

Summary Sheet for Result of Evaluation Study After the Project

1. Outline of the Project:		
Country: The Socialist Republic of Vietnam		Project title: The Project for Strengthening of Food Industries research Institute in the Socialist Republic of Vietnam
Issue/Sector: Agricultural development/rural development – others		Cooperation scheme: Technical cooperation project
Division in charge:		Total cost (at the time of evaluation): Approximately 560 million Japanese yen
Period of Cooperation	September 6, 2002 – September 5, 2007 (R/D) May 13, 2002	Partner Country's Implementing Organization: Food Industries Research Institute
		Supporting Organization in Japan: Supporting Committee
		Related Cooperation:
<p>1-1 Background of the Project</p> <p>Having positioned the alleviation of poverty in rural areas one of the most urgent issues to tackle with, the Government of the Socialist Republic of Vietnam (hereinafter referred to as 'the Government of Vietnam') has valued agriculture and exerted its best endeavors in promoting stable increase of agricultural production, in stabilizing the basis for the agricultural management through diversifying agricultural products, and in activating the food processing industries. It was estimated that the total amount of added values created by the food processing companies as of 1997 was 2 billion US dollar, equivalent to 8.8% of the gross domestic product (GDP). As for the contribution of the food processing industries to the GDP, while it was only 6.7% in 1991 it has increased by 14% of annual rate of increase up to 1997.</p> <p>The food processing industries could create new markets for the agricultural products and contribute to improving household income of farmers. Furthermore, it is expected to be useful for the advancing the national health and nutritious conditions. Appropriate food processing technologies will be able to enhance the quality of food distribution and preservation services for wider areas and improve the added values of agricultural products, enabling the national agricultural system to transform from only the raw material production to further developed food industries. Meanwhile, the country has not yet developed a system of quality control and preservation which is a basis for the food processing, allowing considerable amounts of food imports from the neighboring countries to come in. Therefore, the improvement in these technologies is essential in order to promote the development of the small-and-medium-scale food processing enterprises (SMEs) in Vietnam.</p> <p>The Government of Vietnam requested the Government of Japan to provide the technical cooperation to the Food Industries Research Institute (hereinafter referred to as 'FIRI') located in Hanoi in order to strengthen the technological capabilities and abilities of the researchers involved, for the ultimate achievements in modernizing the national food processing industries as well as improving the income of rural households. In response to this request, Japan International Cooperation Agency (JICA) has prepared the project formulation through dispatching a basic survey team in December 1999, a short-term survey in October 2000, the second short-term survey in November 2001, and a project consultation team in April 2002. The following project design was agreed between the two sides and the record of discussion (R/D) and a tentative schedule of implementation (TSI) for the implementation.</p>		

1-2 Project Overview

(1) Overall Goal

The food processing technologies are improved in small-and-medium-scale food processing firms in Viet Nam

(2) Project Purpose

FIRI's capability of developing food processing technology is strengthened and the function of FIRI as an institute which offers required information for certification is strengthened.

(3) Outputs

- 1) The characteristics of quality of major processed foods in Viet Nam.
- 2) FIRI researchers will improve their ability of application for the utilization of microorganisms and enzymes.
- 3) FIRI researchers improve their ability to examine and analyze the components and the qualities of the processed foods required for the domestic certification.
- 4) FIRI researchers will improve their capability for the technical guidance in the quality control and food processing to small-and-medium-scale food processing firms.

(4) Inputs (at the time of evaluation)

1) Japanese side:

Long-term Expert: 8 persons

Short-term Expert: 21 persons

Trainees received: 36 persons

Equipment: 840,677US\$

Local cost: 177,950US\$

2) Vietnamese side:

Counterpart: 49 persons

Local cost: 271,722US\$

Equipment, Land and Facilities: A 5 story building was constructed as a research unit in 1997 and a common laboratory inside the Institute for the purposes of analytical work and microorganisms experiments. As for the purchase of relevant research equipment, approximately 100,000 US\$ has been allocated as an annual budget from the Ministry of Industry and the Ministry of Ecological Technologies.

II. Evaluation Team

Members of Evaluation Team	(Specialized field: name, title)
	Leader Dr. Ryuzo NISHIMAKI Agricultural Advisor Rural Development Department Japan International Cooperation Agency (JICA)
	Analysis/ Quality Control Dr. Megumi YAMAZAKI Former Technical Advisor The Japan Inspection Institute of Seasonings and Vegetable Juices.
	Fermented Foods Dr. Hisakazu IINO Professor Science for Living System Graduate School, Showa Women's

	Evaluation	Mr. Yasuhisa MINAMI	University Senior Consultant SOWA Consultants Inc.
	Planning and Management	Ms. Yasuko NAKAYA	Rural Development Department Japan International Cooperation Agency (JICA)
Period of Evaluation	May 1, 2007 – May 17, 2007		Type of Evaluation: Terminal

III. Results of Evaluation

3-1 Confirmation of Results

(1) Achievements for Project Purpose

Project Purpose: FIRI's capability of developing food processing technology is strengthened and the function of FIRI as an institute which offers required information for certification is strengthened.

Indicator 1 "6 utility solutions are applied" as well as Indicator 2 "40 proceedings are presented" have been achieved at the time of the final evaluation survey. As for Indicator 3 "35 technical guidance sessions are given to small-and-medium-scale food processing firms", only 26 technical guidance sessions have been provided to the SMEs at this stage. However, this indicator is expected to be ultimately achievable through more activities for technical guidance as Indicator 4 planned in the latter half of the Project period focusing on the improvement of researchers' ability in technical guidance to SMEs.

(2) Achievements for Outputs

Output 1. The characteristics of quality of major processed foods in Viet Nam.

In order to clarify the characteristics of quality of major processed foods, sampling tests and some surveys with improved methods (market survey, needs survey of food processing SMEs) were conducted. In concrete terms, in order to examine the characteristics of 5 food groups (dairy products, sweets, edible oil, instant noodle, and fruit juice), 53 samplings and 479 items were analyzed and examined cases reached at 43, which enabled the plan to be achieved. In addition, based on these results of analyses and surveys, a working group was established in January 2006, comprising members from different sections inside FIRI. This working group identified target food groups (rice spirits, fruit wines) and relevant techniques necessary for the production sites (strain technology, Cyclodextrin, sensory evaluation, simple analysis methods for the production sites). A series of these activities clarified the direction of the Project and accordingly contributed to achieving the project purposes.

Output 2. FIRI researchers will improve their ability of application for the utilization of microorganisms and enzymes.

As for relevant activities for strains, the number of classified strains was 156, followed by 93 as identified strains, 66 as characterized strains, and 10 as specified valid strains. As for enzymes and applied technologies, all the target indicators are expected to be achievable by the completion of the Project, taken into account that all the targets have been already achieved, or some have realized more than the targets, as shown in some figures such as 1 specified enzyme, 6 kinds of screening methods developed or specifically evaluated by FIRI researchers, 8 counterparts who have been equipped with screening methods.

Output 3. FIRI researchers improve their ability to examine and analyze the components and the

qualities of the processed foods required for the domestic certification.

This output could be assessed in that 42 analytical methods and 105 analytical items were transferred to the counterpart side and 5 quality evaluation methods were improved. In addition, 10 manual guide books on these technologies were prepared and are already fully utilized, which will be a solid basis for the prospect of further achievements by the completion of the Project.

Output 4. FIRI researchers will improve their capability for the technical guidance in the quality control and food processing to small-and-medium-scale food processing firms.

Based on the activities from Output 1 to Output 3, as technical levels of the Project's counterparts have improved, activities for Output 4 were initiated. A working group, cross-cuttingly established inside FIRI in January 2006, has started a work plan called "Rainbow Operation" to improve as their main targets technologies (strain technology, Cyclodextrin, sensory evaluation, simple analysis methods for the production sites) necessary for the target food groups such as rice spirits and fruit wines and the food processing sites.

As for the progress of this indicator to produce the technical instruction manual guidebooks to food processing SMEs, 25 manuals for microorganisms and strains and 17 manuals for food analyses were prepared. Moreover, 17 seminars/workshops and 9 consulting sessions at the production sites were conducted to improve the capability of FIRI's researchers in technical support for SMEs. Meanwhile, the number of consulting sessions at the production sites did not reach at 20 as a target number. However, this is the activity that has currently been implemented with a strong focus and the targets shall be realized by the end of the Project.

3-2 Summary of Evaluation Results

(1) Relevance

< Consistency with policies of the Government of Viet Nam >

The Government of Viet Nam clarified their policy goals in "Vietnamese Socioeconomic Development 5 Years Plan (2006-2010)", mentioning "the development in market economy is required to achieve the social welfare, creation of employment opportunities, poverty alleviation, educational and cultural advancement, and national health improvement. In order for these goals to be realized, the Government shall execute its own duties and responsibilities and all the people shall exert their best endeavors. In addition, this 5 Year Plan has raised 8 issues as their most urgent matters, comprising "social development, realization of social fairness/gender equality, creation of employment opportunities, promotion of the increase in formal national income, eradication of hunger, alleviation of poverty, consolidation of social safety system, prevention of social problems". The 5 Year Plan positions the food processing SMEs as an important target like SMEs in other economic sectors and describes its promotion policies for SMEs as follows. "Further focuses are needed for peripheral, mountainous and underdeveloped areas and each area's characteristics and strong points need to be considered for better utilization to maximize the exploitable resources in those areas, where SMEs need to be supported and encouraged to develop". Accordingly, the Project purposes and upper goal, aiming at the promotion of food processing SMEs and poverty alleviation, are assumed to be in live with the Government's policy line.

< Consistency with Japanese Aid Policy >

The Government of Japan has specified 5 important fields for providing cooperation to Viet Nam, as shown in the National Aid Plan to Viet Nam of 2000, including (1) human resources development and institutional building (especially through its support for the transition toward market economy), (2)

strengthening infrastructure of electricity and transportation, (3) agriculture and rural development, (4) education and health, (5) environment. Among these fields, this Project's purposes have contributed to (3) agriculture and rural development as well as (4) education and health, which means this Project has corresponded to Japanese Aid Policy toward Viet Nam.

< Consistency with the needs of the target group >

FIRI is a national organization which is responsible for (1) the research and development on the production of highly value added foods and the foods diversification and (2) the technical advice and support toward food processing SMEs. This Project has aimed at transferring the techniques in food processing, material development, food component analysis and evaluation, and so forth to FIRI. It also has intended to strengthen the organization's activities to enable FIRI to transfer their techniques to the food processing SMEs. According to the results of interviews conducted toward the counterparts, they acknowledged that FIRI personnel were required to improve their technologies for their mission and this Project had appropriate selection of the targets for the Project purposes.

< Consistency with the Project Plan >

The Project has adopted a participatory approach from the planning stage in order to promote the initiatives by the counterpart personnel and organization. In addition, the Project has been designed based on a logical framework. First, through activities of the Output 1, research and analyses were conducted to clarify the quality characteristics of the major agricultural processed products that have been distributed in the country, to comprehend the needs of food processing SMEs, and to select processed foods that could be targeted in the Project. Second, all the activities for Output 2 and Output 3 were intended for providing the counterparts of FIRI with the technologies in analyses and application of microorganisms and enzymes that are necessary for quality improvement and certification of the selected target foods. Finally, based on the technologies transferred through relevant activities of Output 1 to Output 3, relevant activities for Output 4 "FIRI researchers will improve their capability for the technical guidance in the quality control and food processing to small-and-medium-scale food processing firms" were conducted and the counterparts' capability and ability in technical support were improved effectively. Therefore, the approach adopted in this Project is considered appropriate.

(2) Effectiveness

Regarding the prospect for the project purpose "FIRI's capability of developing food processing technology is strengthened and the function of FIRI as an institute which offers required information for certification is strengthened", it has been almost achieved in light of 3 indicators set in PDM. Meanwhile, as for Indicator 3 mentioning "35 technical guidances are given to small-and-medium-scale food processing firms", while it was not realized at the time of evaluation it could be achieved by the completion of the Project.

In terms of the degree of contribution by each output toward the achievement of the project purpose, as Output 1 a survey was conducted to clarify the needs of food processing SMEs, which resulted in identifying the highly needed fields. Output 2 intended to improve the applied technologies for microorganisms and enzymes, and Output 3 included relevant activities for improving the experiments and analytical capacities on the food components as well as food quality. Through the technologies transferred by Output 2 and Output 3, FIRI's counterparts have improved their capabilities in technical instruction on food analyses and food processing towards food processing SMEs (Output 4). Logically speaking, these transferred technologies are to be properly delivered to SMEs, and this could be considered to be contributing to the achievement of the project purpose. Accordingly, the effectiveness of the Project is regarded as high.

(3) Efficiency

< Relevance of the inputs >

The inputs of the Project have been arranged and implemented almost as planned, in terms of quality, quantity and timing, all of which was fully utilized at the implementing processes of the Project. Therefore, the efficiency in the Project is considered high.

< Relevance of the experts dispatched >

During the first 3 years of the project period, mainly 4 long-term experts, including Chief Advisor, Project Coordinator, Food Microorganisms Utilization, and Analytical Technologies, exerted in transferring the techniques in technical development, experiment and analysis to FIRI counterpart researchers, which has contributed to achieving Output 2 and Output 3. At the time after the 3 years of the Project completed, it was observed that only 2 long-term experts in Microorganisms and Analytical Technologies were not enough when technical advices on more different techniques were needed. Accordingly, it was decided that, during the second half of the Project, Chief Advisor (short-term expert) and Project Coordinator (long-term expert) were dispatched more frequently. Effective provision of the short-term experts in technical fields necessary for the activities, under the supervision of the Chief Advisor, contributed to the advancement of the activities for not only Outputs 2 and 3 but also Outputs 1 and 4. The period and timing of dispatching experts are regarded as appropriate and effective for achieving the project purposes.

< Relevance for accepting trainees >

Acceptance of counterpart training in Japan was conducted almost as planned. At the time of final evaluation, 36 counterpart researchers were trained in Japan and they have contributed to achieving results of the Project as a whole. In addition, the trained counterparts became confident in their capabilities that were improved after the training, which brought about not only positive changes in their attitudes toward the work but also their active initiatives in implementing the Project's activities inside FIRI as core members. This could underpin the effectiveness of the implemented training in Japan.

< Relevance of the provision of the equipment >

Relevant equipment provided by Japanese side was necessary and sufficient in models and quantity for achieving the results of the Project's activities. In addition, common laboratories were established on the 3rd floor and 5th floor, where the abovementioned equipment provided by the Project as well as other equipment items purchased by FIRI itself were installed and utilized effectively by researchers.

< Relevance of the local cost sharing >

Sharing the local cost by Japanese side and Vietnamese side was considered necessary and appropriate in order to promote the Project's activities effectively. FIRI has offered a spacious office for the Japanese experts and procured some parts of analytical equipment necessary for the project's activities, which considerably contributed to achieving the results of the Project.

< Appointment of counterparts >

By the completion of the Project, 49 counterparts were appointed. Though Project Managers changed once due to the retirement of FIRI Director along the way, the Project's activities were taken over smoothly to the successor with no delay in the Project's activities. Counterparts were selected from relevant departments to the Project and the working group comprising these members promoted the activities seriously. Fortunately enough, English proficiency among these counterparts was quite high,

which again contributed to the effectiveness of the Project's activities.

(4) Impact

< Prospect in achieving the upper goal >

Overall Goal: The food processing technologies are improved in small-and-medium-scale food processing firms in Viet Nam.

An indicator raised at the time of final evaluation, "the number of the small-and-medium-scale food processing firms that have accepted technical transfer from FIRI" has not yet grasped and it is difficult to assess the prospect of this upper goal at this stage. However, through implementing the activities for Output 4 "FIRI researchers will improve their capability for the technical guidance in the quality control and food processing to small-and-medium-scale food processing firms", the Project has enabled the FIRI researchers, especially during the second half of the Project period, to smoothly implement the technical transfer/instruction towards the food processing SMEs. Their contribution to the quality improvement in those firms has been confirmed, and therefore, the upper goal is expected to be realized. In addition, the all of the counterparts, who participated in a workshop held at the time of final evaluation, answered that the Project's upper goal would be achieved 2 to 3 years after the completion of the Project, which is able to underpin a positive forecast of continuous activities after the Project period.

However, in order to achieve the upper goal of the Project, i.e. FIRI "will conduct technical instruction towards the small-and-medium-scale food processing firms and play a supervisory role as a national authority", FIRI is required to come closer to the SMEs to comprehend their needs. Furthermore, it needs to continue its endeavors to improve their own capabilities in transferring the appropriate technologies to the firms even after the completion of the Project. For the purpose of enabling FIRI to transfer the technologies in more efficient and timely methods to the food processing SMEs located in scattered areas in the country, it will be requested to coordinate with other organizations and institutions such as UNIDO (United Nations Industrial Development Organization) and women's associations to conduct training programs jointly and to prepare TOT (Training of Trainers) programs.

< Technical Impact >

In Vietnam, its own inherent microorganisms and enzymes have not yet been investigated. This Project has clarified the characteristics of these microorganisms and enzymes, which could be expectedly utilized for developing materials and new products. Through utilizing microorganisms and enzymes, agricultural products that are affluent in Vietnam could be converted to further more useful materials, creating high beneficiary impacts in their rural areas. In addition, if any substitutes to the imported products could be invented, its contribution to those fields will be unimaginable.

< Other Impacts >

- 1) The direct beneficiary group envisaged in this Project is food processing SMEs in Vietnam, while the domestic farmers as material suppliers to those firms are also regarded as indirect beneficiary group. The development in the food processing industry, as a result, could be a production incentive to the farmers, leading to collective agricultural cultivation. Accordingly, this would expectedly increase the distributed quantity of the products and the unit prices, which would further encourage the income increase of the farmers. It is expected, ultimately, the income disparity between the rural areas and urban areas would diminish.
- 2) The implementation of the Project has not generated any negative impacts.

(5) Sustainability

< Sustainability in policy and institution >

It is expected that there will be no changes in the relevant policies to promote the food processing SMEs as well as safety and sanitary control in Vietnam and they will continue to be implemented in its mid- and long-term prospect. In addition to this, the results of the on-going SME promotion programs implemented by the Vietnamese authorities will gradually become tangible and the systems will become more and more supportive for those SMEs, presumably.

Furthermore, FIRI has embraced many younger researchers and important positions such as Director are elected in a democratic manner, which shows this organizations higher flexibilities as an organization and a research system compared to other national institutes. FIRI is expected to respond to changes in socioeconomic conditions in the country and to support the national trends to proceed in better ways.

< Financial Sustainability >

FIRI has intended to strengthen its own financial sources through increasing consulting contracts with client firms as well as providing technical services. In the meantime, the organization has received an instruction regarding the institutional reform of research institutes, and to be transformed into an independent administrative institution. Since 2009, some parts of national subsidy for operational costs (personnel cost) were abolished, while there is a tendency of increasing income through the service provision such as food analyses and technical transfer towards firms, which has accounted for 40% of the total operational fund of FIRI.

< Technical Sustainability >

Technical meetings and group meetings inside each department of FIRI have been held regularly, it is observed that there are supervisory systems by senior experienced researchers for younger and fresh researchers. Technologies transferred from Japan to the organization through this Project are expected to settle down and shared systematically inside FIRI.

Based on the abovementioned points, in light of policy dimensions, policies regarding food processing SMEs promotion as well as food safety/hygiene control are expected to continue to be executed, there is a high probability of knowledge and techniques acquired through the Project's activities to be maintained and utilized. In light of financial dimensions, there is a plan of subsidy cut of a part of operational cost (personnel cost) after the institutional transformation into an independent administrative institution.

3-3 Factors that Promoted Realization of Effects

(1) Factors Concerning Planning

- 1) The mid-term evaluation has indicated that some of the indicators for the current PDM need to be reconsidered and reexamined by the Project as they are not appropriate to measure the impacts. In response to this evaluation, PDM and PO have been redesigned according to the current conditions, which promoted the Project's activities.
- 2) In order to achieve the project purposes, relevant activities were conducted, namely, for Output 1 relevant surveys were conducted to clarify the needs of food processing SMEs. By targeting the highly needed fields, for Output 2, activities for improving the applied technologies regarding microorganisms and enzymes were implemented. For Output 3, activities for experiments of food component and quality as well as improvement of analytical capability were also conducted. Based on the techniques transferred through Outputs 2 and 3, activities for Output 4 intended to improve the researchers' capabilities in food analyses and proper technical instruction on food processing towards food processing SMEs. This plan supported by logical flows was able to realize the effects of the Project's activities.

(2) Factors Concerning the Implementation Process

- 1) Proper operational instructions by JICA Vietnam Office and JICA Headquarters were provided. In

response to a comment by the mid-term evaluation, mentioning insufficient explanation on ODA and JICA Technical Cooperation schemes toward counterparts, JICA Vietnam Office actively paid frequent visits to FIRI for full explanation and this contributed to a better relation between Vietnamese counterparts and Japanese experts.

- 2) Regarding the utilization of JICA internal supporting committee, the second half of the Project period witnessed more committee meetings when Chief Advisor returned to Japan, in addition to regular meetings such as annual plan formulation meetings. This encouraged the Project to timely explain about progresses of the Project' activities and to effectively receive necessary advices and instructions. Proper technical support from this committee contributed to a smoother implementation of the Project.

3-4 Factors that Impeded Realization of Effects

(1) Factors Concerning Planning

One of the negative factors was that indicators on PDM were not clearly identified until the implementation of the mid-term evaluation. Although, after the mid-term evaluation, setting clear indicators promoted the Project's activities, it was desirable that proper numerical targets were set based on the baseline data since the beginning of the Project.

(2) Factors Concerning the Implementation Process

The Project had invited members from stakeholder organizations for establishing the supporting committee. Yet, during the first half of the project period, relevant information from the project site was not sufficiently reported to the committee, and therefore, technical support from the committee could not be provided based on the situations in the field side. Meanwhile, this problem was solved during the second half of the project period through increasing the number of meetings for the supporting committee where technical advice and instruction were appropriately provided as its mission.

3-5 Conclusion

Discussions with stakeholder organizations and counterparts concluded that most of the project purposes raised on PDM were realized. In addition, it confirmed that FIRI played a considerable role in transferring the technology toward food processing SMEs. It was concluded that remaining issues are expected to be solved by Vietnamese side as well. Accordingly, this evaluation committee for the Project was completed as of September 2007.

3-6 Recommendations (Specific Measures, Suggestions and Advice Related to the Project)

The following points are suggested to encourage the sustainability for the Project in the coming period.

- (1) The Project shall utilize the remaining period effectively and complete the activities planned.
- (2) The Project shall prepare a SME supporting plan after the completion of the project, in order to smoothly transfer the technologies at laboratory level toward food processing SMEs. The contents of this plan shall be reported at Joint Coordination Committee (JCC) meeting that is to be held in August.
- (3) FIRI shall strengthen further its functions as a research institute, a technical supporting organization, and a training facility.

1) Strengthening the function as a research institute

(i) Commoditizing and standardizing technologies

It shall aim at promoting the standardization of the technologies acquired by FIRI researchers as well as commoditizing the technologies through obtaining new technologies and re-training.

(ii) Utilizing equipment

FIRI is requested to draft a usage management manual at earliest timing when it intends to utilize any equipment including expensive analytical equipment items provided by JICA. In addition, FIRI

is requested to create training opportunities at regular basis for researchers who wish to be trained on how to utilize the equipment and to enable more researchers to utilize the technologies.

(iii) Commitment to exploratory (independent) research

FIRI is requested to implement its own research activities, in order to keep it as a leading research institute in the food industry.

2) Technical support for food processing SMEs

(i) It is requested to establish a responsible department to promote technical support to food processing SMEs.

(ii) FIRI is requested to examine appropriate approaches to disseminate the technologies transferred through the Project wider in Vietnam.

3) Strengthening a training function

(i) It is requested to exert its best endeavors to implement technical instruction towards domestic firms and organizations and to improve its own supervisory capabilities.

(ii) It is recommended that FIRI implements collaborative activities with JICA such as South-South Cooperation and acceptance of trainers from the third countries.

3-7 Lessons Learned

(1) Behind the successful smooth implementation of this FIRI-JICA Project between the two countries, there was a mutual trust that had been built up over the 5 years. Mutual efforts to deepen mutual understanding are essential for achieving concrete results of technical cooperation between countries with different cultures, social systems and economies.

(2) Regarding the provided equipment, sustainability should be taken into account: for example, spare parts available in the country should be selected.

(3) Flexible consideration and modification are necessary for PDM and PO according to the necessity, in order to implement the Project's activities smoothly.

(4) Project purposes and upper goal shall be set in as clear manner as possible to show the future image.