

Forest Drought a Serious Threat, Calls for Urgent Attention, Policy Intervention

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Another calamity has quietly visited Uttarakhand, affecting the fragile ecosystem. It is manifested in the form of severe dry conditions in forests. Numerous forest fires witnessed in the state this summer has drawn attention towards forest drought. The raging fires showed the severity of drought. Uttarakhand forests have turned xeric (devoid of moisture), leading to depletion of sub-surface water and a drastic fall in minor forest produce such as burans, kafal, bedu, bhojpatri and medicinal plants. About 74,000 hectares of forest in seven hilly districts have been declared drought-hit. About 70 per cent of the state's population of around 10 million (according to the 2011 Census) lives in rural areas and is intimately associated with forests and dependent on them for livelihood. Forest drought and consequent reduction in minor forest produce have hit their economy. The recorded forest cover is 61.43 per cent of the geographical area but the actual forest cover is around 46.73 per cent. Only around 8 per cent area is available for agriculture and other primary sector activities while the net sown area of 12 per cent.

Hydrological cycle getting disturbed

The management of forest resources assumes significance in an ecologically-vulnerable state like Uttarakhand that is home to unique biodiversity of both animals and plant wealth. It is also source of India's biggest perennial rivers Ganga and Yamuna. The river systems of the Himalayas are the backbone of India's food security and the forest hydrology plays a critical role in maintaining the water cycle and recharge of aquifers. They are not only the life sustaining resource base for the local economy and livelihood of people but are also critical for the downstream population in the Indo-Gangetic plains. Climatic factors such as receding glaciers are attracting the attention of scientists. Rise in temperatures, negligible winter rain and untimely and excessive rains have caused havoc on the ecosystem, including forests, in the state. Severe dry conditions this time have disturbed the hydrological cycle in forests.

A task force headed by me as Director General of the Indian Council of Forestry and Research and Education found during the survey that forests of Uttarakhand hills were becoming xeric (devoid of moisture) and directly affecting water sources. Besides, forest drought was changing vegetation dynamics, especially the biodiversity of minor forest produce which is the backbone of traditional healing practices and the local economy. This report lends credence to the UN Climate Change report that the Himalayan glaciers could melt to a fifth of their current level by 2035. The rainfall pattern is changing and cloudbursts have become frequent, followed by a drought. The sub-surface water, which is the only source of local drinking water streams, is vanishing fast as temperate forests are turning xeric due to climate change. Dry conditions are affecting forest vegetations and phenology. Over-exploitation of minor forest produce and improper afforestation planning are among the reasons for it. As experienced lately, a forest drought is followed by extremely heavy rainfall, floods and landslides, causing severe damage to life and property. Every year precious lives and property are lost in floods and landslides in Uttarakhand. However, dense forests are less vulnerable to droughts, as they work as water sinks and recharge sub-surface water and aquifers.

Decline in minor forest produce hits livelihood

This disturbance in forests due to climate change is a serious threat to the rich biodiversity of Uttarakhand forests, including minor forest produce, medicinal and food plants. A forest drought accentuated by human activities is affecting agricultural and horticultural activities. Minor forest produce is a major source of income of people living in forest areas in the hilly region but drought has affected their livelihood. Wild animals such as monkeys, neel gai and boars are destroying standing crops in agricultural fields as food trees have vanished from adjoining forests due to deforestation as well as poor afforestation policies. Uttarakhand is home to more than 150 unique herbs and shrubs and plants, which play a unique role in primary health care of local people. No wonder the state government has set up a task force for searching the 'Sanjeevani buti' of epic Ramayana. Taxol derived from a coniferous tree found in higher Himalayas is a cancer curing drug. Similarly, Kira jari (yarsagumba) found in higher hills of Pithoragarh is also dwindling. These plants are slowly becoming extinct due to forest drought, development activities, population growth, impact of tourism and deforestation. Forest fires are most lethal for the extinction of these rare herbs. Snowfall is necessary for fruiting in apple trees but due to climatic factors, apple-growing areas are not receiving adequate snow, resulting in low productivity. This is rapidly eroding the livelihood base of people in hilly areas. This along with frequent natural calamities and depletion of minor forest produce and other forest-based resources is leading to migration from hilly areas.

Mahua plants not best option

Scientifically-tested solutions for strengthening ecology in the Himalayas should be made available and development activities should be reframed and linked with climatic adaptation. Kneejerk attempts such as planting of mahua in Dehradun schools will not solve the problem. Mahua is a plant of the tropical zone and there are better options in Uttarakhand of local fruit-bearing trees such as bedu, kafal and leechi in Dehradun. The forest pathology division of the Forest Research Institute (FRI) has successfully grown Kira Jari in mandwa (koda) millet, which the state government should have encouraged.

Raging fires indicated severity of forest drought

The state's land use planning is sketchy and needs revamping. Ill-planned development activities and the haphazard road network have choked natural drainages in the hilly areas. Due to choking of drainages, small water bodies are created in sub-surface soil, which gives way during heavy rainfall and cause landslides. The drought policies of the Central and state governments need to encompass forest drought, especially in forest fringe villages. Chinks in forest management were exposed during the summer this year when raging fires destroyed a huge green cover. The numerous raging fires showed the severity of drought in forests. Local people, foresters and other government agencies are responsible for this man-made tragedy. Local people have been found to be responsible for forest fires and Forest Department officials for their unpreparedness and lackadaisical attitude in taking preventive measures. The National Green Tribunal (NGT) had recently taken to task both Central and state governments on the issue of forest fires.

Preventive measures

- Concentrate on climatic adaptation and forest hydrology and make the state forest fire proof.
- Prepare block-level natural resource maps, particularly focusing on livelihood and ecologically vital resources
- Focus on conservation and propagation of rare medicinal herbs and plants such as kida jari
- Promote floriculture, horticulture, animal husbandry and local handicraft and handloom, besides village-based decentralised eco-tourism.
- Recast afforestation programmes to emphasise more on water harvesting in forests areas and plantation of fruit trees for herbivores that destroy crops
- Frame a policy for plantation, regulated and sustainable harvesting and regeneration of minor forest produce such as burans, kafal, bedu and other local multipurpose trees and fruit-yielding trees to cater to all ecosystem components.
- Provide for management of forest droughts in the crisis management plan
- Include minor forest produce, which is an important source of livelihood, in drought management plans
- Maintain and develop deodar forests that are very important for maintaining hydrology.
- Prepare an early warning system, mapping of fire-prone areas and involve van panchayats through financial assistance and other incentives.
- Study and implement the 2011 survey report of the ICFRE.

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