

"Project Formulation Survey" under the
Governmental Commission on the Projects for
ODA Overseas Economic Cooperation
in FY2012

Summary Report

Philippines

The Study for Introduction of IT
for Agricultural Product Distribution

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Summary

Introduction

In the Philippines, several agricultural development projects have been implemented in the fields of rural development and irrigation which aim for the improvement of livelihood and agricultural productivity. However, the end results of these projects did not meet the expected goals instead postharvest losses and transportation costs increased due to inefficient agricultural product distribution system. In addition, challenges such as producers are forced to sell at lower prices for their products and consumers buying products at higher prices highlighted the inefficient supply chain.

Increased benefits for producers, distributors, and consumers should be achieved by ensuring the stability of prices, quality, and food safety. These can be done with the development of appropriate facilities such as wholesale markets through controlling the supply and demand.

Development of information technology (IT) infrastructures has been promoted in the Philippines in the past few decades. Although the coverage of fixed internet still stays at a low level, the use of mobile phones has become popular around the country.

In this context, introducing the IT system of a Japanese company could be expected to improve the agricultural distribution system in the Philippines. Solutions to the above mentioned problems would also be provided. Moreover, the said system has the capability to make products more competitive to meet the demand of the increasing middle to upper class in the Filipino society as well as assist in exporting the product to expanding Asian market in the future. The study aims to formulate an official development assistance (ODA) projects required for the business development of private Japanese company based on a holistic comprehension of current situation, and the needs of related government and private organizations in the country.

I. Description of the Current Situation and Development Needs of Concerned Issues in the Surveyed Country

I.1 Current Situation and Development Needs in the Country

The agricultural sector accounted 11.6% of the country's gross domestic product (GDP) in 2010 and the share has been decreasing with the development of other sectors. Relative productivity, especially the income of farmers, is much lower compared with other sectors. This has created a gap in the society in terms of economic development.

Japanese ODA projects have contributed to sector development by increasing productivity with the modernization of irrigation systems and livelihood improvement, although conventional product distribution has still been in practice, which creates issues on quality assurance and fair-trade in the country.

Table I-1 shows the changes in GDP and employment contributed by different sectors in the Philippines.

Table I-1 Changes in GDP and Employment by Sector

	GDP in 2005 (PHP million)	GDP in 2010 (PHP million)	Average Annual Growth (%)	GDP Share in 2005 (%)	GDP Share in 2010 (%)	Labor in 2010 (thousands)	Ratio of Labor (%)	GDP per Capita in 2010 (PHP)
1. Agriculture	596,727	662,665	1.9	13.3	11.6	11,960	33.1	55,408
2. Industry	1,465,272	1,859,515	4.4	32.7	32.6	5,400	15.1	34,435
3. Service	2,419,280	3,179,358	5.4	54.0	55.8	18,680	51.8	170,201
合 計	4,481,279	5,701,539	平均 4.6			36,040		158,200

(Source: NCSB, 2012 and Bureau of Labor and Employment Statistics, 2012)

I.2 Current Situation and Challenges of Agricultural Product Distribution

Agricultural product distribution processes are categorized into three levels, i.e., production, distribution, and consumption. After further analysis, problems were found at all levels.

(1) Production

Since accessibility of marketing information to producers is limited, they have difficulty in planning their production and sales schedule which leads to unstable income. In addition, the products are sold based on weight at a minimum price, so any value-adding process such as sorting by size done by the producer would be beneficial to increase their profit.

(2) Distribution

There are several stakeholders in the supply chain, e.g., market, cooperatives, middlemen, packers, transporters, consolidators, wholesalers, retailers, and exporters, wherein a charge is added to the product at each level of distribution. This results in unequal profit distribution in the supply chain. Furthermore, inefficient distribution process leads to an increase of postharvest losses and decrease of product quality. Improving information accessibility and IT development can help to manage the balance of supply and demand at several levels of product distribution.

(3) Consumption

Lack of information from the demand side limits the stable supply of products, resulting in higher sales price, which is then paid by the consumers. It is also required to meet diversified needs of consumers brought by economic development through provision of high quality products or value-added services.

I-3 Need to Introduce IT in Agricultural Product Distribution

IT provides holistic information management covering several levels of stakeholders in the supply chain so that the balance of supply and demand can be easily adjusted. Using information management through IT will help minimize postharvest losses by providing producers with necessary information in planning their production and supply. In addition, the IT system gives consumers food safety by ensuring the production history and other related information of the product.

II. Possible Applications of Small and Medium-sized Enterprise (SME) Products and Technologies, and Its Prospects for Future Business Development

E-Supportlink Ltd. (ESL) offers a distribution system of agricultural products as an application service provider (ASP) in Japan. The customers of ESL are agricultural production companies, cooperatives, intermediate distributors, and retail stores. The market for ESL's system and service in Japan tends to decrease due to the aging society that results to decline in population.

Under this circumstance, ESL started to consider new business development plans overseas as its growth strategy.

Southeast Asia, especially the Philippines, was selected as a potential new market for ESL because of its high GDP growth rate in recent years. In addition, there is a production base of ESL's existing customers so that the application of system and service of ESL become more competitive.

ESL has been proposing the introduction of two sets of software, i.e., "A Farm Story" and "ESL System", to the agricultural product marketing in the Philippines.

"A Farm Story" is a farm management system which enables its user to search agricultural chemicals and fertilizers to be used legally for a certain product. The system is linked with the database of the Department of Agriculture so that the information on certified chemicals can be accessible to the user. Moreover, the system gives a harvest schedule by registering necessary information into the system.

On the other hand, the "ESL System" is a sales management system which enables necessary data transactions between the producer, production company, and distributor by using common codes. Once a product is shipped from a farm, the product is then trimmed for packaging. At this point, specifications and classifications are given to the product for further market chain distribution. The ESL system provides data management from receiving products up to its shipment, visualizing complicated agricultural product distribution.

Currently in the Philippines, the system is not being used for farm and sales management of fruits and vegetables; although the demand for IT was found essential especially to projects lead by the Department of Agriculture. ESL's business development can be supported by the following facts: Usually, a development cost for creating new kind of system is required. However, these systems are already applied in Japan, meaning these do not entail development costs anymore. This would also mean that the system can be provided with a lower investment for producers and small companies. Furthermore, a concentrated production area for a certain commodity gives higher dealing rate of products at trading centers. Even though the handling unit price is much lower than in Japan, the total amount of transactions could be higher. These conditions are supportive for ESL's business development.

On the other hand, the biggest barrier in the introduction of the system would be the conventional manual management that provides lower labor cost in the country. Introduction of a new technology could be considered as too advanced or too difficult to operate in the current given condition.

In this time, ESL plans to offer the systems as ASP to two agricultural cooperatives (one is also an

operator of a trading center). The fee collection system of “A Farm Story” shall be based on its usage. The cooperative shall be charged according to the number of producers using the system.

The fee collection system of ESL shall be charged per weight of turn volume to passage quantity (ESL system passage quantity).

The proposed ESL’s business on the introduction of IT for agricultural product distribution contributes to the development of agricultural marketing and efficient distribution system in the country, collaborating with agricultural production organizations and with the Department of Agriculture.

III. Expected Development Impact and Its Effect on Business Development of the Proposed SMEs in the Surveyed Country Through Proposed ODA Projects

III-1 Formulation of ODA Projects

With regards to efficient agricultural product distribution, information plays an important role which should be properly collected, shared, provided, and managed for its appropriate utilization. An efficient distribution system with proper information can contribute to agricultural development. In this context, the study mission proposes four ODA projects as follows:

1. The Policy Support Project of Agricultural Product Distribution (Technical Assistance): This comprises the standardization, product coding, and renewal of the Pesticide Law. The project aims to increase the product value in the supply chain with proper trading which will then benefit both producers and consumers.

2. The Agricultural Product Distribution Development Project (Loan): This comprises the construction and development of local/wholesale markets, introduction of an IT system and establishment of a cold chain as well as enhancement of market management ability. The local market gathers producers and distributors while the wholesale market caters to distributors and consumers. Transaction of various kinds of information happens in the market at each distribution process points. Therefore, proper information management system should be established in the market.

The two ODA projects mentioned above require a certain amount of time to formulate which makes it difficult for private companies to collect an initial investment for their businesses. The project is being proposed to aim for the realization of ODA project in a short period of time.

3. The Pilot Project for Agricultural Product Distribution Development Project: This project comprises the dispatch of experts to the Department of Agriculture, such as collaboration projects with ACSP, ARISP and MINSAAD. The project also includes the experimental introduction of the system to *Sentrong Pamilihan* (central market) and BMFC.

4. Preparatory Survey for Agricultural Product Distribution Development Project: This project is being proposed which comprises survey for cost estimation and developing detailed schedule for the loan project.

III-2 Effects of the Proposed Projects

Implementation of the projects contributes to increased product value (amount, quality, shape, and appearance) using balanced supply and demand management with an appropriate information transaction. The stability of product supply and quality will contribute not only in fulfilling the increasing domestic demand, but also in enhancing and expanding the country's product exports to the Asian market which may lead to further export development of the agricultural industry in the Philippines.

On the other hand, transparency of market chain increases the opportunity for Japanese enterprises to expand their businesses in the Philippines. Development of product distribution infrastructure and related laws and regulations are expected by Japanese enterprises. These Japanese enterprises, such as production companies, distributors, processors, and retailers, are now facing difficulties in finding new market in the shrinking Japanese market.

Therefore, the implementation of a proposed ODA project will aid the development of agricultural industry in the Philippines and the expansion of Japanese businesses and enterprises.

III-3 Effects of the System Introduction to the Proposed ODA Projects

The standardization and coding of agricultural product at the national level will serve as an efficient market chain from farm to shop, having proper data management at production site, distribution process, and consumption. The introduction of the system which is already being used in Japan will be a good model that can be expanded to potential users such as producers, cooperatives, markets, and retail stores in the Philippines. This adds to the competitiveness of the ESL system, with its introduction, to 11 trading centers (as planned by AMAS) in terms of its interconnectivity over the country.

Collaboration with on-going ODA projects will shorten the time for the introduction of the system and it will promote an effective utilization of basic data for policy making. The introduction of the system may be implemented directly by the company.

IV. Proposals in Formulating ODA Projects

I. The Policy Support Project of Agricultural Product Distribution	
1) Implementation Agencies	
Implementing Agency : AMAS (Supporting agencies : BAFPS, BPI, FPA, NPAL, and PCARRD)	
2) Background and Overview	
In order to promote agricultural distribution in the Philippines, it is effective to establish a center that can adjust supply and demand of products such as wholesale market and to introduce an IT distribution system. It also requires a smooth development to establish and strengthen the policy framework and system. Specifically, technical cooperation including these three components: standardization of agricultural products, renewal of the Pesticide Law, and promotion of traceability are proposed. Also, in relation to the dispatch of experts, it is suggested to include training, adjustment, and support within DA into the terms of reference (TOR).	
3) Component of the Project	4) Project Period
a) Standardization of agricultural products b) Renewal of Pesticide Law c) Traceability promotion	3 years
5) Objectives	
To promote export of agricultural products by supporting policies of agricultural distribution, following international standards, and promoting the agricultural product distribution development project.	
6) Effects of the Project	
『On Producers』 : Increase producer's income by adopting and following a price setting based on the international standard 『On Distributors』 : Increase export of agricultural products by following the international standard 『On Consumers』 : Safe purchase of agricultural products	
7) Estimated Cost	8) Scheme
JPY 300 million (a) JPY 100 million (Expert: JPY 100 million), (b) JPY 50 million (Expert: JPY 30 million, Equipment: JPY 20 million), (c) JPY 150 million (Expert: JPY 110 million, Equipment: JPY 40 million)	Technical Cooperation
9) Project Outline	
a) Standardization of agricultural products <ol style="list-style-type: none"> 1) Standardization of agricultural products <ol style="list-style-type: none"> ① ㄱ Check the existing standard of the country, local, and firm ② ㄱ Consider authority of the standard ③ ㄱ Inform and promote the standard 2) Standardization of coding system <ol style="list-style-type: none"> ① ㄱ Set up a committee for the standardization of coding systems organized by related organizations ② ㄱ Check the existing coding system of the country, local, firm, and farmer ③ ㄱ Coding of the existing coding system of the country, local and firm; and develop compatible systems ④ ㄱ Establish a standard coding system ⑤ ㄱ Promote, teach, and support the standard coding system 	
b) Renewal of Pesticide Law <ol style="list-style-type: none"> ① ㄱ Accumulate basic data for residual pesticide examination ② ㄱ Choose the examination of prior pesticides and products ③ ㄱ Monitor the targeted pesticides, products and region, and establish a method and system for emergency ④ ㄱ Strengthen the pesticide registry system by establishing the procedures and regulation systems ⑤ ㄱ Set up a committee for pesticide risk evaluation organized by related organizations ⑥ ㄱ Consider revising Food and Sanitation Act ⑦ ㄱ Strengthen and promote a certification system of a quality guarantee system for safe products 	
c) Promotion of traceability <ol style="list-style-type: none"> ① ㄱ Setup an office ② ㄱ Choose a supply chain that would be a model case of traceability ③ ㄱ Introduce traceability and chain traceability for the above chosen players and support for international certification ④ ㄱ Support marketing ⑤ ㄱ Approach for consumer's recognition on the usefulness of traceability 	

II. The Agricultural Product Distribution Development Project

1) Implementing Agencies

DA

2) Background and Overview

The delayed standardization of agricultural products, renewal of Pesticide Law and promotion of the traceability are caused by the system where most farmers directly sell their products to wholesaler (distributor) without marketing.

The Agricultural Product Distribution Development Project establishes a central wholesale market as a hub for agricultural distribution to standardize agricultural products, renew the Pesticide Law, and promote smooth traceability. The project sets up a wholesale market network connected to the region and consumption area by looking at the total distribution system in the Philippines

The concepts of this project are the modernization of wholesale market by soft and hard infrastructures and securing the benefits of each participant in the supply chain.

3) Component of the Project

- a) Project development of a central wholesale market
- b) Project development of a local market
- c) Project development of a cold chain

4) Project Period

3 years

5) Objectives

To ensure the stability of price and quality of the product as well as secure its safety for the consumers. It also aims to increase the benefits of the producers, distributors, and consumers who are the main players in the supply chain.

6) Effects of the Project

【On Producer】 : Secure a sustainable, fair, clear, and quick payment

【On Distributor】 : Stable and effective transaction of various products

【On Consumer】 : Stable supply of agricultural products according to the demand, secure traceability of agricultural products, and expect food safety

7) Estimated cost

- a) JPY 2.88 billion (Construction: JPY 2.2 billion, Equipment: JPY 100 million, Consultant fee: JPY 583 million), b) JPY 1.5 billion (Construction: JPY 1 billion, Equipment: JPY 75 million, Consultant fee: JPY 583 million), c) JPY 1.2 billion (Construction: JPY 120 million, Consultant fee: JPY 50 million)

8) Scheme

ODA Loan

9) Project Outline

- a) Project development of central wholesale market and
- b) Project development of a local market

【Establish the wholesale market】

- ① Design plan
- ② Supply
- ③ Build the market

【Improve the ability of the market organization】

- ④ ー Build a system of market operation
- ⑤ ー Procurement of materials and software
- ⑥ ー Development of IT system of operation and management of the market
- ⑦ ー Make a manual for IT system operation
- ⑧ ー Training for IT system operation staff
- ⑨ ー Operational test of the IT system
- ⑩ ー Operation of the IT system and follow up

- c) Develop a cold chain

- ① ー Consider the necessity, emergency, and effectiveness of the set up
- ② ー Understand the current situation of the expected market area and the corresponding problems. Determine an order of priority
- ③ ー Select the priority of cold chain
- ④ Consider and propose the necessity of technical support related to management of the cold chain establishment.
- ⑤ Consider the introduction of refrigerators
- ⑥ Evaluate the effect of the project (such as IRR)

III. The Pilot Project for Agricultural Product Distribution Development Project	
1) Implementing Agencies	
a) Implementing agencies : DAR、 Supporting agencies : AMAS, ITCAF, and ATI b) DAR	
2) Background and Overview	
<p>Implement the pilot project for the introduction of the system to the wholesale market and agricultural cooperative for future development of agricultural distribution.</p> <p>Private projects are implemented following a time schedule from the start of the project to speed up implementation. Normally, ODA takes at least a year for project formation. Therefore, the pilot project should be proposed by introducing the system to ODA projects such as ARISP and to the existing wholesale market. If the pilot project is found to have effective introduction of the system in the wholesale market and use of the distribution information system network, it would be possible to promote IT by adopting this concept on food centers established at the barangay and municipality levels by DA.</p>	
3) Component of the Project	4) Project Period
a) Management and use of distribution information of agricultural products b) IT introduction to ARISP	2 years
5) Objective	
To establish an information distribution model which can be applicable to upcoming agricultural product distribution development projects into the market.	
6) Effects of the Project	
① Union member (Producer) : Provide funds for production, improve quality, and increase in production and price ② Agricultural cooperative : Quick finance from the Land Bank of the Philippines (LBP) and increase the amount of finance from LBP ③ Distributor : Stable supply of products, secure quality of products, and decrease the cost for collection of production information	
7) Estimated Cost	8) Scheme
JPY 100 million a) Consultant fee: JPY 15 million, Equipment: JPY 17 million, System development: 26 million, b) Consultant fee: JPY 15 million, Equipment: JPY 15 million, System development: 12 million	Proposal Type Research in Private Sector Diffusion and Substantiative
9) Project Outline	
a) Management and use of distribution information of agricultural products <ol style="list-style-type: none"> 1) Introduction of IT system into the wholesale market <ol style="list-style-type: none"> 1-1 Basic survey 1-2 Development of network operation system 1-3 Supply and installation 1-4 Operational test 1-5 Training for market managers, operators, and users (agricultural cooperatives and retailers, etc.) 1-6 Monitoring and evaluation 2) Build a distribution information system into each market <ol style="list-style-type: none"> 2-1 Basic survey 2-2 Development of network operation system 2-3 Supply and installation 2-4 Operational test 2-5 Training for market managers, operators, and users (agricultural cooperatives and retailers, etc.) 2-6 Campaign 2-7 Monitoring and evaluation b) IT introduction to ARISP <ol style="list-style-type: none"> ① Contract of production and sale to business partners requiring production information ② Introduction of IT ③ Consider system content ④ Training of IT system staff ⑤ Explanation and agreement among union members, and collection of production information ⑥ Operational test of the IT system ⑦ Operation of the system ⑧ Examine economic effects of the IT system 	

IV. Preparatory Survey for Agricultural Product Distribution Development Project	
1) Implementing Agencies	
DA	
2) Background and overview	
“The policy-support project of Agricultural Product Distribution” and “the Agricultural Product Distribution Development Project” are proposed in this project formulation survey as projects that will be done through the Japanese ODA cooperation scheme. Earlier preparatory survey will be proposed for immediate implementation.	
3) Component of the Project	4) Project Period
Preparatory Survey for the Policy-support Project of Agricultural Product Distribution Preparatory Survey for the Agricultural Product Distribution Development Project	10 months
5) Objectives	
To ensure smooth implementation of “the Policy Support Project of Agricultural Product Distribution” and “the Agricultural Product Distribution Development Project”.	
6) Effects of the Project	
“The Policy-support Project of Agricultural Product Distribution” and “the Agricultural Product Distribution Development Project” will be put into practice immediately.	
7) Estimated Cost	8) Scheme
JPY 50 million (Consultant fee: JPY 50 million)	Preparator Survey (Public-Private Partnership Preparator Survey)
9) Project Outline	
<ul style="list-style-type: none"> ① ㄱ Check the basic strategy and plan concerning wholesale market development and agricultural product distribution improvement in the Philippines. ② ㄱ Check measures concerning strategy crops in the Philippines and selection of object crops in these projects. ③ ㄱ Check the legal system concerning agricultural product distribution and regulations. ④ ㄱ Check and cooperation, check the progress demarcation of a national wholesale market development plan. ⑤ ㄱ Inventory survey of the existing wholesale market. ⑥ ㄱ Survey the situation, circumference infrastructure, agricultural-products production, and circulation of new planned construction site. ⑦ ㄱ Survey the situation, circumference infrastructure, agricultural-products production, and circulation of existing wholesale market sites. ⑧ ㄱ Select a new planned construction site in consideration of the scale of institutions and maintenance level. ⑨ Select and target existing wholesale markets including elimination and consolidation, in consideration of repair plans and maintenance level. ⑩ Survey the situation of the candidate institution of cold chain system, circumference infrastructure, agricultural cultivation, circulation, and investigation of target agricultural products. ⑪ ㄱ Select the site for cold chain in consideration of the scale of institution and maintenance level. ⑫ Check the existing distribution system and the status of preparation of candidate institution concerning IT introduction. ⑬ Select the target institution for IT introduction in consideration of maintenance level. ⑭ Check the operation condition of implementation agency of selected wholesale markets. ⑮ Make a program and educational materials for equipment management, IT installation, marketing, traceability, etc. ⑯ Design an education plan and capacity strengthening plan. ⑰ Consider and create a yen loan industrialization plan and an enforcement schedule. ⑱ Consider and create a technical cooperation project industrialization plan and its enforcement schedule. ⑲ Consider and create a PPP project industrialization plan, an enforcement schedule, and if indicated, the start date of the PPP preparatory survey. ⑳ Adjust the comprehensive business and cash planning, and enforcement schedule. 	

Attachment: Outline of the Survey



