



LANDSLIDES IN THE CENTRAL WESTERN GHATS : ISSUES & RECOMMENDATIONS



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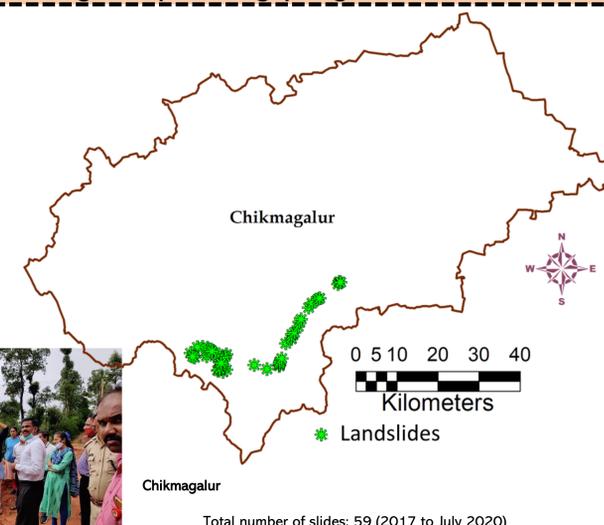
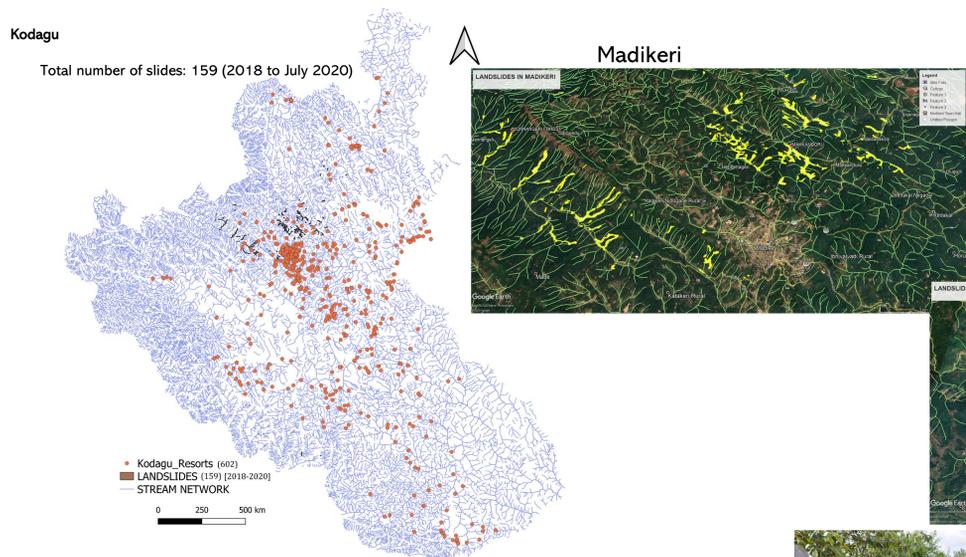
Landslides

- Landslides are considered as a prime widespread geological event across the globe, which will have long term impacts.
- Landslides are defined as a movement or downslope transport of soil and rock resulting from manmade actions or occasionally natural phenomena.
- The movements are different such as falls, slides, topples, lateral spread, and flows, varies based on the top material present on the earth's surface.
- Orographic precipitation over a short duration in the mountainous regions triggers the landslides in the absence of proper/mismanaged drainage systems.
- The impact of landslides varies based on its extent, but results in ecological, socio-economic imbalances.
- Between 1998-2017, landslides affected an estimated 4.8 million people and cause more than 18000 deaths across the globe.

Recommendations

- ✓ **Identification of landslide prone regions:** Considering the level of devastations, landslide susceptibility mapping should be carried out to delineate potential zones of instability, to minimize the loss of human lives and damages to properties. If any indication of slope instability is noticed in an area which has major risk elements, the fact should be shared with the society in a proper way with the implementation of mitigation measures
- ✓ **Arresting deforestation:** Analyses of land use dynamics highlights of widespread removal of native vegetation in all districts of central Western Ghats. Tree cutting amounts to removal of a protective mantle. Moreover, after interval of some years when the root network disintegrates the compaction of soils and rocks by root mass weakens causing slope failure. The hollows created by stump and root disintegration become a major cause for water seepage into the soil and trigger off landslides during spells of heavy rainfall.
- ✓ **Planting of native vegetation on hilltops and slopes:** The roots of the native vegetation, especially of certain chosen tree species, can act as good soil binders, thereby providing slope stability. The removal of trees (with deep tap roots) and subsequent taking over of secondary vegetation, planting of monoculture species on hill tops by removing earlier natural tree cover, most of them with shallow roots has reduced the soil binding properties. At present many hill tops are barren or with highly inadequate tree cover.
- ✓ **Restoration of natural drainage network:** Alteration in hydrological regime due to changes in drainage network consequent to deforestation due to unplanned anthropogenic activities. Inappropriate locations of human habitations on the first and second order streams has hindered the natural water path.
- ✓ **Discouraging monoculture plantations:** The land given to commercial plantations in ecologically fragile regions should be taken back and the afforestation has to be carried out with the native species of flora according to suitably designed planting programmes.

Stream blockage triggering to slides



Field Observations: Interaction with local stake holders & review of restoration measures

Blockage of stream/ diversion for plantation

Unscientific restoration

20-June-2020

06-June-2020

Resort Construction is full swing during lockdown also

06-June-2020

Rehabilitation

Acknowledgement