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GEOSPATIAL EXCELLENCE

TREE SPECIES IDENTIFICATION

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Remote sensing data combined with machine learning methods can be used to identify and classify tree species over large areas using satellite images. In this study, **Sentinel-2** multispectral data were used to process and analyze the images to separate **mango plantations (Mangifera indica)** from other types of vegetation. By applying spectral indices and classification techniques, the study was able to accurately map and monitor mango-growing regions, helping improve agricultural planning and crop management.

Figure 1: Area of interest

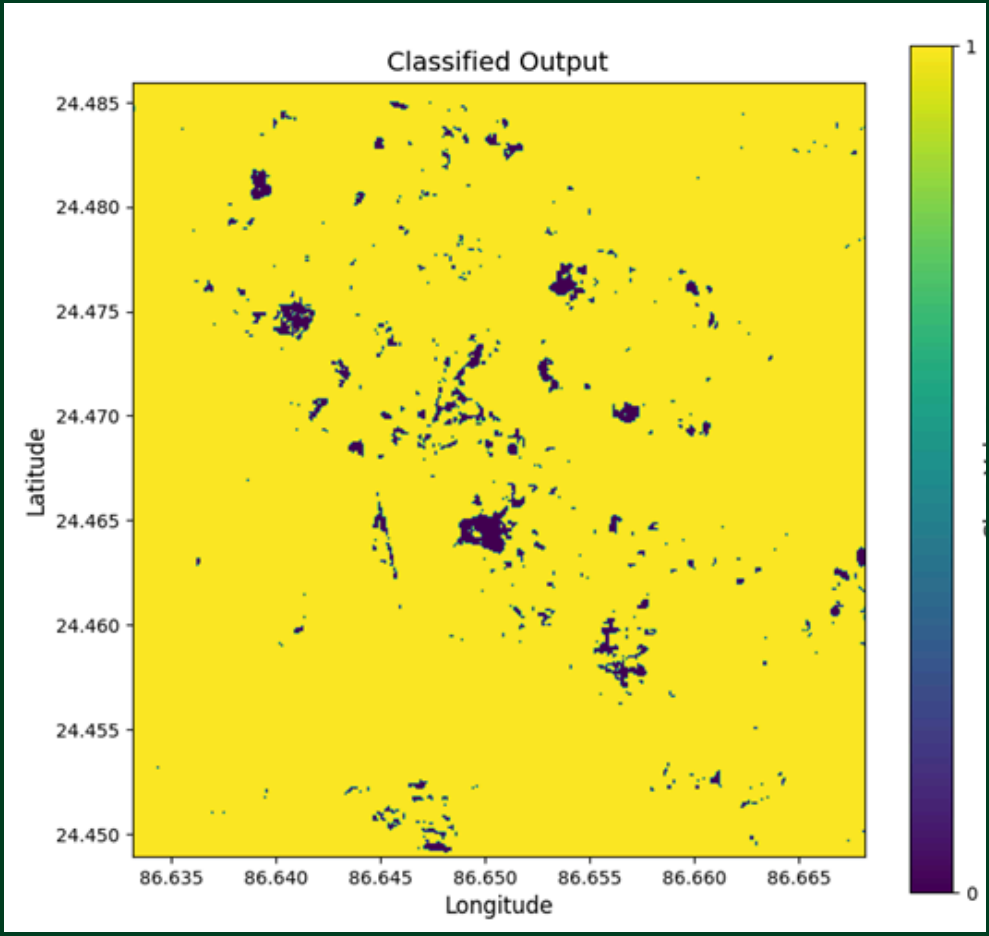

Figure 2: Classified Output

Data used: Sentinel-2
Resolution: 10 metres
Results:

- Achieved an overall classification accuracy of **86%,** demonstrating reliable model performance.
- Successfully identified mango tree species using Sentinel-2 multispectral imagery.
- Produced a clear classified output map showing the spatial distribution of mango tree species.
- Enabled semi-automated, repeatable species identification across large areas.
- Supported scalable applications in forestry management, ecological monitoring, and precision agriculture.

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