* Another warning

- Frequent landslips in Himachal Pradesh
  ↳ recent one in Kinnaur killed 14.
- H.P
  - faces instability from enviro factors like climate change & heavy monsoon rains.
  - Landslid Hazard Zonation Map of India
    ↳ marks 70% of the State as 'high risk'
  - 32% of the State is categorized as
    ↳ high damage risk zone for seismicity
  - More uncertainty due to greater rainfall & cloudburst activities.
  - Man made pressures
    ↳ hydropower projects
    ↳ more & more roads
    making the region even more fragile.
- Need
  - Sustainable tourism
  - expansion of farm based economy, particularly apple growing.
  - Limiting man made pressures

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* The rumbling hills of Himachal Pradesh

— Landslides in Himachal Pradesh

— Factors :

- Deforestation & Land degradation
- Desertification
- Glacier Lake Outbursts Floods
- Climate Change
- Dams and hydro power projects
  - 932 hydropower projects in HP. Most of these projects are in Kinnaur, Chamba and Shimla districts.
- Use of rock blasting and heavy machinery in construction sites, besides tree felling
- Unscientific disposal of construction debris
  - The entire stretch of the Sutlej is filled with debris

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- Govts continue pushing for more hydro power projects and four-lane highways.

—Development vs Environment

- Development is a double-edged sword.
  - dams and hydro power projects have brought prosperity in HP, they have also brought suffering.
- Sustains livelihoods of many.
- Road connectivity is key for tourism

—Way Forward:

- Single roads ->not be made double lanes
- Focus on the maintenance of existing roads
- Scientific disposal of debris.
- The govt must review its policy on hydro power projects.
- There is a need for a consensus with the locals before setting up a project.

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Development that is mindful of nature

Unusually heavy rains have caused landslides in Kottayam and Idukki in Kerala.

- Flash floods, mudslides and landslides have been reported in most districts located between central and southern Kerala.

Need for a serious review of the land-use pattern in Kerala.

Land-use pattern in Kerala:

- Historically, most of the settlements were concentrated in the coastal plain, the adjoining lowlands and parts of the midlands.
- At present, this scenario has altered with significant land-use change across topographic boundaries.
- Population growth, agricultural expansion, economic growth, infrastructure development

– particularly road construction – and intra-State migration have all led to the settlement of the highlands.

•Kerala is experiencing high growth of residential buildings.

•The Census records that during the decade between 2001 and 2011, the population grew by 5% whereas the number of houses grew by 19.9%.

•With a population density of 860 persons/sq. km against an all-India average of 368 persons/sq. km (Census 2011), Kerala experiences very high pressure on the land.

Concerns:

•The rapid pace of construction has serious implications for the geo-environment.

•Not only in terms of the locations for housing the settlements but also the

demand for construction materials is altering the landscape in the state.

- The basin characteristics of all rivers have been altered.
    - It has resulted in gross disturbance of the character of the terrain evolved through weathering and formation of soil under natural vegetation cover.
    - Consequently, the water-absorbing capacity of the river catchment is lost, and has contributed to increasing surface run-off and reduction in groundwater recharge.
- Road construction in hilly areas has created conditions conducive to landslides.
    - Construction on hill slopes prone to disintegration during heavy rain is a threat not only to those who choose to live there but also to those who are in

the path of the debris that gets dislodged in a landslide.

- In parts of the State, the hills have been overbuilt, posing a danger to life.

- Extremely complicated rules for registration of purchase and sale of property in Kerala are not matched by due diligence of building plans.
- The hesitancy towards the implementation of the recommendations by the Gadgil Committee, on protection of the Western Ghats is the best example of this.

Way Forward:

Review of two projects:

1. The Silver Line project - a light railway connecting the two extremities of the State.

- Its potential to usurp agricultural land and cause ecological disturbance is well known.

2. Widening of the highway taking place in parts of the State.

- This has involved mass felling of trees and the removal of habitation on both sides of the road.
- The loss of vegetation and tree cover is sure to have an impact on local climate and water retention, impacting its availability.