



Forest Alert System

Why in News?

Madhya Pradesh has become **the first state to implement an [Artificial Intelligence \(AI\)](#) based real-time forest alert system** as a pilot project.

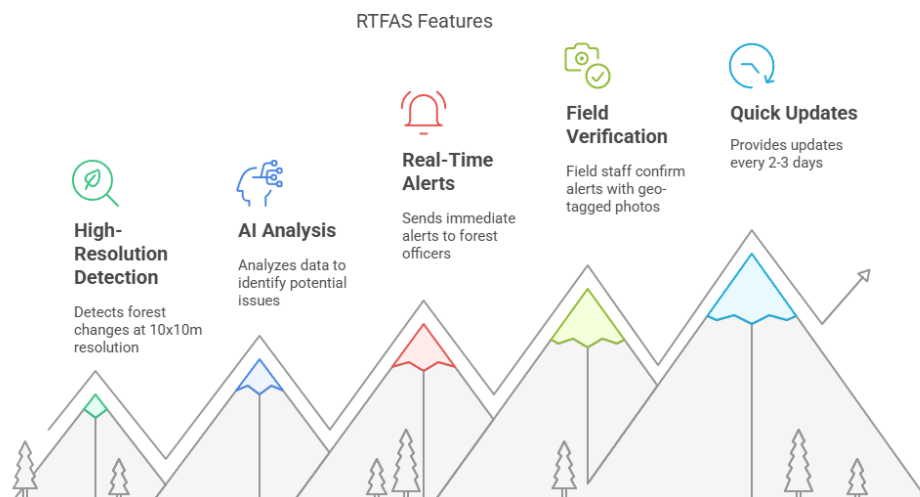
Key Points

▪ About Forest Alert System:

- It is a system based on **Google Earth Engine, AI models** and **multi-temporal satellite data** .
- Madhya Pradesh has implemented this technology on a pilot basis in **sensitive forest divisions such as Shivpuri, Guna, Vidisha, Burhanpur and Khandwa districts**. There are plans to expand it **at the state level in the future**.
- This system will enable **proactive [forest management](#)** by timely detection of **forest encroachment, land use change and forest degradation**.

▪ Features:

- **Satellite images from three different dates** obtained from Google Earth Engine will be analyzed.
- **Indexes like Normalized Difference Vegetation Index (NDVI), Soil Adjusted Vegetation Index (SAVI), Enhanced Vegetation Index (EVI), Synthetic Aperture Radar (SAR)** will be used to identify the changes .
- Significant changes to the land (e.g., cropping, construction, harvesting) will be flagged by **the AI model and** recorded as **polygon alerts** .
- The app will have features like **GPS tagged photos, voice notes, comments, [geofencing](#), distance measurement** .
- **Filters such as date, density and area will also be available** on the dashboard, making it possible to get specific information.
- Field workers can upload **photos, GPS locations, and voice recordings** through the app.



Initiatives Taken by India for Sustainable Forest Management

▪ Government-Led Programs:

- **Green India Mission (GIM):** Increased forest cover by **0.56%** between **2017 and 2021**.
- **National Agroforestry Policy (2014):** Encourages tree **planting on private farmland** to reduce pressure on natural forests.
- **Trees Outside Forests in India Program:** Encourages **tree planting on non-forest lands** by involving private stakeholders to boost green cover.
- **Compensatory Afforestation Fund (CAMPA):** Funds reforestation where forests are **diverted for industrial use**.

▪ Corporate & Community Efforts:

- **CSR-Driven Plantations:** Companies in **automobile, cement, and energy sectors** undertake afforestation to **offset emissions**.
- **Agroforestry for Livelihoods:** Farmers integrate **timber, fruit, and medicinal plants with crops** for additional income.

▪ Carbon Credit Strategies: Industries invest in afforestation to earn carbon credits.