



Strengthening Forest Fire Management in India

The report, '**Strengthening Forest Fire Management in India**', jointly prepared by the Ministry of Environment, Forest and Climate Change (MoEFCC) and the World Bank has been released recently.

- Repeated fires in short succession are reducing diversity of species and harming natural regeneration, while posing a risk to over 92 million in India who live in areas of forest cover.
- The objective of this assessment is to strengthen knowledge on forest fires by documenting current management systems, identifying gaps in implementation, and making recommendations on how these systems can be improved.
- Further, the report seeks to understand how forest fires are deterring India's efforts to meet its climate change goals.

Forest Fires

- Fire can play a vital role in keeping the forests healthy, recycling nutrients, helping tree species regenerate, removing invasive weeds and pathogens, and maintaining habitat for some wildlife.
- As populations and demands on forest resources have grown, the cycle of fire has spun out of balance. So, there is a need to improve the prevention and management of unwanted forest fires.
- Forest fires have become an issue of global concern. In many other countries, wildfires are burning larger areas, and fire seasons are growing longer due to global warming.
- Globally, forest fires release billions of tons of CO₂ into the atmosphere, while hundreds of thousands of people are believed to die due to illnesses caused by exposure to smoke from forest fires and other landscape fires.
- Tackling forest fires is significant for India as it has set ambitious policy goals for improving the sustainability of its forests. As part of the **National Mission for Green India** under India's **National Action Plan on Climate Change**, the government has committed to increase forest and tree cover.
- Further, under its **Nationally Determined Contribution**, India has committed to bringing 33 percent of its geographical area under forest cover and to create additional sinks of 2.5 billion to 3 billion tons worth of CO₂ stored in its forests by 2030.
- So, prevention and management of forest fires is important to achieve these goals.

Key Findings

- **Forest fires in India are both widespread and concentrated**
 - At least 60 percent of districts in India are affected by forest fires each year.
 - While states in the Northeast account for the greatest share of fire detections, the largest area affected by fire is in the Central region .
- **Fire potential and behavior is shaped by a combination of natural and social factors**
 - India's monsoons are largely responsible for the seasonal nature of forest fires in the country. Forest fires peak during the dry months of March or April before the arrival of the monsoon.
 - Nearly all forest fires in India, as in other parts of the world, are caused by people as important goods and services obtained from forests (such as fodder for their livestock) are generated or gathered through the aid of fire.
 - Shifting societal and cultural practices also play a role, as with the use of fire in traditional shifting cultivation (jhum).

- **A vacuum exists at the level of national policy**
 - A cohesive policy framework with a clear strategic direction provides the foundation for successful Forest Fire Prevention and Management (FFPM) which is absent at the policy level.
 - Though MoEFCC had issued national guidelines on FFPM in 2000, they are no longer being implemented.
 - **A shortage of dedicated funding for FFPM** at the central and state level has been a perennial issue, which has been documented by the Comptroller and Auditor General in various states.
- **India has developed robust detection systems for forest fires**
 - Using satellite data, Madhya Pradesh was the first state to develop an SMS-based system to alert field staff of active fires burning in their area. Since then, Forest Survey of India (FSI) has rolled out a nationwide system.
 - Satellite-based detection has helped fill a gap left by under-resourced ground detection. As these satellite systems continue to be upgraded, they would benefit from greater integration, including the increased collection of field-based reporting for verifying satellite-derived fire alerts, as well as improved data sharing between the states and FSI.
- **Post-fire management is not being treated as part of the FFPM process**
 - Post-fire data collection is an essential part of the fire management process and crucial to producing informed FFPM plans and policies.
 - A lack of standard protocols for collecting and reporting information on fires, including their causes, has made it impossible to aggregate data across states.
 - The states will need help from MoEFCC and the research community in developing standard methods and protocols for assessing ecological impacts and economic damages from fire.

Way Forward

- **Policy**
 - A national policy is required to consolidate existing guidelines and to issue comprehensive guidelines for FFPM which should be aligned with the climate change policies.
 - The policy should also define the respective roles and responsibilities of the MoEFCC, state forest departments, and disaster agencies, and establish a mechanism for the provision of regular funding for FFPM to the states.
 - The process of formulating the national policy should be open, consultative, clearly defined, and time-bound.
- **Staffing, capacity, and management practices**
 - Inadequate resources and lack of sufficient staff on the ground are some of the reasons for ineffective prevention, detection, suppression, and post-fire practices.
 - Ground-based detection will continue to be essential along with the introduction of new remote sensing technologies. So, training should be provided to field officers, seasonal firewatchers, and community volunteers involved in firefighting.
- **Coordination with other agencies and entities**
 - Since forest fires are not typically treated as disasters, the disaster management authorities have so far played a minor role in FFPM.
 - Stronger collaboration between the State Forest Departments (SFDs), the disaster management authorities and research entities would enable states to innovate new science-based management approaches for preventing fires and rehabilitating fire-affected areas.
- **Technology**
 - FSI has begun the **development of systems for early warning and fire danger rating**, and these efforts should be continued.
 - **Digitization of management boundaries** by the state forest departments should be completed so that FSI can more accurately determine which fires to report and to whom.
 - Fire alert systems can also be improved by integrating ground-based detection with the satellite-based alert systems.
- **Community Engagement**

- Sensitization of communities should be done to ensure that fire is used responsibly in a way that promotes forest health, while seeking to avoid damaging and out-of-control fires.
- Provision of training should extend beyond state-managed forests to community institutions in regions such as the Northeast, where communities are responsible for managing most of the forest estate.

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