

## 付 属 資 料

1. ミニッツ（終了時評価レポートを含む）
2. PDM（2003年3月21日改訂版、2006年7月21日改訂版）
3. PO（2006年7月21日改訂版）
4. 評価グリッド
5. C/P 発表資料
6. VILAS（Vietnam Laboratory Accreditation Scheme）の承認に係る資料
7. 第2回 PDM 改訂に係る資料  
（2006年7月21日 JCC にて承認）
8. プロジェクトで実施したセミナー、ワークショップ等に  
参加した中小食品加工企業リスト

**MINUTES OF DISCUSSIONS  
OF  
THE JOINT COORDINATING COMMITTEE  
FOR THE FINAL EVALUATION  
ON  
THE PROJECT FOR STRENGTHENING OF  
FOOD INDUSTRIES RESEARCH INSTITUTE  
IN THE SOCIALIST REPUBLIC OF VIETNAM**

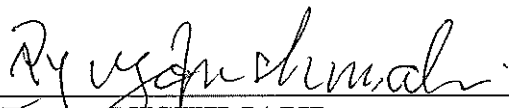
The Japan International Cooperation Agency (hereinafter referred to as “JICA”), dispatched the Final Evaluation Team (hereinafter referred to as “the Team”) headed by Dr. Ryuzo NISHIMAKI to the Socialist Republic of Vietnam from May 1st to 15th, 2007 for the purpose of conducting the joint final evaluation on The Project for Strengthening of Food Industries Research Institute in the Socialist Republic of Vietnam (hereinafter referred to as “the Project”).

The Joint Evaluation Committee, which consists of members from JICA and members from institutions of the Socialist Republic of Vietnam, was jointly organized for the purposes of conducting the final evaluation and preparation of necessary recommendations to the respective Governments.

After intensive study and analysis of the activities and achievements of the Project, the Joint Evaluation Committee prepared the Final Evaluation Report (hereinafter referred to as “the Report”), which was presented to the Joint Coordinating Committee.

The Joint Coordinating Committee discussed the major issues pointed out in the Report, and agreed to recommend to the respective Governments the matters attached hereto.

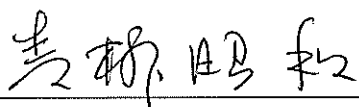
Hanoi, May 15th, 2007



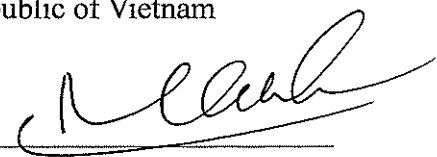
**Dr. Ryuzo NISHIMAKI**  
Senior Researcher  
Rural Development Department  
Japan International Cooperation Agency  
Japan



**Ms. DANG PHAN THU HUONG**  
Deputy Director General  
International Cooperation Department  
Ministry of Industry  
The Socialist Republic of Vietnam



**Mr. Akikazu AOYAGI**  
Chief Advisor  
Project for Strengthening of Food Industries  
Research Institute in the Socialist Republic  
of Vietnam



**Dr. LE DUC MANH**  
Director  
Food Industries Research Institute  
The Socialist Republic of Vietnam

## ATTACHMENT

1. The Joint Evaluation Team, which was jointly organized by the Team and the Vietnamese Evaluation Team, presented the Report to the Joint Coordination Committee.
2. The Joint Coordinating Committee accepted the Report presented by the Joint Evaluation Committee, and requested the Project to take necessary measures to implement its recommendations to ensure the achievement of the Project Purpose in the remaining period.
3. The Vietnamese side requested the Team to consider further technical cooperation which aims to contribute to technological improvement of food processing SMEs in Vietnam. The Team took note the request to forward to the JICA Headquarters.

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FINAL EVALUATION REPORT  
ON  
THE PROJECT FOR STRENGTHENING OF  
FOOD INDUSTRIES RESEARCH INSTITUTE  
IN THE SOCIALIST REPUBLIC OF VIETNAM

HANOI, May 15<sup>th</sup>, 2007

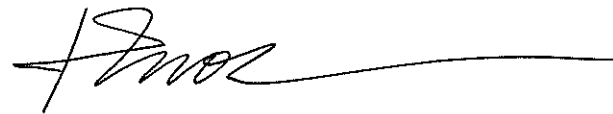
JAPAN – VIETNAM

JOINT FINAL EVALUATION COMMITTEE



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Dr. Ryuzo NISHIMAKI  
Leader  
Japanese Final Evaluation Team  
Japan International Cooperation Agency  
Japan



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Ms. Dang Phan Thu Huong  
Leader  
Vietnamese Final Evaluation Team  
Ministry of Industry  
The Socialist Republic of Vietnam

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## I . Outline of the Project

### 1. Background of the Project

Bearing in mind that the alleviation of poverty in rural areas being the most important issue, the Government of Vietnam is taking many efforts to promote the stable increase of agricultural production, and the stable operation of food processing firms based on the diversification of agricultural products, as well as their production outputs.

Food processing firms creates new markets for agricultural products, and contributes to the improvement in income of the rural households. Also, it is expected to be useful to improve people's health and nutrition. Introducing suitable food processing technologies may contribute to the development of food processing industry, by adding more values to food, improving food preservation and making them able to distribute in wider regions.

The food processing technologies as well as the food quality assurance are neccessary and should be improved for the sake of the food processing industry in Vietnam.

In August 1998, 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") which is belonging to the Vietnamese Ministry of Industry, in order to raise technological capabilities and abilities of the researchers involved, thus contributing to modernize the food processing industry with particular focus on small-and-medium-scale food processing enterprises (hereinafter referred to as "SMEs") in rural areas, then to improve the income of rural households at overall.

In response to this request, the Government of Japan dispatched Study Teams and as a result, the Record of Discussions on the Project for Strengthening of Food Industries Research Institute in Vietnam (hereinafter referred to as "the Project") was signed on May 13, 2002 between the Vietnam authorities and the Project Design Team of JICA. The Project was commenced on September 6, 2002 and will be terminated on September 5, 2007. To support Project implementation, the Project Consultation Team was dispatched in March 2003 to formulate the Project Design Matrix (PDM) and Plan of Operation (PO) in accordance with the R/D. Also the Mid-Term Evaluation Team was dispatched in June of 2005.

## 2. Contents of the Project

The Project design is stipulated as follows (See ANNEX 1):

### (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 of the Project

- 1 The characteristics of quality of major processed foods in Viet Nam are clarified.
- 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) Activities of the Project

1. Analyze the characteristics of the major agricultural processed foods in Viet Nam.
  - 1-1 Survey the actual circumstances.
  - 1-2 Analyze the effective factors for the quality improvement.
  - 1-3 Make supplement survey at factories
2. Transfer the basic and applied technology on the microbiology and the enzymology.
  - 2-1 Transfer the technology in microbiology.
  - 2-2 Transfer the technology in enzymology.
  - 2-3 Transfer the technology to develop the new food ingredients
3. Transfer the basic and practical technology of analysis of food components and food analysis.
  - 3-1 Transfer analytical methods of food components.
  - 3-2 Transfer analytical methods of food qualities.
  - 3-3 Apply the analysis of food components and food qualities to the agricultural processed foods
4. Guide in the microorganisms and enzymes and in the foods analysis technologies to small-and-medium scale food processing firms.
  - 4-1 Prepare the manuals for technical guidance.
  - 4-2 Organize seminars/workshops.
  - 4-3 Implement on-the-job trainings (consulting).





## II . Objectives of the Evaluation

Evaluation study was conducted with the purposes of:

1. Evaluating the overall achievement of the Project based on the R/D, and PDM,
2. Evaluating the Project in terms of the five criteria that are shown below,
3. Identifying remaining problems and giving recommendations on necessary measures to be taken after the termination of the Project to the respective governments, and
4. Considering the lessons drawn from the Project activities in order to reflect them on future projects in the sense of making them more effective and efficient.

## III . Evaluation Methods

Evaluation activities were conducted by the Joint Evaluation Committee, which was composed of the Japanese Evaluation Team and the Vietnamese Evaluation Team in accordance with the R/D, PO, and the PDM. These activities included report analysis, field survey, and discussions with concerned official's staff members based on the five evaluation criteria listed below

### 1. Relevance

Relevance refers to the validity of the Project purpose and the overall goal in connection with the development policy of the Vietnamese Government as well as the needs of beneficiaries.

### 2. Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefit was brought about as a result of the Project (not as that of external factors).

### 3. Efficiency

Efficiency refers to the productivity of the implementation process, and examines if the input of the Project was efficiently converted into the output.

### 4. Impact

Impact refers to direct and indirect, positive and negative impact caused by implementing the Project, including the extent to which the overall goal has been attained.

### 5. Sustainability

Sustainability refers to the extent to which the recipient country can develop the Project further, and the benefits generated by the Project can be sustained under the recipient country's policies, technologies, systems and financial state.



## IV. Members and the Schedule of the Joint Evaluation Team

### 1. Japanese Side

**(1) Dr. Ryuzo NISHIMAKI**

Senior Researcher  
Rural Development Department  
Japan International Cooperation Agency (JICA)

**(2) Dr. Megumi YAMAZAKI**

Chairperson  
Supporting Committee

**(3) Dr. Hisakazu IINO**

Professor, Science for Living System  
Graduate School, Showa Women's University

**(4) Mr. Yasuhira MINAMI**

Senior Consultant  
SOWA Consultants Inc.

**(5) Ms. Yasuko NAKAYA**

Project Officer  
Rural Development Department  
Japan International Cooperation Agency (JICA)

### 2. Vietnamese Side

**(1) Ms. Dang Phan Thu Huong**

Deputy Director General  
International Cooperation Department  
Ministry of Industry (MOI)

**(2) Mr. Nguyen Phu Cuong**

Deputy Director General  
Science Technology Department  
Ministry of Industry (MOI)

**(3) Mr. Nguyen Xuan Tien**

Deputy Director General  
Foreign Economic Relations Department  
Ministry of Planning and Investment (MPI)

**(4) Dr. Nguyen Kim Vu**

Former Deputy Director  
VN Institute of Agriculture Engineering and Post-Harvest Technology

**(5) Dr. Ngo Tien Hien**

Former Director of FIRI

### 3. Schedule of the Evaluation

CPs: FIRI Counterpart, VET: Vietnamese Evaluation Team

#### (1) Schedule of Final Evaluation Consultant (Mr. Yasuhira MINAMI, 1 May-8 May)

Days	June	Schedule	Accommodation
1st	1 Tue	11:10 Dep. of Narita (JL5135) -14:30 Arr. of Hanoi Meeting with Chief Advisor and Coordinator	Hanoi
2nd	2 Wed	8:30 Courtesy call to FIRI, Meeting with Japanese expert, CPs 9:30 Briefing on how to evaluate the Project and Confirming the schedule Hearing from Japanese experts	
3rd	3 Thu	8:30 Hearing from CPs (all CPs by group) (aft) Courtesy call, hearing and interview to MPI and MOI	
4th	4 Fri	7:00- Move to Hai Phong and Bac Giang Province Visit Cooperative and farmers	
5th	5 Sat	Summarizing the result of research.	
6th	6 Sun	Summarizing the result of research.	
7th	7 Mon	8:30- Workshop in FIRI	
8th	8 Tue	09:00 Courtesy call, hearing and interview to Department of Cooperatives and Rural Development, MARD 10:00 Courtesy call, hearing and interview to Department of Agro-forestry Product Processing and Salt Industry, MARD	

#### (2) Schedule of Mission and Evaluation Consultant

days	June	VET	Schedule	Accommodation
9th (1)	9 Wed		(Consultant) Supplementary survey (Dr. Nishimaki, Dr. Yamazaki, Ms. Nakaya) 18:10 Dep. of Narita(JL751)-21:45 Arr. of Hanoi	Hanoi
10th (2)	10 Thu		9:00- Visit to JICA Vietnam Office 10:00 Courtesy call to MOI 11:00 Courtesy call to MPI 13:15 Courtesy call to FIRI	
		Need (aft only)	13:30- Visit to food processing SMEs in Hatai Province Interview to Experts.(Chief advisor, Coordinator, Short-term Experts)	
11th (3)	11 Fri	Need	8:30-9:30 First Joint Evaluation Committee (confirmation on schedule and the method of evaluation) 9:30-11:30 Presentation of the activities of the Project 13:30 Interview to Counterpart personel	
12th (4)	12 Sat		Meeting among Japanese mission members (making the draft of report) (Dr. Iino) 11:00 Dep. of Narita(JL5135)-14:30 Arr. of Hanoi	

13th (5)	13 Sun		Meeting among Japanese mission members(making the draft of report)
14th (6)	14 Mon	Need	8:30-11:30 and 13:30-16:00 Second Joint Evaluation Committee
15th (7)	15 Tue	Need	8:30- Third Joint Evaluation Committee (Final discussion for the Joint Evaluation report, Signing or report) 14:00- Joint Coordination Committee(Signing of Minutes)  Report to JICA Vietnam Office 16:00- Report to Embassy of Japan (report the result of the evaluation)

## V RESULTS OF THE EVALUATION WITH FIVE CRITERIA

The Project Design Matrix (PDM) which was revised after the Mid-term Evaluation and accepted by the JCC on July 21 2006 is used as basis of this Final Evaluation. Based on this PDM, achievements of the outputs as well as the implementation process of the Project were reviewed (see Annex 7~8 for the Project Achievement Grid, and the Project Implementation Process Grid). Achievements of the Project were then evaluated with five evaluation criteria. Results of the evaluation are as following (see Annex 9 for the Five Criteria Evaluation Grid).

### 1. Relevance

#### (1) Relevance of the Project for policy of Government of Vietnam

The Overall Goal and Project Purpose are on the same line with the Government of Vietnam policy, in which they both focus on the improvement of food processing SMEs, and the poverty alleviation.

The rural population in Vietnam forms about 70% of the total population, and a majority of rural residents is poor, and their living conditions, as well as their productivity are low, compared with those of urban residents. Unemployment, income gap between rural and urban areas, and malnutrition in rural areas are the most important issues in Vietnam presently. In order to resolve these problems, the government is taking measures aiming to improve rural infrastructure, diversify agricultural production, and promote small and medium private enterprises especially those that process foodstuffs.

Vietnam development policy is described in the Five-Year Socio-Economic Development Plan in 2006-2010 as following: *"The development of the market economy should be the drive for social welfare, employment creation, poverty reduction, educational and cultural development and health care for the people. The role and responsibility of the state and the whole society's contribution should be emphasized towards this end"*. And one of eight main tasks stated in this Five-Year Plan is : *"Realize social progress, equity and gender equality, create jobs, encourage people to get rich in legitimate ways, alleviate hunger and reduce poverty, develop social security system and prevent social problems"*. Food processing SMEs, as well as other SMEs in other economic sectors are considered as important targets of this Five-Year Plan through the policy to: *"Support and encourage the development of SMEs in order to mobilize all possible resources and make use of the comparative advantages of each region and each locality, together with the development of rural industries, trade villages and farms, focusing more on SME development in remote, mountainous or difficult areas"*.

#### (2) Consistency with the Japanese aid policy

Japan had specified 5 important fields for providing cooperation to Vietnam. Among them, this Project contributes to the followings. (1) Agriculture and rural development:

improvement of living conditions in local areas, such as: improving agricultural infrastructure to increase productivity; improving post-harvest (storage, circulation, and processing); developing and diffusing agricultural technologies to diversify agricultural products; (2) Education, national health and medical services: provision of facilities and equipment for educational institutions, national health and medical services, measures against infected diseases, AIDS, and child health.

### (3) Relevance of the Project for the needs of target group

The food processing industry is playing important role for Vietnam in order to promote SMEs development in rural areas. It is reported that there are many food processing SMEs being in urgent need to improving product quality in order to meet increasing consumers' requirements. FIRI is appraised favorable to food processing SMEs in Vietnam because of FIRI (1) is a national leading institute, (2) has many researchers, (3) is carrying out various researches on various food categories.

FIRI is a national institute in charge of carrying out technological researches for producing high added value foods, diversifying processed foods, and offering technical guidance, instructions, and assistances to food processing SMEs in Vietnam.

The purpose of this Project is to strengthen FIRI's activities through technical transfer such as food processing, material development and food ingredient analysis evaluation, as well as know-how on technical transfer to small and medium food processing enterprises. According to a hearing to counterpart personnel (C/Ps) of the Project, a major portion of them addressed that the Project does fully match their needs to improving their skills which are necessary for them to fulfill their duties. The achievements of the Project may help the food processing SMEs in Vietnam to produce more processed foods with high quality and high added value, and may help promote employment in rural areas, improve farmers' income, and provide people countrywide with tasty, nutritious and safe foods.

Recently, many foreign investors come to Vietnam and bring with them latest technology, especially related to food processing sector. Therefore, FIRI has an urgent need to enhance its technical level to remove the technical gap between domestic and foreign invested enterprises.

### (4) Relevance of Project planning

The Project activities were planned in a logical manner: Firstly, to carry out surveys to clarify the quality characteristics of main processed foods circulating in Vietnam, to grasp requirements of food processing SMEs, and identify which processed foods should be selected as targets of the Project. Secondly, to transfer technologies on microorganism and enzyme, and analysis technologies which are required to improve quality of and certificate these

targeted processed foods. Finally, to improve FIRI's ability in carrying out technical instructions to small and medium food processing enterprises.

The Project formulation was prepared carefully since 1998. The original PDM and PO was formulated at the beginning of the Project, and based on results of the PCM Workshop held in 2002 during the Second Preparatory Study. These PDM and PO were then revised based on results of the Workshop held in 2005, during the Mid-term Evaluation Mission. So it can be said that the Project was designed in a participatory manner and it had successfully raised sense of ownership of agencies and persons involved in the Project. Revision of PDM and PO made during the Mid-term Evaluation was reasonable to accommodate many changes happened during the Project implementation, and was considered as an important turning point for the Project. However, the adjustment of the Project implementing direction, and the definition of objectively verifiable indicators had not been done properly until the Mid-term Evaluation, and these had caused the delay of some activities of the Project.

## 2. Effectiveness

### (1) Achievement of Project Purpose

As at the time of conducting the Final Evaluation, all Outputs of the Project have been almost achieved. Verified by indicators described in the PDM, all activities of the Project had been achieved, except one activity of Output 4 which is to be accomplished by the termination of the Project.

### (2) Contribution of Project Outputs to the Project Purpose

Major achievements of the Project Purpose are following:

#### <Output 1>

Through activities of Output 1, experts and FIRI C/Ps had carried out a number of visits, surveys, and consultations to a number of food processing SMEs. Through these activities, the actual circumstances of a part of processed foodstuffs circulating in the Vietnamese market had been grasped. This helped to know which analytical items are proper to evaluate quality of the foodstuffs in the Vietnam market. This also helped the SMEs to set suitable parameters for checking quality of their products.

In addition, activities of Output 1 are considered necessary for FIRI researchers to know which data should be collected when carrying out instructions to SMEs.

These also contributed a lot to the improvement of FIRI personnel's skills and know-how to approach SMEs.

#### <Output 2>

Through activities of Output 2, a number of long-term and short-term experts had worked closely together with FIRI's researchers and had transferred many technologies on the utilization of microorganisms and enzymes to food processing. It is reported that technical abilities as well as knowledge of FIRI's researchers were improved significantly through the activities of the Project, which includes the trainings in Japan.

#### <Output 3>

Through activities of Output 3, FIRI researchers' ability to examining and analyzing the components and the qualities of processed foods is quite improved, which resulted by acquiring the national certification for ISO/IEC 17025. Nowadays, FIRI researchers can analyze almost all basic items of food component and food quality, and can handle properly almost all analytical equipment provided by the Project.

#### <Output 4>

After the Mid-term Evaluation, results of activities of Output 1, 2, and 3 had been fed back to enable the commencement of activities of Output 4. Since then, C/Ps and experts have paid many efforts to push forward activities of this Output. An action plan (called "Rainbow Operation") was implemented to concentrate efforts of C/Ps and experts in 7 key fields (Strain, Cyclo-dextrin, Rice Spirit, Fruit Juice, Lactic Acid Bacteria, Sensory Evaluation, and Simple Analysis). Although the number of on-the-job trainings and consultations organized for food processing SMEs is still small compared to the intended target, it is anticipated that this Output can be achieved up to the termination of the Project.

### (3) Analysis of the factors

#### (a) Promoting factors

The followings are identified as promoting factors.

- The issue of food safety: Nowadays, the issues on hygiene and safe foodstuffs are becoming the most concerned issues in Vietnamese society, and are addressed frequently on mass media such as television, news papers, etc. The Government of Vietnam had issued the *"National Program on the Control of Microbiologicals and Chemical Residues in Food to 2010"* (January 2003). The food processing SMEs are forced more to produce safety foods by applying appropriate food processing technologies.
- The effects of AFTA and WTO joining: Vietnam is committed to reduce tariffs for products imported from ASEAN countries and others, in order to realize the ASEAN Free Trade Area (AFTA) and in accordance to WTO commitments. Consequently, a large quantity of cheap processed foods is imported to Vietnam from neighbouring countries. The food



processing SMEs in Vietnam are requested to be more competitive, pursuing how they can produce high quality products with cheaper price. In the near future, it is anticipated that many food processing SMEs will recognize the need to improve their technologies, and the role of FIRI will become more important for the food processing SMEs.

- Since January 2006, in order to accelerate activities of Output 4, an action plan (called Rainbow Operation) had been drawn and implemented. Based on this plan, 7 working groups were organized to take charge in 7 key fields (Strain, Cyclo-dextrin, Rice Spirit, Fruit Juice, Lactic Acid Bacteria, Sensory Evaluation, and Simple Analysis), and 6-10 FIRI's staff were assigned in each group. Short-term experts who are specialized in these above-mentioned fields were also dispatched to work closely with C/Ps in each working group to push forward activities of the group. Staff of Japanese companies running business in Vietnam and in Japan were also invited to carry out instructions to the C/Ps especially on the skill to approach SMEs and reply to SMEs' requirements. These activities were not planned in the PDM and PO, but had contributed a lot to the achievement of the Project Purpose.
- Since September 2006, the Project has cooperated with UNIDO Country Office in Vietnam in carrying out several trainings and workshops on food processing to women entrepreneurs involved in the "Entrepreneurship Development Programme for Women in Food Processing in Central Vietnam – Phase II". The Project had co-worked with UNIDO personnel to organize a workshop (in Quang Binh Province in November 2006) to instruct women entrepreneurs on the method to process fermented shrimp. Following this workshop, in March 2007, the Project started a cooperation with UNIDO and Women Unions in Ha Tinh, Quang Tri, and Quang Binh provinces, through which FIRI C/Ps took charge in instructing women entrepreneurs in rural areas of these provinces on the methods to produce rice spirit, pickled vegetable, fermented shrimp, bread, and confectionary.

### 3. Efficiency

#### (1) Quality, quantity and timing of inputs to achieve Outputs

##### <Personnel>

In the period from September 2002 to September 2004, four long-term experts and four short-term experts were dispatched. And in the period from August 2004 to August 2005, four long-term experts and five short-term experts were dispatched. Since 2005, dispatched experts had contributed a lot to the achievements of Output 2 and 3, i.e. to transferring basic technologies (on the utilization of microorganisms and enzymes, and on analytical techniques)

to FIRI researchers.

Since the Mid-term Evaluation, the direction of the Project implementation was adjusted. Lessons learned from the previous stage had led to the introduction of a combination of only one long-term expert (in charge of Project Coordination) with a number of short-term experts (Chief Adviser and technical experts). Technical short-term experts were assigned to undertake various tasks covering a wide range of technical fields which were required to achieve Outputs of the Project, especially to achieve Output 1 and Output 4. According to the hearing to C/Ps and persons concerned, it may say that the adjustments since the Mid-term Evaluation had made an important turning point for the Project, and it had contributed a lot to the achievement of Output 1 and 4.

In some specific cases, in order to improve efficiency of the technical transfer, C/Ps were sent to Japan for training. As at the Final Evaluation, 36 C/Ps had obtained trainings in Japan, and they had contributed a lot to the achievement of the Project Outputs, especially for the Output 3. According to experts, almost all C/Ps who returned to FIRI after obtained trainings in Japan had shown significant changes in their way of thinking and working attitude, since they became more self-confident and more active in carrying out their official works.

#### <Equipment>

Analytical equipment and materials had been provided appropriately. Two common laboratories (in 3F and 5F) were established to make full use of equipments provided by the Project as well as equipments owned by FIRI. In addition, FIRI had acquired several equipments by its own budget. These equipments were used efficiently. Records on the use of these equipments were made since February 2005 and contributed to the proper management of these equipments.

The deliveries of some equipments from Japan had been delayed and it caused the delays of some Project activities, but these did not cause significant minus effects to the achievement of the Project.

#### <Financial inputs>

The local cost by Japanese side and the counter-budget by Vietnamese side were assessed adequate, and were used appropriately to carry out necessary activities.

Vietnamese side provided the Project Team with suitable working rooms in the FIRI's office building. It also acquired by its own budget a number of analytical equipments, which contributed a lot to the achievement of the Project.

#### 4. Impact

##### (1) Expected possibility to achieve Overall Goal

At the evaluation workshop held in May 2007, 100% of participants of the workshop addressed that the Overall Goal of the Project may be achieved in two or three years after the termination of the Project. The technology transfers or technical instructions to some food processing SMEs, such as the Hainam Pickled Vegetable Enterprise in Hai Phong, the Uc Company (rice spirit producer) in Ha Tay, etc. were successfully carried out, and contributed a lot to the improvement of quality of foodstuffs produced by these SMEs.

However, in order to be able to achieve the Overall Goal, and to fulfill the duty as a heading institute to serve the food processing SMEs, FIRI should continuously pay efforts to improve its ability to approach SMEs, to grasp current conditions of SMEs, and to transfer acceptable technologies to SMEs. In addition, FIRI should also pay efforts to cooperate with other organizations/ agencies (such as UNIDO, Women Unions, etc.), to carry out the trainings to trainers of other agencies, etc. in order to multiply ability to transfer food processing technologies and analytical techniques to SMEs nationwide in a more efficient and quicker manner.

##### (2) Technical impacts

The utilization of microorganisms and enzymes particular to Vietnam has yet to study. Through the Project, by clarifying and using the characteristics of these microorganisms and enzymes to develop new materials, it is expected to develop diversified food products. The effect would be great, if imported materials and products were to be replaced by these products.

##### (3) Other impacts

a) It is considered that the achievements of the Project will not only benefit food processing SMEs in Vietnam, but also benefit Vietnamese farmers who supply agricultural materials to the food processing SMEs. The development of food processing industry may be an incentive to the farmers to produce more crops of higher quality. Thereby, the farmers may intensively cultivate crops that may help to raise farmers' income through increase in amount of sales or in unit price of foodstuffs. The rise in income will encourage farmers to participate in the community works, and this may lead to the development of the rural areas. This may also reduce the income gaps between rural and urban areas, promoting poverty alleviation.

b) The unbalanced diet may be one cause of the malnutrition circumstance especially for children in rural areas of Vietnam. If good processed foods with various micronutrients are produced and circulated in the market at a suitable price, then it would contribute greatly to

maintain and improve people's health.

c) No any negative impact had been reported. However, it needs to continue to pay attention to avoid any adverse impact that may cause by the Project activities.

## 5. Sustainability

### (1) Policy and institutional sustainability

The policies of the Government of Vietnam to giving priorities to food processing SMEs promotion and food safety are anticipated unchanged. The Agency for SME Development (ASMED, which belongs to Ministry of Planning and Investment, MPI) is striving to push forward many plans to promote development of SMEs. The Department of Local Industry Development (which belongs to the Ministry of Industry, MOI) is carrying out similar tasks which aim to develop industrial SMEs in rural areas. The Department of Cooperatives and Rural Development (which belongs to the Ministry of Agriculture and Rural Development, MARD) is also carrying out a plan aiming to strengthen the cooperatives in rural areas of which a large number of food processors are targeted. Therefore, it is anticipated that the food processing SMEs will have more opportunities to develop through these favorable policies.

It observed that FIRI has a good organizational system and research environment that may change flexibly to be able to accommodate the easy-changing demands of the growing society under industrialization and integration to the world.

### (2) Financial sustainability

FIRI is striving to increase its self-incomes, such as consultancy fees through providing technical instructions to enterprises. Presently, the self-income make about 40% of FIRI's annual financial source, and this portion is anticipated to rise in the future. FIRI still needs financial supports from the government in the future. In addition, it is recommended that FIRI should pay more efforts to seek and exploit other income sources such as through achievement of contracts to provide services to SMEs and other agencies, companies, etc.

### (3) Technical sustainability

Technical and professional meetings are held frequently in every department of FIRI. There had not been any reported problem in transferring technologies from the well-experienced staff to the newly-employed young staff. Therefore, it is expected that the technologies transferred from Japan upon this Project would be spread and rooted in FIRI in the organizational manner.

As a result of the Project, the C/P personnel capability and ability have been improved at the satisfactory level. In addition, FIRI has a system to frequently carry out internal trainings to enhance its researchers' technical skills. With knowledge and technology transferred through

the Project, and with their gradually-improved awareness on international research institutions and the competitive-based economy, it is anticipated that they can develop their capabilities continuously.



## VI. Conclusion

In conclusion, based on the series of discussion with the concerned officials and C/Ps, it can be said that the Project has achieved the outputs and the project purpose as described in the PDM. In fact, FIRI through the Project activities, has contributed to technological improvement of food processing SMEs. Nevertheless, some remaining items are expected to be completed by FIRI.

Therefore, the Joint Evaluation Committee concludes that the Project is to be terminated successfully by September 2007.

## VII. Recommendation

1. The Project should utilize the remaining period to accomplish the Project activities.
2. The Project should draw a concrete action plan (technology transfer plan for food processing SMEs), which aims to facilitate technical transfer to food processing SMEs, by expanding activities of the Rainbow Operation. And the Project should submit it to Joint Coordinating Committee to be held in August, 2007.
3. FIRI's functions of: (1) research, (2) providing technologies to food processing SMEs, and (3) providing trainings to local customers and agencies in need, should be strengthened.

(1) Strengthening function as a research institute:

- 1) Sharing to improve technical skills up to a higher level.

FIRI researchers should strive to raise knowledge and skills on technologies which are developed by themselves, and continue to strive to obtain advanced technologies from outsiders, and share these obtained knowledge and skills to each other. FIRI should pay efforts to improve the knowledge sharing within it, through among the others, frequent re-trainings/refreshing activities.

- 2) Utilization of equipments

To make full use of the equipments either provided by JICA or acquired by FIRI's own budget, FIRI should make rules on the management of these equipments as soon as possible, and provide researchers with more chances to obtain trainings on the use of these equipments.

- 3) Improvement of originality to conduct researches

FIRI researchers should continue to make efforts to conduct researches originated based on his/her own conception, in order to secure its position as a leading institute in food processing sector.

(2) Technical assistance to food processing SMEs

- 1) FIRI should establish a new division in its organization, in order to push forward technical transfers to food processing SMEs.
- 2) FIRI should examine appropriate methods to diffuse technologies which were transferred upon the Project as wider as possible throughout Vietnam.

### (3) Improvement of ability to conduct trainings

- 1) FIRI should make efforts to carry out technical instructions to companies, local agencies, and improve its ability to offer trainings to trainers of other agencies nationwide.
- 2) It is desirable that FIRI provides trainings to trainees from other countries, such as training programs under the framework of South-South cooperation

#### 4. Expansion of technology

FIRI should disseminate technologies attained through the Project to other parties in Vietnam.

#### 5. Continuous assistance from Japan

To support FIRI to expand achievements of the Project to benefit more food processing SMEs, JICA is requested to dispatch senior volunteers to FIRI under JICA's volunteer scheme.

#### 6. Financial assistance

To enhance food security and quality assurance, it is requested that the Vietnamese Government to allocate adequate budget assistance to FIRI to further up its technical assistance to food processing SMEs.

## VIII. Lessons learned

1. Both Japanese side and Vietnamese side could implement FIRI-JICA Project smoothly. Five year was needed for the construction of the mutual reliance. It is important to keep the effort over the long period of time to deepen mutual understanding, for the appearance of the result of the cooperation between the countries of the different culture, social and economy.
2. In the selection of type of equipments provided to recipient country, the sustainability of these equipments is one of the most important criteria. The equipments must be carefully selected.
3. The project logical framework (PDM and PO) should always be discussed by the members of the Project for improving the activities.
4. There was a big gap between the Project Purpose and the Overall Goal describe in the PDM. It is necessary to set these goals in a realistic manner, where the future direction of the Project is properly clarified.

ANNEX 1 PROJECT DESIGN MATRIX (PDM)

21 July, 2006

Title of the Project	Project for Strengthening of Food Industries Research Institute in Socialist Republic of Vietnam
Term of Cooperation	6 September 2002 to 5 September 2007
Project Area	Viet Nam
Target Group	Researchers of FIRI

Narrative Summary	Objectively Verifiable Indicators	Means of Verifications	Important Assumptions
<p>The food processing technologies are improved in small-and-medium-scale food processing firms in Viet Nam.</p> <p>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.</p>	<p>20 small-and-medium-scale food processing firms are received technology transfer by FIRI and their processing techniques are improved.</p> <p>1. 6 utility solutions (example: Genetic method of improving strain) are applied. 2. 40 proceedings are presented. 3. 35 technical guidance are given to small-and-medium-scale food processing firms.</p>	<p>1. Survey on model firms 2. Report of the Project</p> <p>1. Annual report of FIRI 2. 6-month report of the Project 3. Reports of seminars/workshop and consulting</p>	<p>National policy on the promotion of the food processing industry is maintained.</p> <p>Most of the counterpart personnel continue their work at FIRI</p>
<p><b>Outputs</b></p> <p>1 The characteristics of quality of major processed foods in Viet Nam are clarified.</p> <p>2 FIRI researchers improve their ability of application for the utilization of microorganisms and enzymes.</p> <p>3 FIRI researchers improve their ability to examine and analyze the components and the qualities of the processed foods required for the domestic certification.</p> <p>4 FIRI researchers improve their capability for the technical guidance in the food processing used microorganisms and enzymes and in foods analysis to small-and-medium-scale food processing firms.</p>	<p>1-1 The characteristics of 5 processed foods are clarified by analysis of the samples. 1-2 The number of the analyzed samples are 53 1-3 The number of the analytical items are 391 1-4 The number of the research of the improved methods are 50 1-5 The characteristics of the Project's target foods are clarified.</p> <p>2-1 The number of isolated strains are 150 2-2 The number of identified strains are 90 2-3 The number of characterized strains are 66 2-4 The number of specified useful strains are 10 2-5 The number of specified enzyme is 1 2-6 The number of methods of screenings developed/ evaluated by FIRI researchers are 6 2-7 8 FIRI researchers obtained the methods of screenings and they can do it by themselves.</p> <p>3-1 41 analytical methods are transferred to the researchers of FIRI 3-2 The number of analytical items implemented at the technology transfer are 100 3-3 The number of improved quality evaluation of processed foods are 4 3-4 The number of developed manuals are 10 3-5 The frequency of using developed manuals increases to 60 %</p> <p>4-1 The number of manuals for technical guidance of microorganisms and enzymes for small-and-medium-scale food processing firms are 25 4-2 The number of manuals for technical guidance of the food analysis for small-and-medium-scale food processing firms are 10 4-3 The number of seminars and workshops organized for small-and-medium-scale food processing firms are 16. 4-4 The number of on the job training (consulting) organized for small-and-medium-scale food processing firms are 20.</p>	<p>1 Annual report of FIRI 2 6-month report of the Project 3 Manuals developed 4 Seminar, workshop and consulting reports</p>	
<p><b>Activities</b></p> <p>1. Analyze the characteristics of the major agricultural</p>	<p><b>Inputs</b></p> <p>Japanese side</p> <p>Vietnamese side</p>		<p>1. Counterparts are placed appropriately.</p>



<p>processed foods in Viet Nam.</p> <p>1-1 Survey the actual circumstances.</p> <p>1-2 Analyze the effective factors for the quality improvement.</p> <p>1-3 Make supplement survey at factories</p> <p>2. Transfer the basic and applied technology on the microbiology and the enzymology.</p> <p>2-1 Transfer the technology in microbiology.</p> <p>2-2 Transfer the technology in enzymology.</p> <p>2-3 Transfer the technology to develop the new food ingredients</p> <p>3. Transfer the basic and practical technology of analysis of food components and food analysis.</p> <p>3-1 Transfer analytical methods of food components.</p> <p>3-2 Transfer analytical methods of food qualities.</p> <p>3-3 Apply the analysis of food components and food qualities to the agricultural processed foods</p> <p>4. Guide in the microorganisms and enzymes and in the foods analysis technologies to small-and-medium scale food processing firms.</p> <p>4-1 Prepare the manuals for technical guidance.</p> <p>4-2 Organize seminars/workshops.</p> <p>4-3 Implement on-the-job trainings (consulting).</p>	<p>1. Dispatch experts</p> <p>(1) Chief Advisor</p> <p>(2) Project Coordinator</p> <p>(3) Expert in the technical field of:</p> <p>a. Microbiology</p> <p>b. Analysis</p> <p>c. Others, when necessary</p> <p>2. Provision of machinery and equipment</p> <p>3. Counterparts training in Japan</p> <p>4. Dispatch of Mission when necessity arises</p>	<p>1. Assignment of counterpart personnel and administrative personnel</p> <p>(1) Project Director</p> <p>(2) Project Manager</p> <p>(3) Project Sub-Manager</p> <p>(4) Counterpart personnel (full-time)</p> <p>(5) Administrative Personnel</p> <p>(6) Secretary, driver for project car and other necessary personnel</p> <p>2. Land, building and facilities necessary for the Project</p> <p>3. Provision of running expenses of the Project</p>	<p>2. The Vietnamese government allocates the budget appropriately for the Project.</p>
<p><b>Pre-conditions</b></p> <p>No objection against implementation of the Project</p>			

Plan of Operation (PO)

21 July 2006/ added data 11 May 2007

JICA Project of Strengthening the Food Industries Research Institute (FIRI)

Underlined in the schedule(\*\*) means the completion of the activities

Activity	Term (Japanese Fiscal year, April-March)												Responsible person in the Project team	Input						
	2002			2003			2004			2005					2006			2007		
	II	III	IV	I	II	III	IV	I	II	III	IV	I			II	III	IV	I	II	
Administration																			Project Director (Dr. Manh)	EX: expert, LC: local cost, CPT: CP training in Japan, EQ:equipment
Joint Coordinating Committee meeting		*																	DR and CA	1 EX
Discuss on PDM		**																	DR and CA	1 EX
Discuss on the index of PO and APO		*																	DR and CA	1 EX
Prepare APO																			head of PRICD and PC	1 EX
To start "Working Group" for Activity 4																			VDR and CA/ PC	2 EX, 1CPT
Design layout of common laboratories		**																	Analysis, Microbiology and Act2, 3 experts	2 EX, 1CPT
Build and /or innovate common laboratories																			Analysis, Microbiology and Act2, 3 experts	2 EX
Discuss the administration of common lab.																			DR and CA	1 EX
Plan activity		**																	DR and CA	1 EX, 3CPT
Plan local budget		*																	DR	
Plan common laboratory		**																	DR and CA	1 EX
Plan equipment		*																	DR and CA	1 EX
Plan C/P training in Japan		*																	DR and CA	1 EX
Plan expert		*																	DR and CA	1 EX

Activity	Term (Japanese Fiscal year, April-March)												Responsible person in the Project team	Input		
	2002		2003		2004		2005		2006		2007					
	II	III	IV	I	II	III	IV	I	II	III	IV	I	II			
Activity I Analysis of characteristics of major agricultural processed foods in Vietnam															Project Manager (Dr. Thua)	EX: expert, LC: local cost, CPT: CP training in Japan, EQ:equipment
1 Survey the actual circumstances															VDR and CA	EQ(vehicle, USD 2,5,800)
2 Analyze the effective factors for the quality improvement															VDR and CA	2EX, LC (translation of TCVN)
3 Research for the smooth implementation of the improved methods															VDR and CA	3EX, LC
3 Research for the smooth implementation of the improved methods															VDR and CA/ PC	12EX, LC(travel)

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Activity	Term (Japanese Fiscal year, April-March)												Responsible person in the Project team	Input								
	2002			2003			2004			2005					2006			2007				
	II	III	IV	I	II	III	IV	I	II	III	IV	I			II	III	IV	I	II			
<b>Activity II Transfer of basic and applied technology on microbiology and enzymology</b> 1 Transfer the technology in microbiology (1) Isolate, identify and preserve for stock culture system (2) Screen, select strains and improve the properties of functional microorganisms 2 Transfer the technology in enzymology (1) Purify enzyme, and investigate enzymatical properties (2) Apply enzymes 3 Transfer the technology to develop the new food gradients (1) Improve skill in changing ingredients of farm products to useful materials																				Project Manager (Dr. Tram)	EX: expert, LC: local cost, CPT: CP training in Japan, EQ:equipment   5EX, LC, 5CPT, EQ(USD 285,000)   2EX, LC, 1CPT, EQ (USD 44,000)   10 EX, LC, 7CPT, EQ (USD 33,000)	

Activity	Term (Japanese Fiscal year, April-March)												Responsible person in the Project team	Input				
	2002		2003		2004		2005		2006		2007							
	II	III	IV	I	II	III	IV	I	II	III	IV	I			II			
Activity III Transfer the basic and practical technology of analysis of food components and food qualities																		EX: expert, LC: local cost, CPT: CP training in Japan, EQ: equipment
1 Transfer analytical methods of food components																		
(1) General food components																		
(2) Related food components																		5 EX, LC, 4 CPT, EQ (USD 300,000)
2 Transfer analytical methods of food qualities																		
(1) Quality indices																		
(2) Safety evaluation																		5 EX, LC, 8 CPT, EQ(USD 152,000)
3 Apply the analysis of food components and quality to small-and-medium-scale food processing firms																		
(1) Apply the analytical methods to agricultural processed food in Viet Nam																		1 EX, LC

Activity	Term (Japanese Fiscal year, April-March)																Responsible person in the Project team	Input	
	2002		2003		2004		2005		2006		2007								
	II	III	IV	I	II	III	IV	I	II	III	IV	I	II						
Activity IV Guide in food processing technology and in food analysis to small- and-medium-scale food processing firms																		Project Manager (Dr. Thuat)	EX: expert, LC: local cost, CPT: CP training in Japan, EQ:equipment
1 Prepare the manuals for technical guidance																		VDR and/ head of 7 WG and CA and PC	
(1) Prepare the manuals of food processing and food analysis	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	VDR and/ head of 7 WG and CA and PC	3 EX, LC, 6 CPT, Japanese lecturers
2 Organize seminars / workshops																		VDR and/ head of 7 WG and CA and PC	
(1) Implement seminars and workshops																		VDR and/ head of 7 WG and CA and PC	
3 Implement on-the-job trainings (consulting)																		VDR and/ head of 7 WG and CA and PC	
(1) Implement on-the-job training (consulting)																		VDR and/ head of 7 WG and CA and PC	