

付 属 資 料

1. ミニッツ（合同評価報告書）
2. 評価グリッド（和文）
3. インタビュー概要及び質問票回答のまとめ
4. 稲種子増殖技術に関する改善点、残された問題点
5. 唐箕及び選別機の導入・開発結果

**MINUTES OF MEETINGS
BETWEEN
THE JAPANESE TERMINAL EVALUATION TEAM
AND
THE LAO PEOPLE'S DEMOCRATIC REPUBLIC AUTHORITIES CONCERNED
ON
THE JAPANESE TECHNICAL COOPERATION
FOR
RICE SEED MULTIPLICATION AND DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT**

The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Project Terminal Evaluation Team (hereinafter referred to as "the Team"), headed by Mr. Shunichi NAKADA, to the Lao People's Democratic Republic (hereinafter referred to as "Lao PDR") from February 21, 2011 to March 4, 2011, for the purpose of conducting Terminal evaluation for Rice Seed Multiplication and Distribution System Improvement Project (hereinafter referred to as "the Project").

During its stay, the Team had a series of discussions and exchanged the views with the Lao authorities concerned (hereinafter referred to as "the Lao side") and monitored and evaluated the Project with the Lao Terminal Evaluation Team members.

As a result of discussions, the Joint Terminal Evaluation Team reported the achievements of the Project to desirable measures to be taken for the remaining period of the Project and the Lao side agreed to accept the matters referred to in the joint evaluation report as attached ANNEX2.

Vientiane, March 4, 2011



Mr. Shunichi NAKADA
Leader
Japanese Terminal Evaluation Team
Japan International Cooperation Agency



Mr. Somxay SISANONH
Deputy Director General
National Agriculture and Forestry-
Extension Services
Ministry of Agriculture and Forestry

Both side agreed on contents of evaluation report. It's recommendations as follows.

1. Activities for remaining period of RISEP
 - i) Improvement of the Strategy

Develop a national strategy for seed multiplication and distribution which cover the following areas in collaboration with relevant authorities

Legal framework, National Seed Board, Inspection system, Distribution system of R3 seeds, and Dissemination of cultivation techniques of improved varieties, and others
 - ii) Standardization of RISEP model

To introduce the System to other area, it is necessary to identify and organize the required steps and authorize it as a RISEP model.

2. Stronger collaboration among departments in MAF

Although, after implementation of the Project, direct counterparts within the target areas have enhanced their capacity and begun to work very closely; the level of collaboration among departments was seen as being unsatisfactory. To improve every aspect of rice production, Quality (NAFRI), Control (DOA), and Multiplication and Distribution (NAFES), effective collaboration among these departments is vital. The Strategy Planning of Rice Seed Multiplication and Distribution document has not been adopted yet, but, hopefully, a Seed Board will be established in the future, under the umbrella of which, these three organizations will then be better able to work together.

3. Areas to be improved for the establishment of nationwide Seed Multiplication and Distribution System

Everyone interviewed during the evaluation expressed their appreciation towards the successful implementation of the Project. However, they envisaged that it was just the beginning of JICA's engagement in this field, and appealed for JICA to continue with its involvement.

The Team recognizes the necessity to clarify roles and responsibilities among various actors including the Government organizations, farmer groups, private sectors, and development partners. Bearing this as precondition, the Team identified the area to be improved as described below.

Area	Activities	Government	Private Sector
Policy	- Seed laws / Regulations / Standards	A	C
System	- National / Provincial Seed Board - Inspection system - Distribution system	A	B
Technology	- Seed production - Cultivation technology	B	C
Infrastructure	- Production / Post harvest / Distribution	B	C

*A-C represents the extent of potential contribution/involvement

**Some of the activities indicated in the table have been partially achieved by RISEP

List of Stakeholders Consulted / Interviewed by the Evaluation Team

Name	Title/Designation	Organization
Mr. Thongphath Vongmany	Director General of NAFES	National Agriculture and Forestry Extension Services (NAFES)
Dr. Somnuck Thirasack	Deputy Director General of NAFES/Project Director	RISEP, NAFES
Dr. Sengpaseuth Rasabandith	DD of Extension and Database Division/Project Manager	RISEP, NAFES
Dr. Katsumi Katayama	System Management / Rice Seed Extension	RISEP, NAFES
Mr. Tamotsu Seiji	Rice Seed Multiplication Specialist	RISEP, NAFES
Mr. Sengchanh Phetkhounluang	Deputy Project Manager	RISEP, NAFES
Mr. Lusi Yologialong	Deputy Project Manager	RISEP, NAFES
Mr. Tadashi Kotani	Representative	JICA Laos Office
Mr. Viengsavanh Sisombath	Program Officer	JICA Laos Office
Mr. Soulivanthong Kingkeo	Deputy Director General of NAFRI	National Agriculture and Forestry Research Institute (NAFRI)
Mr. Chanphasouk Tauthaphone	Head of Seed Multiplication Centre	Naphok Seed Multiplication Centre (RCCRC)
Mr. Khamxay Sipaseuth	DG Assistant	Department of Agriculture (DOA)
Mr. Saleumsy Phithayaphone	Deputy Director of Planning Division	Department of Agriculture (DOA)
Mr. Vanthieng Phommasoulin	Senior Officer	Department of Agriculture (DOA)
Mr. Bouaphanh Konedavong	Deputy Director of PAFO	PAFO of Vientiane Province

Name	Title/Designation	Organization
Mr. Khamphanh Vaneth	Deputy Head	Cabinet office of Agriculture of Vientiane Province
Mr. Somvandy Chanthavong	Head of Pakcheng Agricultural Station	Pakcheng Agricultural Station (PAS)
Mr. Boumpheng Ban Kham Phnong	Director, Planning Section	PAFO of Vientiane Province
Mr. Phouvong Rayvong	Technical Staff of Planning Section	PAFO of Vientiane Province
Mr. Vixay Keomahavong	Adviser of Pakcheng Agricultural Station	PAS
Mrs. Vandy Vongxai	Staff	PAS
Mr. Vanhua Khora Bayouthone	Staff	PAF
Leader of R3 Seed Producer Group	Leader	Phonkham Village
Leader of R3 Seed Producer Group	Leader	Cheng Village
Mr. Phoumy Inthapanya	Director, RCCRC	Rice and Cash Crop Research Center, NAFRI
Dr. Masato Togawa	Chief Representative	JICA Laos Office
Mr. Latsanivong Amalathithada	Director General of Provincial Agriculture and Forestry Extension Station, Vientiane Capital	
Mr. Vilaysack Souphanthong	Director of Provincial Agriculture and Forestry Extension Station	
Mr. Vanhphaeng Houangsauanh	Deputy head of Provincial Agriculture & Forestry Extension Station	
Mr. Khan Kham Boulliphane	Director of Nongheo Seed Multiplication Centre	No-SMC
Miss Thongpheuane Xaythongdit	Deputy Director of No-SMC	No-SMC
Mr. Suon Thone Khaophong	Head of Agriculture Unit, DAFO	DAFO Vientiane City
Leader of R3 Seed Producer Group	Leader	Pakngum District

JOINT TERMINAL EVALUATION REPORT

ON

RICE SEED MULTIPLICATION AND DISTRIBUTION SYSTEM

IMPROVEMENT PROJECT

Vientiane City, 4 March 2011

Japanese – Lao PDR
Terminal Evaluation Team

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Abbreviations

ARC	:	Agriculture Research Center
C/P	:	Counterpart
DAFO	:	District Agriculture and Forestry Office
DG	:	Director General
DOA	:	Department of Agriculture
DOP	:	Department of Planning
IRRI	:	International Rice Research Institute
JICA	:	Japan International Cooperation Agency
LAFRC	:	Luang Namtha Agriculture Forestry Research Center
Lao PDR	:	Lao People's Democratic Republic
MAF	:	Ministry of Agriculture and Forestry
NAFES	:	National Agriculture and Forestry Extension Services
NAFRI	:	National Agriculture and Forestry Research Institute
NSB	:	National Seed Board
N-SMS	:	Naphok Seed Multiplication Station
No-SMC	:	Nongheo Seed Multiplication Center
OJT	:	On the Job Training
PAFO	:	Provincial Agriculture and Forestry Office
PAS	:	Pakcheng Agriculture Station
PDM	:	Project Design Matrix
PO	:	Plan of Operation
PSC	:	Project Steering Committee
RCCRC	:	Rice and Cash Crop Research Center
RISEP	:	Rice Seed Multiplication and Distribution System Improvement Project
RRU	:	Rice Research Unit
SDC	:	Switzerland Development Cooperation
SHDP	:	Smallholder Development Project
SMC	:	Seed Multiplication Center
SMS	:	Seed Multiplication Station
TSC	:	Technical Service Center
R1	:	Foundation Seed
R2	:	Stock or (registered) seed
R3	:	Extension or (certified) seed
TDK	:	Thadokkham

1. Outline of the Project

1-1 Background of the Project

The Lao Peoples Democratic Republic (hereafter Lao) is located in the center of Indochina. The Population was approximately 5.7 million, and GDP per capita was 613 US dollars (2006). The country was categorized as a Least Less Developed Country (LLDC) at the time of Project commencement. The Agriculture and Forestry sector within Lao employs approximately 80 percent of the employable population and contributes approximately 30 percent of GDP.

Although rice is the single most important crop for Lao, rice self-sufficiency has yet to be achieved in some parts of the country. Demand for rice is increasing significantly, with Lao's population growth being approximately 2 percent per year and prospective economic growth being around 7 percent per year. Therefore, the Government of Lao targeted an increase in the production of high quality rice seed, together with a strengthening of its extension activities, with the aim of increasing rice yields and incomes for farmers. The Ministry of Agriculture and Forestry (MAF) had already succeeded in developing a high quality improved rice plant (increased yields, resistant to disease and improved taste) at the National Agriculture and Forestry Research Institute (NAFRI) in collaboration with the International Rice Research Institute (IRRI).

However, there was no administrative system for rice seed multiplication and distribution and the Seed Multiplication Stations/Centers (SMSs/SMCs) were unable to ascertain rice seed demand levels nor create seed production and distribution plans. In Lao, seed production is structured so that, R1 seeds are produced by NAFRI, R2 seeds are produced at the provincial level, and R3 seeds at seed centers and by R3 producing farmers. However, the quality and quantity of rice seed produced at the local level was low, with the technical capacity of seed centers and registered farmers to dry and filter rice seed being inadequate. Moreover, rice seed extension was poorly connected to the provincial and district extension offices, with seed centers directly selling to local farmers.

Three major challenges had been identified; which were, to establish a management system for rice seed multiplication and distribution, to improve the technical capacity for rice seed production and filtering at seed centers, and to establish an extension system for local farmers.

1-2 Summary of the Project

1-2-1 Overall goal

Quality rice seed is widely used by farmers in 3 target provinces.

1-2-2 Project purpose

A rice seed multiplication and distribution system that is appropriate for local conditions is established in 3 target provinces.

1-2-3 Outputs

<Output 1> A management system for rice seed multiplication and distribution is established at the central level.

<Output 2> A management system for rice seed multiplication and distribution is established in target provinces.

<Output 3> The production of foundation seed is improved in RRU in RCCRC and LAFRC.

<Output 4> The function of the N-SMS is strengthened to transfer knowledge and skills to SMCs.

<Output 5> Multiplication and distribution of stock (registered)/extension (certified) seed are improved in No-SMC, PAS and LAFRC.

<Output 6> Multiplication and distribution of extension(certified) seed is verified at the farmer level.

2. Objectives and methods of the evaluation

The ‘Rice Seed Multiplication and Distribution System Improvement Project’ has been operating since August 2006, alongside the National Agriculture and Forestry Extension Services (NAFES) as the Counterpart organization (C/P). Target areas have been Vientiane City, Vientiane Province and Luang Namtha Province with two long-term experts (System Management/Distribution and Rice Seed Multiplication) having been dispatched. A terminal project evaluation is due to be undertaken before the project completion in July 2011.

2-1 Objectives of the evaluation

- (1) To review the actual inputs, activities and implementation process, and the achievement level of the project purpose and outputs in comparison with the latest Project Design Matrix (PDM), and the Plan of Operations (PO). This should be undertaken in a manner so as to make a comprehensive evaluation of the project in accordance to the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impacts and Sustainability), before the project completion in July 2011.
- (2) To share and discuss the lesson learnt and the recommendations at the meeting with the Joint Evaluation Committee to ascertain the sustainability of the project after the completion of the project.

2-2 Methods of the evaluation

Evaluation activities were conducted by the Evaluation Team (hereinafter referred to as “the Team”), which was composed of the Japanese Evaluation Team and the Lao Evaluation Team. These activities included reviewing project documents such as the Record of Discussions (R/D), the latest PDM (Annex-1), the PO and progress reports, and minutes of meetings, questionnaire survey, field survey, interviews and discussions with officials/staff members of the government and farmers concerned. The Team analysed the collected data based on the examination of the project performance and implementation process, and five evaluation criteria listed in the following table.

(1) Examination of the project performance and implementation process

Examination of the project performance	<ul style="list-style-type: none"> • Were the inputs implemented as planned? • Were the outputs produced as planned? • Will the project purpose be achieved? • Is there any prospect that the overall goal will be achieved?
Examination of the project implementation process	<ul style="list-style-type: none"> • Were activities implemented as planned? • Were there any problems in the method for technology transfer? • Were there any problems in the project management system? (i.e. monitoring, communication within the project, etc.) • Does the project have a high recognition level within implementing organizations and counterpart organizations? • Did any problems occur during the process of implementing the project, or any other factors that influenced effectiveness?

(2) Five evaluation criteria

Items	Review points
Relevance	Is the project purpose; still relevant at the final evaluation, appropriate to solve the problems, and consistent with the priorities and the policies of Lao PDR and Japan? Were the project strategies and approaches appropriate?
Effectiveness	Will the project benefit society?
Efficiency	Was the input utilized effectively? Was it appropriate (timing and the size) to achieve the output? Weren't there alternative ways to achieve the output?
Impacts	Were the inputs utilized effectively? Were they appropriate (timing and size) to achieve the outputs? Were there alternative ways to achieve the outputs?
Sustainability	Is there a prospect that the effects of the project will continue after project completion?

2-3 Procedure of the evaluation

- (1) To review and analyse the progress of the project including the level of achievement of the project objectives and outputs, and the appropriateness of the input.
- (2) To examine and agreed upon evaluation questions, and create an evaluation grid in accordance to the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impacts and Sustainability).

- (3) To evaluate and analyse the project based on the results of questionnaire, site visits and interview with concerned parties, to create comprehensive evaluation report.
- (4) To inform both Lao and Japanese sides the results of terminal evaluation survey, and sign the Minutes of Meetings (M/M) after both parties agreed upon the results.

2-4 Members and schedule of the Evaluation Team

2-4-1 Japanese evaluation team

Name	Designation	Title and Affiliation
Shunichi NAKADA	Leader	Senior Advisor to the Director General, Rural Development Department, JICA
Chukichi KANEDA	Rice Seed Multiplication and Distribution	Technical Advisor, Japan Association for International Collaboration of Agriculture and Forestry
Tadashi KOTANI	Evaluation Planning 1	JICA Lao Office
Viengsavanh SISOMBATH	Evaluation Planning 2	JICA Lao Office
Atsuko ORIMOTO	Evaluation Analysis	Consultant, Japan Development Services Co., Ltd.

2-4-2 Lao evaluation team

Name	Designation	Title and Affiliation
Dr. Somnuck THIRASACK	Leader	DDG of NAFES, Project director
Dr. Sengpaseuth RASABANDITH	Rice seed multiplication and distribution	DD of Extension Div, Project manager
Mr. Bouaphanh KONEDAVONG	Member	DDG of VTE PAFO
Mr. Khammouan LORKHAMCHUAE	Member	DDG of LNT PAFO
Mr. Vanhphaeng HOUANGSAVANH	Member	DD of PAFES, Vientiane Capital
Mr. Sengchanh PHETKHOUNLEANG	Member	Deputy Project manager

Name	Designation	Title and Affiliation
Dr.Chay BOUNPHANOUSAY	Member	DD of RCCRC
Mr. Khankham BUALIPHANH	Member	Director of No-SMS
Mr. Somvandy CHANTHAVONG	Member	Director of PAS
Mr. Manit SENGTHONGHAK	Member	Director of LAFRC
Mr. Vandy PHETPASEUT	Member	DOA
Mr.Thippavong OUNLA	Member	Division of International Cooperation, DOP

2-4-3 The schedule of the evaluation

Date		Activities
21 Feb.	Mon.	<ul style="list-style-type: none"> ▪ Meeting with JICA and project experts ▪ Meeting with National Agriculture and Forestry Extension Services (NAFES)
22 Feb.	Tue.	<ul style="list-style-type: none"> ▪ Interview with National Agriculture and Forestry Research Institute (NAFRI) ▪ Site visit for Rice and Cash Crop Research Center (RCCRC) and Naphok Seed Multiplication Station (N-SMS)
23 Feb.	Wed.	<ul style="list-style-type: none"> ▪ Interview with the Department of Agriculture (DOA) ▪ Visiting central market
24 Feb.	Thurs.	<ul style="list-style-type: none"> ▪ Site visit and Interview with the Provincial Agriculture and Forestry Office (PAFO) Vientiane Province ▪ Interview with seed producing farmers in Phonkham Village ▪ Site visit and Interview with Pakchen Agriculture Station (PAS) ▪ Interview with seed producing farmers in Chen Village
25 Feb.	Fri.	<ul style="list-style-type: none"> ▪ Interview with RCCRC ▪ Preparation of the Minutes
26 Feb.	Sat.	<ul style="list-style-type: none"> ▪ Preparation of the Minutes
27 Feb.	Sun.	<ul style="list-style-type: none"> ▪ Preparation of the Minutes ▪ Main evaluation team's arrival at Vientiane

Date		Activities
28 Feb.	Mon.	<ul style="list-style-type: none"> ▪ Meeting at JICA Laos Office ▪ Meeting with National Agriculture and Forestry Extension Services (NAFES)
1 Mar.	Tue.	<ul style="list-style-type: none"> ▪ Interview with the PAFO Vientiane City ▪ Interview with the Nongheo Seed Multiplication Center (No-SMC) ▪ Interview with farmers' groups (Pakngum District)
2 Mar.	Wed.	<ul style="list-style-type: none"> ▪ Meeting within the Team ▪ Preparation of the Minutes
3 Mar.	Thurs.	<ul style="list-style-type: none"> ▪ Evaluation meeting with Joint Evaluation Committee ▪ Discuss the evaluation results and the Minutes ▪ Correction of the Minutes
4 Mar.	Fri.	<ul style="list-style-type: none"> ▪ Signing of the Minutes ▪ Report to JICA Laos Office and the Embassy of Japan in Laos

3. Results of the evaluation

3-1 The Project performance

3-1-1 Input

The Team confirmed that most of the inputs from Japanese side and Lao side were borne. Besides input from JICA and Lao Government, farmer groups also contributed to the necessary infrastructure and/or equipments. Details of the inputs are shown in the evaluation grid (Annex-2).

3-1-2 Output

The Team confirmed that most of the outputs were fulfilled in accordance with the latest PDM (February 4, 2010). However, there are some indicators that might not be achieved within the Project duration due to the outside factors (details described in the relevant paragraph below).

<Output1> A management system for rice seed multiplication and distribution is established at the central level.

Indicator 1-1 The current status of rice seed multiplication and distribution in nation-wide is reported annually.

The production of R1, R2 and R3 is regularly reported to confirm the achievement of national target (100,000 ton). Therefore, this indicator is accomplished.

Indicator 1-2 The Strategy Planning of Rice Seed Multiplication and Distribution (the Strategy) is revised and approved as a national strategy.

The draft Strategy that defined the roles and responsibilities among relevant authorities regarding rice seed multiplication and distribution was formed and has been submitted to the Ministry of Agriculture and Forestry (MAF). MAF issued the official document to define which authorities are responsible for rice seed production, multiplication and distribution of, in particular, R1 and R3. NAFES drafted to suggest the establishment of National Seed Board and to clarify the responsibilities of R2 production and distribution. The indicator was not fully accomplished; however, it did not affect to produce the output.

Indicator 1-3 The management structure is established and NAFES can provide the instructions to PAFO necessary for realization of the Strategy.

The management structure was established and NAFES started to provide the instructions to PAFO. This indicator has been accomplished.

Indicator 1-4 The staff of NAFES can transfer the expertise of the improved system of rice seed multiplication and distribution by seminar/ training course.

100 % of the C/Ps of NAFES participated training courses (in country, in Thailand or Vietnam, and in Japan), and, with OJT, the capacity of NAFES staffs has been greatly improved. This indicator has been accomplished.

<Output 2> A management system for rice seed multiplication and distribution is established in target provinces.

Indicator 2-1 Each target province formulates a Provincial Plan of Rice Seed Multiplication and Distribution in accordance with the Strategy.

Provincial Plan of Rice Seed Multiplication and Distribution to define production target and implementation structure was formulated two years ago in both Vientiane City and Vientiane Province. They are in the process of revision, and the Provincial Plan in Luang Namtha Province will create the Provincial Plan

before the completion of the Project. This indicator will most likely be accomplished before the completion of the Project.

Indicator 2-2 In accordance with the Provincial Plan, each target province formulates an Annual Plan suitable for local conditions every year.

All target provinces produce a bi-Annual Plan based on calculations from the previous year and information provided by DAFO. This indicator has already been accomplished.

Indicator 2-3 The necessary staff is allocated in target PAFO/ PAFEC, Stations/ Centers and DAFOs in accordance with the Strategy/ the Provincial Plan.

The indicator has been accomplished.

<Output3> The production of foundation seed is improved in RRU in RCCRC and LAFRC.

Indicator 3-1 All foundation seeds meet the quality standard defined by the Strategy.

A manual of R1 seed production including quality standard was completed, equipment and facility were enhanced to assure the quality, and this has helped the standardization of the rice product. As the result, both RCCRC and LAFRC succeeded R1 production in rain season 2010, and both institutions expressed the view that the quality of R1 has improved. Although the result of the dry season production is not yet confirmed, this indicator will most likely be accomplished.

Indicator 3-2 Foundation seed is produced based on production plans of stock (registered) seed in varieties and quantity.

Foundation seed is produced based on production plans of stock (registered) seed in varieties and quantity; however, the production plans are not necessarily represented the actual demand. There is no storage capacity in RCCRC, and it hampers the stable supply. The indicator has not been fully achieved.

<Output4> The function of the N-SMS is strengthened to transfer knowledge and skills to SMCs.

Indicator 4-1 The yield reaches the same level of RRU in each variety and more than 70 % of stock (registered) seed meets the quality standard defined by the Strategy.

Japanese seed separators were installed to improved the quality of the R2 seeds.

PMS/PMCs and some farmers groups that purchased R2 seeds from N-SMS expressed their satisfaction with the quality. Based on the interviews, the Team observed that the indicator was fulfilled; however, the actual data to monitor seed quality could not be obtained. The Team recognized the need of improvement in data management in the future.

Indicator 4-2 The staff in charge of rice seed production can transfer knowledge and skills on the production methods of stock (registered) / extension (certified) seed to SMCs.

RCCRC started to transfer technique to other SMS/SMCs in 2007. Since N-SMS joined under RCCRC in 2008, there have been several training courses provided not only LAFRC and PAS, but also for 11 participants from 4 other provinces. Moreover, N-SMS and RCCRC ran training courses by themselves for 15 participants from 2 provinces in 2010. This indicator was accomplished.

Indicator 4-3 The staff in charge of rice seed machinery can transfer knowledge and skills on the operation and maintenance of the rice seed processing machines and the related equipment/facilities to SMCs.

The training specified only for machinery is rarely held, and this component is included in the Indicator 4-2.

Indicator 4-4 A technical manual for rice seed multiplication and distribution is made.

Technical manuals on R2 and R3 seed production were completed. Over 200 manuals have already been distributed to the non-target provinces under the World Bank funded project. This indicator has been accomplished.

<Output5> Multiplication and distribution of stock (registered) / extension (certified) seed are improved in PAS and LAFRC.

Indicator 5-1 The production of stock (registered) / extension (certified) seed is increased by 20 % in PAS and LAFRC

There is no baseline data available to compare current amount of production of R2 and R3 seeds in PAS and LAFRC, since the quality standard of R2 and R3 was not clearly defined and shared before the Project started. The Team considered the indicator was achieved, based on the fact that the indicator 4 of the project purpose, 'Amount of distribution of R2 and R3' has already been attained.

Indicator 5-2 More than one (1) staff in the target Center/ Station can implement self-monitoring as a means of quality control of rice seed.

There are 4 staffs in PAS, 3 in LAFRC, and 4 in No-SMC can implement self-monitoring (inspections). This indicator has been accomplished.

Indicator 5-3 More than 80 % of stock (registered) seed produced in PAS, and more than 70 % in No-SMC and LAFRC, meet the quality standard defined by the Strategy.

Over 80% of R2 seeds produced in PAS, No-SMC and LAFRC met the quality standard in accordance to the guideline established in the Project. The indicator was achieved.

Indicator 5-4 The target Center/ Station (marketing unit) can manage the ordering and distribution of stock (registered) / extension (certified) seed.

The target SMS/SMCs can calculate how much R2 seed necessary to produce the R3 seed to meet the demand, based on the order and information obtained from DAFO. This indicator has been accomplished.

Indicator 5-5 More than 85 % of stock (registered) / extension (certified) seed produced in the target Center/ Station is sold.

Target SMS/SMCs have expressed their interest in increasing production of R2, and have sold most of the seed produced. This indicator has been accomplished. However, the concept of seed reservation had not been in place and continuous cropping was expected at the time of setting this indicator. The Team recommends these factors should be considered in the future.

<Output 6> Multiplication and distribution of extension (certified) seed is verified at the farmer level.

Indicator 6-1 The seed grower group of farmers establish marketing system by the support from PAFO, DAFO, Stations/ Centers and private sectors.

Some farmers' groups managed to sell all the seeds and their income increased considerably. However; some found it difficult to market R3 seeds produced particularly in rain season, and have had to sell as consumption rice to meet loan repayment to a bank. Also, many groups pointed out difficulty to convince fellow farmers to invest on quality seeds. Regarding the seed marketing, there were two different approaches proposed by different actors; subsidy based distribution and private sector involvement. The Team considers there are some more rooms to be improved.

Indicator 6-2 More than 50 % of extension (certified) seed produced by seed production farmers meets the quality standard defined by the Strategy.

More than 50% of R3 seeds produced by seed production farmers met the quality standard in accordance to the guideline established in the Project in target groups. All target SMS/SMCs reported over 85% of the seed production met the quality standard in 2010. This indicator has already accomplished.

Indicator 6-3 More than one (1) extension staff members of each target district acquire sufficient knowledge/skills to distribute extension (certified) seed according to demand.

Extension staff members have capacity to report the demand of R3 seeds from farmers in the respective districts; however, some limitation remained (assessment of the farmers' need based on the future prospects; technical service to produce R3 seeds).

3-1-3 Achievement of the project purpose

<Project Purpose> A rice seed multiplication and distribution system that is appropriate for local conditions is established in 3 target provinces.

Indicator 1 An appropriate flow of seed production from the foundation seed to the extension (certified) seed is established in each target province.

All officials, staff and farmers, met by the Team, understand the system of R1, R2, and R3 production, and an appropriate flow of seed production has been established in each target province. The level of accomplishment of the indicator is satisfactory; however, there still some rooms to improve infrastructure such as storage facilities and the capacity for data management on the demand for R2 and R3 seeds.

Indicator 2 Target Stations/ Centers can ascertain the demand of extension (certified) seed in the target areas, as well as produce and distribute the necessary amount of extension (certified) seed.

Although No-SMC was newly attached to the Project as a target organization, all target stations / centers can ascertain, produce and distribute the necessary amount of extension seeds.

Indicator 3 Seed Renewal Rate in the target districts and provinces is estimated by DAFO, PAFO and NAFES.

DAFO, PAFO and NAFES can estimate seed renewal rate in the target districts.

Indicator 4 Annual amount of distribution of stock (registered) / extension (certified) seed originated from the project amounts to more than 210 tons/year. Details are 120 tons/year in the flow from N-SMS and No-SMC, 60 tons in the flow from PAS, and 30 tons in the flow from LAFRC.

N-SMS and No-SMC produced approx. 168t of R2 and R3 seeds last year, PAS for over 290t, and LAFRC for approximately 33t.

The amount of distribution of R2 and R3 seeds is expected to reach the target, since SMS/SMCs and Farmers' Groups produced well above the target in 2010. It is recommended to verify the achievement before the completion of the Project.

3-1-4 Prospect to achieve the overall goal

<Overall Goal> Quality rice seed is widely used by farmers in 3 target provinces.

Indicator 1. More than 10 % of rice production field areas in the target provinces use the extension (certified) seed that has been recommended by PAFO.

Currently, 30 to 50 % of R3 target amount is already produced. To fulfill the indicator, technical aspect and marketing aspect should be considered. As for technical aspect, basic technology has been transferred, and these technology needs to be expanded to new seed growers. To improve marketing, both governmental and private sector involvement is essential.

Indicator 2. Farmers can access extension (certified) seed in all districts in targets provinces.

Farmers have started to sell the R3 seeds beyond their districts, and this indicator will most likely be achieved within 5 – 10 years after the completion of the Project.

3-2 The Project implementation process

3-2-1 Activities

The Team confirmed that the Project conducted most of the activities in accordance with the PDM and the PO. The details of the progress of the activities are shown in Annex-3.

3-2-2 Methods of technical transfer

The Project provided a comprehensive technical package covering, not only rice seed multiplication and distribution techniques but also, management and administrative skills. There were combined activities with regard to technology transfers such as, trainings in-country, in Thailand and Vietnam, and in Japan, and

also, OJT, seminars and workshops by long-term and short-term experts. No problems were found in the methods used for technology transfers, and all activities in relation to technical transfers were highly regarded by all concerned C/Ps.

3-2-3 Project management aspect

The Team confirmed that there was no problem in the project management. The Project established a steering committee to meet every two months to identify any problems in early stages. The Project submitted monthly report to NAFES, and the reports were circulated in concerned departments in MAF. Japanese experts and Lao C/Ps worked very closely.

3-2-4 Project recognition

All the C/P organizations and target groups including farmers' groups had high recognition in regards to the Project. However, participation organizations, such as the Department of Agriculture (DOA) and NAFRI, pointed out the linkage among departments in the MAF has not yet to be enhanced and some officials of participation organizations were not highly aware of the Project.

3-2-5 Factors influenced the effectiveness of the Project

Organizational changes occurred during the Project period, and these caused enhancement in the Naphok Seed Multiplication Station results to be somewhat limited. In response, the Project through the Joint Coordination Committee (JCC) changed the project design to focus more on provincial level. It created stronger relationship with NAFES, RCCRC, and PAFO/DAFO, and the provincial level rice multiplication and distribution system was enhanced significantly in the target area.

3-3 Five evaluation criteria

The evaluation was conducted based on the Five Evaluation Criteria (Relevance, Effectiveness, Efficiency, Impact, and Sustainability). The detailed results of evaluation are presented in **Annex 2 Evaluation Grid** and summarized below.

3-3-1 Relevance

The Project is highly relevant for the following reasons:

(1) Consistency with Lao policy

- The 6th Agriculture and Forestry Development Plan, covering a 5 year period, (2006-2010), identified four (4) targets for important policy within the

sector; i) food security, ii) promotion of commercialized agriculture, iii) reduction of shifting cultivation, and iv) sustainable forest management. “Food security” indicates that 3.3 million tons of annual rice production should be achieved by the year 2010.

- The above MAF Five Year Plan (2006-2010) outlined a direction for rice seed multiplication and distribution in Lao PDR. It had a vision on rice seed production, specified in the “Strategic Planning of Rice Seed Multiplication and Distribution System in the Lao PDR” (The Strategy).

(2) Needs for the people of Lao PDR

- Although self-sufficiency has been achieved, at the national level, since 2000, food security remains insufficient due to; low productivity in villages in the mountainous regions, underdeveloped roads for distribution, and flood disaster. Ensuring food security is still a serious matter due to poor nutritional intake in some rural regions.

- The price of rice is increasing and Lao PDR has started to import more rice from neighboring nations. Food security has been recognized as a priority at the planning stage, not only in the rural areas, but also for within the capital city Vientiane.

- Through undertaking the interview survey with the C/Ps, it was confirmed that most of the C/Ps recognize the needs of the Project; which is, a consistent approach on rice seed multiplication and distribution system.

- Most of the interviewed seed growers expressed their appreciation for the Project.

(3) Consistency with Japan’s aid policy

- The current Japan’s Country Assistance Program for Lao PDR and the Rolling Plan for Lao PDR (as of June 2009), takes up six (6) priority areas including “Developing Rural Regions and Sustainable Use of Forest Resources”. In “Developing Rural Regions” a contribution to food security by increasing rice production is considered to be one of critical issues.

3-3-2 Effectiveness

Although problems remain, the effectiveness of this Project is rated as high because of the following reasons.

(1) Achievement of the project purpose

The project purpose, as described in the *Achievement of the project purpose* (3-1-3)

and also in the evaluation grid (ANNEX-2), has been achieved.

(2) Level of the outputs produced

Most outputs were produced adequately, as described in *Output (3-1-2)* as well as in the evaluation grid (ANNEX-2).

(3) Benefit for the society

Since 2007, R3 seed producing farmers' groups have been organized in the target provinces; and the amount of R3 seed that members produced in 2010 exceeded 450 tons. R3 producing farmers from target area learnt technique to produce quality seeds through correct methodology via the extension services of PAFO and DAFO. Some farmers participated in study tours to Thailand and Vietnam, which also provided opportunities for networking with farmers from other provinces.

Moreover, R3 producing farmers reported that the ordinary farmers who purchased seed from them were happy to have increased yield and better quality rice. Since rice is the most important crop in Lao PDR and 80 % of the people are employed within the agriculture sector, having better yield and improved quality can make a significant impact on society as a whole.

(4) Remaining issues (see ANNEX 4, *Present Situation of Improvement of Rice Production*)

Law, regulations & standard, National Seed Board & Secretariat, Inspection system, Distribution system of R3 including marketing, and Dissemination of cultivation techniques of improved varieties

3-3-3 Efficiency

The efficiency of this Project is assessed as high because of the following reasons.

(1) Appropriateness of input

The inputs including experts, equipment, facilities, and trainings, were adequate in terms of amount, quality and timing, as detailed in *The Project Performance (3-1)* and the evaluation grid (ANNEX 2).

It was reported that most of the facilities, equipment and office supply were utilized effectively. However, Japanese supplied incubators had broken down after only a few weeks of operation, due to the unstable electric current in Lao PDR, even though all the machines utilize transformers. The Project subsequently installed heat bulbs so that the machines were still usable, nonetheless, it would be desirable to arrange special contract guarantees, when purchasing such precision

equipment.

(2) Alternative ways to achieve the same output

The Project examined and practiced alternative methods to achieve more with the same cost.

With regarding to JICA training courses, the level and technology taught in the training courses in Japan were found to be difficult to apply in Laos, since Japanese rice farming utilizes high technology methods. For more appropriate technology and greater cost efficiency, NAFES and JICA agreed to modify some of the training courses to the third countries such as Thailand and Vietnam, and were successful in sending an increased number of trainees on more training courses of more appropriate level.

A lot of equipment was purchased and shipped from Japan, however, this was found to be very expensive and obtaining spare parts for mechanical problems often proved difficult. The Project undertook a trial of Lao companies producing similar products, and was successful in identifying a local supplier within Lao, capable of providing similar equipment at a considerably lower cost.

3-3-4 Impacts

The Project is likely to achieve some positive impacts described as follows.

(1) Direct impacts

- Prospect to achieve overall goal: The overall goal is consistent with the project purpose. Since the Project most likely achieve the project purpose, it is likely to achieve the overall goal within 5 to 10 years after the completion of the Project as described in *Prospect to achieve the overall goal* (3-1-4).
- Beyond the original project design: The Project added a target institution (Nongheo Seed Multiplication Center) in 2009, and increased the target amount of distribution of R2 and R3 seeds in the latest PDM.
- Expansion of R3 seeds distribution: R3 producing farmers' groups have already sold R3 seeds to farmers from other provinces, and it has started to show the sign of expansion.
- Improvement of income for seed growers: Some of the R3 producing farmers' groups reported that the household incomes had more than doubled after producing R3 seeds.
- Expansion of activities beyond the Project: NAFES is planning to expand the multiplication and distribution system established by the Project to 7 other

provinces funded by World Bank/EU and SDC.

(2) Indirect impacts

- In *The Seventh National Socio-Economic Development Plan*, the target amount of high quality rice seeds in commodity production was mentioned. It indicates recognition of the importance of quality seeds in MAF, although the amount, 100,000 tons by 2015, seemed very ambitious.
- The production and the quality of consumption rice increased when ordinary farmers used R3 seeds.
- The yield per area should increase, when farmers use R3 seeds, and need less land to produce the same amount of rice. Therefore, the Project indirectly decreased the production pressure under the fragile environment.

3-3-5 Sustainability

Sustainability of this Project is reasonably high due to the reasons described below; however, there are still some problems outstanding.

(1) Institutional aspects

The linkage among NAFES, RCCRC, PAFO/DAFO and SMS/SMCs has been strengthened, and the counterpart and target organizations have enhanced their capacity. However, the Seed Board has not established, and collaboration of the department level is yet to be improved.

(2) Financial aspects

NAFES, RCCRC, and some of the PAFOs and SMS/SMCs started to input their own budget towards the purchase of equipment and machinery for rice seed multiplication activities. Most interviewees were confident in their ability to continue some activities after completion of the Project, but expressed concern regarding the difficulty expanding the Project.

However, World Bank/EU and SDC are funding a project in 7 provinces aimed the food security by demonstrating and practicing better rice-based farming systems, and NAFES is expanding the Rice Seed Multiplication and Distribution System established under RISEP. Therefore there is some financial assistance available for the partial expansion of the Project.

(3) Technical aspect

Since the capacity of the staff has been greatly enhanced, they now feel more confident in working by themselves. The Project provided a comprehensive

package of technical transfers, including, training courses in-country, in Thailand and Vietnam, and in Japan, as well as, OJT, seminars and workshops by long-term and short-term experts. Various manuals were created in a way that target group can easily understand in the field, and it will contribute the sustainability of the technical transfer.

It is deemed that the technical package has contributed towards enhancing sustainability of the Project.

4. Conclusions and Recommendations

4-1 Conclusions

Based on a series of interview and discussions with officials concerned and counterparts as well as the field survey, the Evaluation Team concluded that the Project would achieve the project purpose during the Project period.

The Project successfully established the Rice Seed Multiplication and Distribution System in the target area, which did not exist in the past in Lao PDR. The target area only covers 20 % of the rice production in the county, therefore, to expand the impact of the Project nationwide, the Government needs to tackle several issues including legal framework, inspection system, marketing improvement, and technical services towards farmers.

Although necessity of further external assistance in technical and financial aspects was observed for expansion of the activities initiated by the Project, it is appropriate that the Project terminates as planned in the R/D since the Project has achieved its objectives.

4-2 Recommendations

To ensure the sustainability of the Project, the Lao side and the Japanese side shared the following recommendations.

(1) Activities for remaining period of RISEP

i) Improvement of the Strategy

Develop a national strategy for seed multiplication and distribution which cover the following areas in collaboration with relevant authorities

Legal framework, National Seed Board, Inspection system, Distribution system of R3 seeds, and Dissemination of cultivation techniques of improved varieties, and others

ii) Standardization of RISEP model

To introduce the System to other area, it is necessary to identify and organize the required steps and authorize it as a RISEP model.

(2) Stronger collaboration among departments in MAF

Although, after implementation of the Project, direct counterparts within the target areas have enhanced their capacity and begun to work very closely; the level of collaboration among departments was seen as being unsatisfactory. To improve every aspect of rice production, Quality (NAFRI), Control (DOA), and Multiplication and Distribution (NAFES), effective collaboration among these departments is vital. The Strategy Planning of Rice Seed Multiplication and Distribution document has not been adopted yet, but, hopefully, a Seed Board will be established in the future, under the umbrella of which, these three organizations will then be better able to work together.

(3) Areas to be improved for the establishment of nationwide Seed Multiplication and Distribution System

Everyone interviewed during the evaluation expressed their appreciation towards the successful implementation of the Project. However, they envisaged that it was just the beginning of JICA's engagement in this field, and appealed for JICA to continue with its involvement.

The Team recognizes the necessity to clarify roles and responsibilities among various actors including the Government organizations, farmer groups, private sectors, and development partners. Bearing this as precondition, the Team identified the area to be improved as described below.

Area	Activities	Government	Private Sector
Policy	- Seed laws / Regulations / Standards	A	C
System	- National / Provincial Seed Board - Inspection system - Distribution system	A	B
Technology	- Seed production - Cultivation technology	B	C
Infrastructure	- Production / Post harvest / Distribution	B	C

*A-C represents the extent of potential contribution/involvement

**Some of the activities indicated in the table have been partially achieved by RISEP

4-3 Lessons learnt from the Project

- (1) Special care to introduce precision equipment
In the early stages of the Project, Japanese digital incubators were provided; however, they all broke down after only a few weeks, due to the unstable electrical current in Lao PDR. This occurred even though all the equipment utilized the appropriate transformers.
They are currently usable, after installation of heat bulbs, but it would be advisable to consider the local conditions of Lao PDR, and in the future, include special guarantee arrangements within contracts with suppliers, when purchasing such precision equipment.
- (2) Keys to success: Active participation of farmer groups (ownership)
The Project successfully delivered the concept to convince the farmers to produce the improved varieties, and it strengthened the farmers' ownership and willingness to take an active participation in the Project.
- (3) Keys to success: A combination of a working steering committee (regular monitoring and discussion) to share information and to establish strong network
The Project established an effective steering committee, and held regular meetings amongst concerned parties (every two months) for monitoring purposes. This made it possible to identify problems quickly, and to make the necessary alterations and suggestions to the JCC to change the project design, as and when necessary. Moreover, the steering committee gave an opportunity for organizations to share their views and experiences, and helped to build strong network among organizations and farmers.
- (4) Successful localization of the project components
The Project was successful modifying the technologies currently conducted in Japan to match with the condition of Lao PDR.
 - Effective combination of various trainings and study tours (in Japan, in Thailand and Vietnam, and in country)
 - Locally modified equipments (separators and winnowers)
- (5) Integrated enhancement of seed distribution flow to secure sustainability of the Project
In this project, not only central governmental bodies, such as NAFES and RCCRC, but also PAFO/DAFO, SMS/SMCs and seed growers had the opportunity to enhance