

Geospatial tech for crop monitoring

Enhancing Crop Monitoring and Information Access in Vietnam

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Context

Monitoring crops is crucial for decision-making among Vietnamese stakeholders, including farmers, transporters, millers, exporters, and government officials. Rapid advancements in remote sensing and geographic information technologies, alongside innovations in digital fields like artificial intelligence and cloud computing, offer substantial opportunities to enhance crop monitoring in Vietnam. Ensuring accessible data for all stakeholders is equally critical.

However, challenges persist in the adoption of geospatial technologies in Vietnamese agriculture. Smallholder farmers often lack access to essential imagery products such as crop stress and yield maps for informed decision-making. Additionally, most available imagery products are captured at medium-scale resolution, unsuitable for the small farm sizes commonly found in Vietnam. Improving access to these datasets in user-friendly formats is therefore of utmost importance.

Solution

This project focuses on making data more accessible and enhancing the resolution and specificity of the information provided for smallholder farmers by developing cloud-based internet mapping technologies for accessing imagery and map products. By doing so, they will have more capacity to make informed decisions to improve crop yield and household income.

Using field data and AI algorithms, it aims to achieve farm-scale resolution mapping for rice and fruit crops using drone and spaceborne sensors. These sensors will collect data on crop health and attributes, processed through AI for accurate image classification and regression modelling. Stakeholder input will guide map dissemination via cloud-hosted internet mapping platforms.



Key activities

- 1. Data Acquisition:** Engage in capturing satellite and drone imagery across agricultural regions, gather on-ground data, secure additional GIS datasets that address the needs of the stakeholders.
- 2. Imaging Processing and AI-based Model Development:** Process captured imagery and develop AI models tailored for rice and fruit crop assessment, ensuring validation of these models for accuracy.
- 3. Crop Mapping and Web Application Development:** Assess crop maps, then design and test map server applications to enable effective web mapping of agricultural data.
- 4. Web Map Serving and Training:** Finalise and launch interactive web maps, conduct training sessions for farmers and decision-makers, and establish a roadmap for the sustained adoption of these technologies.

For further information

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