

## Summary of the Joint Terminal Evaluation

<b>1. Outline of the Project</b>	
<b>Country:</b> The Kingdom of Cambodia	<b>Project Title:</b>
<b>Issue/Sector:</b> Agricultural Development / Rural Development	Agricultural Productivity Promotion Project in West Tonle Sap
<b>Division in Charge:</b> Rural Development Department	<b>Cooperation Scheme:</b> Technical Cooperation Project
	<b>Total Cost:</b> 374 million yen
<b>Period of Cooperation:</b> (Record of Discussions [R/D] signed: August 18, 2010) October 1, 2010 – March 31, 2015 (4.5 years)	<b>Implementation Organization:</b> Ministry of Agriculture, Forestry and Fisheries (MAFF) Provincial Department of Agriculture of the three target provinces (Battambang, Pursat, and Kampong Chhnang Provinces)
<b>Supporting Organization in Japan:</b> Ministry of Agriculture, Forestry and Fisheries	
<p><b>Relevant Projects:</b></p> <p>【Technical Cooperation Projects】</p> <ul style="list-style-type: none"> <li>● Battambang Agricultural Productivity Enhancement Project (BABEP) (2003-2006)</li> <li>● Battambang Rural Area Nurture and Development Project (BRAND) (2006-2010)</li> <li>● Improvement of Agricultural River Basin Management and Development Project (TSC3) (2009-2014)</li> </ul> <p>【ODA Loan Project】</p> <ul style="list-style-type: none"> <li>● West Tonle Sap Irrigation Rehabilitation Project (Loan Agreement [L/A] Signed:2011)</li> </ul>	
<p><b>1-1. Background of the Project</b></p> <p>Agriculture is the main industry of the Kingdom of Cambodia. Agricultural production contributes to 34.4% of the country's gross domestic product (GDP), and more than 60% of Cambodian people make a living from agriculture.</p> <p>The Royal Government of Cambodia requested the Government of Japan for technical cooperation on improving agricultural productivity and incomes of farmers. In response to the request, JICA conducted two projects: the <i>Battambang Agricultural Productivity Enhancement Project (BAPEP)</i> from April 2003 to March 2006, and the <i>Battambang Rural Area Nurture and Development Project (BRAND)</i> from November 2006 to March 2010. The implementation of the BRAND project resulted in the increase in crop yield of rice and the efficiency in seed use in project target areas. Meanwhile, the number of extension workers with sufficient knowledge and skills to disseminate newly acquired rice cultivation technologies was still limited. This made it difficult for the techniques transferred in the two projects to be disseminated to the whole Battambang Province and beyond. It was also found necessary to improve the technical capacity of staff in the Ministry of Agriculture, Forestry and Fisheries (MAFF).</p> <p>Against this background, the Government of Cambodia through MAFF requested the Government of Japan through JICA to conduct a technical cooperation project to sustain and further disseminate the rice cultivation techniques and strengthen the rice distribution mechanism that leads to the increase in farmers' income. In response, JICA dispatched a mission team to conduct the detailed preliminary study on the request from May to June 2010. With the Ministry of Agriculture, Forestry and Fisheries (MAFF), Battambang Provincial Department of Agriculture (PDA), Pursat PDA, and Kampong Chhnang PDA as the implementing agencies (or counterpart [C/P] agencies), the <i>Agricultural Productivity Promotion Project in</i></p>	

*West Tonle Sap (APPP, the Project)* was launched in October in the same year to be implemented for four and a half years. The three target provinces are selected for their potential in the agricultural production and C/Ps are selected from relevant agricultural offices at central, provincial and district level responsible for the dissemination of improved agricultural technologies for the implementation of project activities.

Since the commencement of the Project, the Advisory Study was conducted in September 2011 to review and improve the initial project design and activity plan and the Mid-term Review Team was conducted in October 2012 to review the Project implementation process and Project achievements and to give recommendations to improve the Project.

## **1-2. Project Overview**

The Project aims to improve the productivity and incomes of farmers in target three provinces in the West Tonle Sap region (Battambang, Pursat, and Kampong Chhnang Provinces) through strengthening extension workers abilities, facilitating farm management activities in the project target communes, improving farmers' rice cultivation techniques, promoting the production and distribution of quality seeds, and improving the distribution of Indica rice produced by project supported farmers.

**(1) Overall Goal:** Productivity and income of farmers in the target areas in the three provinces in West Tonle Sap are improved.

**(2) Project Purpose:** Productivity and income of farmers who participate in the Project activities in the three provinces in West Tonle Sap are improved.

### **(3) Outputs**

- 1) Extension workers' abilities to implement extension activities are improved.
- 2) Activities for the improvement of farm management are promoted by the target communes.
- 3) Agricultural production techniques of the participating farmers are improved.
- 4) The production and distribution of quality seeds are promoted.
- 5) The distribution of Indica rice is improved for the beneficiary farmers through the collaboration of the provincial governments, private sectors and farmers.

### **(4) Inputs**

#### **Japanese Government (Total Input: 374 million yen)**

Japanese Experts: Seven JICA experts (four long-term experts and three short-term experts)  
Equipment (vehicles, office equipment and furniture, and agricultural equipment) : USD 144,000  
Project expenses: USD 1,313,000

#### **Cambodian Government**

Assignment of C/Ps  
Provision of facilities ( project offices in the three provinces and training facilities)  
Project expenses: USD 44,000 (annual utility bills of the three project offices: approx USD 12,000)

<b>2. Evaluation Team</b>			
Members of the Evaluation Team	< Japanese Side >		
	Noriaki Nagatomo	Team Leader	Deputy Director General, Rural Development Department / Group Leader, Agricultural and Rural Development Group 1, JICA
	Kenji Kaneko	Planning Management	Senior Assistant Director, Team 1, Agricultural and Rural Development Group 1, Rural Development Department, JICA
	Setsuko Kanuka	Evaluation and Analysis	Analyst International Management Group Inc.
	< Cambodian Side >		
	Sameng Keomouine	Team Leader	Deputy Director, Department of Agriculture and Extension, MAFF
	Kheng Yasith	Planning Management	Vice Chief, Monitoring Section, Department. of Planning / Statistics, MAFF
	Yao Ven	Evaluation and Analysis	Officer, Department of Bilateral and Multilateral Cooperation, MAFF
<b>Evaluation Period:</b>	August 31 <sup>st</sup> to September 20 <sup>th</sup> , 2014	Type of Evaluation:	Terminal Evaluation
<b>3. Evaluation Results</b>			
<b>3-1. Achievements of the Project</b>			
<b>(1) Achievements of the Outputs</b>			
<p>At the time of the Joint Terminal Evaluation, all indicators set for the five Outputs have been achieved. Given the achievement levels of the indicators, results of relevant surveys (FFS End-line Survey and monitoring surveys on SGGs and pilot groups), and the perception of the Project stakeholders (e.g. JICA experts, C/Ps, extension workers, and Project supported farmers) on the each Output's achievement levels, it is evaluated that all Outputs have been achieved. The following section summarizes the achievement levels of the indicators for each Output.</p>			
<b><u>Output 1 (Improvement of Extension Workers' Abilities) : Achieved</u></b>			
<p>From 2011 to 2013, FFS training for participating farmers was conducted for 1,303<sup>7</sup> times in total (accumulative), exceeding the target of 880 (Indicator 1-1). Extension workers assigned to seed-growers' group (SGG) have acquired field inspection and seed examination skills. They have become capable of conducting field inspections (four times per cropping season) and examining the quality of seeds (twice per cropping season) according to the Project Standards for Seed Field Inspection, developed by the Project (Indicator 1-2). According to the 2012 and 2013 FFS End-line Survey<sup>8</sup>, all demo-farmers who</p>			

<sup>7</sup> The number of FFS training conducted by the Project include FFS training for participating farmers (1,156 times), SGG members (62 times), and pilot group (PG) members (85 times).

<sup>8</sup> In this report, the FFS End-line Surveys refer to the surveys conducted to demo-farmers and participating farmers (Note□The 2013 FFS End-line survey was also conducted to former demo-farmers). The surveys conducted to SSG and pilot group members are referred as monitoring surveys.

responded to the survey are satisfied with extension services provided by extension workers (100 % satisfaction level, compared with the target of more than 80%) (Indicator 1-3).

**Output 2 (Promotion of Activities for Farm Management by the Target Communes) : Achieved**

In order to facilitate the promotion of farm management activities in target communes, C/Ps and JICA experts attended the Commune Investment Plan (CIP) meetings organized in six districts of Battambang Province in 2011 and explained about the Project and FFS training. In the following year, the Project conducted a workshop inviting stakeholders (district and commune councilors) from all 30 communes in Battambang Province to discuss the improvement in rice cultivation through FFS. These activities have deepened the understanding among district and commune councilors about the necessity to incorporate agricultural activities to improve farm management in their CIP for sustainable agricultural development. As a result, a FFS Monitoring Matrix (which serves as a training implementation plan) prepared in 2011 by the Project has been incorporated in the CIP of each target commune and has been implemented as planned (Indicator 2-1). Thirty (30) communes in Battambang Province included agricultural activities in their CIPs for the fiscal year (FY) 2012 and 27 communes in the FY 2013 CIPs, and 23 communes in the FY 2014 CIPs (Indicator 2-2).

**Output 3 (Improvement of Rice Cultivation Technique among FFS Participants) : Achieved**

As discussed in the achievement level of Output 1, the Project conducted FFS training for 1,303 times from 2011 to 2013, which were attended by approximately 20,000 farmers in total (cumulative). The indicator for Output 3 is for more than the half of participating farmers become able to use at least one type of agricultural technique shown in FFS training (Indicator 3-1). According to the 2012 and 2013 End-line Survey results, all respondents have adopted at least one newly introduced technique in rice cultivation<sup>9</sup>. The 2013 survey results reveal that the indicator is achieved in all three provinces with more than five techniques being adopted by 52% of survey respondents from three target provinces.

**Output 4 (Promotion of the Production and Distribution of Quality Seeds) : Achieved**

For the promotion and distribution of quality seeds, four SGGs (three in Battambang Province and one in Kampong Chhnang Province) were formed and the Toul Lapov Agriculture Station (TAS), attached to Pursat PDA, has also been reformed into an agricultural station specialized in seed production. From 2011 to 2013, FFS training for SGGs were held 62 times, attended by 844 SGG members in total (accumulative). As a result, four SGGs and TAS produced 110.8 tons of certified seeds in 2013, exceeding the target of 100 tons (Indicator 4-1). Moreover, four SGGs and TAS produced 3.3 tons of registered seeds in 2011 and 2012, and 4.4 tons in 2013. The target of more than one ton was achieved in three years in a row (Indicator 4-2). According to the project estimates, approximately 2,500 farmers used quality seeds from 2011 to 2014, exceeding the target of 1,000 farmers (Indicator 4-3).

**Output 5 (Improvement on the Indica Rice Distribution) : Achieved**

In order to improve the distribution of Indica rice produced beneficiary farmers, the Project established

<sup>9</sup> The nine techniques are newly introduced by the Project. The technique, such as weeding, was not practiced because farmers used the broadcasting or random planting methods, which made it difficult for farmers to enter their rice fields.

<sup>10</sup> The amount of Indica rice circulated in the market is calculated based on the amount of quality seeds produced by SGGs and TAS in the previous year and the estimated amount of self-consumption by farmers.

15 pilot groups. As a result of Project activities targeting pilot group members and public relations (sales promotion) activities, according to the Project's estimate, 2,413<sup>10</sup> tons of Indica rice produced from quality seeds were circulated in the market in 2012 and 1,712 tons in 2013 (indicator 5-1). In 2014, the Project estimates that 3,010 tons of Indica rice will be circulated, exceeding the target of more than 2,000 tons. The second indicator for Output 5 sets that more than one collective activity is conducted by more than 18 farmers groups. The Project has formed 19 farmers groups, exceeding the target of 18. The farmers groups have been conducting most of the collective activities-the collective purchase of farming inputs such as seeds and fertilizers, the use of recommended rice cultivation and seed production, and price sharing (Indicator 5-2). The collection shipment and sales, however, has turned out to be difficult for pilot groups. Both farmers' groups were able to carry out collective shipment and sales in 2012, but none of the pilot groups were able to carry out the collective sales in 2013 due to the increasing market demand for wet paddy. Another reason for this is that for the collective shipment of wet paddy, there is a need to hand over the produce to middlemen as quickly as possible for the prevention of quality degradation. As the paddy quality degrades at the faster speed for wet paddy, compared to the dry paddy, it is more difficult to maintain quality of the harvest if there are time lags for harvesting among pilot group members.

## **(2) Prospect of the Project Purpose Being Achieved: High**

Considering that all four OVIs for the Project Purpose have been achieved or mostly achieved and all five Outputs have been achieved, the prospect of the Project Purpose of being achieved by the end of the project period is high. The annual Indica rice yields by demo-farmers exceeded the target of 4.0 tons/ha in three consecutive years since the Project started (4.5 tons/ha in 2011, 4.3 tons in 2012, and 4.4 tons in 2013). The annual Indica rice yields by participating farmers have not reached the target (3.5 tons) ; however, there was a steady increase in the annual yield from 2011 to 2013. There has been a significant increase in the annual sales of Indica rice among demo-farmers (USD 2,191 in 2013) and participating farmers (USD1,592 in 2013), compared to the sale value recorded in the baseline survey (USD 1,207 in 2010).

### **3-2. Summary of the Evaluation Result**

#### **(1) Relevance: High**

The Relevance of the Project is assessed as high. The Project is in line with the *Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase III (2014-2018)*, which is the medium-term national development framework of the Cambodian Government. The Project is also in line with other main relevant policies, such as *National Strategic Development Plan (2014-2018)*, and the *Agricultural Strategic Development Plan (2014-2018)*. In the *Country Assistance Policy for the Republic of Cambodia (2012)*, the Japanese Government sets agriculture and rural development as one of the main strategic areas under the "strengthening of the basis for economic activities," which is one of three priority pillars (goals). Under the strategic area, the policy document states that with the aims to develop the agriculture sector and improve the livelihood of under-privileged farmers, the Japanese Government supports to improve the productivity and quality of rice through improving rice production skills. Japan's productivity in rice cultivation is among the highest in the world. It also has empirical advantages in supporting the agricultural sector in Tonle Sap region from its experiences in implementing two previous projects (BAPEP and BRAND).

## **(2) Effectiveness: High**

The Effectiveness of the Project is assessed as high. As discussed earlier, the Project Purpose (“Productivity and income of farmers who participate in the project activities in the three provinces in West Tonle Sap are improved.”) is envisaged to be achieved by the end of the Project period, judging from the achievement levels of the four OVI of the Project Purpose and the achievement levels of the five Outputs.

## **(3) Efficiency: Relatively High**

The Efficiency of the Project is assessed as relatively high. Most of the Inputs for implementing activities have been allocated as planned and duly used to implement project activities in order to produce the five Outputs. Project activities have been conducted mostly as planned without any significant delay and all activities are either already completed or expected to be completed within the project period. As a result, all the five Outputs have been achieved. On one hand, the Project has been conducted with a strong teamwork. With a close communication, the project team members have made continuous efforts to improve training contents and method for an effective and efficient transfer of technical skills and knowledge. On the other hand, contrary to the initial expectation at the Project planning stage, the transfer of technical skills and knowledge was limited from the Battambang PDA staff members who were assigned as C/Ps in the previous technical cooperation project to newly assigned C/Ps. Moreover, there was insufficient consensus building on cost-sharing between the Japanese and Cambodian sides at the project formulation stage. The consensus building on various budgetary issues, such as overtime fees and payment methods for C/Ps and extension workers, had to be made after the Project started, which affected the project implementation, especially at the Project’s initial stage.

## **(4) Impact: Relatively High**

The Impact of the Project is assessed as relatively high. The prospect of the Overall Goal (“Productivity and income of farmers in the target areas in the three provinces in West Tonle Sap are improved.) being achieved within three to five years remains uncertain. The main factors that make the prospect unclear are the budgetary and human resources constraints of the Cambodian Government and many external factors, such as the occurrence of natural disasters, the outbreak of crop diseases, the change in market demands, and the construction of irrigation systems, that affect productivity and incomes of farmers. Nonetheless, a gradual improvement in the productivity and income of farmers is expected to occur at a slow pace through the farmer to farmer transfer of knowledge. The transfer of technical skills from the farmers supported by the Project to other farmers is expected to contribute to the achievement of the Overall Goal. In addition, the Project had many positive impacts, such as the seed sales by demo-farmers, the voluntary establishment of farmers’ groups, agricultural prizes won by Project supported farmers, requests from other organizations to the Project for the transfer of technical skills, and repeated visits to the Project by the Minister of MFF, which contribute to the achievement of the Overall Goal. From a gender perspective, women usually have the control over the family finances in Cambodia; the increase in incomes contributes to the improved access to education for beneficiaries’ children.

## **(5) Sustainability: Moderate**

The Sustainability of the Project is assessed as moderate. The Project is in line with Cambodia’s overarching development policies and main agricultural policies. There is no foreseeable change in policy direction. The financial and organizational sustainability of the Project is deemed as a challenge. While the

MAFF budget has been increasing in recent years, the share of the agriculture sector in the total government expenditure still remains small. The 2014 budget allocated to MAFF is only 1.6 % of the total national budget. It was reported that only 3.5 % of MAFF budget was allocated to extension (World Bank). According to MAFF, the national average ratio of one extension workers to farming households is one extension worker to 2,000 farming household <sup>11</sup>. The technical sustainability of the Project is deemed relatively high. Through implementing the Project activities, core human resources (e.g. extension workers, C/Ps, demo-farmers, and SGG leaders) to disseminate rice cultivation techniques and rice seed production techniques recommended by the Project (APPP-recommended techniques) have been developed in the three target districts. The manuals developed by the Project are highly evaluated by farmers and extension workers for its user-friendliness.

### **3-3. Main Factors Promoting the Production of Effects**

#### **(1) Factor Concerning to Planning**

- (a) Technical assistance on wide-ranging technical skills/knowledge along the value chain: The Project conducted the technical transfer of wide-ranging technical skills/knowledge along the rice value chain from the production of seeds to the sales promotion. By providing a comprehensive assistance, the Project successfully facilitated the improvement of farmers' income through the Indica rice production, which led to the increase in the morale among farmers supported by the Project and the transfer of technical skills/knowledge from farmers to farmers.

#### **(2) Factors Concerning to the Implementation Process**

- (a) Close communication and strong teamwork: The Project has implemented regular meetings to establish an effective flow of information with the Project team. The close communication has fostered a strong teamwork and facilitated a smooth Project implementation.
- (b) Effective cooperation/collaboration with relevant projects and NGOs: The Project has proactively engaged with relevant projects implemented by local and international NGOs and donor agencies. The Project's efforts toward effective cooperation/collaboration contributed to the strengthening of the project stakeholder's skills and facilitated the transfer of rice cultivation techniques.
- (c) Active use of mass media: The Project has strategically used all mainstream media channels (i.e. nation-wide newspaper, TV, and radio) to publicize the Project's activities and to promote the sales of quality seeds and Indica rice. The mass media campaigns have successfully increased the public recognition of the Project and SGGs and have facilitated the sales of quality seeds and the transfer of APPP recommended techniques.

### **3-4. Main Factors Inhibiting the Production of Effects**

#### **(1) Factor Concerning to Planning**

- (a) None

#### **(2) Factors Concerning to the Implementation Process**

- (a) Occurrence of natural disasters: During the cooperation period, heavy floods and droughts occurred

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<sup>11</sup> In Japan, the ratio is one extension worker to approximately 350 to 360 households on average.

every year. This resulted in: a) a difficulty for farmers to follow APPP-recommended techniques, especially transplanting methods, b) a reduction of their yields, and c) an increase in the number of villagers, especially the youth, migrating to urban areas or other countries for work, which exacerbated the labor shortage.

- (b) Low market demand of the 10 prioritized rice seed varieties: The ten prioritized rice seed varieties are selected by the Cambodian Government from the standpoint of food security. In accordance with the Cambodian Government's policy, the Project has conducted the transfer of rice cultivation techniques using a few varieties selected from the ten varieties. The ten varieties are not, however, necessarily in line with the market demand and, except for two or three of them, they are not traded at high prices. Those few varieties that are traded at high prices and can contribute to the increase in farmers' income are highly susceptible to a crop disease (rice blast) and its growing season overlaps the timing for droughts and floods. Moreover, in recent years, there has been a significant climate change with different annual rain patterns, which has made it more difficult to determine the cropping timing and decide other appropriate farming actions. Within the framework of the Project, it was a hindering factor for farmers to practice rice cultivation techniques learned in the Project and for the Project to disseminate the techniques. .

### **3-5. Conclusion**

Based on the above findings, it is concluded that the Project Purpose (the improvement of the productivity and income of farmers who participate in project activities in the three provinces in West Tonle Sap) is envisaged to be achieved by the end of the cooperation period; therefore, the Evaluation Team recommends that the Project be terminated in March 2015 as originally scheduled.

### **3-6. Recommendations**

In order to increase the likelihood the Overall Goal to be achieved within three to five years of the Project completion and further improve the sustainability of the Project, the Evaluation Team makes the following recommendations.

#### **(1) Measures to be taken by the Project**

- 1) Further dissemination of APPP-recommended techniques: The Evaluation Team recommends that the Project scale up its dissemination efforts through up-coming sales promotion activities using the mass-media. The Evaluation Team further suggests that the Project established an environment conducive for MAFF to continue disseminating APPP-recommended techniques by presenting its achievements in other provinces and widely distributing teaching materials for extension services and technical manuals.
- 2) Further promotion of farmer-to-farmer transfer of technical skills: The Evaluation Team recommends that the Project distribute extra leaflets and technical manuals to SGG leaders and selected high-performing demo-farmers who have been active in disseminating APPP-techniques. The Evaluation Team further recommends that the Project promote training services already provided by selected SGGs and demo-farmers in the upcoming sales promotion activities.

#### **(2) Measures to be taken by MAFF**

- 1) Increase in the budget allocation and human resources for extension services: The Evaluation Team

recommends that MAFF continue to increase its budget allocation for extension activities. The Evaluation Team further recommends that MAFF increase the number of extension workers and provide sufficient training to them.

- 2) Continuous dissemination of the APPP-recommended techniques: In order for the Overall Goal to be achieved and strengthen the Project's sustainability, it is crucial that MAFF continues to disseminate APPP-recommended techniques using the Project's outputs (i.e. the technical manuals and extension materials as well as human resources developed by the Project). For the continual use of the technical manuals and extension materials, the Evaluation Team recommends that MAFF promote their use in non-project target provinces and also to other development partners implementing relevant projects. Given a shortage of extension workers, it is recommended that MAFF utilize high performing SGG leaders, pilot group leaders, and demo-farmers as resource persons for the dissemination of APPP-recommended techniques.
- 3) Use of APPP's outputs (i.e. technical manuals and human resources) in the upcoming irrigation project (Japanese ODA loan project) : The *West Tonle Sap Irrigation and Drainage Rehabilitation and Improvement Project* under the Japanese ODA loan scheme will be conducted from 2015. It is planned that the irrigation project will be implemented by the Ministry of Water Resources and Meteorology (MOWRAM) as its main implementing agency, in cooperation with MAFF. The Evaluation Team recommends that MAFF coordinate with MOWRAM to ensure that the Project's outputs will be effectively used in the soft component (farm management) of the irrigation project.
- 4) Prevention of the deterioration of rice cultivation techniques: In order to prevent the deterioration of rice cultivation techniques transferred by the Project, MAFF should continue to closely monitor the rice cultivation techniques practices by farmers. The Evaluation Team further recommends that MAFF strengthen the partnership with the Cambodia Agricultural Research and Development Institute (CARDI), International Rice Research Institutes (IRRI) and higher education institutions for better addressing potential challenges such as the occurrence of diseases and pests in rice production. In addition, the Team emphasized that it is highly important that MAFF continue to enhance its technical and organizational capabilities in order to ensure the stable production of rice and quality seeds.
- 5) Implementation of the periodical review of prioritized 10 seed varieties: In order to achieve the Cambodian Government's policy goal of transforming the country into a major milled rice exporter in the global market, it is important that farmers use high yield varieties with a high resistance pests and diseases that meet the market demand and are resilient to climate changes. The Evaluation Team recommends that the prioritized 10 varieties be periodically reviewed and reassessed based on the market demand and new research findings from research institutions such as CARDI and IRRI.

### **3-7. Lessons Learned**

- 1) Farmer-to-farmer transfer of technical skills: Any Project beneficiaries (even end-beneficiaries, such as farmers) whose capacity is strengthened through Project activities can become the agents of transferring newly acquired knowledge/skills to others. They can and should be utilized as resource persons to disseminate project effects in a cost-effective manner. This type of transfer of technical skills, which can be described as learning through social networking or social learning, can be facilitated with the presence of visual improvements experienced by project beneficiaries and the environment conducive for learning the process that has enabled the improvements. Moreover,

it is necessary to create opportunities/events (e.g. agricultural fair and contests) that enhance the motivation of resource persons.

- 2) Consideration for measures against climate change risks: In designing a technical cooperation project, natural disasters not occurring during the project period have been treated as an important assumption for achieving a project's objective. The recent global trend is that natural disasters have been occurring more in frequency and larger in scale. There have been cases whereby large natural disasters have greatly affected the project implementation. While it is difficult to carry out the natural disaster risk mitigation/management, the natural disaster risk evaluation should be conducted prior to formulating the detailed design of a project.