Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Viet Nam Office: January, 2020

Country Name	**Northwest Region Rural Development Project**
Socialist Republic of Viet Nam	

I. Project Outline

Background	In Dien Bien Province, except Dien Bien District with favorable irrigation conditions, the productivity of rice cultivation in other districts in the province was lower than the national average at the time of ex-ante evaluation. Due to the lack of irrigation facilities, the land available for double rice cropping per year was limited. In addition, in the districts with the scarcity of flat land, the clearance of forest for shifting cultivation with maize and cassava as the major crops for self-consumption negatively affected the environment. The role of local government authorities in supporting agricultural production was limited due to the shortage of state budget, human resource and capacity.		
Objectives of the Project	Through improving the method and approach for cultivation, water resource distribution and irrigation infrastructure management and the capacity for rural development of local government, the project aimed at promotion of rural development in the pilot districts, thereby promoting rural development in Dien Bien Province. 1. Overall Goal: The rural development in Dien Bien Province is promoted. 2. Project Purpose: The rural development in the pilot districts is promoted through strengthening the system, as district government being the core thrust force, to improve the production, post harvesting and marketing of market-oriented agricultural products.		
Activities of the Project	1. Project Site: Dien Bien District, Tuan Giao District and Muong Cha District in Dien Bien Province (Pilot communes: Thanh Hung commune and Noong Het commune in Dien Bien District, Quai Cang commune and Muong Mun commune in Tuan Giao District, Muong Tung commune and Ma Thi Ho commune in Muong Cha District)[1] 2. Main Activities: (1) Draft and implement an improvement plan for better cultivation and conduct training for farmers on the issues related to cultivation in pilot communes; (2) Draft and implement an improvement plan for efficient and effective water usage and conduct training for farmers and facility managers on water use in pilot communes; and (3) Conduct training for extension staff for obtaining better knowledge and skills and training and feedback seminars for the officials of Province, District and Commune People's Committee and other related agencies, and formulate an action plan for expanding the outcome of the project in pilot districts to other districts of the province etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 3 persons (long term) and 23 persons (short term) 2) Trainees Received: 27 persons 3) Equipment: vehicles, thermometers and hygrometers, an electromagnetic current meter for river, grain moisture meters, sowing machine, computers, digital cameras etc. 4) Local operation cost Vietnamese Side 1. Staff Allocated: 25 persons 2. Project office and facilities 3. Local operation cost		
Project Period	August 2010 – July 2015	Project Cost	(ex-ante) 499 million yen, (actual) 420 million yen
Implementing Agency	Department of Agriculture and Rural Development (DARD) of Dien Bien Province, Dien Bien District, Tuan Giao District, and Muong Cha District		
Cooperation Agency in Japan	Ministry of Agriculture, Fisheries, and Forest of Japan		

II. Result of the Evaluation

<Constraints on Evaluation>

- [Terminology used in the Project Purpose and the Overall Goal] The term "rural development" was used both in the Overall Goal and Project Purpose in the ex-ante evaluation, as activities such as construction of water supply facilities and village roads which are not directly related to agriculture were expected to be implemented in accordance with local needs. However, this project was implemented focusing on agricultural production. Thus, in the ex-post evaluation, the term "rural development" was read as "improvement of agricultural production".

<Special Perspectives Considered in the Ex-Post Evaluation>

- [Supplemental Information for the Continuation Status of Project Effects and Achievement of the Overall Goal] Output 1 (improvement of the method and approach for cultivation through training for farmers) and Output 2 (improvement of water resource distribution and irrigation infrastructure management) of the project need to continue for the Project Purpose (improvement of farming status in pilot districts) to continue after project completion and to achieve the Overall Goal (improvement of farming status in Dien Bien Province). Thus, in this ex-post evaluation, the following points including: (1) whether training for farmers is still conducted and expanded to other districts, (2) whether Water Users' Groups (WUGs) established under the project are still functional and WUGs are established in other districts, and (3) whether group (participatory) activities such as regular meetings and maintenance of irrigation facilities are still conducted and expanded to other districts at the time of ex-post evaluation were checked as supplemental information.

[1] The number of farmers covered by the project is 785 farm households in six communes in three districts, with higher emphasis on paddy production (production of soybean and maize was conducted only in two to three villages in three communes).

1 Relevance

<Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development policy such as "increasing agricultural production" and "reducing poverty in the Northwest region of Viet Nam" as set forth in the "Socio-Economic Development Plan (SEDP) (2006-2010)", the "SEDP (2011-2015)" and the "Five Year Plan of Agriculture and Rural Development (2011-2015)" at the times of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Viet Nam's development needs for increasing production of rice (paddy) and other crops to promote poverty reduction in the Northwest region of Viet Nam, at the times of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy as stated in the "Country Assistance Program for Viet Nam" (2009), which included "improving the livelihoods of residents in rural farming communities" under "improvements in living and social conditions and corrections of disparities".

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Regarding paddy production, according to the questionnaire survey to 226 households out of the target farmers of 785 households in six pilot communes in three pilot districts, 99% of the farmers increased the yield. Among them, according to the sample survey for 60 households (ten households per commune), the yield was increased by 15.5% (from 489 to 565 kg/1,000m^2) on average. Seeding amount was reduced by 34% (from 11 to 7 kg/1,000m^2) on average among the above 60 households. Frequency of applying pesticide was also reduced and farmers became able to apply fertilizers with good balance of three elements of nutrition (nitrogen (N), phosphate (P) and potassium (K)). Regarding soybean production, the project implemented experimental cultivation plots of soybean in Tuan Giao District, and according to the interview survey to 51 households in Quai Cang Commune and 46 households in Muong Mun Commune, all of them answered that the yield was increased and improvements were realized in methods of insects identification and protection, fertilizer application, the amount of fertilizer and pesticides used, the amount of seeding and so on[2]. Regarding maize production, the project also implemented experimental cultivation plots of maize in Tuan Giao District, and according to the comparison survey between pilot farmers and traditional cultivation farmers[3], the yield of pilot farmers was higher than that of traditional cultivation farmers by 40% in Quai Cang Commune and by 175% in Muong Mun Commune.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have continued to the time of ex-post evaluation. Based on the Decision No.1073/KH-SNN issued in June 2016 on dissemination of the agricultural extension manual produced under the project, training for farmers and agricultural extension workers (AEW) on cultivation of paddy, soybean and maize has been conducted in other districts as well as in pilot districts in Dien Bien Province, in which approximately 18,000 people participated since project completion. WUGs established under the project have still been functional and participatory activities such as regular meetings and maintenance of irrigation facilities have been conducted in pilot districts. Moreover, 52 WUGs/Water Use Cooperatives have been established at the commune level and 278 Water Users' Sub-groups (WUSs) have been established at the village level, and participatory activities have been conducted in the province including non-pilot districts since project completion. Consequently, according to the data collected by DARD at the village level (thus including both pilot and non-pilot farmers), the improved farming status of farmers have been generally maintained in pilot villages since project completion, as shown in the tables below[4]. There are exceptions though, (1) regarding paddy production, the amount of seeds used has increased in many villages at the time of ex-post evaluation. One of its reasons is that, while sowing by machine was introduced by the project to reduce the amount of seeds required, farmers generally prefer sowing by hand, as seeds sown by machine often do not sink into soil properly and can easily be drifted away when it rains a lot. Another reason is that, farmers previously tended to use paddy kept from previous seasons as paddy seed for the next seasons, and such seed amount was not recognized or reflected in the statistics of DARD. However, more recently, farmers came to purchase certified seeds from agricultural cooperatives and/or shops, and thus the used seed amount became reflected more accurately in the statistics of DARD. (2) Regarding soybean and maize production, the yield has decreased at the time of ex-post evaluation, as it rained too much in 2018 affecting the crop growth.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved by the time of ex-post evaluation. Based on the Decision No. 1073/KH-SNN stated above and the Decision No.1072/KH-SNN (issued in June 2016) on dissemination of the manual on participatory water management improvement, which was also produced under the project, the action plan formulated by the project for expanding the outcome of the project in Dien Bien Province has been applied in all districts and city in the province (Indicator 1). In Dien Bien Province as a whole, the yield of paddy, soybean and maize has increased slightly, while the amount of purchased and used seed and fertilizer has largely increased after project completion, as shown in the tables below. Reasons for the seed amount increased are the same as ones stated above. Regarding the amount of fertilizer, besides annual crops such as paddy, soybean and maize, Dien Bien Province has also promoted production of other crops (perennial crops), contributing to the income increase of local farmers and poverty reduction in the province. The amount of fertilizer purchased and used for all crops in the province largely increased partly because (1) it is easy to adjust the amount of N, P and K for appropriate paddy growth and thus it is recommended by DARD to apply them, (2) it is also encouraged by DARD to use organic fertilizer to promote replacement of chemical fertilizer in future, (3) the area of fruit trees and macadamia has increased in fallow land or ineffective

[2] Concrete figures on to what extent the yield etc. was increased among them was not available in existing documents.

[3] The number of households was not available in existing documents.

[4] Besides data provided by DARD, direct interviews with 32 farmers were conducted, which includes 22 pilot farmers, seven non-pilot farmers who applied the project's cultivation techniques after the project completion, and three farmers who have not applied the project's cultivation technique. While a consistent tendency was not seen between the results of interview with the pilot farmers and the data provided by DARD (partially due to the difference of sample size), it was confirmed that many pilot farmers continue to apply the project's cultivation techniques and some non-pilot farmers now apply project's cultivation techniques.

arable land in recent years, thus a large amount of fertilizer is needed for improvement of soil quality in these land areas, and (4) farmers in remote and mountainous areas have become familiar with using chemical fertilizers that they have never used before or rarely used and access to the remote and mountainous areas has recently become easier and more convenient than before, resulting in a significant increase of fertilizer application in these areas (Indicator 2).

<Other Impacts at the time of Ex-post Evaluation>

While women had been engaged in farming, opportunities for them to access to advanced techniques had been limited. The project recommended to ensure the gender equity, sharing assignments between men and women. Accordingly, the rate of female participation in agricultural training in Dien Bien Province has been improved from approximately 15-20% before the project implementation to over 50%.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

<table>
<tr><th>Aim</th><th>Indicators</th><th>Results</th></tr>
<tr><td>(Project Purpose)
The rural development in the pilot districts is promoted through strengthening the system, as district government being the core thrust force, to improve the production, post harvesting and marketing of market-oriented agricultural products.</td><td>More than 60% of the farmers in the pilot village improves their farming status.

*Definition of “farming status”: example: production increase, cost reduction of inputs etc.</td><td>Status of the Achievement: achieved (continued)
(Project Completion) More than 60% of farmers in pilot villages improved their farming status.
(Ex-post Evaluation) The improved farming status of farmers have been generally maintained in pilot villages since project completion.
[Paddy]
<table>
<tr><th rowspan="2">Pilot Site</th><th rowspan="2">Farming Status Indicator</th><th colspan="2">Summer</th><th colspan="2">Spring</th></tr>
<tr><th>2014</th><th>2018</th><th>2015</th><th>2019</th></tr>
<tr><td rowspan="5">Muong 1 Village/ Muong Mun Commune/ Tuan Giao District</td><td>Yield (kg/1,000m^2)</td><td>620</td><td>600</td><td>630</td><td>610</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>4</td><td>7</td><td>4</td><td>8</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>40</td><td>25</td><td>40</td><td>25</td></tr>
<tr><td>Amount of organic fertilizer (kg/1,000m^2)</td><td>600</td><td>500</td><td>600</td><td>400</td></tr>
<tr><td>Frequency of pesticide application (times)</td><td>4</td><td>5</td><td>2</td><td>3</td></tr>
<tr><td rowspan="5">Sang Village/ Quai Cang Commune/ Tuan Giao District</td><td>Yield (kg/1,000m^2)</td><td>580</td><td>570</td><td>590</td><td>600</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>4</td><td>8</td><td>4</td><td>9</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>40</td><td>30</td><td>40</td><td>30</td></tr>
<tr><td>Amount of organic fertilizer (kg/1,000m^2)</td><td>400</td><td>300</td><td>400</td><td>N/A</td></tr>
<tr><td>Frequency of pesticide application (times)</td><td>4</td><td>5</td><td>2</td><td>3</td></tr>
<tr><td rowspan="5">Group 9,10/ Thanh Hung Commune/ Dien Bien District</td><td>Yield (kg/1,000m^2)</td><td>570</td><td>590</td><td>610</td><td>640</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>9~10</td><td>6~7</td><td>9~10</td><td>6~7</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>115</td><td>85</td><td>115</td><td>95</td></tr>
<tr><td>Amount of organic fertilizer (kg/1,000m^2)</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Frequency of pesticide application (times)</td><td>7~8</td><td>3~4</td><td>7~8</td><td>3~4</td></tr>
<tr><td rowspan="5">Group 18,19/ Noong Het Commune/ Dien Bien District</td><td>Yield (kg/1,000m^2)</td><td>600</td><td>630</td><td>620</td><td>660</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>10</td><td>6~7</td><td>10</td><td>6~7</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>115</td><td>85</td><td>115</td><td>95</td></tr>
<tr><td>Amount of organic fertilizer (kg/1,000m^2)</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Frequency of pesticide application (times)</td><td>7~8</td><td>3~5</td><td>7~8</td><td>3~5</td></tr>
<tr><td rowspan="5">Ho Chim 1, 2/ Ma Thi Ho Commune/ Muong Cha District</td><td>Yield (kg/1,000m^2)</td><td>460</td><td>480</td><td>470</td><td>480</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>5</td><td>7</td><td>5</td><td>7</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>35</td><td>25</td><td>35</td><td>25</td></tr>
<tr><td>Amount of organic fertilizer (kg/1,000m^2)</td><td>500</td><td>400</td><td>500</td><td>400</td></tr>
<tr><td>Frequency of pesticide application (times)</td><td>4</td><td>5</td><td>2</td><td>3</td></tr>
<tr><td rowspan="5">Pom Cai Village/ Muong Tung Commune/ Muong Cha District</td><td>Yield (kg/1,000m^2)</td><td>470</td><td>490</td><td>470</td><td>480</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>5</td><td>7</td><td>5</td><td>7</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>25</td><td>35</td><td>25</td><td>30</td></tr>
<tr><td>Amount of organic fertilizer (kg/1,000m^2)</td><td>500</td><td>400</td><td>500</td><td>400</td></tr>
<tr><td>Frequency of pesticide application (times)</td><td>4</td><td>5</td><td>2</td><td>3</td></tr>
</table>
[Soybean and Maize]
<table>
<tr><th rowspan="2">Pilot Site</th><th rowspan="2">Farming Status Indicator</th><th colspan="2">Maize</th><th colspan="2">Soybean</th></tr>
<tr><th>2014</th><th>2018</th><th>2014</th><th>2018</th></tr>
<tr><td rowspan="3">Muong 1 Village/Muong Mun Commune/Tuan Giao District</td><td>Yield (kg/1,000m^2)</td><td>730</td><td>620</td><td>180</td><td>150</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>2</td><td>2</td><td>10</td><td>12</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>40</td><td>30</td><td>40</td><td>25</td></tr>
<tr><td rowspan="3">Cuong Village/ Quai Cang Commune/Tuan Giao District</td><td>Yield (kg/1,000m^2)</td><td>920</td><td>630</td><td>180</td><td>150</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>2</td><td>2</td><td>10</td><td>12</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>40</td><td>30</td><td>40</td><td>25</td></tr>
<tr><td rowspan="3">Group 19/Noong Het Commune/Dien Bien District</td><td>Yield (kg/1,000m^2)</td><td>718</td><td>721</td><td>-</td><td>-</td></tr>
<tr><td>Seed amount (kg/1,000m^2)</td><td>2</td><td>2</td><td>-</td><td>-</td></tr>
<tr><td>Amount of compound (NPK) fertilizer (kg/1,000m^2)</td><td>50</td><td>50</td><td>-</td><td>-</td></tr>
</table></td></tr>
<tr><td>(Overall Goal)
The rural development in Dien Bien Province is promoted.</td><td>1. Approximately by 2020, the action plan formulated by the project is utilized in districts of Dien Bien Province other than the pilot districts by the governmental authorities of Dien Bien Province and districts.</td><td>(Ex-post Evaluation) achieved
Based on the Decision No.1072/KH-SNN and 1073/KH-SNN, the action plan formulated by the project has been applied in all districts and city in Dien Bien Province.</td></tr>
</table>

	2. Approximately by 2020, agricultural management in Dien Bien Province improves through increasing farming status for paddy rice, maize and soybeans etc.	(Ex-post Evaluation) partially achieved The yield of paddy, soybean and maize has increased slightly, while the amount of purchased and used seed and fertilizer has largely increased after project completion.

[Paddy Production in Dien Bien Province]

Farming Status Indicator	2014		2018	
	summer/fall	winter/spring	summer/fall	winter/spring
Cultivation area (ha)	16,928	8,476	18,727	9,329
Yield (kg/1,000m^2)	503	605	510	592

[Soybean and Maize Production in Dien Bien Province]

Farming Status Indicator	Maize		Soybean	
	2014	2018	2014	2018
Cultivation area (ha)	29,929	29,765	5,543	2,989
Yield (kg/1,000m^2)	254	266	131	135

[Amount of Procured/Used Seed in Dien Bien Province] (ton/year)

Paddy		Maize		Soybean	
2014	2018	2014	2018	2014	2018
670	1,116	430	506	165	209

[Amount of Fertilizer Used for all crops (including annual crops and perennial crops)[5] in Dien Bien Province] (ton/year)

Name	2014	2018
Nitrogen fertilizer (N)	1,550	9,914
Phosphate fertilizer (P)	359	17,842
Potassium fertilizer (K)	207	5,054
Compound (NPK) fertilizer	4,687	N/A
Organic fertilizer	60	27,800

[Amount of Pesticides Used for all crops (including annual crops and perennial crops) in Dien Bien Province] (ton/year)

Name	2014	2018
Fungicide	23	28
Insecticide	40	35
Herbicide	125	95
Golden snail pesticide	0	6
Hormone (growth regulators)	0.4	0

Source: JICA document, Questionnaire Survey to DARD

3 Efficiency

Both the project cost and the project period were within the plan (ratio against plan: 84%, 100%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The needs for increasing agricultural production and reducing poverty in the Northwest region of Viet Nam are stated in the "SEDP (2016-2020)" and the "Five Year Plan of Agriculture and Rural Development (2016-2020)".

<Institutional Aspect>

There has been no change in the organizational structure of DARD of Dien Bien Province since project completion. Within DARD, there are three staff each in the Cultivation Division and the Livestock and Fishery Division, 19 staff in the Agricultural Extension Center (AEC) (provincial level), 81 staff in the Agricultural Extension Station (AES) (district level), 226 AEW (commune and village level), 19 staff in the Sub-Department of Plant Protection (PPD) (provincial level) and 50 staff in the Plant Protection Station (PPS) (district level). According to DARD, the number of staff is sufficient to promote improvement of agricultural production in the province. In addition, People's Committee of each district in the province has functional divisions and units responsible for crop production, plant protection, agricultural extension and so on, and sufficient number of staff is assigned in these divisions and units.

<Technical Aspect>

At the time of ex-post evaluation, only some staff to whom the skills were transferred under the project have continued working at DARD and relevant agencies (others have retired or changed their jobs). Nonetheless, according to DARD, the skill level of staff in DARD and People's Committee of districts in the province is generally sufficient to promote improvement of agricultural production, over 90% of them having the university or higher degrees. However, the skill level of irrigation officers in Quai Cang and Muong Mun Communes needs to be enhanced more to fulfill their duties. DARD has conducted training on agricultural extension and participatory water management for staff at provincial, district and commune levels every year since project completion. The guidelines and manuals developed under the project have also been utilized by stakeholders. Most of the equipment procured under the project is still used in a good condition, however, as stated above, the sowing machine is not much used, as many farmers prefer sowing by hand.

<Financial Aspect>

The amount of budget allocated for AEC and PPD (for agricultural extension) and Sub-Department of Irrigation (for participatory water management) was 1,356 million VND in 2016, 3,102 million VND in 2017 and 2,889 million VND in 2018. According to DARD, the budget amount is limited, however, DARD has managed to combine with other financial sources such as district budget and other programs and projects to implement the improvement of agricultural production.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the technical aspect of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project had achieved the Project Purpose at project completion, and it achieved the Overall Goal at ex-post evaluation: more than 60% of farmers in pilot villages improved their farming status at project completion, and the farming status of farmers has been improved

[5] The amount of fertilizers and pesticides used for all crops was summarized by DARD based on selling records of agricultural material shops in Dien Bien Province. From 2018, there is no data of compound fertilizer NPK in the statistics of the amount of fertilizer used in Dien Bien Province because all amount of compound fertilizer NPK is converted into single fertilizer N, P and K for easy management by DARD.

to some extent in Dien Bien Province as a whole at ex-post evaluation. Regarding the sustainability, some problems were observed such as insufficient technical skills of some irrigation officers, while no particular problem was observed on the policy, institutional and financial aspects.

Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Lessons Learned for JICA:

- As stated above, many farmers prefer sowing by hand and thus the sowing machine procured under the project is not much used. When introducing an advanced cultivation technique under a project, it is important to carefully consider at the time of project formulation whether the technique is appropriate under local customs and conditions.

WUG members in Muong 1 village
are checking the irrigation canal after rain

Training on maize cultivation in Tuan Giao District