

**Verification Survey with the Private Sector
for Disseminating Japanese Technologies
for Disseminating food processing
technologies for promoting food processing
SMEs in East Java Province**

Summary Report

Indonesia

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Japan International Cooperation Agency

(JICA)

Kowa Kogyo Co.,Ltd.

1. Background

1.1. Background to the food processing industry and its priority in East Java Province

In its Third National Medium-Term Development Plan (RPJMN) (2015-2019), the Government of Indonesia sets out “to enhance the competitiveness of small- and medium-sized enterprises (SMEs) by improving productivity and adding value” as one of its development goals. To this end, the Indonesian Government aims to promote its labor-intensive industry to create employment and also eliminate barriers against the growth and development of micro-business entities.

Given the efforts of ASEAN member states toward eliminating tariffs by the end of FY 2015, the East Java Government recognizes that “protection by enhancing competitiveness” and “market expansion outside the region” are the present urgent challenges facing regional industries. East Java Province is acknowledged as one of the key industries in the region, which is home to a number of small- and medium-sized food-processing enterprises. Accordingly, the Provincial Government plans to initiate capacity development of small- and medium-sized food-processing enterprises to “expand their productivity by introducing automatization” and “develop such products with high preservative quality and added value, which can be offered to markets outside the region (including Jakarta, other metropolitan areas and overseas markets).

Based on the East Java Provincial Ordinance No. 133 of 2008, Organization and Responsibilities of the Industrial Technical Implementation Unit of the Department of Industry and Commerce, the East Java Provincial Government, East Java Provincial Government, Department of Industry and Commerce, Industrial Technical Implementation unit on Food, Beverage and Packaging (Hereinafter referred to as the “UPT”) was established, aiming to improve know-how in production and packaging technology. The UPT provides those enterprises involved in food, beverage and packaging businesses with the information, services and consultation they need. It aims to enhance competitiveness in the food, beverage and packaging sector, boost the production capacity of value-added products, expand the food and beverage sector, boost related investments and create employment.

1. Outline of the Survey

1.1. Purpose

This survey is to improve the product development and supply capacity of small- and medium-sized food-processing enterprises, strengthen the leadership of the East Java Provincial Government in product development to local food-processing enterprises and accumulate

know-how in regional industrial development by using confectionery machines of a Japanese private company. In so doing, the survey will develop the small- and medium-sized food processing sector in East Java Province.

1.2. Expected outputs


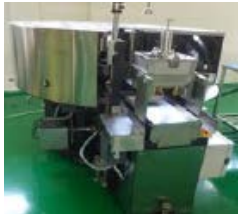




The expected outputs of the Survey are as follows:

Output 1	Confectionery machines are manufactured, transported and installed in the UPT. Subsequently, a sample product is produced by using the machines jointly with the UPT staff. In addition, the technology for applying these machines are transferred to the staff.
Output 2	The technology for product evaluation, product development and its supervision are transferred to local staff in East Java Province through workshops in which East Java Provincial Governmental organizations also participate. The product development capacity is improved by developing and evaluating new products produced by local staff, while their capacity to supervise product development of third parties is also fostered.
Output 3	The technology for applying the machines is transferred to small- and medium-sized food-processing enterprises, while their product development capacity is improved by workshops for the small- and medium-sized food processing sector and product development supervision conducted by governmental organizations. At the same time, both these activities and the technologies help nurture respect and pride for the food-processing industry by the governmental organizations involved and food processing enterprises and boost their motivation for the food-processing business in the process.
Output 4	The insights and technology behind regional industrial development policy are transferred and accumulated in governmental organizations by organizations in food-related sectors in Osaka and Kansai regions. The regional industrial development method applied by Osaka is introduced to the small- and medium-sized food processing sector in East Java Province, a training course is delivered to transfer the know-how and knowledge related to regional industrial development is shared.

1.3. Outline of the products and technologies to be verified and disseminated

The products of Kowa Kogyo to be verified and disseminated in the survey are outlined as follows:

[Outline of the products and technologies]

Name	Manual baking machine	Semi-automatic disk-type baking machine	Biaxial extruder (for food production)	Ice-cream cone baking machine	Vertical and horizontal packaging machine	Drying machine
Specifications	80 to 130 pieces/hour	500 to 800 pieces/hour	800 to 3000 pieces/hour	40 to 50 cones/hour	25 to 50 packages/minutes	250°C to 300°C
Characteristics	A manual baking machine that allows multiple foods to be baked in batches.	A baking machine that injects raw materials to bake automatically. The products are taken out manually. The baking level can be controlled from hard-baked for rice crackers to soft-baked like sponge in cake dough and pancakes.	A device that covers kneading and heating (sterilization) functions and adding water and pressure to powder to solid raw materials.	A baking machine available for small-lot and various food production. Changing the machine type also allows double-row setting.	A packaging machine available for small-lot and various other food.	A machine that dries the confectionery processed by a sugar-coating machine. It can automatically dry a multiple foods in batches.
Image						

Name	Manual baking machine	Semi-automatic disk-type baking machine	Biaxial extruder (for food production)	Ice-cream cone baking machine	Vertical and horizontal packaging machine	Drying machine
Major final products	Rice crackers	Rice crackers	Puffed snacks, confectionery, flat bread	Ice-cream cones	Packaging for confectionery products	Coating on confectionery
Comparative advantage over competitors	<p>1) Support the development of customer-specific products by customizing Kowa's machine based on accumulated tangible and intangible know-how. ⇒ Although pre-existing confectionery machines must be customized according to final products, the current production process on the customer side and other factors, very few enterprises have such food manufacturing machines. For example, despite the fact extruder manufacturers in Europe exist, their machines mainly handle pasta, cereals and other wheat products and are not available for food products using rice powder and other raw materials common to Asia.</p> <p>2) Each machine shown above is of good quality and durable, as they been in service for around 40 years since their introduction.</p>					
Installation site	Within the premises of UPT SIDOARJO					
Quantity	Three (hook-, screw- and rapid-processing types)	One	One	One	One	One

1.4. Implementation system

■ Survey implementation system

Entity		Responsibilities
Japan side	Kowa Kogyo Co., Ltd.	<ul style="list-style-type: none"> - Implementation body - Machine manufacturing, implementation of general verification activities - Introducing confectionery producing technology and product development method
	Mitsubishi UFJ Research and Consulting Co., Ltd.	<ul style="list-style-type: none"> - Overall survey management - Coordinating dissemination activities - Supporting commercialization and marketing
	Nomura Trading Co., Ltd.	<ul style="list-style-type: none"> - Liaising with local administrations - Supporting on-site verification activities * Plus, sharing local food market information as needed
	Kansai Cooperative of Kitchen Instruments for Confectionery and Baking	<ul style="list-style-type: none"> - Introducing technologies of cooperative members - Providing know-how on baking technology and product development
	Osaka Prefectural Government, Osaka City	<ul style="list-style-type: none"> - Indirect support via cross-regional collaboration activities
	Osaka Urban Industry Promotion Center	<ul style="list-style-type: none"> - Dispatching lecturers to introduce regional industrial development schemes
Indonesia side	Department of Industry and Commerce of East Java Provincial Government, UPT SIDOARJO	<ul style="list-style-type: none"> - Counterpart of both on-site verification and dissemination activities - Providing verification survey site and covering its running costs - Secretariat of workshops and seminars and attracting participants - Acquiring Japan's regional industrial development schemes - Operating an incubation center after the verification survey
	Department of Industry	<ul style="list-style-type: none"> - Supporting export procedures for verification machines - Sharing the plan and measures related to this survey - Deliberating on and facilitating this survey
	Food and Beverage Industry Association (GAPMMI)	<ul style="list-style-type: none"> - Supporting efforts to attract participants to workshops, etc. - Introducing technologies to member enterprises - Providing distribution and marketing information
	Ministry of Cooperative & Small and Mid-scale Business	<ul style="list-style-type: none"> - Promoting collaboration with local small- and medium-sized food-processing enterprises - Introducing group purchasing and other schemes and promoting their use

2. Achievements of the Survey

2.1. Result of each activity

During the survey, four activities were defined in line with 1.2 Expected Outputs.

[Activity 1]	To manufacture, transport and install confectionery machines and produce a sample product jointly with the UPT
[Activity 2]	To transfer and supervise technologies for product evaluation and development through workshops conducted with the UPT
[Activity 3]	To organize workshops for the small- and medium-sized food processing sector and supervise product development by the UPT
[Activity 4]	To transfer and accumulate technologies and know-how on regional industrial development policy by the Osaka Prefectural Government

The specific achievements of each activity are as follows:

2.1.1. [Activity 1] To manufacture, transport and install confectionery machines and produce a sample product jointly with the UPT

During this activity, as well as manufacturing, transporting and installing machines produced by Kowa Kogyo, a confectionery sample was jointly produced by Kowa Kogyo and the UPT through training in Japan and at the UPT launching ceremony.

The training activity in Japan was implemented from May 22-28, 2016 (Sunday to Saturday) to visit relevant facilities prior to the machine completion. During this training, workshop operators acquired basic knowledge about Kowa Kogyo's machines, all the training participants understood how to apply Kowa Kogyo's technology to their food-processing facilities and knowledge of Japanese local governments on their measures for industrial development was shared with personnel of the Department of Industry and the East Java Provincial Government Department of Industry and Commerce.

The manufacturing of the machines was completed on August 18, 2016 and their export process got underway on October 24 the same year.

The UPT building was completed in November 2016 and upon arrival at the UPT on December 19, the machines were installed and tested. The launching ceremony was held on December 20, receiving 84 attendants in total including the Provincial Government personnel and small- and medium-sized enterprise personnel involved in the food-processing business.

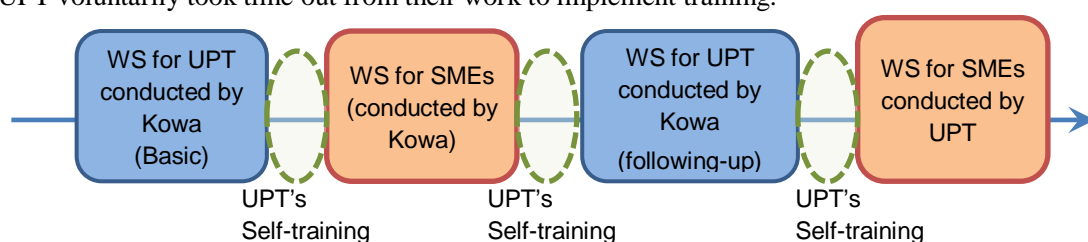
2.1.2. [Activity 2] To transfer product evaluation and development technologies and supervision through workshops conducted with the UPT

The workshop was implemented by taking several steps as shown in the following table:

- First, Kowa Kogyo delivered basic training in the form of a workshop for the UPT staff.

- Subsequently, in a workshop for SMEs, Kowa Kogyo oversaw the training, assisted by the UPT.
- Follow-up of technical transfer came in the form of workshop for the UPT staff before implementing the next workshop for SMEs. This arrangement helped the UPT staff establish and advance the technology they had acquired.
- Kowa Kogyo originally initiates a technological transfer in the workshop for SMEs but gradually shifts the direction to supervise the UPT staff so that they can proceed with the technological transfer by themselves.

Even during the period when the Kowa Kogyo staff were absent and no workshop was held, the UPT voluntarily took time out from their work to implement training.



[Image showing supervision to the UTP through workshops]

2.1.3. [Activity 3] To organize workshops for the small- and medium-sized food processing sector and supervise product development by the UPT

2.1.3.1. Results of the workshops for SMEs

During the workshop for SMEs in the regency conducted by the UPT, the UPT staff provided supervision; supported by Kowa Kogyo as advisor. Over time, the UPT staff's flavoring skills improved and they became more or less able to supervise how to add some adjustment and make rice crackers.

2.1.3.2. Future UPT activity

As part of efforts to enhance the product development capacity to meet local preferences, the UPT will reflect and collaborate with cooking schools to create recipes. With this in mind, continuous support will be provided after completing the survey via local agents or with Kowa Kogyo directly involved.

The machines are streamlined to reduce initial and running costs and in the long term, local manufacturing of the machines is also a feasible consideration.

2.1.4. [Activity 4] To transfer and accumulate technologies and know-how on regional industrial development policy by Osaka Prefectural Government

The following training was provided to personnel from the East Java Government Department

of Industry and Commerce on Wednesday November 29, 2017:

[Outline of the Socialization and Seminar]

	Socialization	Seminar
Date and time	Wednesday, November 29, 2017 9:00 to 15:00	Thursday, November 30, 2017 9:00 to 12:00
Venue	The UTP	The UTP
Target	25 personnel from the East Java Government Department of Industry and Commerce	25 staff from food-processing companies in East Java Province
Purpose	- To share know-how on industrial development from Japanese local governments	- To introduce food-processing technology in Japan and share the survey outputs

During the socialization, participants shared their specific views and pointed out challenges, such as the possibility of licensed manufacturing of the machines and the greater electricity required for Kowa Kogyo's machines. In response, Kowa Kogyo will address those challenges. In addition, historical regional developmental efforts (such as the One Village One Product Movement) and agricultural diversification initiatives were introduced as well as exchanging views and proposing how the local government could support efforts to create local specialties in each regency of East Java Province.

While the seminar participants understood that quality products, such as health-conscious food, are expensive, many companies still supply their products affordably given the pressure to keep prices low. During the seminar, some participants questioned whether they could produce and sell their product cheaper. This prompted an explanation that consumer's quality and price evaluation for health-conscious processed food would change along with economic growth and improved living standards. There was also a request made by a group that did not participate in the workshop to use Kowa Kogyo's machine in the UPT.

2.2. Achievement of the survey purpose

Most survey activities were completed and achieved the following outputs:

- Output 1
- During the survey, confectionery machines were manufactured, transported to Indonesia and subsequently installed in the UPT. Prior to the launch of the UPT in December 2016, training was conducted in Japan to visit factories producing value-added confectionery, provide

operational supervision and develop the capacity to self-produce samples using the machines.

■ Output 2

- As well as technology to apply Kowa Kogyo's machines, know-how on product development using the machines and evaluation of samples were transferred to the UPT. Alongside these basic technologies, the UPT staff, in their capacity as supervisors, transferred such know-how to local food-processing companies through workshops delivered in the survey.
- Through each technological transfer, each UPT staff acquired insights into basic technologies. During the last stage of the survey, they eventually became able to combine ingredients and finely adjust machines without the support of Kowa Kogyo to develop samples more or less as planned. Some samples were of sufficient quality and flavor for sale at the dealer's site.
- Since the variety of recipes remains limited, however, a partnership with a local cooking school, etc. will be established to promote activities to improve product development know-how and establish a foundation on which to build more appealing products. With this foundation and the continuous support of Kowa Kogyo after the survey completion, the plan is to acquire know-how on developing products that are acclaimed by consumers in Indonesia and the surrounding countries.

■ Output 3

- The UPT transferred technology for machine operation and food processing through the workshop for SMEs.
- Through the workshops, each participant obtained ideas of new products and understood how to boost their productivity by introducing confectionery machines. In future, the product development capacity of local SMEs will be further developed through subsequent workshops organized by the UPT and business activities in collaboration with Kowa Kogyo and local partner enterprises to stimulate new product distribution.

■ Output 4

- To transfer and accumulate know-how and technologies related to regional industrial development policy for governmental organizations, how the business matching is promoted with customers and partners through the Monozukuri Business Information-center Osaka (MOBIO) and the support framework for technological improvement and product development of regional enterprises through the Osaka Research Institute of Industrial Science and Technology, etc. and other activities were explained to the Department of Industry and the East Java Provincial Government as well as exchanging their views during training in Japan.
- As mentioned above, technical know-how on boosting productivity and developing products by

introducing machines could be more or less transferred through the workshops.

- During the socialization, examples of regional development and agricultural diversification initiatives in Japan were introduced as well as exchanging views and proposing how the local government could support efforts to create local specialties in each regency of East Java Province.

2.3. Continuous self-reliant efforts of the Indonesian governmental organizations after the survey completion

- This survey provides younger to senior UPT staff with food-processing technology and long-term human resource development. The implementation system allows the UPT to continuously spearhead efforts to support SMEs and autonomous food product development activities, etc. even after survey completion. Their budget for organizing workshops in FY 2018 has already been approved.
- After the survey completion, Kowa Kogyo will follow up their activity to expand.

3. Business Development Plan after the Survey

Continuous growth of the Indonesian confectionery market is expected amid high potential for the same. While the need for production machines varies between major enterprises and SMEs, they share the same business direction toward “new product development”. The main issues facing customers, competitors and companies are summarized as follows:

[Summary of main issues for establishing strategy]

3C analysis	Main issues
<u>C</u> ustomer	<ul style="list-style-type: none"> - The size of the snack food market was 17 trillion rupiah (in 2015) and is expected to continue growing at an annual average rate of 8.3%. - In East Java Province, 594 companies (out of a total 2,930 food-processing companies) handle shrimp crackers, which shows sufficient marketability. - The needs for SMEs include “proposals for new product development including recipes” and “raising the unit price by boosting quality.” - The needs for major enterprises include to “enhance productivity and production scale” and “develop new products.” They also face price issues but retain some potential to invest in new product development, including new market exploration focusing on health promotion. - Confectionery stores sell products on commission, while confectionery manufacturers bear the inventory risk and spearhead product promotion. The unit price is expected to increase, even for the same product, due to packaging. - Some SMEs are eligible for grants for importing and manufacturing equipment.
<u>C</u> ompetitor	<ul style="list-style-type: none"> - The main confectionery machines introduced are expensive European machines and affordable Asian machines. - The Asian machines are cheaper than those of Kowa Kogyo. - Equipment and machines used by SMEs and micro enterprises include those manufactured by a local company equivalent to DIY quality.
<u>C</u> ompany	<ul style="list-style-type: none"> - The most advantageous approach involves manufacturing equipment and machines capable of handling a range of confectionery together with customers. - Price competitiveness is lower than for Asian machines.

Source: Prepared by Kowa Kogyo

■ Product pricing for the Indonesian market

The approach taken to set the price by reducing production cost or how to realize mass production will be key to meeting needs common to SMEs and major enterprises: “increasing unit price by boosting quality” and “enhancing the scale of productivity and production.” In other words, they also retain a strong insistence and intention focused on the cost performance of production machines. Further, as mentioned, cheaper confectionery machines are distributed, particularly in the Asian region and their unit price reflects affordability compared with the price Kowa Kogyo expects, which underlines how complex such price competition can be.

In Japan, high manufacturing costs are the norm, given that products incorporate various functions to improve quality, introduce automatization and increase security. In future, further consideration will be made to achieve additional price savings.

■ Creating added value and raising the unit price

One of the needs common to SMEs and major enterprises is to develop new products. Most retailers in Indonesia sell products on commission and their inventory risk must be borne by manufacturers or wholesalers. By taking responsibility for the inventory risk, manufacturers propose new products on shelves so that they can sell new products of their choice, which reaffirms the significant advantage to manufacturers of handling the entire process, from product development to launching, in a relatively simple way. Kowa Kogyo’s strength lies in contributing to such new product development (or sales outlets, if possible) and adding both tangible and intangible value in the process. During new product development, since the above-mentioned intention for low price/high cost performance will decline slightly, it is regarded as “up-front expenditure.” Accordingly, Kowa Kogyo will be able to offer its machines leveraging its strength.