Esri India Building Sustainable Forest Management Solutions with ideaForge

In conversation with Abhilash Damodaran, Forest Officer, Himachal Pradesh Forest Department

The key priorities of the Himachal Pradesh Forest Department are to ensure the ecological stability of the state, enhance the forest cover, improve the quality of the forest, and ensure the sustainability of livelihoods of the forest-dependent population in the state. The long-term goal is to protect against the climate change vulnerabilities that are predicted to happen across the globe.

Boosting Performance with Drone and GIS Technologies

Drones are helping the Forest Department to get higher-resolution imagery. The images can be captured at suitable frequencies and multiple operations can be undertaken. The array of operations can be effectively planned based on the planning requirements and the demand from the field units. The topography of Himachal Pradesh is quite undulating, mountainous, and inaccessible, so the endurance of the drones matters a lot.

By combining drone technology with GIS, the Forest Department is transforming forest mapping and management. The integrated solution provides a complete, end-to-end workflow to capture high-resolution imagery and diverse data in real-time, process it, and generate useful insights that empower forest managers to make informed decisions in resource allocation, plantation management, wildlife management, forest fire detection & damage assessment, and more.

The integrated Drone-GIS solution is providing the Himachal Pradesh Forest Department unparalleled insights into forest resource/ inventory, health, security, and operations.

In the future, using the deep learning capabilities of ArcGIS, the department aims to achieve more effective outcomes in vegetation mapping, biomass estimation, habitat characterization, forest protection, tracing out man-animal conflicts, etc. The video motion feature of ArcGIS Pro can be used to detect forest offenses or the areas where forest offenses have occurred. The routes and the various paths taken by people in the forest can also be detected.

Additionally, while managing a forest area, it is important to take care of the local communities. It is important to consider their livelihoods and the other activities that are happening there because all these are interrelated and they ultimately affect the quality of the forest and wildlife in that particular area. GIS and drone technologies aid in mapping these effectively and taking the best course of action. The combination of GIS and drone technologies widens the scope of decision-making in forest and wildlife management. The integrated solution is boosting the Himachal Pradesh Forest Department's performance.

> "It has been a great working experience with ideaForge and Esri India. Due to the support provided by them, our personnel quickly learned the diverse applications. By combining our forest and wildlife management skills with Esri India's skills in digital mapping using modern tools and technology, we look forward to continuously achieving excellent outcomes in our forest and wildlife management efforts."
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> **- Abhilash Damodaran, Forest Officer, Himachal Pradesh Forest Department**