

SEACAP 21/004

Slope Stability Management

Theme 3

Introduction to Slope Stability Management

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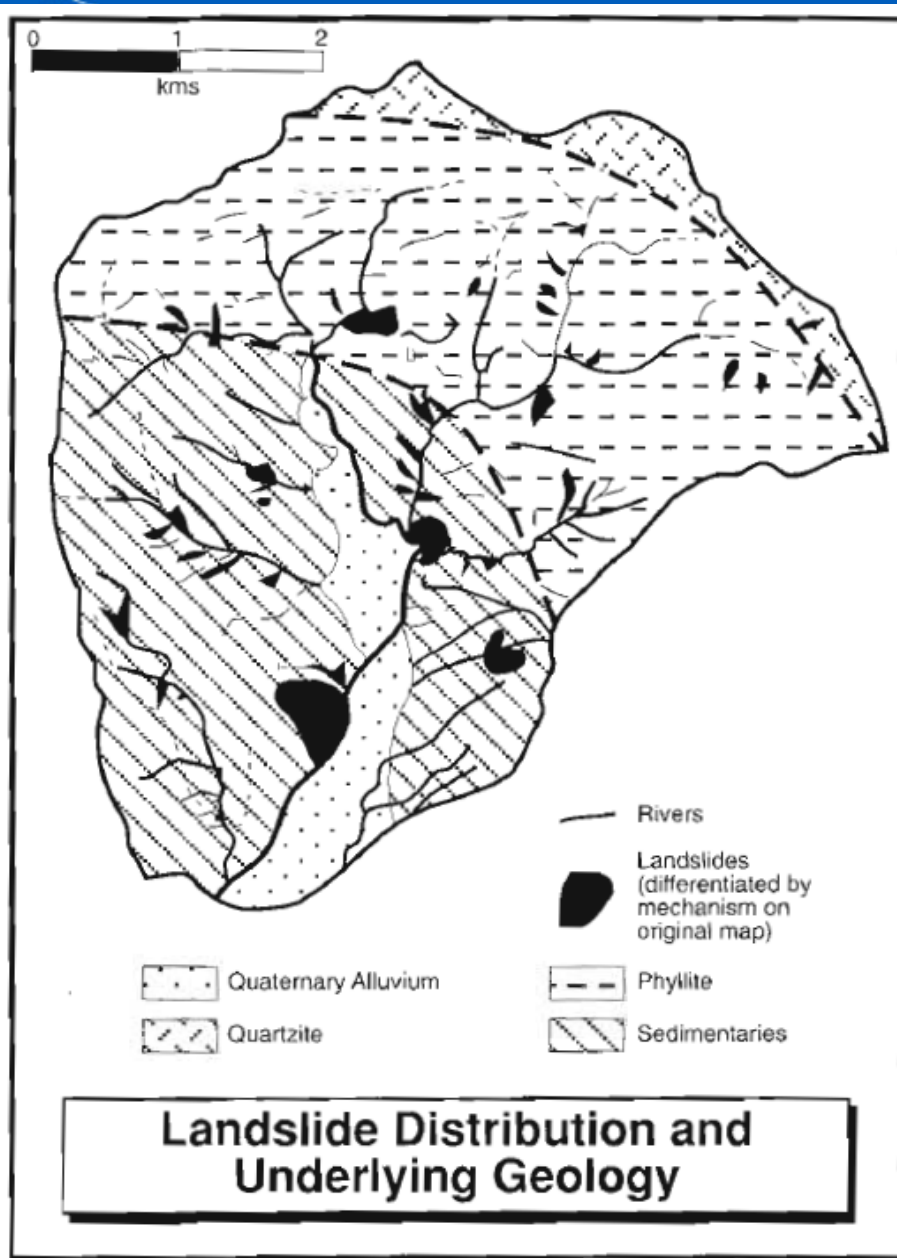
- **3.1 Slope hazard mapping for route selection**
- **3.2 Slope hazard inventory for roadside slope management**
- **3.3 Engineering practice to minimise roadside slope stability hazards**
- **3.4 Engineering mitigation of specific roadside slope stability hazards**
- **3.5 Monitoring**

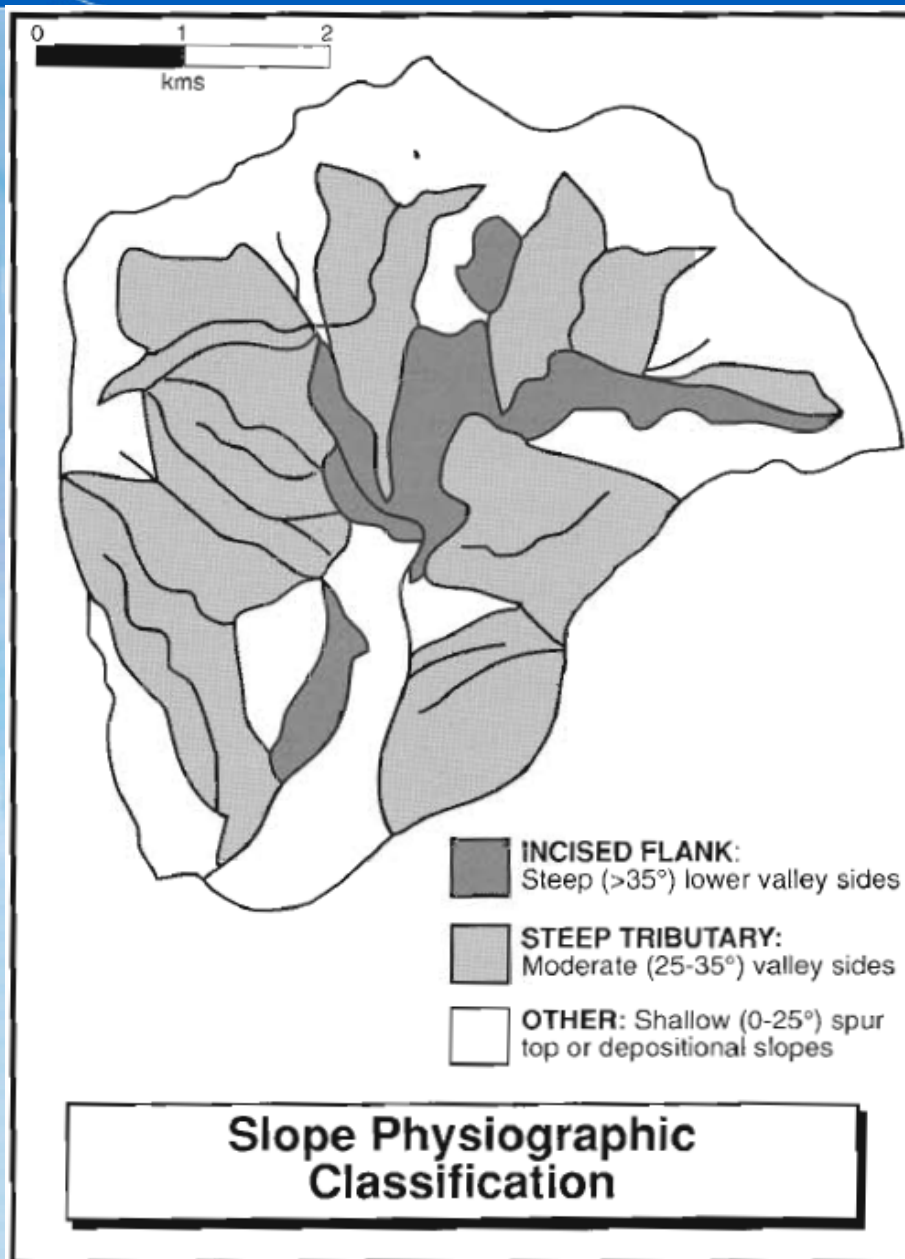
What do we mean by landslide ‘hazard’ and ‘risk’?

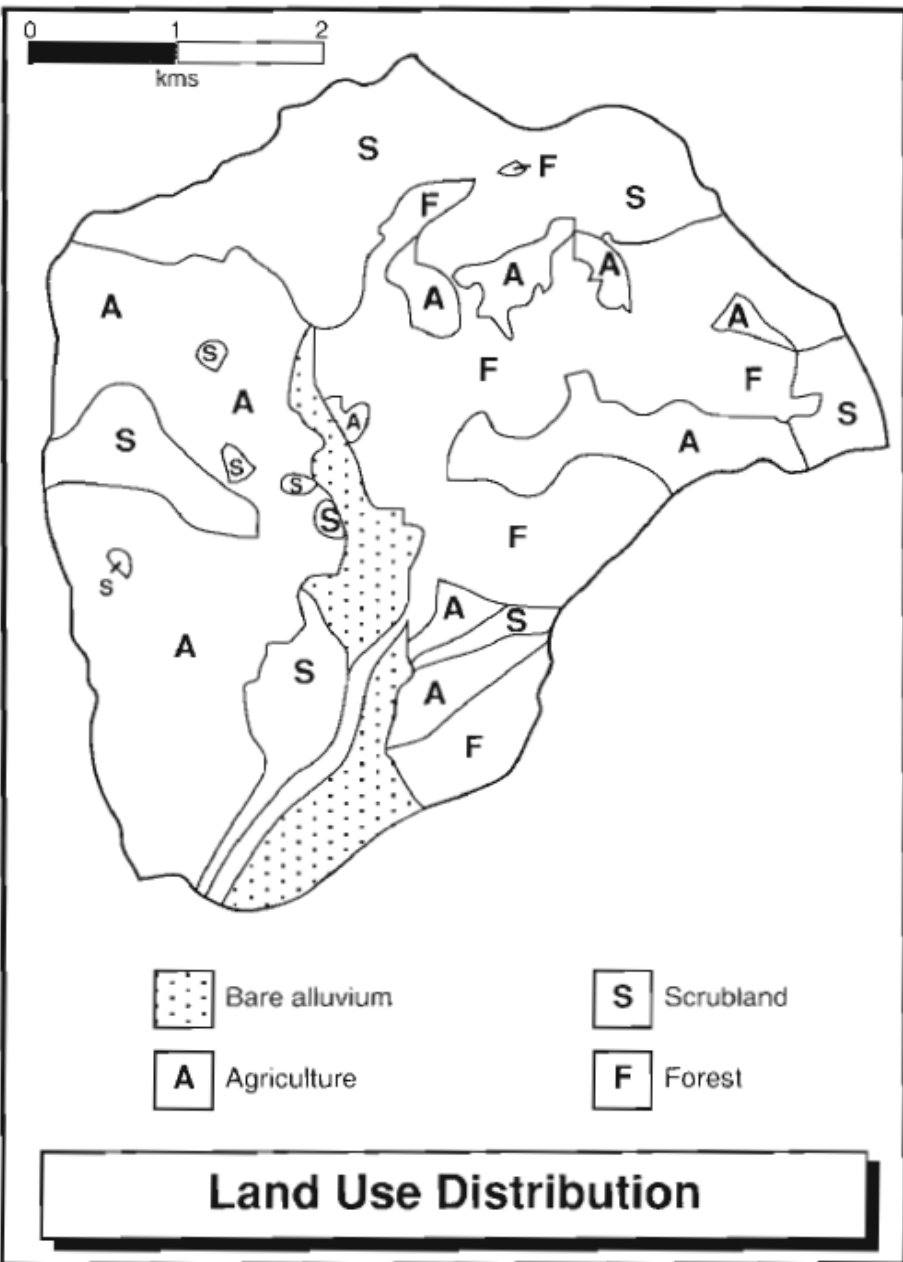
- The terms Hazard and Risk are defined in Section 3.3.3 of the Slope Maintenance Manual and are clarified in Theme 5.
- For now we can assume that a landslide Hazard is a potential feature that is or could create failure
- A landslide Risk is the expected consequences of that failure in respect of life, damage, and economic activity.

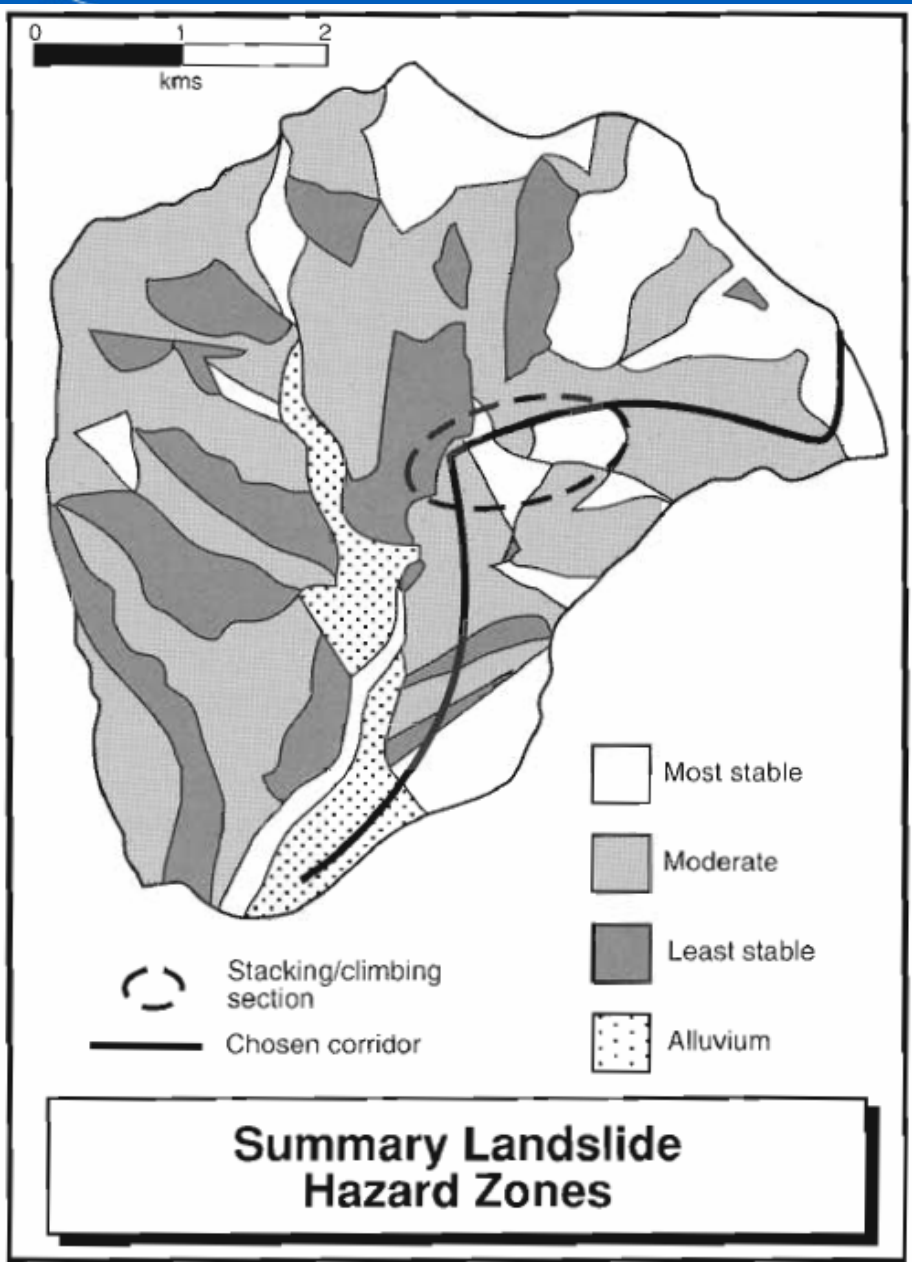
Theme 3.1 Slope hazard inventory for route selection

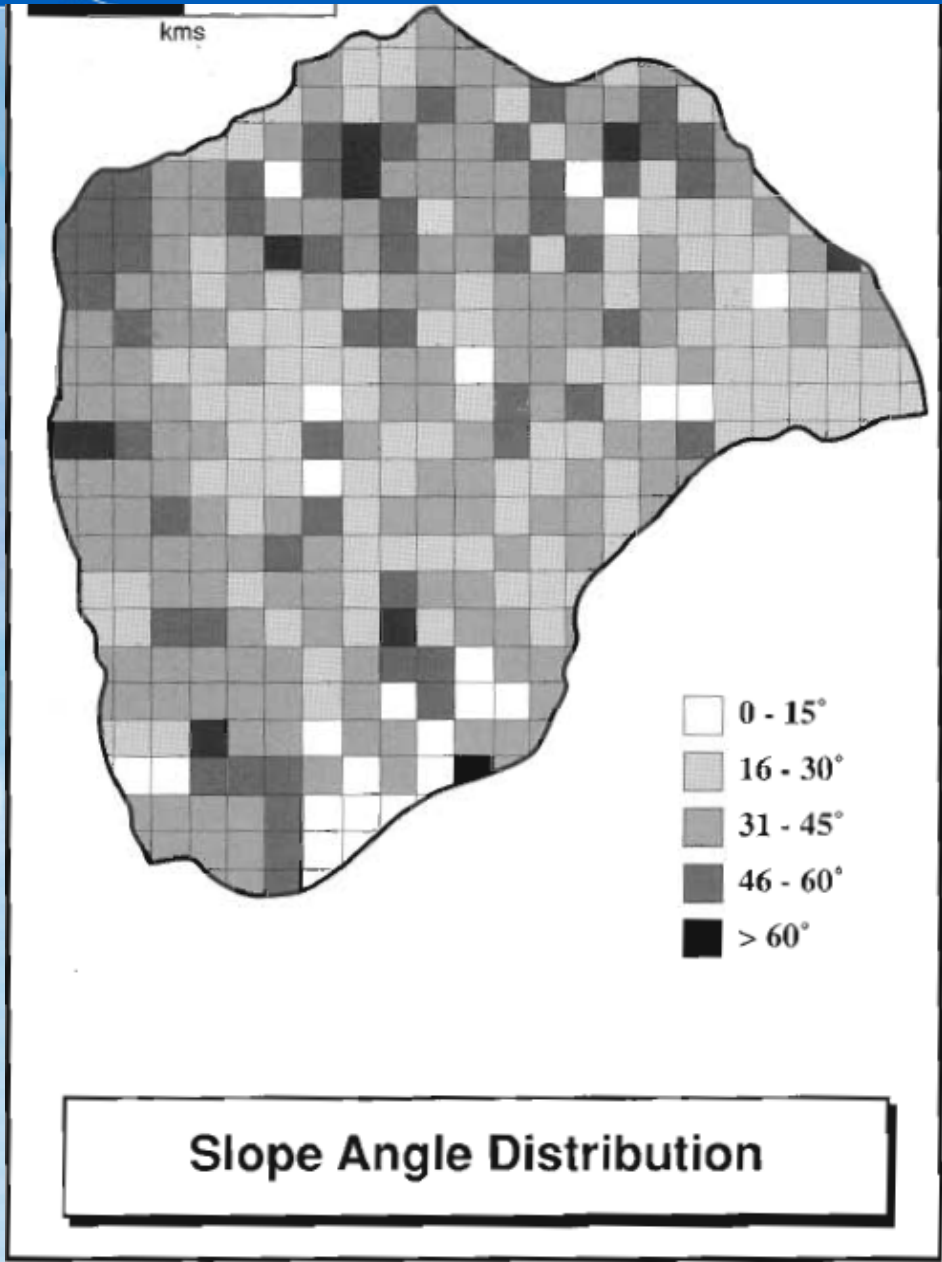
- Determine distribution of existing slope failures
- Identify most significant factors
- Divide area of study into slope units
- Measure landslide controlling factors for each unit
- Assign hazard rank to each unit
- Verify assumptions on the ground

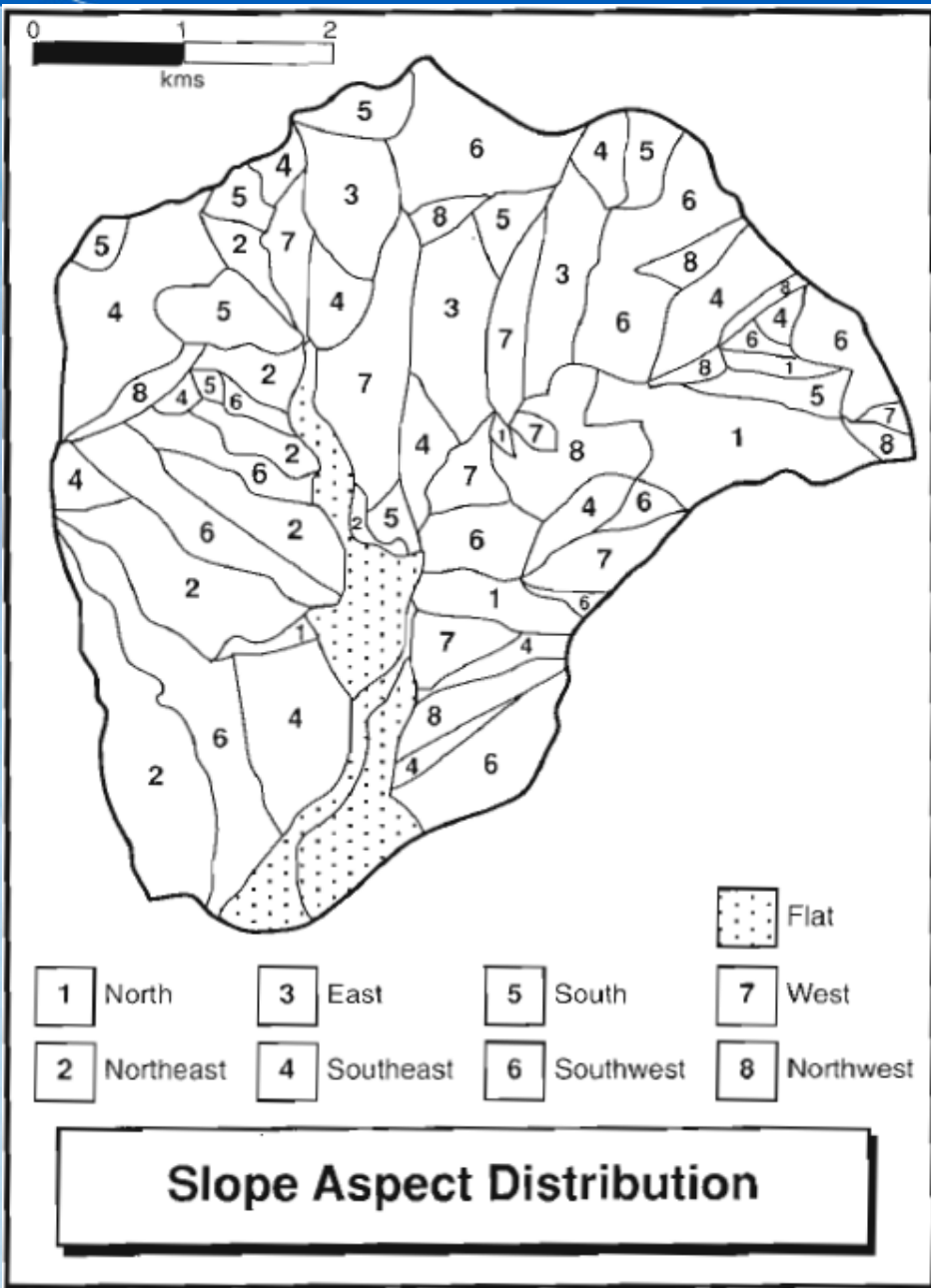












Theme 3.2 Slope hazard inventory for roadside slope management

- **Need to establish slope database by walkover survey and identifying existing and potential landslide features**
- **More detail to be given in Theme 4**

Theme 3.3 Engineering practice to minimise roadside slope stability hazards

- **Avoid existing identified unstable areas**
- **Avoid major earthworks (cut and fill)**
- **Consider balanced earthworks**
- **Consider reducing road standards (width and alignment)**
- **If unstable area not avoidable, no reduction in instability (e.g. drainage, retaining wall, toe berm)**

Theme 3.4 Engineering mitigation of specific roadside slope stability hazards

- Improved slope drainage
- Shallower slope angles
- Retaining wall
- Catch wall
- Erosion protection (slope and toe)

Theme 3.5 Monitoring

- Regular inspections
- Movement monitoring