Enhancing Food Security in Developing Countries through the Promotion of ICT in Agriculture

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World Bank Group HQ,
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1. Introduction of EPIS
EPIS is...

A public agency which is specialized in ICT in Agriculture and capacity building for the existing and potential farmers.

Main Function

- Informatization in agriculture, rural communities and food industry
- Developing culture in agriculture and rural areas and spread and promotion of its values
- Improving technical skills and management capability of farm enterprises
- Developing human resources including training professions in agriculture, rural areas and food industry
- Providing safety information about agricultural products, promoting information exchange and protecting intellectual and industrial property rights
- Providing information about trade policies and international cooperation in agriculture, rural areas and food industry
- Providing the knowledge and information service in the area of agri-food
2. Smart Agriculture and Food Security
What is Smart Agriculture?

Application of ICT into Agriculture

- Sensing
- Automatic
- Remote Control

- Precision Agriculture
- Uniformed Quality
- High Productivity
- Weather Control
Challenges: Water shortage, Climate change, Lack of arable land, Pest and disease, Ageing farming population etc.

Then...... HOW address these issues?

“Farming intelligently” and “precision agriculture”
Effect of Smart Agriculture on Food Security

Production
27.9% ↑

Labor Hour
15.8% ↓
Labor Cost
15.9% ↓

Pest and Disease
53.7% ↓
Damage Cost
57.3% ↓

Sourced by Seoul National University, 2016
3. Cooperation Projects to Promote Smart Agriculture in Developing Countries
CASE1- Smart greenhouse in the Philippines

Public-Private Partnership (PPP) ODA by KOICA, EPIS and private companies to enhance productivity, as well as quality of the Tomato

01 Title : Enhancing Productivity and Producing High Quality Tomato through Smart Greenhouse in the Philippines

02 Budget : USD 2.49 Mil (KOICA 70%, Private Investment 30%)
※ Public partner (EPIS), Private Investment from 3 companies

03 Duration : 2018. 1 ~ 2021. 12 (4 years)

04 Components : 1) Establishing Smart Greenhouse and Operating System
               2) Enhancing Distribution System and Value-added Branding
               3) Farmers Capacity Development on Greenhouse Operation
Concept

Cooperatives
Farmers education

Production Modernization
Smart greenhouse

Distribution Improvement
Linked to local distribution
Co-branding
Cooperative Shipping

Consumption
Local market
Franchise

Diffusion
Farmers cooperatives
Government fund (HVCDP)
Joint venture

Agri-technical Institute
Crop education and consulting

Work-visa
Local Smart Farm

Farmers Training in Korea
Project Components

Establishing Smart Greenhouses and Building Human Resources

Water Production

Soil Production

Intensive Education

Farm Consulting

Invitational Workshop

Establishing 19 greenhouses in Baguio BPI (1st year) and DA RARES in Tanay (2nd year)
Knowledge Exchange on Digital Agriculture Technology
Time and Venue: Aug 26th - 30, 2019 in Korea
CASE 3- Establishing Real Time ASEAN Food Security Info Network

01 Duration: 2014 – 2021 (1st phase and 2nd phase)

02 Components: Establishment of National Agri-food Information Systems and capacity building for recipient countries

<table>
<thead>
<tr>
<th>Target</th>
<th>1st Phase (Production)</th>
<th>2nd Phase (Distribution)</th>
<th>3rd Phase (Forecasting/EWI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Countries</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Contents</td>
<td>- Establishment of Production Information System by Product (Production, Yield, Production/ Harvest Areas) - Develop human resources</td>
<td>- Establishment of Distribution Information System by Product (Stock, Price, Export/Import) - Develop human resources</td>
<td>- Establishment of Forecasting / EWI System - Maintenance &amp; Improvement(‘24~) - Develop Human Resources</td>
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</tbody>
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Expected Outcomes

- **Save time in inputting data** in the district/province level and swift approval procedure through NAIS.

- **Strengthen data analysis capacity** of officials in recipient countries by using NAIS and also through human capacity building.

- **Swift response to food security issues** not only in recipient countries but also in the whole ASEAN region in the long-run.
5. Implication and Future Plan
Future Plan

Successful Implementation of Smart Agriculture in Developing Countries

- Analysis of Local Environment & Localization
- Adaptable Technologies & Cost
- Public - Private Partnership (PPP)

Preparation of New Smart Agriculture projects

- 2020~2023 (Visayas, Mindanao)
- 2021~2023 (Da Lat, Ho Chi Minh)
Thank You.