GeoAI Blue Carbon: Mapping and monitoring Tamil Nadu's Coastal Treasures

Leveraging Drone Imagery and GeoAI for Swift and Precise Blue Carbon Quantification

Traditional assessments of blue carbon in coastal ecosystems are both resource-intensive and time-consuming, and the challenging nature of the landscape often makes access difficult. This project aims to transform the measurement of carbon sequestration in mangroves, seagrasses, and salt marshes along Tamil Nadu coast by leveraging advanced GeoAI technologies.

Project Highlights
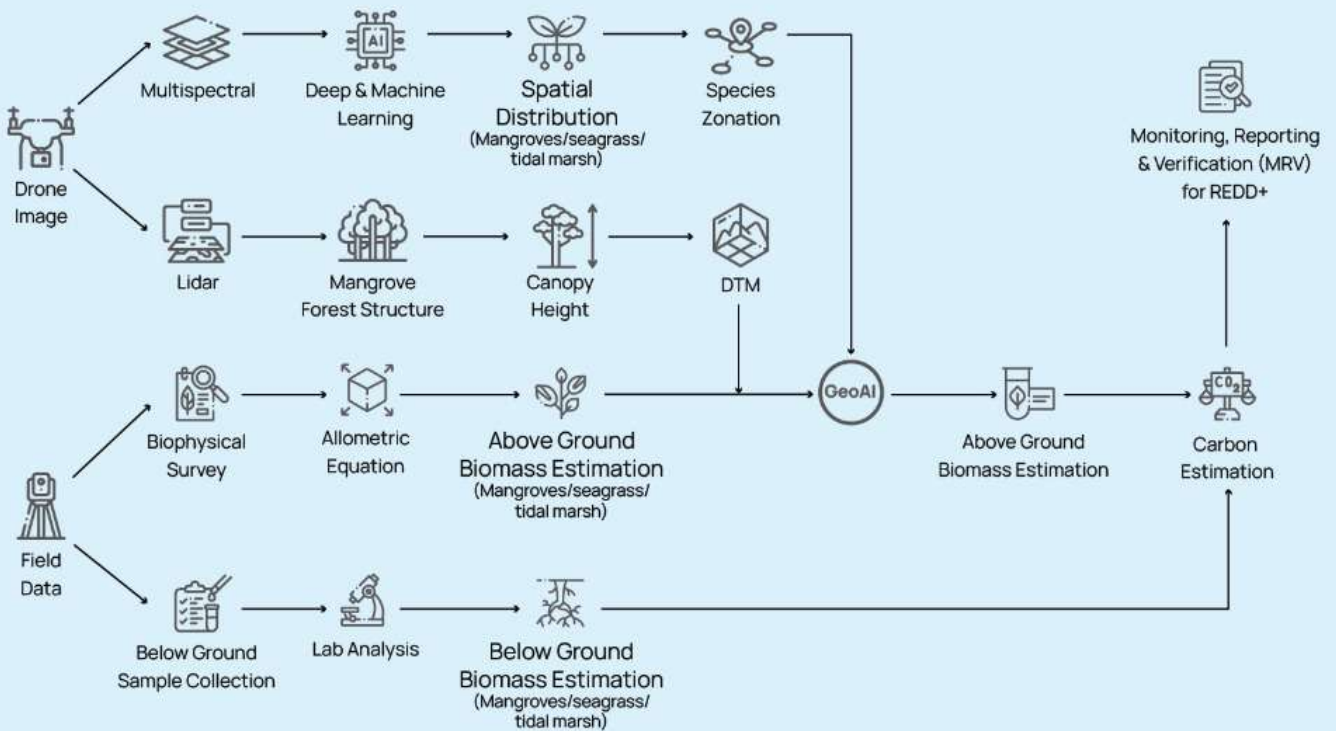
Drone-Based Imaging

GeoAI Analytics

Estimation of blue carbon

Accurate data
Policy decision and better conservation and management

Why It Matters:

- Provides detailed, accurate data to inform policy decisions and conservation strategies to better manage the ecosystems

- Helps achieve global climate goals and refine carbon budgets for a sustainable future

Drone Image → Multispectral → Deep & Machine Learning → Spatial Distribution (Mangroves/seagrass/tidal marsh) → Species Zonation

Drone Image → Lidar → Mangrove Forest Structure → Canopy Height → DTM

Field Data → Biophysical Survey → Allometric Equation → Above Ground Biomass Estimation (Mangroves/seagrass/tidal marsh)

Field Data → Below Ground Sample Collection → Lab Analysis → Below Ground Biomass Estimation (Mangroves/seagrass/tidal marsh)

→ GeoAI → Above Ground Biomass Estimation → Carbon Estimation

→ Monitoring, Reporting & Verification (MRV) for REDD+

Join us in this innovative journey to safeguard Tamil Nadu's coastal treasures and combat climate change. Together, we can make a difference