions
- Affects
- Compliance issues
- Availability of information
- Current approaches

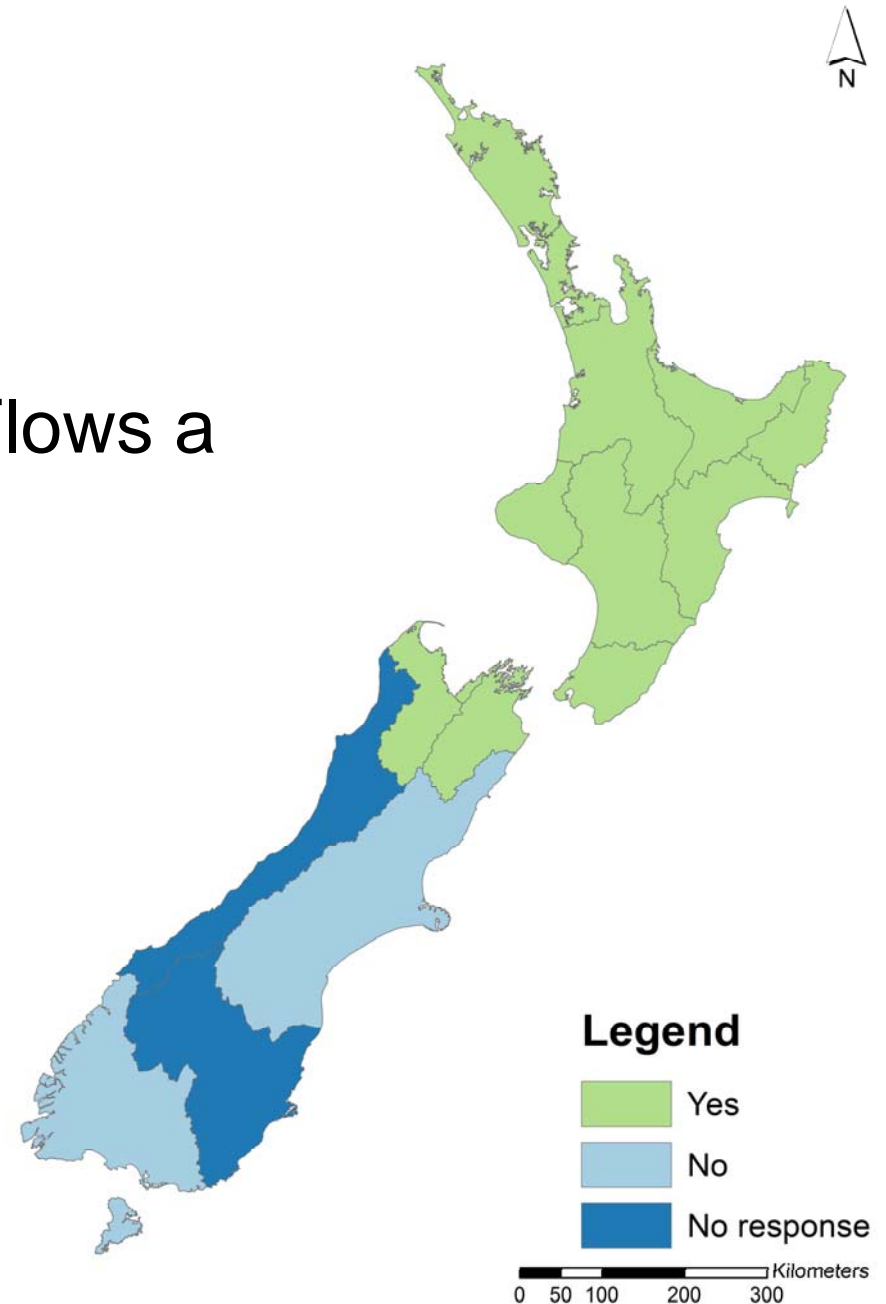
- Analysed interviews through Nvivo
- Themes :
 - Problem
 - Location
 - Cause
 - Effect
 - Controls
 - Management
 - Regulation


A screenshot of the NVIVO software interface. The main window displays a list of nodes organized in a hierarchical tree structure on the left. The right pane shows a table with columns for 'Name', 'Sources', and 'References'. The table lists various nodes such as 'Cause', 'Rainfall', 'Infrastructure', 'Birdnests', 'Engineers', 'Harvest planners', 'Slash', 'midlope', 'harvesting', 'Damage', 'Data', 'Events', 'Number', 'Size', 'Storms', 'Location', 'Problem', 'Regulation', 'Guidelines', 'Harvesting', 'Sediment', 'woody debris', 'Relationships', 'Pipeman', and 'Solutions'. The 'Sources' and 'References' columns show the count of items associated with each node.

Name	Sources	References
Cause	5	31
Rainfall	5	11
Infrastructure	3	5
Birdnests	3	3
Engineers	2	2
Harvest planners	2	2
Slash	5	7
midlope	3	3
harvesting	3	4
Damage	5	21
Data	2	3
Events	2	5
Number	1	1
Size	1	1
Storms	1	1
Location	5	15
Problem	5	6
Regulation	5	12
Guidelines	5	9
Harvesting	1	1
Sediment	1	1
woody debris	3	4
Relationships	0	0
Pipeman	4	11
Solutions	4	18

Preliminary Results

- Are Erosion and Debris Flows a problem in your area?
- Where is it happening?

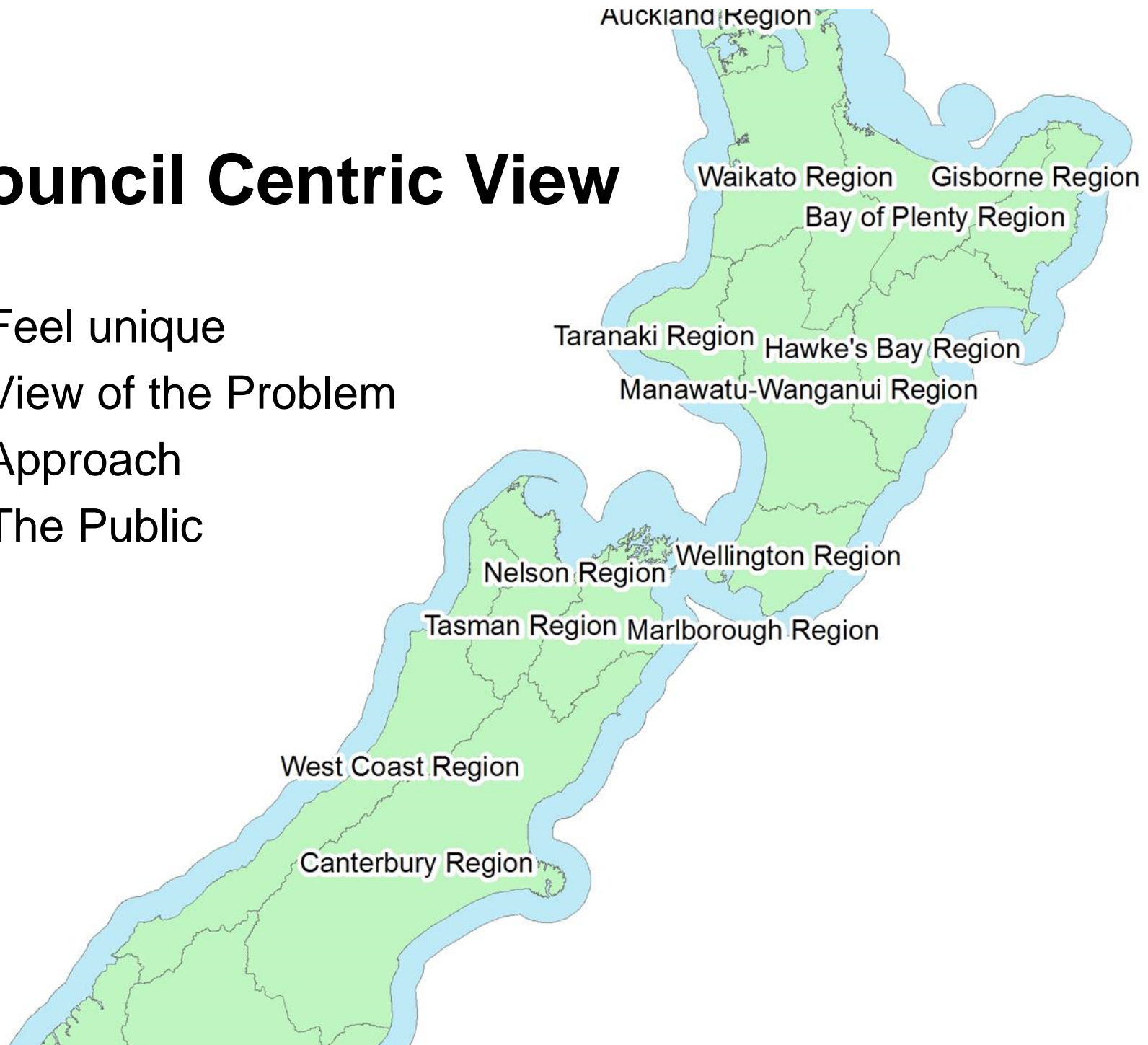


Common elements contributing to the problem:

- High intensity rainfall
- Slope
- Mid-slope failure
- Slash in water ways
- Not Earth Works!

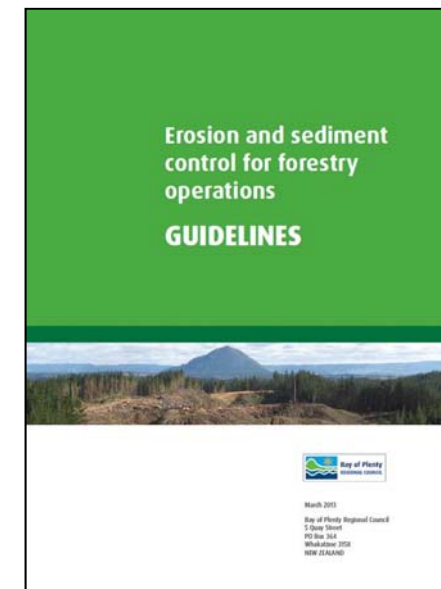
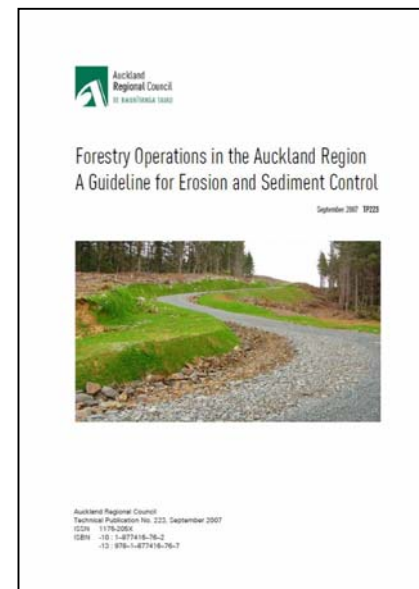
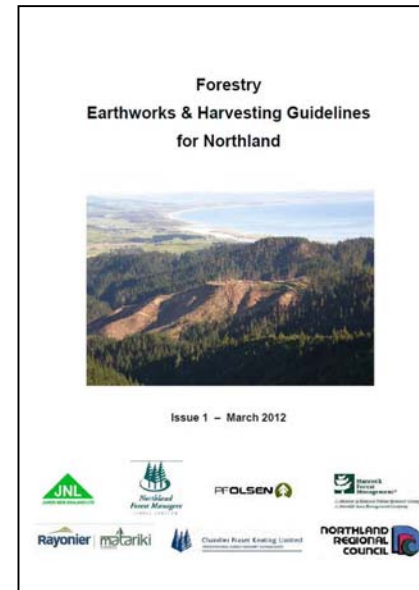
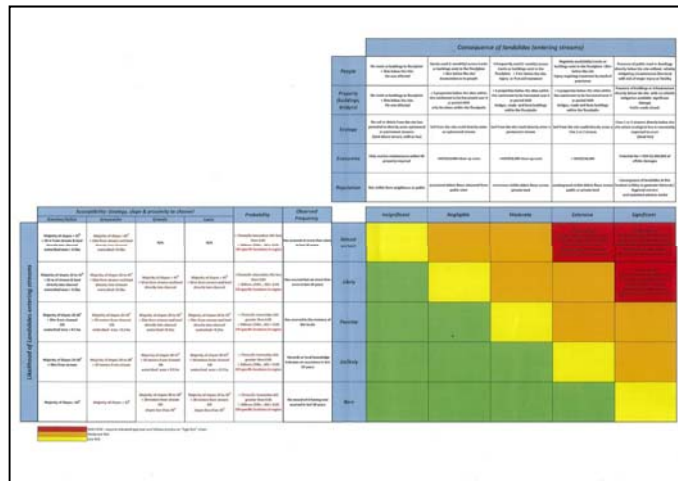
Council Centric View

- Feel unique
- View of the Problem
- Approach
- The Public



What is being done to manage the issue?

- Regulation
- Risk assessment
- Monitoring
- Data collection



Current Mitigation

- Debris traps
- Slash management
- Trees as barriers
- Retirement



What does this mean

- What is the true scale of the problem?
- What is being done?
- What could be improved?



<http://research.nzfoa.org.nz/>
www.gcff.nz

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What does this mean for the industry?

- Larger forest companies are leading the way
- Building good relationships with councils
- Need to engage with the public
- Is the problem caused by events that are beyond our control?



What do we still need to know?

- Where and how many
- Intensity of rainfall that triggers landslides



Growing Confidence in Forestry's Future

