DEPARTMENT OF AGRICULTURAL LAND RESOURCES MANAGEMENT (DALRM)

Cultivating Success: Cambodia's Crop Mapping Powered by TensorFlow & GEE

We co-developed a comprehensive crop mapping program with the Dept. of Agricultural Land Resources Management. We mapped tree crops using advanced deep machine learning techniques capable of discerning subtle spatial patterns in the satellite imagery

The challenge

Cambodia's DALRM needed exact data on vital crops like cashews and mangoes, crucial for productivity, sustainability, and global compliance. Traditional methods were time and labor-intensive. Remote sensing posed challenges, as different tree crops resembled each other in EO data and were often mistaken for natural canopies.

The solution

We co-developed a model to classify cashew crops with DALRM using a UNet deep learning. Training and capacity building ensured proficiency in using Google Earth Engine and machine learning. SIG's support significantly improved Cambodia's crop mapping accuracy and efficiency, aligning with national objectives and enabling informed decisions for sustainable agriculture and economic growth.

The result

The use of Google Earth Engine and neural network models in Cambodia greatly improves officials' ability to rapidly produce maps of economically valuable crops. In two years, this collaboration acquired land-use data crucial for national planning. This partnership continues, focusing on DALRM members' use of Keras Neural Network models for crop maps, promoting Cambodia's sustainable development.

> "Google Earth Engine has empowered our Cambodian DALRM office, allowing us to monitor cropland, analyze land use, and map our national cashew cover. Previously, updating a province's land cover map took up to a year. After training four team members on this GEE based workflow, we were able to map 400,000 hectares of cashew plantations across 25 provinces."
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> Chaya Veasna, Vice Chief of Office, DALRM

About Department of Agricultural Land Resources Management (DALRM)

Cambodia's DALRM promotes economic growth by securing food supply and enhancing agriculture, fishery, and forestry sectors sustainably. Acknowledging agriculture as a top priority, the government strives to boost productivity, diversify crops, enact land reforms, and sustainably manage resources, including forestry and fisheries.

Vertical/horizontal solution: Agriculture

Primary project location: Cambodia

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Spatial Informatics Group blends cutting-edge science into operations & policy, fostering environmental solutions through a robust academic network.

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