



Required sustainable development

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(Mains GS 3 : Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment & Disaster and Disaster Management.)

Context:

- Environmental disasters like landslides due to heavy rains have struck Kerala once again and caused a high loss of life and property.
- 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.

Frequent landslides:

- Landslides are very common in the Lower Himalayas but nowadays also witnessed in western ghats.
- The rising population and development pressures, particularly from logging and tourism, cause deforestation.
- The result is denuded hillsides which exacerbate the severity of landslides; since tree cover impedes the downhill flow of water.
- Landslides in India are also highly dangerous as many Indian families and farmers reside in the hills or mountains.

Change in habitation:

- Historically, most of the settlements in Kerala were concentrated in the coastal plain, the adjoining lowlands and parts of the midlands.
- However, this scenario has altered now, with significant land-use change across topographic boundaries.

- Population growth, agricultural expansion, economic growth, infrastructure development and intra-State migration have all led to settlement of the highlands.
- Kerala is also 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%.

Geo-environment implications:

- The current pace of construction has serious implications for the geo-environment.
- The landscape is altered through terracing, slope modification, rock quarrying, and the construction of roads due to settlement along with the demand for construction materials, with the attendant quarrying and excavations.
- This also leads to altering basin characteristics of all rivers down south which 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, contributing to increasing surface run-off and reduction in ground water recharge.
- Road construction in hilly areas, even when cutting across the toe of the slope, is destabilising and creates conditions conducive to landslides.

Posing threat:

- Construction on hill slopes prone to disintegration during heavy rain is a threat not only to those who choose to live in the buildings but also to those who are in the path of the debris that gets dislodged in a landslide.
- It is clear by now that in parts of the State the hills have been overbuilt, posing a danger to life.

Regulation required:

- It is not even clear that the authorities responsible for the oversight of construction are sufficiently aware of the nature of the problem.
- The idea of a construction-free Coastal Regulation Zone, instituted by the Government of India and applicable to the entire country, is fairly well recognised in the State, the Government of Kerala has been timid in enforcing similar regulation in its own backyard.
- The hesitancy towards the implementation of the recommendations by the Western Ghats Ecology Expert Panel, commonly known as the Gadgil Committee, on protection of the Western Ghats is the best example of this.

Review of the projects:

- The most recent landslide in Kerala should lead the government to immediately review two major projects with a potential to lower ecological security.

- The first of these is 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 however its vitality to the development also needs consideration.
- The widening of the highway is currently taking place in parts of the State under the authority of the Government of India.
- This project 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.

Cautious development:

- Kerala's longitudinal topographic grain combined with its east-west-running rivers gives rise to an alternating ridge-valley landform.
- Given this feature, construction of roads or any structure with a north-south alignment involves cutting across the valleys and lowlands, impacting natural drainage and overall landscape ecology.
- Therefore, development interventions should be cautious and ecologically sensitive to avoid unwarranted consequences and to be sustainable.
- Thus, technical expertise is needed when re-engineering the earth, with the teams including earth scientists, independent public policy experts, elected representatives and citizens from the affected areas.

Expert opinion:

- A panel of experts under the guidance of Dr. Muralee Thummarukudy, chief, Disaster Risk Reduction and operations manager, UN Environment, visited disaster-affected areas across 12 districts in 2019 and conducted over 400 Key Informant Interviews, including interviews with members from the vulnerable populations.
- The study unravels the ecological vulnerabilities of the state and provides insights into the way human interventions have accentuated these vulnerabilities.
- The discussions and findings underline that the state needs to be better equipped for a changing climate.
- The need for integrated water resources management, better land use planning and risk-informed building codes is also highlighted.

Conclusion:

- The lessons learned from the disasters and the response reveal that irrespective of the group, all the vulnerable populations substantially lag behind and do not enjoy the human development that the state celebrates.
- Thus, living in the Anthropocene, we need to guard against any further damage to the natural world.