

# **Agriculture Innovation Platform in Africa (AIPA) and Agriculture Digital Base Development (ADBBD)**

12<sup>nd</sup> November 2022

Nippon Biodiesel Fuel co.,ltd.(NBF)

Makoto Goda

- Common ID
- Multi-Purpose Development

# Introduction of NBF's 10 years acts in Africa



- 2012～ Producing **Energy** in rural villages.  
⇒**Jatropha** Biofuel for maize mills and generators.
- 2014～ Recording transactions for **creating credit**  
⇒E-Money, First E-Voucher project for FAO
- 2019～ Improving Food Value Chain(FVC), **Trust Visualizing**  
⇒**AIPA** : E-Agri Platform "**AGROPONTO**" with the Japanese Ministry of Agriculture, Forestry and Fisheries(MAFF) and WFP
- 2021～ Improving **multi life environment** in rural villages.  
⇒**SSC** : **Small Smart Community**(SSC) with MAFF will show **new development model for post oil era** not only for Africa but for the World.

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- Background of our business
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# Background of our business

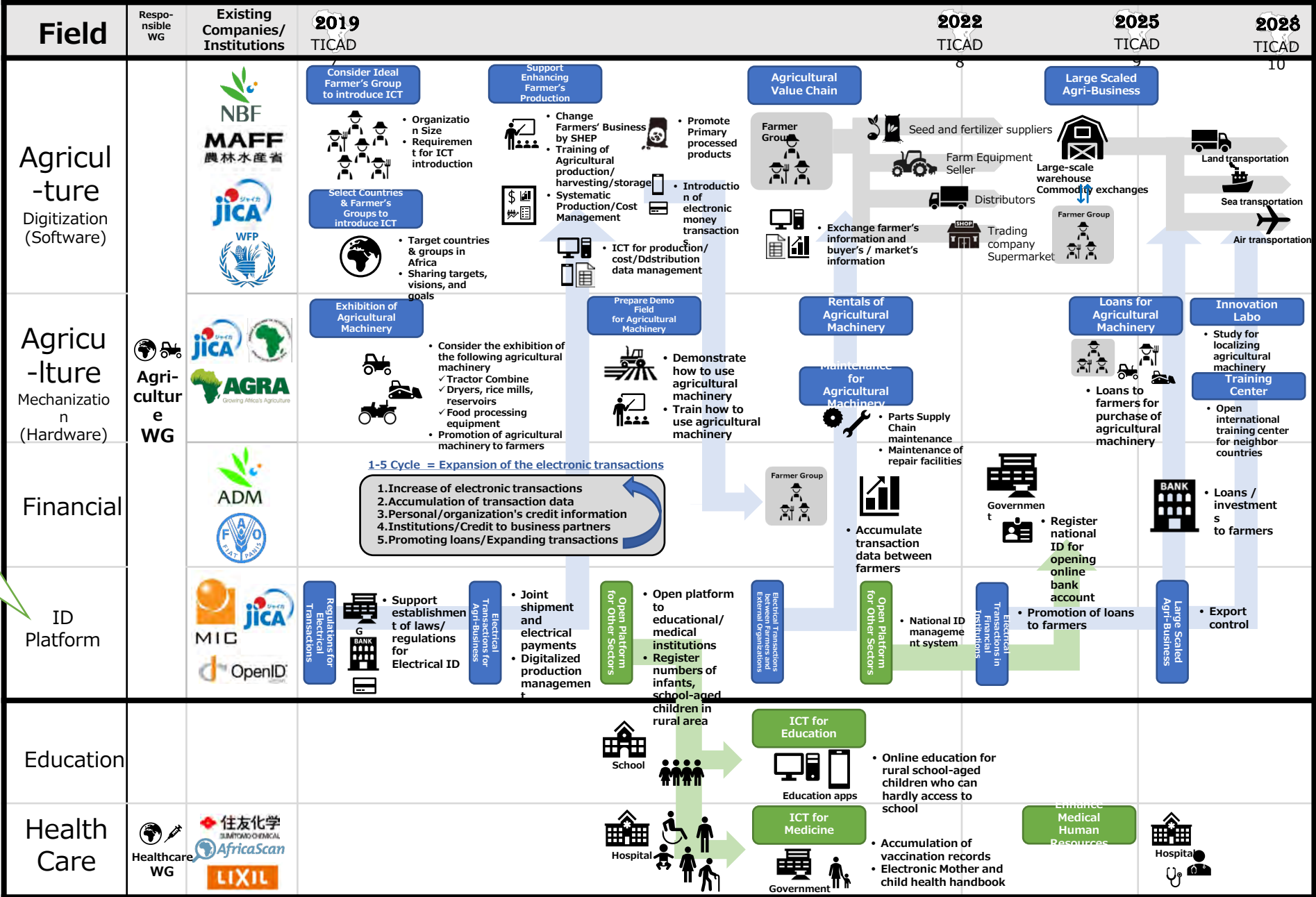


- Mission of NBF is “Peace Engineering”
- Energy, Food and Fair Finance are base of Peace.
- **Concept of ADBD and SSC is based on model of JA.** JA has bank, insurance, newspaper, gas stations, hospitals etc. needed services for pushing up the quality of rural life.
- Increasing Productivity and making Value Chain more efficient are highly needed but not enough. If there are not enough educational services, healthcare services nor entertainment, the one who earned more money will leave the village. We believe **Multi-Purpose development** is important aspect.

African Business Council Agriculture Working Group Roadmap



Common ID for multi sectors and each projects



In response to the deterioration of food supply and demand in African countries against the backdrop of the prolonged COVID-19 and the Ukraine crisis, Japan will work with African partners in areas where it has expertise, such as rice cultivation, human resource development, and food value chain formation, in order to build sustainable agricultural and food systems and strengthen food security in Africa.

## Development of Food Value Chain

### (1) Improving agricultural productivity

Increase agricultural productivity in African countries for import substitution

- Technology Transfer
- Introduction of irrigation and efficient use of water
- Promotion of Mechanization
- Development and dissemination of new farming and distribution system that utilize digital technology.



Electronic agricultural cooperative business using smartphones

### (2) More efficient distribution and processing

Improve distribution and processing efficiency to reduce post-harvest losses.

- Promotion of agro-businesses (rice milling, oil milling, etc.)
- Linkage with transportation infrastructure such as ports, roads, and railroads



Road construction to support to distribute grain

### (3) Infrastructure development to support rural communities in the region

Utilize renewable energy to strengthen connectivity with local communications, water supply, and other related infrastructure, along with agricultural production.

## Addressing Climate Change

### (1) Development of climate adaptive varieties

Develop and promote varieties to reduce greenhouse gas and are resistant to drought.

### (2) Introducing water and resource-efficient agriculture

Develop and disseminate data-driven agriculture and water-saving irrigation adapted to local conditions in response to water stresses such as droughts and floods.

### (3) Forests Conservation and development of the timber industry

Introduce sustainable forest management and illegal logging control in collaboration with international organizations and other partners.

Forest management in harmony with food production will be supported.



lumber breeding in Kenya

### (4) Fishery Resources maintenance and management

Promote sustainable fisheries by strengthening fishery resource management and introducing value-added fishery processing technologies.

## Public-Private Partnership

### (1) Improve production / distribution by mobilizing private sector technology

Provide support for food related value-added formation by mobilizing and collaborating with the technology and know-how of private sector.



On-site guidance for maintaining freshness of marine products

### (2) Responding to new demands such as fair trade for commodity crops

Support production activities to build a stable supply chain in response to new international certification for commodity crops.



Uganda Arabica Sipi Falls RA・UTZ・有機JAS認定  
ウガンダ・シビフォルズ  
Organic Certification

### (3) Efforts to improve nutrition

Work to address chronic malnutrition through nutrition improvement activities in partnership with the private sector and research institutions.



Public-Private Partnerships Nutrition Improvement Initiatives

These actions are positioned as Japan's Initiatives in the Tunis Action Plan of TICAD8





# Agriculture Digital Base Development

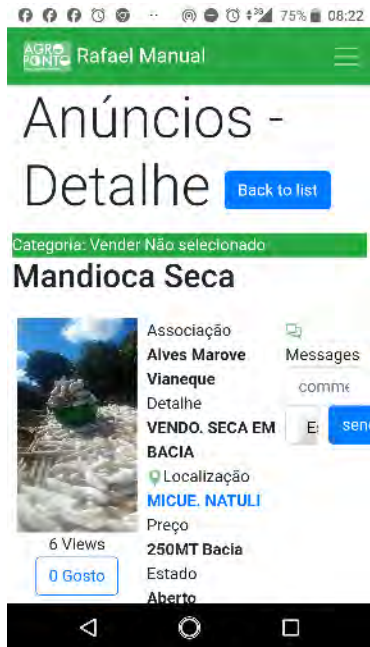
Virtual Market App. AGROPONTO launched by April 2022

User trends (April 2022  $\Rightarrow$  4<sup>th</sup> August 2022  $\Rightarrow$  3<sup>rd</sup> September 2022)

**Mozambique North** 100  $\Rightarrow$  7,900  $\Rightarrow$  8,786

**Mozambique South** 250  $\Rightarrow$  5,500  $\Rightarrow$  20,548

**Senegal** 120  $\Rightarrow$  5,000





# Northern Mozambique

4th August 2022 ~ 3rd September 2022

STD+WFP

-Number of users

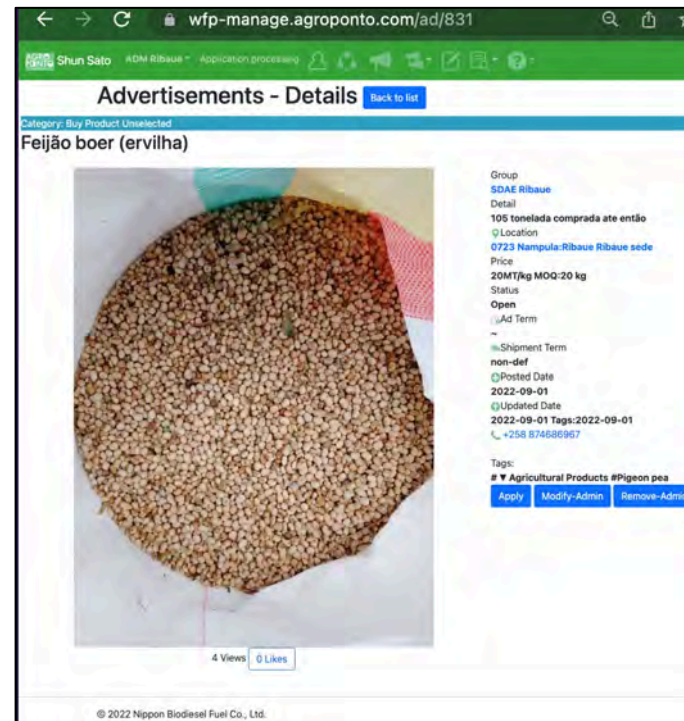
4,900(8/4)




⇒ 8,786(9/3)

-Amount prices of deals

640,000 MZN(8/4)

⇒ 3,715,214 MZN(9/3)



	<p>Bombas Nicone <b>Received, Paid</b> 2022-08-03 10:36:42 Unit price <b>45cMT/kg</b> Quantity <b>21000kg</b> Total price <b>945000 MT</b> Payment method <b>Direct payment (Cash)</b> Payant name <b>António Nicone Nicone</b> Payant number <b>258872301974</b> Application details: <b>Compra de amendoim</b> Expiry date: <b>2022-08-03</b></p>
	<p>Grupo de muepeira-rio <b>Received, Paid</b> 2022-08-03 10:31:09 Unit price <b>10MT/kg</b> Quantity <b>1000kg</b> Total price <b>10000 MT</b> Payment method <b>Direct payment (Cash)</b> Payant name <b>Alberto Impenua Araújo</b> Payant number <b>258864827961</b> Application details: Expiry date: <b>2022-08-03</b></p>
	<p>Bombas Nicone <b>Received, Paid</b> 2022-08-03 10:30:08 Unit price <b>10MT/kg</b> Quantity <b>5000kg</b> Total price <b>50000 MT</b> Payment method <b>Direct payment (Cash)</b> Payant name <b>António Nicone Nicone</b> Payant number <b>258872301974</b> Application details: <b>Compra de Milho</b> Expiry date: <b>2022-08-03</b></p>

# Southern Mozambique

4th August 2022 ~ 3rd September 2022

-Users

5,500 persons (8/4)

⇒ 20,801 persons (9/3)

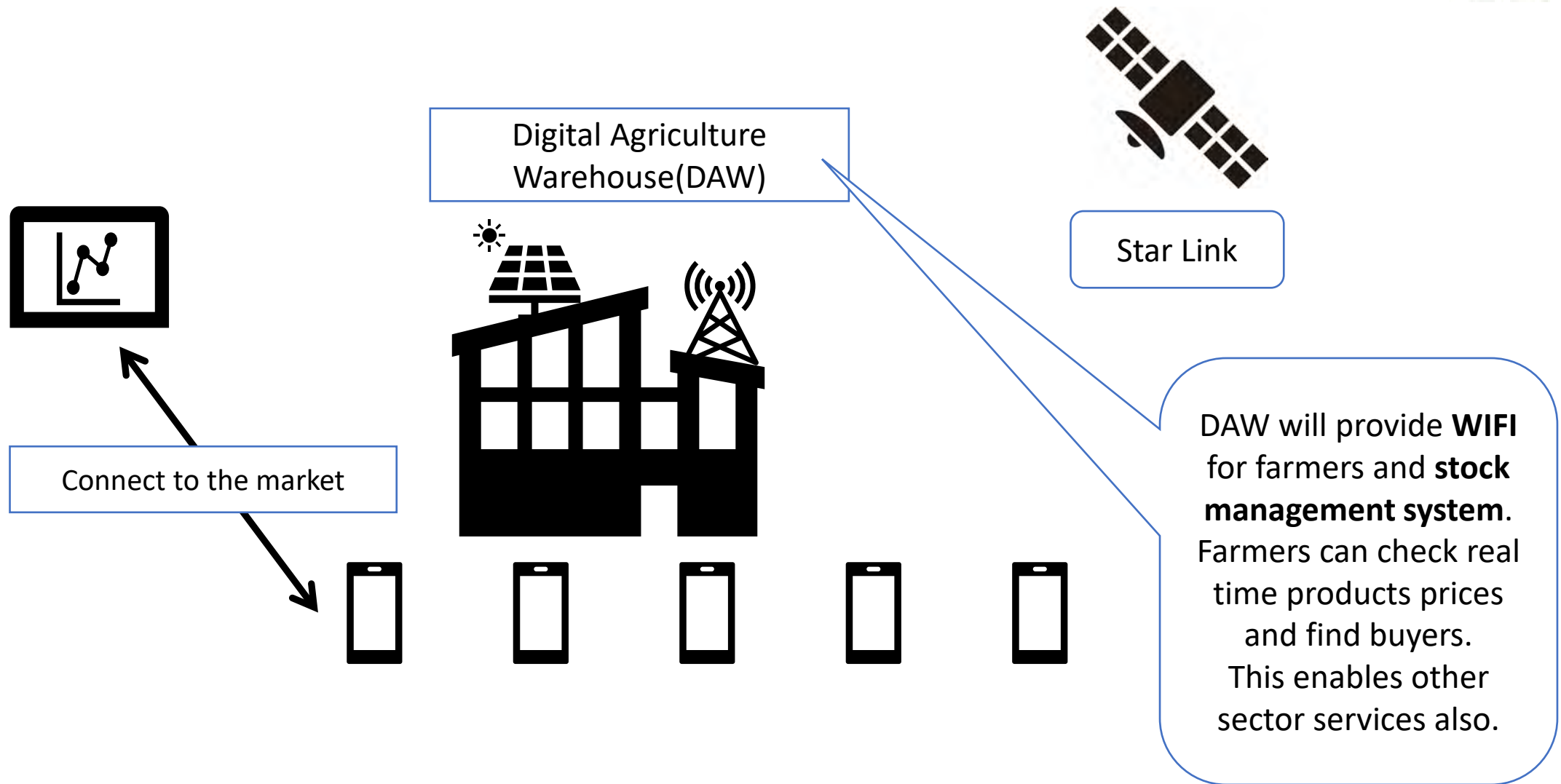
-Amount prices of deals

1,828,553 MZN (8/4)

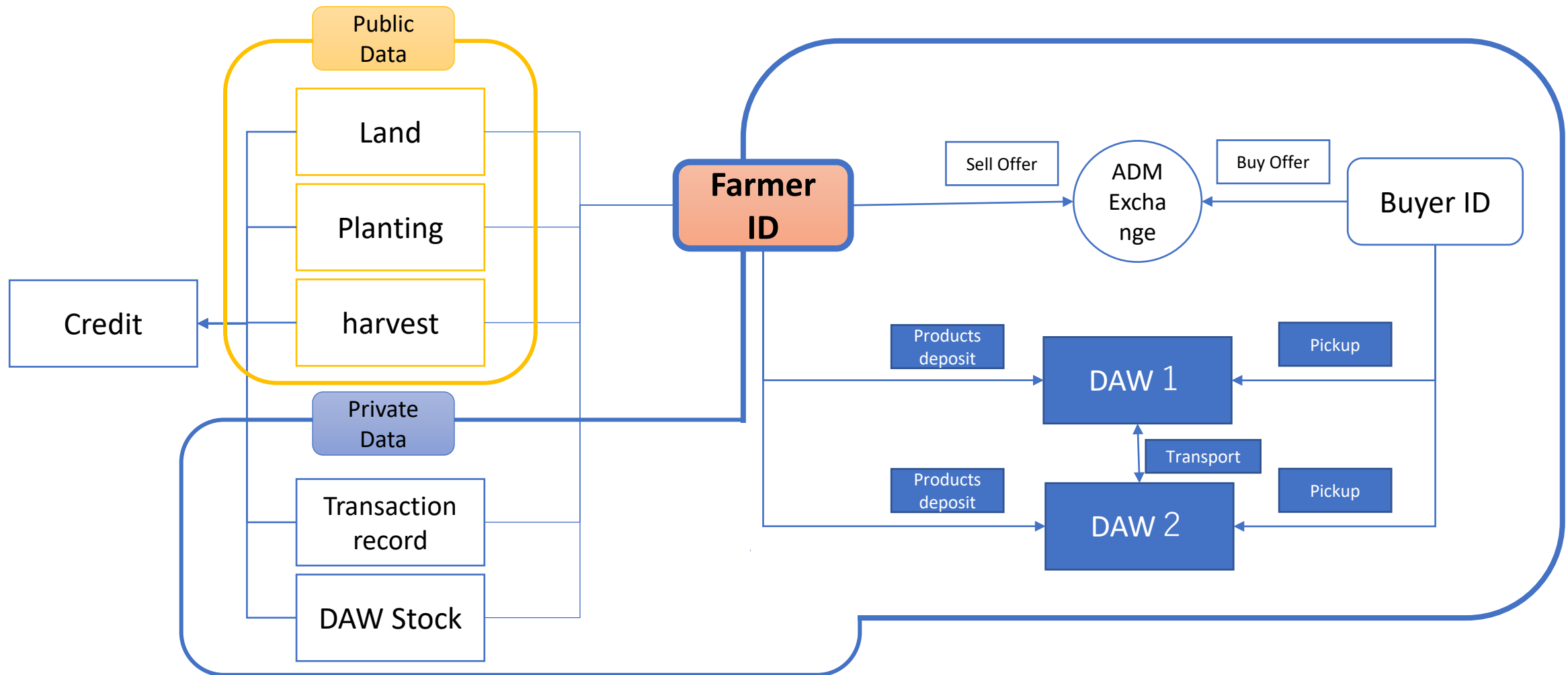
⇒ 2,958,503 MZN (9/3)



# Basic Infrastructure for Small Smart Community



# Data and Product flow



DAW: Digital Agriculture Warehouse



# Farm Mapping by smart phone

3:63202 2022-06-17 14:02:27 10000164 Farm Mapping 16.519548 Ha. tarestides 10000164



1 2 3 4 5 6 7 8 9 10 11

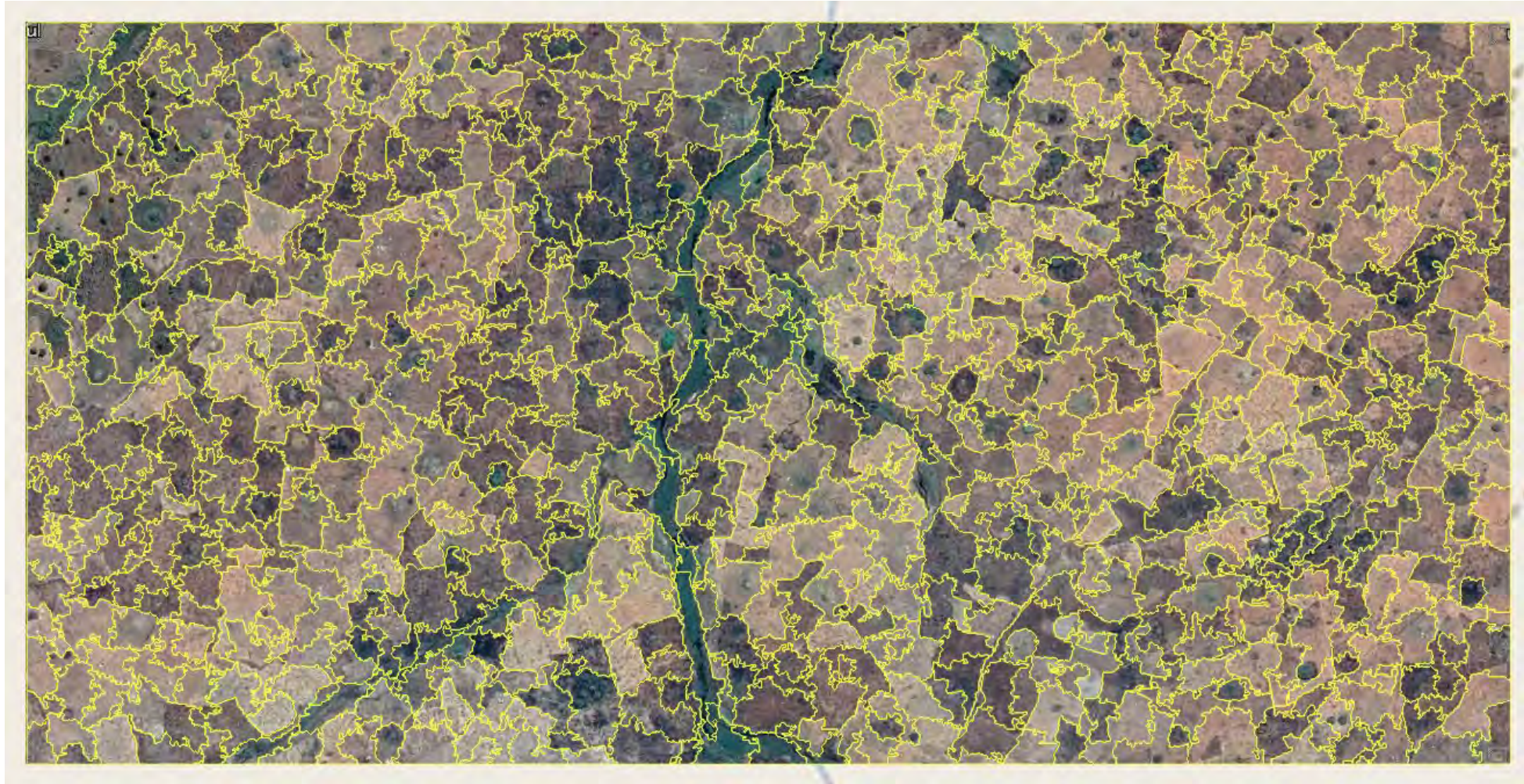
3:61865 2022-06-16 09:50:56 10000099 Farm Mapping 1.572330 Ha. tarestides 10000164



1 2 3 4



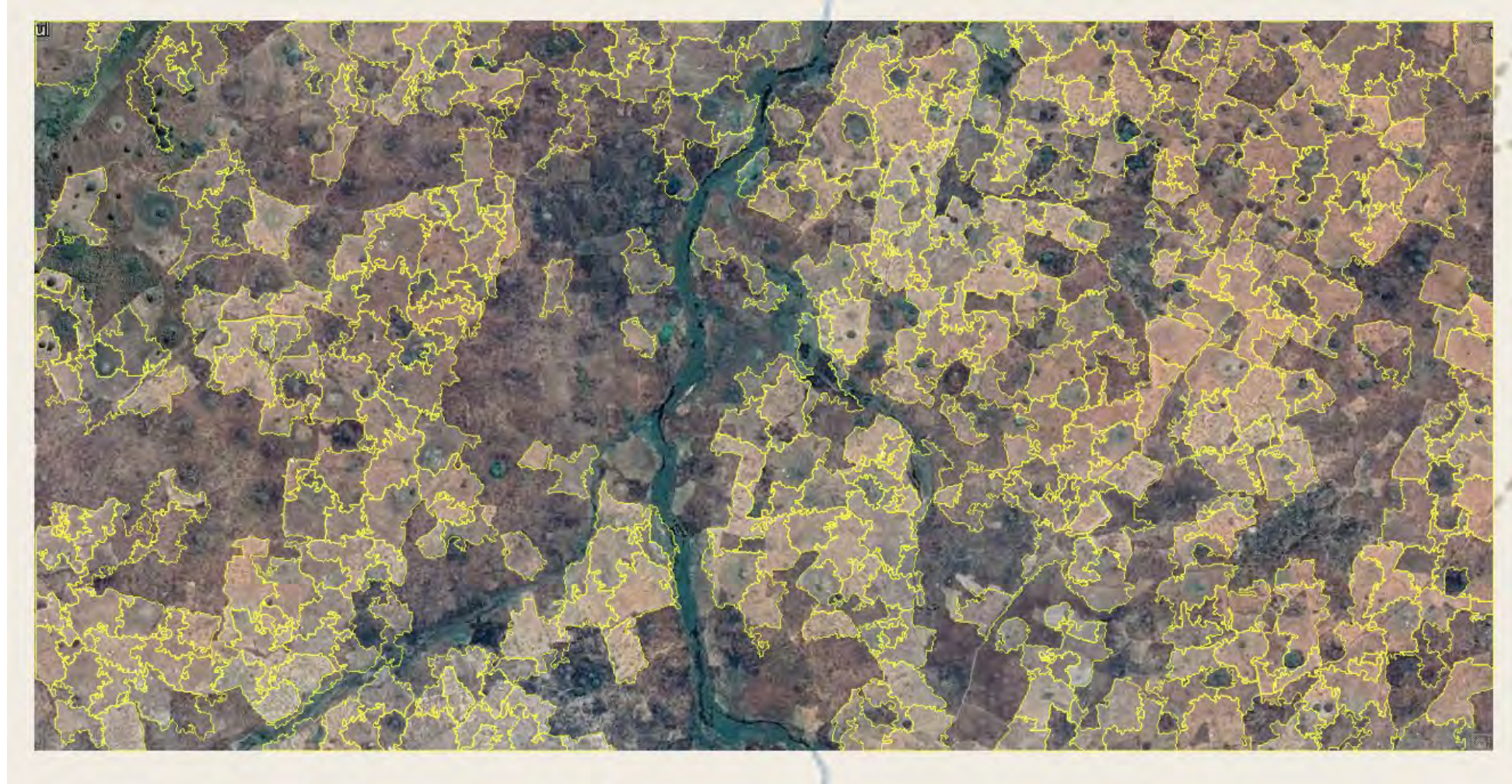
# Farm Mapping by satellite: Segmentation



Spatial agglomeration based on homogeneity of texture on high resolution images



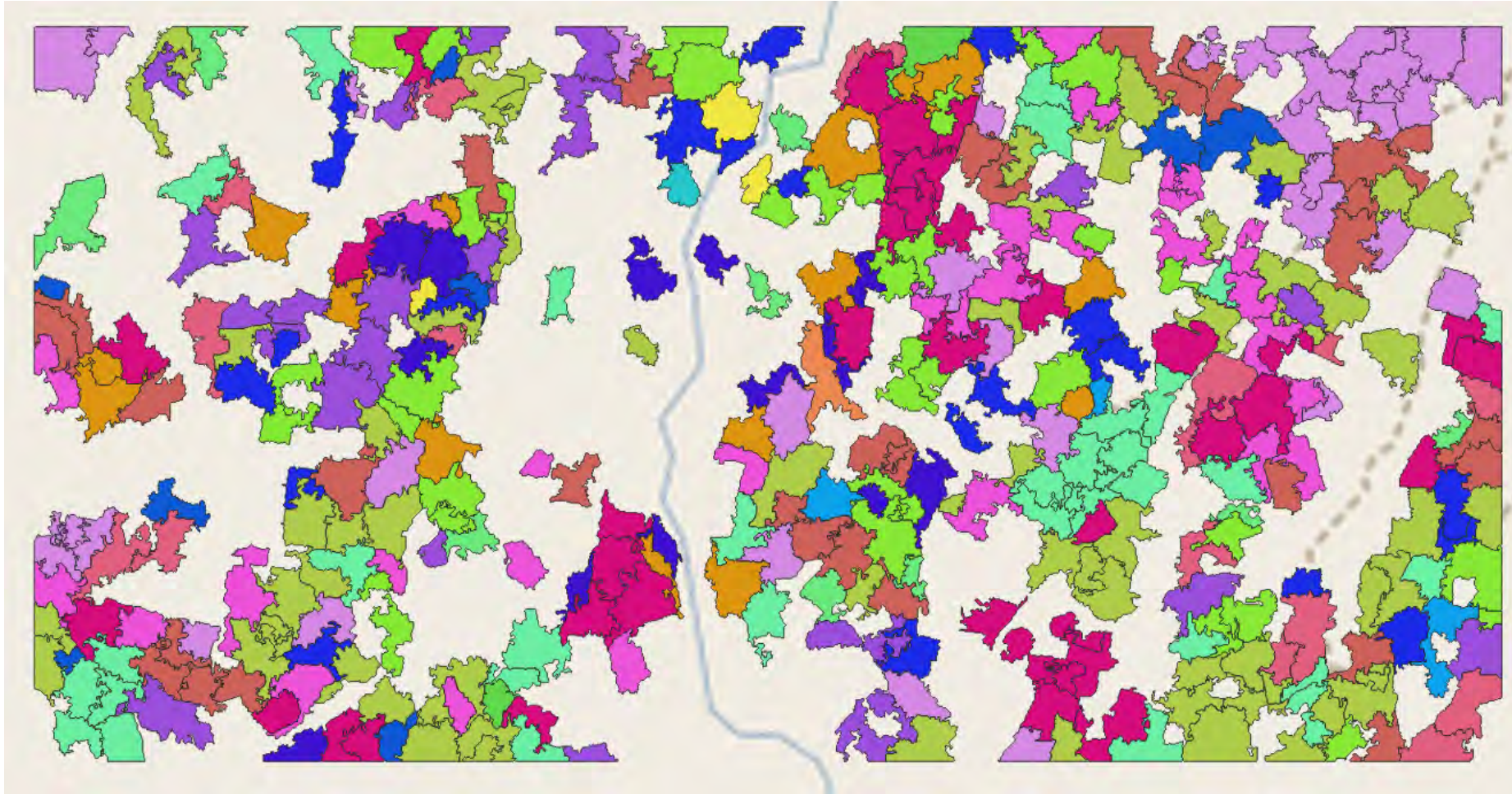
# Farm Mapping by satellite: Crop field segment



Extracted by statistical analysis on pixel values of background image



# Farm Mapping by satellite: Crop type category



Crop / land management derived from time series of medium resolution satellite images

# Issues of Digitalization



- Lack of **infrastructure** for energy and communication.
- Projects are small. They are not big enough to be **Baseline Data**. To integrate each projects, **Common ID** is the KEY.

**Infrastructure** : Renewable Energy, Communication(Star Link) and Water for Multi Purpose ex.**Agriculture Warehouse for Digitalization Hub**

**Baseline Data**⇒Individual Digital ID related with Trade Records,Satelite Land Data, Planting Info, healthcare info etc.

### **Dr. Oyewole, Oluropo Babafemi**

#### **– Pan African Farmers Organization (PAFO) / Nigeria (Based in Rwanda)**

PAFO is a continental organization with a membership base composed of Regional Farmers Networks integrated into nearly 70 national organizations, unions, federations, cooperatives, associations, etc., present in more than 45 countries on the continent, and united in five regional networks operating at the heart of African agriculture. He is a CEO of PAFO.

### **Dr. Abdulhamid Gambo – Sasakawa Africa Association (SAA) / Nigeria**

SAA aims to increase farmers' income and food and nutrition security through promoting market-oriented, sustainable, resilient, and regenerative and nutrition-sensitive agricultural innovations and building the capacity of Extension Agents and farmers. He is a Deputy Country Director in Nigeria.

### **Mr. Rosario Avelino Timoteo – SDAE / Mozambique**

A farmer leader based in Ribaue District, Nampula Province in Mozambique. In addition to being a farmer with 200 hectares of farmland (corn, etc.), he is also a county-level official of a government agency (supervisor of SDAE Ribaue). He visited Japan as a training project of MAFF in 2021 and shared his experience to his communities.

