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KGID 2025 Green Growth: The Path to Sustainable Jobs

Digitalization and K-Smart Agriculture - Vision of EPIS ODA Project -

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EPIS

CONTENTS

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I. Introduction of EPIS

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Mission

Realizing robust agriculture and vibrant rural areas by leading future agriculture and spreading rural values.

Core Value

Vision

A partner for innovative growth in agriculture and rural area with the people.

E ven-Handed

P ersonal-Respect

I nnovative Creativity

S ustainable Win-win

EPIS, established in May 2012,
is a public agency under the MAFRA.
- Leading digital agriculture
- Promoting agricultural and rural values

Strengthening K-Agriculture Competitive-ness through ODA

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II. EPIS's ODA Project

II-1. Areas of EPIS ODA Project

Official Development Assistance (ODA)

Support for food security in partner countries

Digitalization of agriculture

Improvement the income of farm household

01 Areas

- **Smart-Farm**
- **Digital Public Administration**
- **Food Security Partnership with ASEAN (AFSIS)**

02 Main Tasks

A. Establishing Policy Foundations
B. Establishing Facilities and Systems
C. Dispatching Experts
D. Reinforcing Human Competencies
E. Building International Food Security Partnership

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II-2. Projects for Digital and Smart Agriculture

1) Establishing Smart Farm, Training & Extension on High Value Crops
2) Digital Public Administration for Integrated Agricultural Administrative Management

Category	Country	Duration	Targets
Digital	Philippines	’23~’26	Integrated agricultural administrative mgmt. (Farmer data, agricultural subsidies, price, analytic data, etc.)
Smart Agriculture		’20~’23	Horticulture (tomato, mushroom, melon etc.)
	Vietnam	’21~’24	Horticulture (cherry tomato, paprika, strawberry)
		’22~’24	Livestock (pig)
	Cambodia	’21~’24	Horticulture (melon, cherry tomato, etc.)
	Indonesia	’21~’25	Horticulture (paprika, cherry tomato, orange, etc.)
	Uzbekistan	’22~’26	Horticulture (strawberry, nursery)

Smart farm (Philippines)

Pig Smart Farm (Vietnam)

Crop Production (Indonesia)

Farmers’ Training (Vietnam)

Product Sales (Cambodia)

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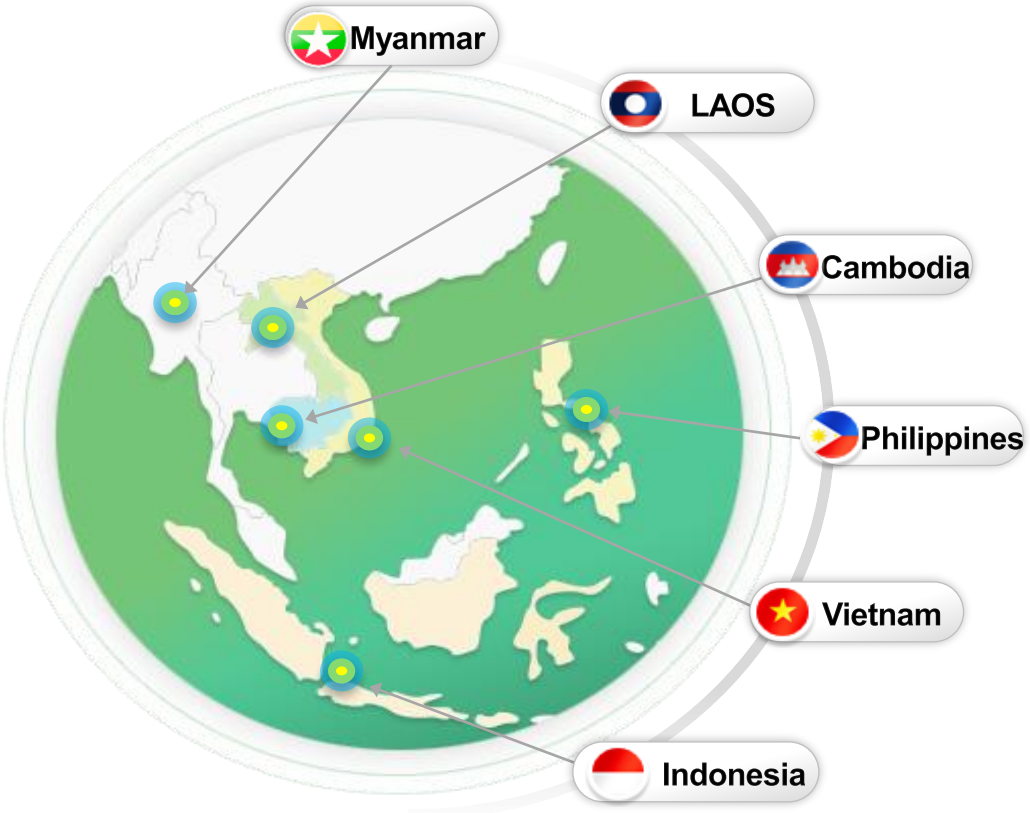
II-4. Project for ASEAN Food Security Network

Collaborative Project for Establishing ASEAN+3 Food Security Information (‘14~)

NAIS is a system for contributing food security to the ASEAN region.
It is an agricultural statistics information system that collects agricultural statistics and food security data.



Phase	Phase 1 Production				Phase 2 Distribution			Phase 3 Forecasting				
Year	'14	'15	'16	'17	'18	'19	'20	'22	'23	'24	'25	'27(p)~
Target												
Contents	▪ Developing National Agri-food Information System (NAIS) for production data (yield, quantity, etc.) collection ▪ Capacity building				▪ System Upgrade (NAIS) for distribution data (whole-sale/retail price, public/ private stocks) collection on mobile device ▪ Capacity building			▪ Pilot project for Production Forecasting and Monitoring System - Strategic crops : rice, sugarcane, etc. ▪ Capacity building program				

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II-5. Accomplishments

In Contribution of ASEAN+3 Food Security Network (AFSIS)

❖ **Awarded a Commendation by the Ministry of the Interior and Safety** in recognition of contributions to enhancing collaboration in e-Government and facilitating the global outreach of Korean enterprises in 2019

2019

In Contribution of Philippine Smart Agriculture

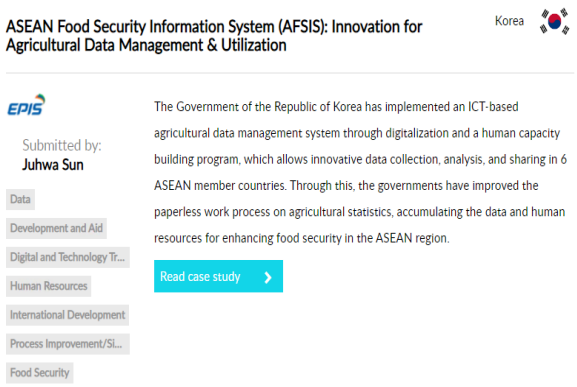
❖ **Selected as a Best Practice Case in ODA by the Office for Government Policy Coordination,** Republic of Korea in 2024

2024

2021

OECD
BETTER POLICIES FOR BETTER LIVES

OPSI
Observatory of Public Sector Innovation



❖ **OECD Observatory of Public Sector Innovation (OECD, 2021)**

❖ **Best ODA Practice (Office for Government Policy Coordination, Korea, 2021)**

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II-6. Best ODA Practice Case (Philippine Smart Farm, 2024)

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III. Vision of EPIS ODA Project

III-1. Project Customization via Competency Diagnosis

In many developing countries..

Lack of Systematic Tool for Smart Agriculture and Informatization
Lack of Experience & Human Competency
Implementing Project with Less Consideration of Beneficiaries' Competency

“ Development of an Agricultural Human and Informatization Competency Diagnostic Tool (Dec, 2025) ”

Customized projects for Country through Verification of Competency Stages

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III-1. Development of Agri-Human Competency Diagnostic Tool

"Package for Smart Agriculture"
(Defined Technology + Training + Manuals per Crop)

Agricultural Human Competency Diagnostic Tool

Key Diagnosis Indicator	**Smart Agriculture Technology Level** **Agri-business Status** (e.g. Business scale, Experiences, etc.) **Competency Level by Retained Knowledge, Technology** **Agri-business Performance by Farm Income**	
How to Apply	**Level 1**	1) Smart agriculture technology diagnostic standards 2) Integrated smart agriculture training curriculum standards
	Level 2	Smart agriculture training curriculum design through trainees' competency diagnosis by level, contents, duration and learning methods, etc.
	Level 3	Seeking mid- and long-term oriented strategic crops from smart agriculture technology diffusion perspective in each country

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III-1. Development of Agri-Digital Competency Diagnostic Tool

“ Global Agriculture Digital Standards ”

OECD — Methodology for the OECD Digital Government Index
WORLD BANK GROUP — GovTech Maturity Index (GTMI)
United Nations — E-Government Development Index (EGDI)
ITU GSR RIYADH 2025 — ICT Development Index (IDI)

Agri-Informatization Diagnostic Tool		
Key Diagnosis Indicator	**Digital Infrastructure** (e.g. ICT services, systems, etc.) **Agricultural Technique Level** (e.g. Agri-automation, Data utilization, etc.) **IT Human Competency** (e.g. Technology, Training facilities, etc.) **Institutional Foundations** (e.g. Policies, Strategies, Restraints, etc.)	
How to Apply	**Level 1**	1) Establishing policy foundation 2) Implementing pilot project for digitalization (Paper-less)
	Level 2	1) Scale-up of pilot project 2) Establishing agricultural administration system (Farmers and farmland information)
	Level 3	Establishing data-ecosystem

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III-2. Masterplan for Capacity Building

Capacity Building for Climate Smart Agriculture Applicable to Global on Different Country Environments

Phase 1

Technology Classification & Capacity Level Analysis

- Status analysis on agricultural technology and capacity building methodology
- Beneficiary country analysis
- Standard technology classification and level definition

Phase 2

Competency Diagnosis Tool and Training Map Development

- Climate smart agricultural technology diagnosis tool development
- Training map development for agricultural technology by crops
- Qualification examination and revision by experts group

Phase 3

Application Plan Development for Capacity Building

- Application package development by crops
- Training map application process design for agricultural technology
- Qualification examination and revision by experts group

Phase 4

Pilot Implementation, Monitoring & Evaluation

- Mid- and long-term implementation plan development for capacity building in beneficiary countries
- Pilot model implementation (Philippines)
- Outcome review and evaluation, feedback

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Level Diagnostic Tool for Capacity on Smart Agriculture

Category		Diagnosis	Level 1	Level 2	Level 3	Level 4
Farm Status	Scale	Production (m²)	< 3,960m²		3,960~6,600m²	> 6,600m²
	Facility	Agricultural Techniques	Smart farm for remote control and environment monitoring		Smart farm for comprehensive environment control, nutrient solution system	AI smart farm, agri-robot, green energy
	Cultivation	Cultivation Method	Soil production in single-unit greenhouse		Nutrient solution in single-unit greenhouse	Nutrient solution in inter-locked greenhouse, automated production
Sales Outcome	Productivity	Productivity (kg/10a)	< 3,000kg	3,000~4,000kg	4,000~5,000kg	> 5,000kg
	Quality	Brix	< 8 brix	8~10 brix	10~12 brix	> 12 brix
		Quality Product Rate (%)	< 65%	65~70%	70~90%	> 90%
	Farm Income	Sales Price Compared to Average Quality Product Price (%)	< 70%	70~80%	80~90%	> 90%

EXAMPLE

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Standard Training Map for Crop

Philippine Standard Training Map for Mango														
Category	**Crop and Environment Mgmt.**									**Facility and Materials Mgmt.**				
	Production Planning	ICT based growth/fruitage	ICT based soil mgmt.	ICT based fertilizer mgmt.	Smart harvesting/distribution	Pest and disease control	ICT based environment control	Disaster risk mgmt.	Mango data utilization	Smart facility installation	Smart facility maintenance	Agri-machines mgmt.	Agri-materials mgmt.	Safety mgmt.
Level 1	Variety's characteristic	Basic physiology	Basic irrigation	Fertilizer types	Basic harvest and storage	Major pest & disease	Proper growth environment	Typhoon, flood, abnormal temp. mgmt.	Crop data collection	Base facility infrastructure	Consumables	Machine purchase and safety	Material purchase	Worker safety and prevention
Level 2	Production environment preparation	Balanced growth mgmt.	Soil characteristic	Leaf and soil analysis	Harvest decision making	Pest & disease control	Environment by growth season	Pro-active measures and recovery	Basic Data analysis and utilization	Facility framework, plastic covering	Framework structure	Machinery emergency mgmt.	Material safety mgmt.	Environmental harmful factor diagnosis
Level 3	Trends of Variety	Harvest season mgmt.	Soil moisture mgmt.	Fertilizer for nutrition	Post-harvest mgmt.	Pest & disease prevention	Environment by crop shape	-	Advanced data analysis and utilization	Facility control system	-	Repair and inspection	Circumstantial material selection	Harmful factor evaluation

EXAMPLE

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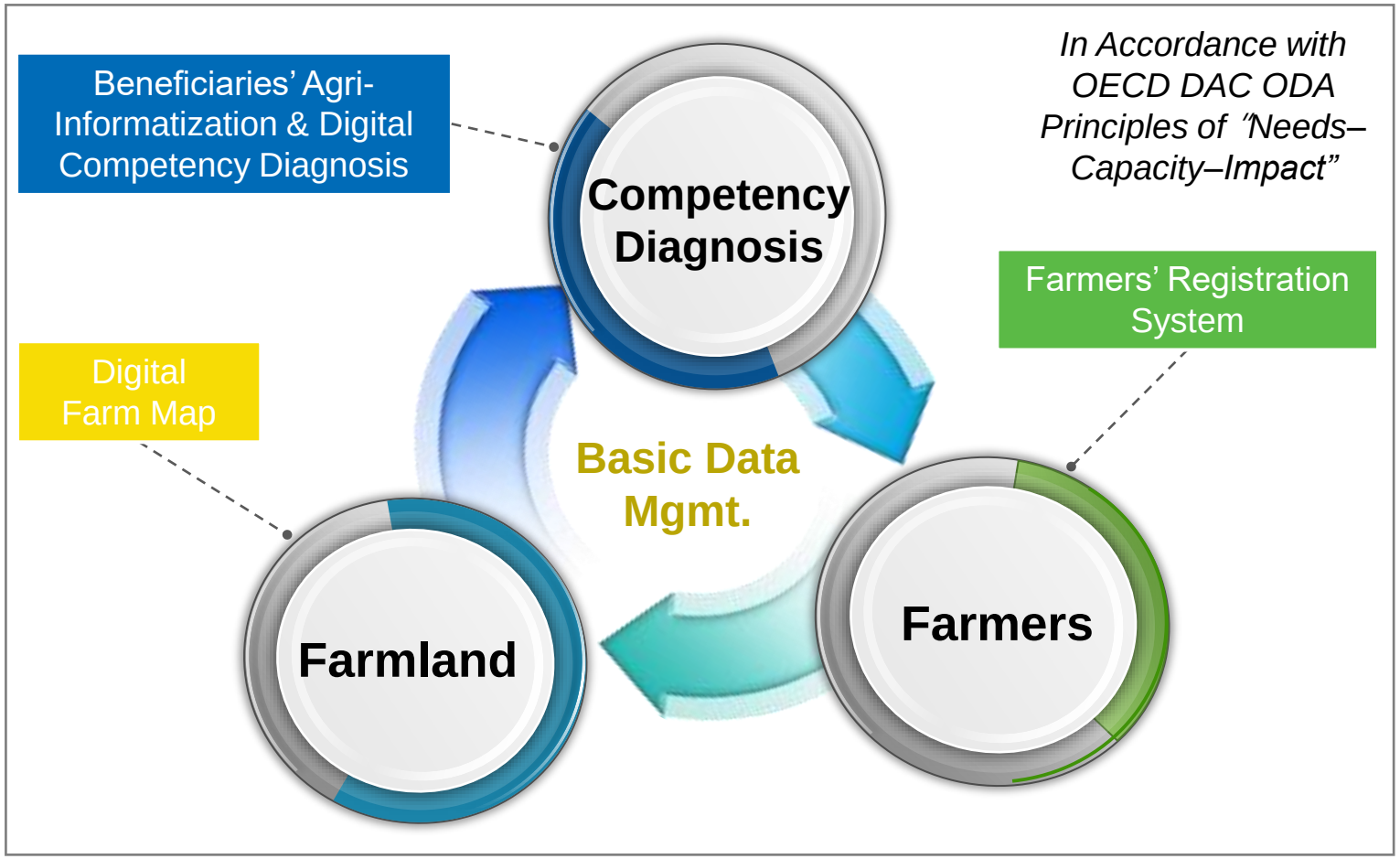
III-3. Masterplan for Digital Agriculture

Needs & Performance-Oriented Approach for Agri-Informatization based on Beneficiaries' Digital Competency



Phase 1 Competency Diagnosis

Phase 2 Establishing Base System for Integrated Agricultural Administration
(Farmers' Registration, Farmland Data Mgmt.)

Phase 3 Sustainable Digital Agriculture Ecosystem for Food Security & Climate Action

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III-3. Masterplan for Digital Agriculture : Farmer Data

Farmers' Registration System

Enhancing Agricultural Transparency & Efficiency through Farmers' Qualification Check of Farm Support Programs on On-line Platform

Efficient Agricultural Subsidies Mgmt. & Scientific Agri-Administration

Farmers

- Farmer's Registration Service
- Support Program Application
- Access to Application Progress
- Transparency via Traceability

Local Government

- Program Implementation (On-line)
- Real-time Process Monitoring
- Enhancing Work Efficiency

Central Government

- Program Monitoring
- Policy-making
- Performance Diffusion

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III-3. Masterplan for Digital Agriculture : Farmer Data (Philippine Case)

Establishing Integrated Agricultural Administrative Management System in Philippines ('23~'26)

One-stop Agricultural Administrative Mgmt. in Integrated Platform

Major Functions

- Farmers' Registration
- Farm Subsidies
- Price Survey
- Analytic Data Service

RSBSA: Registry System for Basic Sectors in Agriculture managed by the Department of Agriculture of the Philippines

What to be Changed

- **Increasing Data Accuracy and Promptness in Data Collection with Less Manpower**
  * 3% Accuracy → 0.5 (p), 18 managing persons per office → 3 persons (p)
- **Reducing Time to Provide Subsidies to Qualified Farmers**
  * 26 Days in 14 Individual Program → 3 days in 3 Classified Program (p)
- **Providing Automated Analytic Data based on Specified Data Classification for Decision Making**

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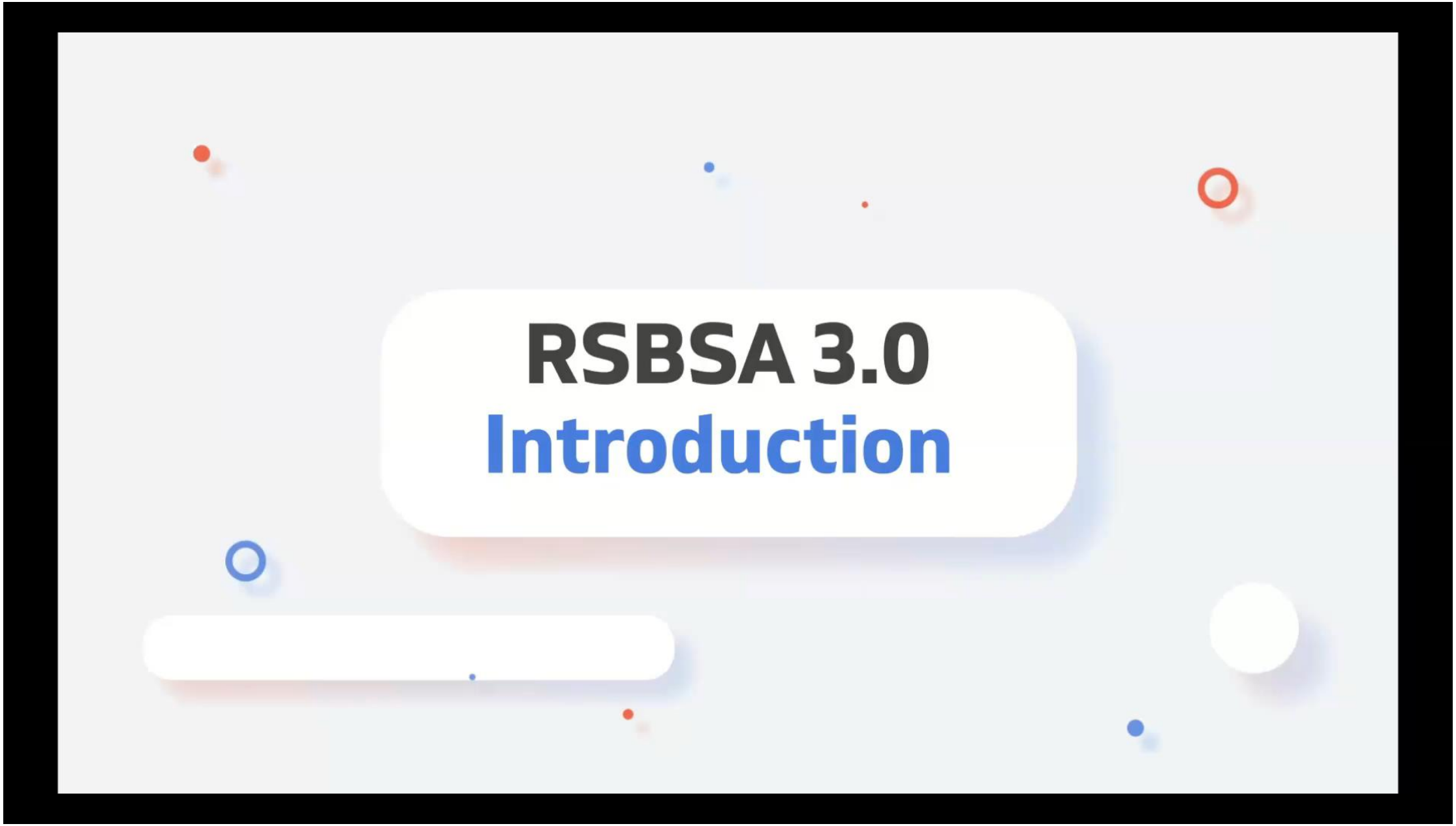
III-3. Masterplan for Digital Agriculture : Farmer Data (Philippine Case)



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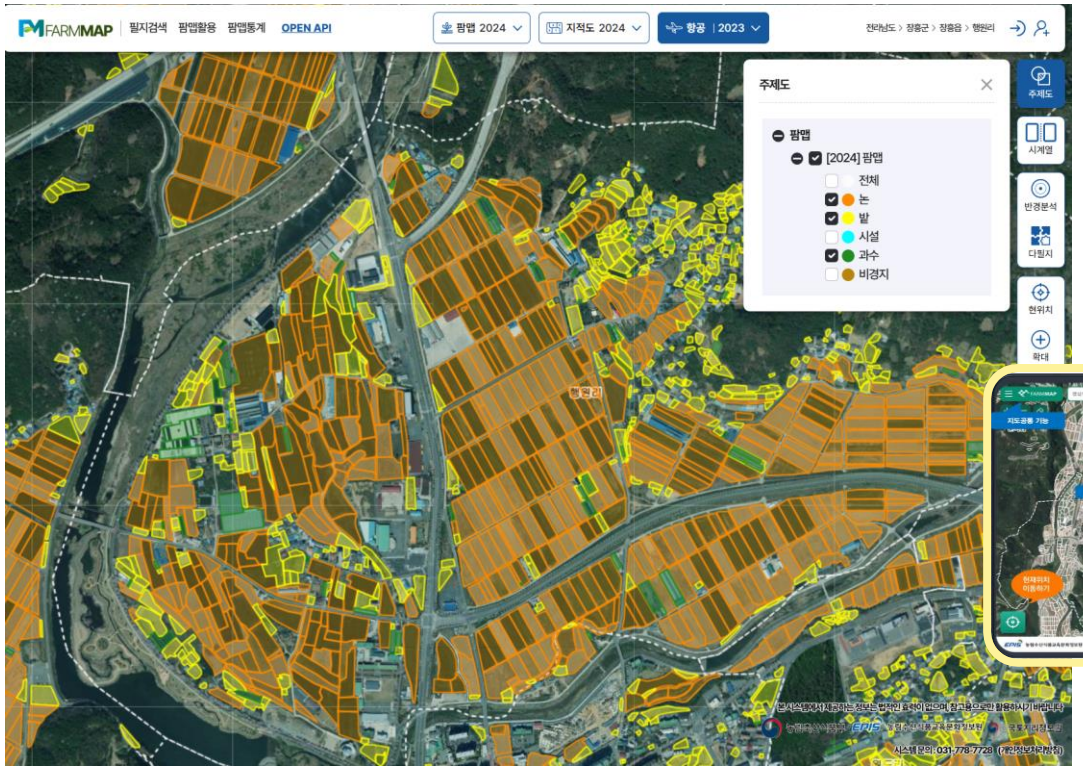
III-3. Masterplan for Digital Agriculture : Farm Land Data

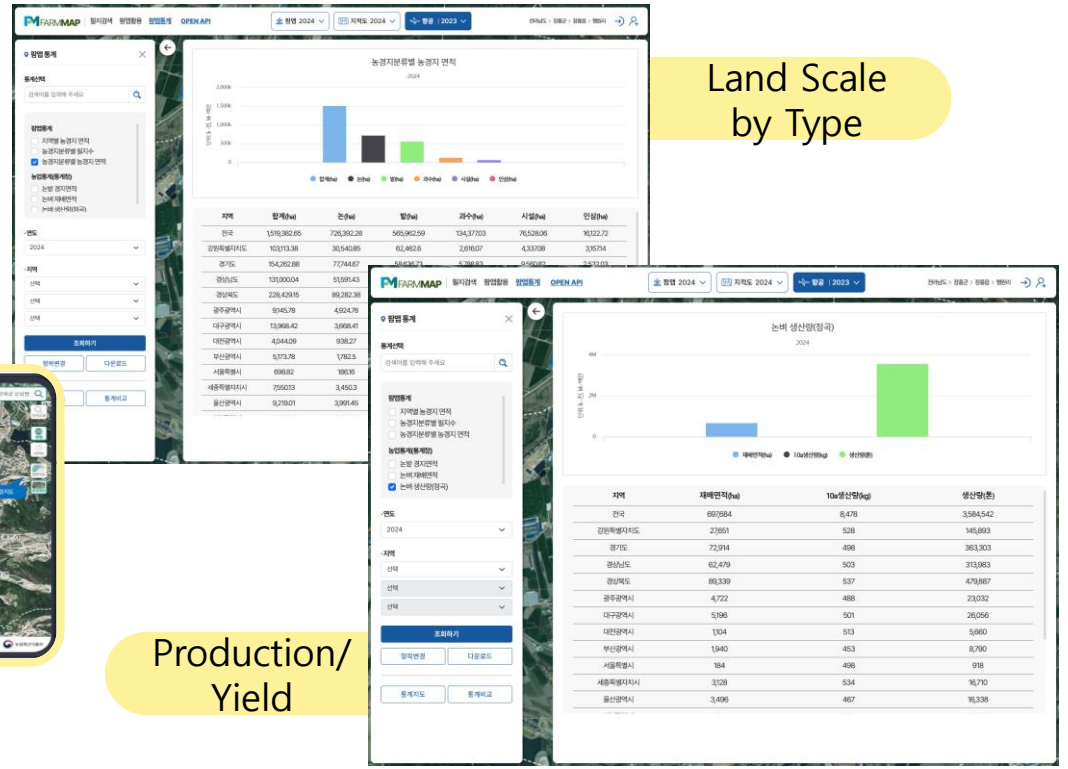
Digital Farm Map

Providing Spatial Data-based Farmland Information for Precise Policy Making & Customized Farm Support Program

Farmland Usage



Farmland Statistics



Land Scale by Type

Production/ Yield

Land Type: Paddy, Field, Facility, Orchard, Non-cultivated

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III-4. Vision : Establishment of Digital Agriculture Ecosystem

Establishment of Digital Agriculture Ecosystem

Agriculture Administration

Establishment of Digital Platform/System

A-1	Production statistics (AFSIS phase1)	B	Farmer Information
A-2	Distribution statistics (AFSIS phase2)	C	Farmland Management

Establishment Integrated Smart Agriculture Administration System

Agriculture Management

Capacity Building

1	Establishment of Smart Agriculture Model Complex
2	Capacity Building * Utilization of Existing Facilities
3	Spread Localized Smart Farm

Spread of Sustainable Localized Smart Agriculture

Digitalization → **Resolving agricultural challenges**

Strengthening food security and climate action

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