A Mindful Development

This editorial is based on the article **Development that is mindful of nature** which was published in The Hindu on 25/10/2021. It talks about the issues of infrastructure development and the need for sustainable development.

Environmental disaster has struck Kerala once again. Unusually heavy rains have caused landslides in Kottayam and Idukki. A high loss of life was recorded in Kerala.

A major reason for the loss of lifes is the land use pattern change in Kerala and the death toll has led to a serious review of the land-use pattern in Kerala. 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 and thus there is a need to look into the issue of development vs environment not only with reference to Kerala but whole of India.

Land-use Pattern Change in Kerala

- Historically, most of the settlements 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 — particularly road construction — and intra-State migration have all led to 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 around 20%.

Issues With the Unsustainable infrastructure

- **Implication for the Geo-environment:** Heavy construction has serious implications for the geo-environment. Not only the locations for siting settlements but also the demand for construction materials, with the attendant quarrying and excavations, is altering the landscape through terracing, slope modification, rock quarrying, and the construction of roads.
- **River Basin is Altered:** The basin characteristics of all rivers is altered due to heavy construction. This 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.
- **Impacts the Downslope Habitats:** 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.

Development Vs Environment: Debate

- **Relation of Environment with Development:**
    - Rapid industrialisation and urbanisation are inevitable to bring in desired levels of economic development.
    - This is also believed to be essential to substantially increase the per capita income.
    - However, these income-generating activities are sure to have negative environmental consequences such as pollution.
    - Noticeably, environmental quality is being compromised for the goals of mass employment generation and poverty reduction.
    - It is believed that with gradual increase in income levels along with growth in financial and technological capabilities, environmental quality could be restored.
    - But the reality is that the continued growth generating activities only increasingly deteriorates the environmental quality.

- **Developmental Factors Affecting Environmental Sustainability:**
  - **Lack of Environmental Compliance:**
    - Neglect of environmental principles is a key reason why natural hazards end up causing a significant number of avoidable casualties.
    - Any exercise to scientifically ascertain the risk from natural hazards to a region are barely implemented in the right spirit.
    - Unregulated quarrying and the unscientific cutting of slopes into hills aggravates the risk of soil erosion and subsequently increases the risk of landslides.
  - **Ill-effects of Subsidies:**
    - In pursuit of providing welfare to vulnerable sections of society, the government has provided a bulk of subsidies.
    - However, subsidised nature of services like energy and electricity leads to their overuse and undermines environmental sustainability.
    - Further, subsidies also undermine the revenue base and limit the government's capacity to invest in new, cleaner technologies.
  - **No Cost to Environmental Resources:**
    Access to natural resources is entirely open and no individual user bears the full cost of environmental degradation and resources are consequently overused.
  - **Complexity of Population Dynamics:**
    - Increasing population tends to exacerbate the linkages between underdevelopment and environmental degradation.
    - Further, poverty generates significant incentives to raise large families and stimulate migrations, which makes urban areas environmentally unsustainable.
    - Both outcomes increase pressure on resources and consequently worsen environmental quality, diminish productivity and reinforce poverty.

Way Forward

- **Ecological Sensitive Development:** Development interventions should be cautious and ecologically sensitive to avoid unwarranted consequences and to be sustainable.
  Governments concerned have conducted anything like a **cost-benefit analysis.**
- **Technical Expertise:** 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.
- **Incorporating Indigenous Knowledge:** Regions and countries can benefit from the knowledge of indigenous people and their understanding of large ecosystems.
  Thus, Governance, including customary institutions and management systems should involve indigenous peoples and local communities to safeguard nature and understand climate change.

- **Conserving Biodiversity:** The linkage of biodiversity and environmental sustainability highlights the critical need to integrate biodiversity considerations in any decision-making.
    - Thus, before adopting any infrastructure project **Environment Impact Assessment (EIA)** must be carried out.

Conclusion

Even the **United Nations Development Programme,** which had pioneered the human development approach, has proposed a **Planetary-Pressures Adjusted Human Development Index** that weighs a country's human development for its ecological footprint.

Living in the Anthropocene, we need to guard against any further damage to the natural world.

Drishti Mains Question

'Rapid infrastructural development is inevitable to bring in desired levels of economic development.' In the light of the statement discuss the need of mindful construction for the sustainability of the environment.