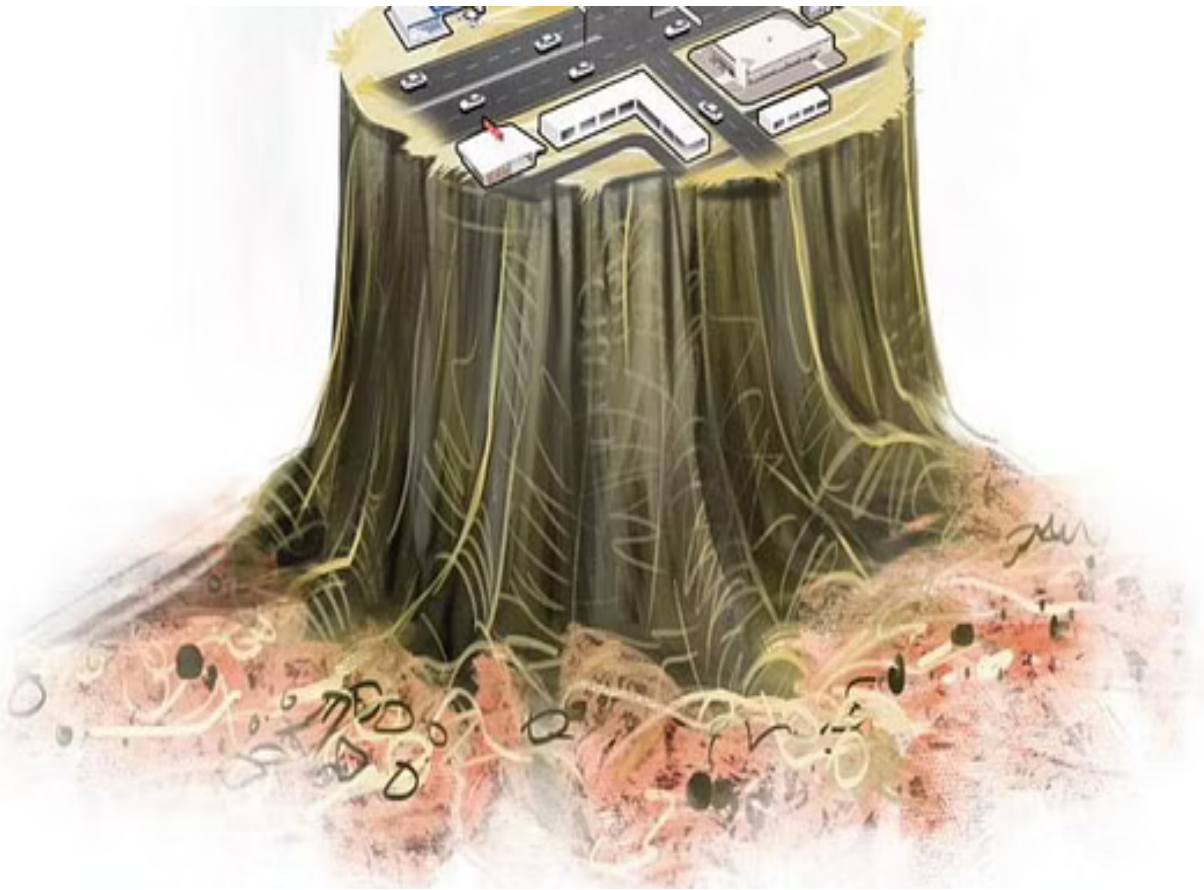


Stop deforestation to sustain water for next generation

Emissions and sequestration of carbon need to be balanced to sustain ecosystem functions and maintain the environmental conditions.



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Representational image (Express Illustrations)

By Dr TV Ramachandra

Global warming with the escalation of greenhouse gas (GHG) footprint (400 parts per million from 280 ppm CO₂ emissions of the pre-industrial era) and consequent changes in the climate has been affecting the livelihood of people with the erosion of ecosystem productivity and recurring disasters such as floods, droughts, landslides, etc.

The anthropogenic activities such as power generation (burning of fossil fuels), agriculture (livestock, farming, rice cultivation, and burning of crop residues), polluting water bodies, industry and urban activities (transport, mismanagement of solid and liquid waste, etc.) have risen substantially CO₂ concentrations to 72 per cent among greenhouse gases.

Emissions and sequestration of carbon need to be balanced to sustain ecosystem functions and maintain the environmental conditions. Forests are the major carbon sinks (45 per cent) aiding in the mitigation of global warming.

Unplanned developmental activities with the large-scale land cover changes leading to deforestation and land degradation are the prime drivers of global warming due to the loss of carbon sequestration potential and emissions.

Forest ecosystems sequester the atmospheric carbon, which aids in moderating the global climate. The land cover change is evident even in the Western Ghats, with the decline of evergreen forest cover from 16.21 per cent in 1985 to 11.3 per cent in 2018.

For example, large-scale developmental activities such as the construction of dams, power projects, forest-based industries, road expansions, urbanization, encroachment for horticultural and agricultural practices in Uttara Kannada district have led to the decline of forests from 74.19 per cent (1973) to 48.04 per cent (2018) with the loss of evergreen forests from 56.07 per cent to 24.85 per cent, which have threatened the sustenance of water, evident from the conversion of perennial streams to intermittent or seasonal streams, flash floods during monsoon and droughts during summer, affecting the food security and livelihood of people.

Hence, the premium should be towards the conservation of the forests with native species to sustain water, which is vital for food security. Carbon footprint in India is contributed by emissions from the energy sector (68 per cent), agriculture (19.6 per cent), industrial processes (6 per cent), LU change (3.8 per cent), and forestry (1.9 per cent), with CO₂ emissions of about 3.1 mg (2017), and the per capita CO₂ emissions of 2.56 metric tonnes.

The ecologically fragile Western Ghats region has been playing the pivotal role of mitigating carbon footprint with the potential to sequester carbon emission of all southern Indian cities and 1.62 per cent of the total CO₂ emissions from India.

India has committed at the Paris Climate Change Agreement to reduce emissions by 33-35 per cent by 2030, which necessitates the immediate implementation of carbon capture (through afforestation of degraded landscapes with native species, and regulating large scale land cover changes) and de-carbonisation (through large scale implementation of renewable and sustainable energy alternatives) with stringent norms towards protection of ecologically fragile regions, dis-incentives for continued higher emissions based on 'polluter pays' principle and adoption of cluster-based decentralized developmental approaches and incentives for reduced emission.

Carbon trading has demonstrated the potential in monetary values across the globe of Indian forests in capturing carbon. The forest ecosystems in the Western Ghats are worth Rs 100 billion (USD 1.4 billion) at USD 30 per tonne.

The carbon credit mechanism and streamlining stakeholder's active participation would dramatically reduce the abuse of forests and encourage farmers to grow trees and convert the land to its next best use.

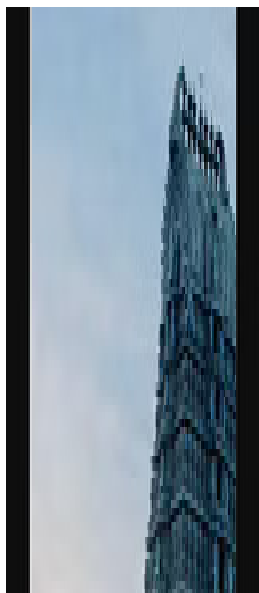
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