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# Digitally Enabled Resilience and Nutrition Policy Innovations (DERPIn) Project

Implemented by **AKADEMIYA2063** in collaboration with the **Pan-African Farmers' Organization (PAFO)**

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# Crop mapping and related outputs and knowledge products

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# What is crop mapping ?

Crop mapping is the process of identifying and categorizing the distribution of crops across agricultural land using various tools such as remote sensing, GIS and satellite imagery.

**Key Features of Crop Mapping:**

- Provides spatial data on where specific crops are grown.
- Helps in assessing crop performance, productivity, and distribution.
- Supports decision-making in agriculture by offering detailed information on crop locations and health.

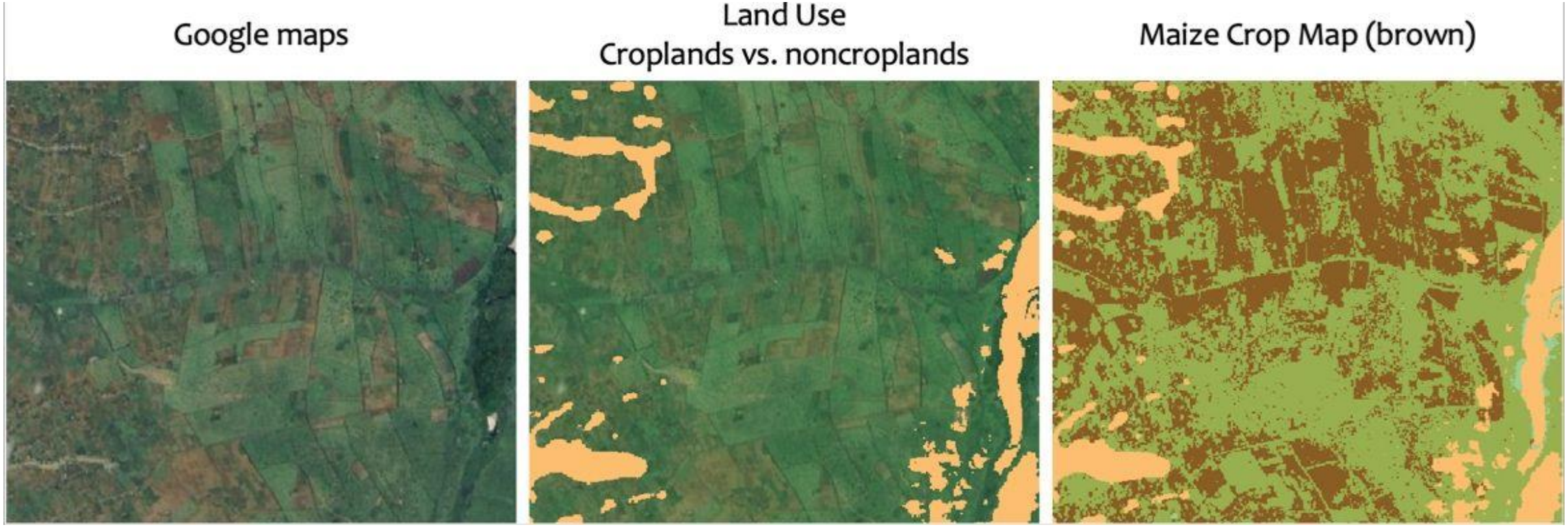
# Crop mapping – Justification

**To what extent a crop type map could help?**

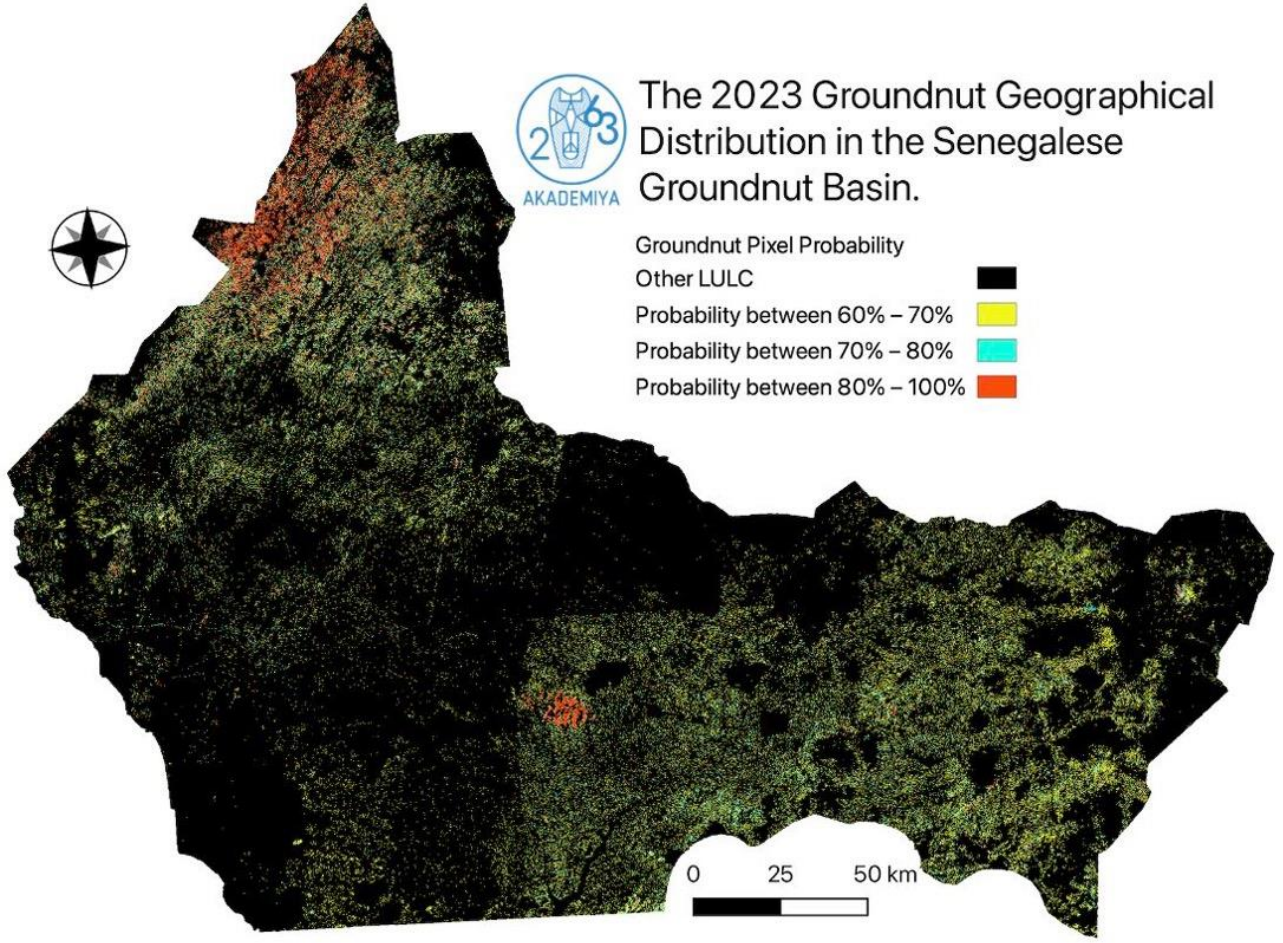
- Enhancing Food Security – Understanding what crops are grown and where, facilitating better planning and distribution strategies.
- Agricultural Productivity and Planning – Identification of areas where crop yields can be improved, better planning of crop rotation, identification of suitable areas for crops.
- Climate change adaptation and mitigation – Tool in adapting farming practices, selecting crop varieties more resistant to drought and other climate-induced stresses.
- Water Resources management – Identifying crops that are less water-intensive for areas prone to drought and optimizing irrigation schemes.
- Supporting Smallholder Farmers – Support farmers by providing information on best crops to plant, potential market opportunities,  adapting to changing environmental conditions.

# Crop type mapping

- **The idea**



# Example of crop map



# Overview of Crop Mapping Outputs

- Crop mapping helps identify key agricultural zones based on crop distribution and yields.
- Provides disaggregated data at community and national levels, enabling targeted interventions.
- Supports strategic decision-making in crop production, distribution, and marketing.
- Assists in predicting agricultural outputs based on geospatial data (e.g., vegetation indices).
- Can inform research, policy, and investments, particularly with insights from AI-driven forecasts.

# How Crop Mapping Benefits Farmers

- Access to timely data on crop performance and yields at the local level.
- Enables farmers to plan planting and harvesting more efficiently based on regional conditions.
- Provides recommendations for suitable crops based on geospatial data and AI forecasts.
- Offers early warnings on potential environmental stresses like droughts or floods.
- Helps farmers adapt to climate variability and identify potential markets.

# Value for Researchers and Policymakers

- Researchers benefit from high-resolution, community-level crop data to analyze trends.
- Policymakers can use crop mapping to drive evidence-based agricultural policies.
- Identifying zones with high vulnerability can lead to targeted policy interventions.
- Facilitates climate change adaptation strategies by predicting crop responses to climatic shifts.

# How Crop Mapping Benefits the Private Sector

- Agribusinesses can identify key crop-producing regions and investment opportunities.
- Crop mapping supports supply chain optimization, particularly with early harvest predictions.
- Provides insights for agricultural inputs (e.g., fertilizers, seeds) and potential sales growth.
- Encourages private sector investments in sustainable agriculture, such as drought-resistant crops.
- It can attract private-sector interest in crop-specific investments.
- Crop mapping helps insurers assess risk accurately by providing detailed data on crop distribution, environmental conditions, and yield predictions. This data enables insurance companies to offer tailored products for smallholders, helping them manage risks such as droughts, floods, or pest infestations.

# Nutrition Adequacy and Vulnerability Dashboard

- The Nutrition Adequacy Dashboard helps identify regions with critical nutrition gaps.
- Designed to improve the efficiency of nutrition interventions.
- Provides real-time data on nutrient gaps and vulnerability levels allowing rapid response during crises like droughts and economic shocks.
- Enables better targeting of policies, such as food distribution and social protection programs.
- Useful for guiding agricultural research and development, especially in areas with identified nutrient deficiencies.

# Nutrition Adequacy and Vulnerability Dashboard (Cont'd)

- Focus on key nutrients like kilocalories, proteins, iron, calcium, vitamin A, and more.
- Spatial analysis highlights regions with the most significant nutrition gaps and vulnerability levels.
- Policy simulations show the impact of changes in income and food prices on nutrient intake.

# How the Dashboard Helps Stakeholders

- For Farmers: It helps farmers by offering insights into the nutritional needs, allowing them to adjust crop production to meet these needs effectively, identify vulnerabilities, and make data-driven decisions that enhance nutrition status and food security.

- For Policymakers : Identifies regions most vulnerable to nutrition deficiencies, helping prioritize interventions.

- For Researchers : Provides disaggregated data that can be used to study malnutrition and its socioeconomic impacts.

- NGOs and Aid Organizations : Facilitates rapid deployment of food and nutrition support where it's needed most.

- For Private Sector: Informs private companies on areas to invest in nutrition-related products, like fortified foods.

# Sharing Outputs

- Use digital platforms (websites) for data dissemination to stakeholders.
- Organize stakeholder workshops and webinars to demonstrate crop mapping and related outputs applications.
- Collaborate with local extension services to ensure farmers and agribusinesses receive actionable insights (PAFO to disseminate with its member organizations).

# Sharing Outputs (Cont'd)

- Tailor outputs to meet the specific needs of stakeholders, including government agencies, researchers, and private sector actors.

- Promote results to raise awareness among investors and policy influencers.

# Medium

- Web Platform for each country
- Factsheets
- Appearance on Local Radio Show (Local languages)
- Multimedia Outreach
- Meteorological services
- Work with municipalities
- Educational material

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