Philippines, Thailand

Follow-up Evaluation of Development Study (Agricultural Irrigation)

Project Sites Philippines, Thailand

1. Background and Objective of Evaluation Study

With a call for greater transparency in ODA projects, there is a recognition that evaluations are also needed for development studies. For development studies, follow-up studies have already been administered from the perspective of post-project supervision, as well as studies on the application of the contents of study reports. Evaluations on "Development studies" addressed as a stand-alone approach were administered on an experimental basis from FY1998. However, since this type of study is still in its initial stage, a clear record of evaluation results and the establishment of evaluation techniques are essential. This study evaluated development studies in the field of agricultural irrigation in order to improve the quality of future development studies by using the lessons that are derived from the evaluations.

2. Evaluated Projects

This study examined a total of nine development studies (four from Thailand and five from the Philippines) in the field of agricultural irrigation. These studies were chosen from the group of completed development studies in this field. In order to highlight various dimentions of the targeted development study taking a macroscopic approach to address development studies in the field, the targeted studies were chosen so that were likely to have different applications for the study results.

3. Members of Evaluation Team

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4. Period of Evaluation

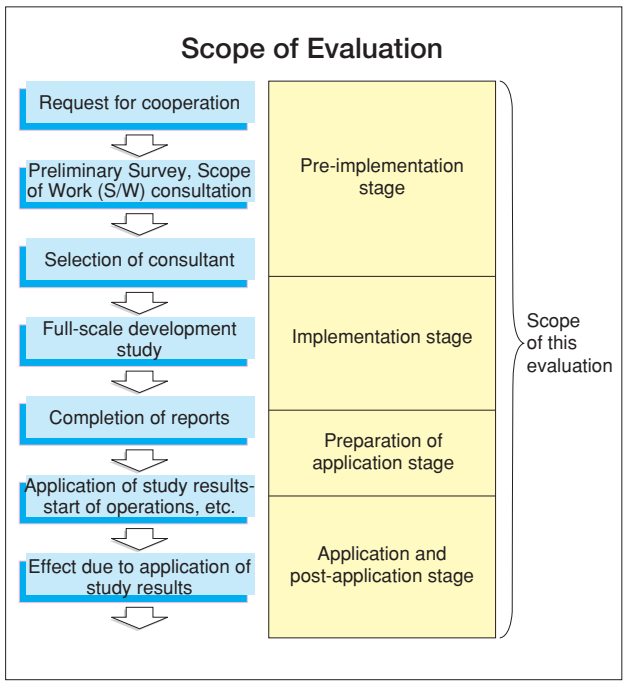
(Thailand)
26 June − 14 July, 2000
(Philippines)
26 June − 14 July, 2000

5. Evaluation methods

(1) Scope of evaluation

The scope of this evaluation includes the "implementation stage" [1], "application preparation stage" [2], and

1) The "implementation stage" denotes the period from the time the study group composed of Japanese consultants is dispatched to the recipient country and begins full-scale survey with the recipient country's cooperation team until the time that the study is completed and the report results are summarized in the final report.
2) The "application preparation stage refers to the preparatory work before application, such as the preparation involved before the recipient country's government applies the transferred technology to other cases based on the recommendations in the final report or makes specific preparations for the next study or start of operations.
3) The "application/post-application stage" indicates the stage until the recipient country applies the transferred technology to other cases and succeeds in its initial goals in bringing projects to operability, all as a result of the specific preparations made by the government at the application preparation stage.



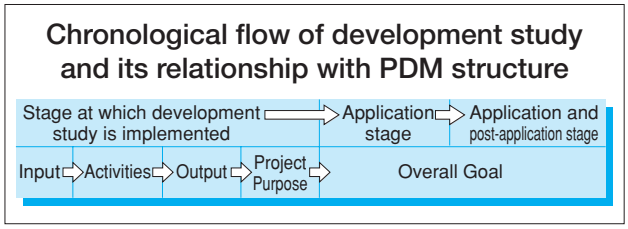
"application /post-application stage" [3]. The development study follows the process shown below.

(2) Evaluation Methods

The basic policies concerning this evaluation method consist of the following three points.

1) Scope of evaluation is based on the PDM logic configuration;
2) In line with the PDM, five evaluation criteria (relevance, effectiveness, efficiency, impact and sustainability) are used for evaluation.
3) Using an evaluation grid for each of the five evaluation criteria, a more specific perspective for the evaluation is maintained.

Since the development studies are summarized in a PDM form at the time of evaluation, efforts were made to derive information with as much accuracy as possible from the existing information and to incorporate it into the PDM.



(3) Methods of Implementation

Information was gathered through questionnaires, hearings, literature review and on-site studies. These efforts were carried out mainly by the Royal Irrigation Depart – ment (RID) in Thailand, the counterpart institution for the proposals targeted for evaluation – and, the National Irrigation Administration (NIA) in the Philippines.

Explanation of the evaluation methods; PDM and 5 five evaluation criteria. (RID HDQs, Thailand)

6. Results of Evaluation: Thailand

(1) Feasibility Study for Kamphaen Sean Irrigated Agricultural Development Project in the Mae Klong River Basin

1) Outline and background of project

The development study targeted for evaluation was part of the Master Plan of the Mae Klong River Basin implemented by JICA in 1977. The study ran from January to October 1979, aimed to set up terminal agricultural fields on 17,200 ha of irrigated land where main water channels had been completed in 1972 by aid from the World Bank. This development study is characterized by the following.

a) This was the first JICA project in Thailand in the field of agricultural irrigation.
b) The World Bank was responsible for the large-scale development of the backbone facilities, while JICA developed the terminal portions, thus dividing roles.
c) There was a difference between the World Bank and Japan in regard with development methods and concepts. The World Bank is skilled in large-scale agricultural development using the U.S. intensive method [4] and Japan is experienced in the extensive method [5] and irrigation ditch, dike and farm road method [6]. Moreover, as seen in the "Ditches and Dikes Act" enacted in 1964, and the "Land Consolidation Act," enacted in 1982,

4) An irrigation development method consistent with x and land substitution.
5) An irrigation development method that sets up waterways dividing the plot as necessary.
6) An irrigation development method that sets up only irrigation ditches and dikes.

the Thai legislation related to development methods was upgraded to catch up with the implementation of the agricultural irrigation projects.

2) Evaluation results

a) Since approximately 20 years have passed since the development study was implemented, it was not possible to receive proper responses from counterpart interviews or questionnaires. As a result, it was difficult to evaluate based on the five evaluation criteria.

b) Although there were primary waterways serving as channels in the eastern Kamphaen Sean District that was the target area of the evaluation study team, these were implemented in 1990 using the extensive method recommended in the "The Master Plan of the Mae Klong River Basin" (1977) and funds provided by the World Bank. It could not be ascertained whether the dikes, drains and farm roads recommended in the "Feasibility Study for Kamphaen Sean Irrigated Agricultural Development in the Mae Klong River Basin District" had been materialized.

(2) Feasibility Study for Agricultural Irrigation Development in the Mae Kuang River Basin

1) Outline and background of project

The development study was carried out from february 1981 to February 1982 with the aim of establishing irrigation works that would provide sufficient water in both rainy and dry seasons. A total of three dams were planned on the left, main and right bank to cover 20,000 ha from Chiang Mai Province to Lamphun Province, as well as water storage facilities and main and supporting canals for dikes and ditches.

On-site study at Kamphaen Sean District (Agricultural Irrigation Development in the Mae Klong River, Thailand)

2) Evaluation Results

Almost 70% of the irrigated area targeted in the development study was completed. There was no delay in carrying out the projects recommended in the development study, and thus the implementation process was ideal. Furthermore, ancillary projects have been continuously implemented by RID.

According to the JICA senior overseas volunteer dispatched to the region, the water storage is currently insufficient to cover the developed irrigation area.

a) Relevance

The Mae Kuang River region suffers from severe water shortage in dry seasons and floods in rainy seasons, making this research study relevant in solving these problems.

b) Effectiveness

It was obvious that the scope of this development plan was dam construction and establishment of an irrigation development plan in the targeted region. The final report made clear that the development study was implemented in line with those goals.

After the development study was completed, a study of next stage was implemented from 1982, expecting loans from the OECF (currently JBIC), and construction began from 1984. Judging from the OECF's 1982 study report and RID activities, the content, scale, implementing conditions and technology recommended in the development study were adequately considered.

Also, basic policies for projects such as dam construction and the establishment of an irrigation development plan were sufficiently examined in the report. The report gave sufficient consideration to technical analyses. However, it is rather difficult for current readers to understand the prospects of agricultural irrigation development policies at that time, water resource policies, agro-economic perspective and the socio-economic impact on the target area.

c) Efficiency

As the whereabouts of the members from this period are no longer known, study activities such as information on Thailand and Japan's input, communication or data collection in those days could not be obtained and thus could not be evaluated.

d) Impact

The recommendations of this development study were analyzed and supplemented in more detail when applying for loan aid from the OECF soon after the study. The recommendations of the development study and analysis conducted therein created the im-

pact described below in the target region through the projects.

i) The irrigated area has steadily increased due to urbanization, afforestation and inland aquaculture, and almost 70% of the initially planned area has been irrigated.
ii) Dam construction resulted in water control and prevented loss of 27 million baht (based on value conversion of the 24% estimated water lost in floods in 1997).
iii) Land use within the region targeted in the project has increased every year due to urbanization. After irrigation development, agriculture began to be focused on chili peppers, vegetables, fruit, and inland-fishery rather than traditional rice cultivation.
iv) A comparison of the harvests in 1992/1993 and 1996/1997 shows that while yields did not change in the rainy seasons, yields in dry seasons increased by 45.5%. The Lampuhn region saw a 78.6% increase in yield in dry seasons.
v) Inland aquaculture: Fish catches increased 120 tons in the weir and 150 tons in fish hatcheries.
vi) As of 1999, there were 130 Water Users' Groups (WUGs) and 12 Water Users' Associations (WUAs).
vii) Dam water has not only been used for irrigation, but also supplied to the Doi Salet District in Chiang Mai Province.

e) Sustainability

The RID is the primary supporter of sustainability, and regional offices still continue activities in line with the farmers' organization and irrigation development as part of the Mae Kuang Operation and Management Project (MKOMP). Sustainability has been achieved.

The office of the Mae Kuang Irrigation Agriculture Development Project (MKIADP) strengthens the roles and responsibilities of WUGs. In 1995, the total number of MKIADP staff exceeded 124 people. Among them, 22 are in charge of water management, taking responsibility for 1,300 ha in area and 31.3 km in distance.

As described above, after the development study was implemented, offices were set up in the applicable regions under the MKIADP and MKPMP and efforts were made to ensure the project's sustainability.

(3) Feasibility Study for Sakae Krang River Basin Irrigation Project

1) Overview and background of study

The evaluated development study targeted 6,300 km^2 of the Sakae Krang River Basin in the northwest region of the central Chao Phraya Plains. The study, conducted between September 1984 and March 1986, aimed to review a water resource development plan for the Sakae Krang River, select dams to be launched and establish an irrigation development plan. The study was implemented and planned in line with the national goals advocated in Thailand's Fifth National Economic and Social Development Plan (1982 − 1985).

Since resolving environmental problems had become an essential issue, debate over the start of projects recommended in this development study centered on development and the environment. This evaluation considered the relationship between the development study and environment from the following perspectives.

a) Was environmental assessment included within the scope of study?

Based on the S/W of the study, three environmental experts participated in the development study group. RID described its appointment of environmental experts from related organizations using RID funds. Judging from items included in the overview (work allocation) of the environmental assessment's implementation plan submitted to RID by the JICA study group, it is clear that environmental problems became one of the study themes upon implementation.

b) How was work allocated for the environmental study?

The implementation plan for the environmental study clarifies which environmental assessment items are allocated to the JICA study group and to RID. The JICA group was responsible for forestry study and RID was primarily responsible for investigating resident transfers in the target region and its influence on the local community.

In order to bring projects into operation, RID independently entrusted Chiang Mai University with an environmental-impact assessment in January 1991, and the plan to alleviate environmental impact in February 1994. These were done in preparation for applying for the 20th OECF loan.

c) In preparation for operation, what factors (conditions) had to be resolved to conserve the environment, and what efforts were sustained to do this?

The goal during implementation of the development study was to satisfy the Environmental Impact

Assessment (EIA), which is the environmental guideline for the National Environmental Board (NEB). After completion of the development study during the period leading up to the execution of what was proposed in the study, EIA became stricter, creating the necessity to implement additional studies to correspond to this issue.

At the same time, a public hearing was held and a survey to study the awareness of the local community was conducted, both mandatory before operations could commence. RID prepared the necessary materials for the public hearing. If the EIA were satisfied and NEB provided the approval (decision), it would mean that the operation is approved.

2) Conclusions derived from evaluation study

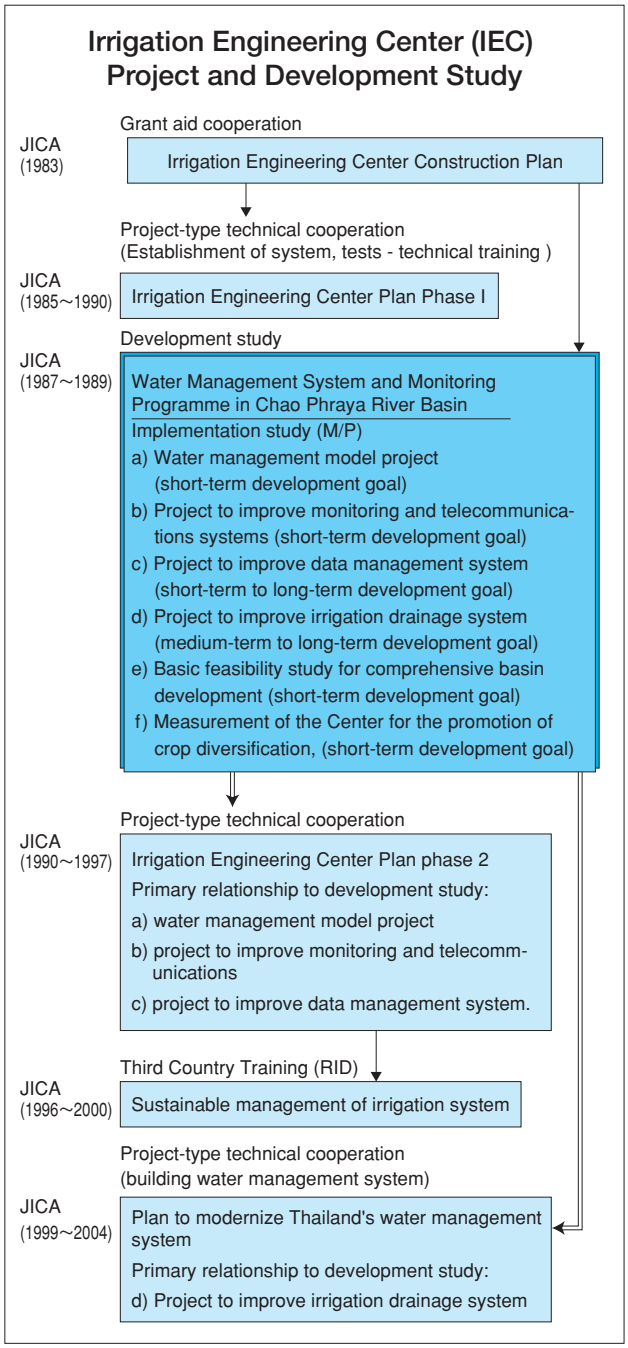
After completion of the development study, the EIA became stricter, and since the execution of proposed project has been under preparation, it was difficult to evaluate using the five evaluation criteria. The projects recommended in the development study still need to seek the a path of coexistence of the environment and development. As seen in the implementation of the OECF's SAPROF study, although prospect for a funding source was realized, the projects have yet to be materialized, in spite of RID's best efforts to resolve the environmental problems.

(4) Water Management System and Monitoring Programme in Chao Phraya River Basin

1) Overview and background of targeted proposals

The development study evaluated was conducted from January 1987 to March 1989. Its goal was to establish a plan to implement the six short, medium and long-term goals described below to ensure efficient and adequate management of water resources in the Chao Phraya River.

a) Water management model (short-term development project)
b) Project to improve monitoring and telecommunications systems (short-term development goal)
c) Project to improve data management and telecommunications system (short to long-term development goal)
d) Project to improve irrigation and drainage systems (medium to long-term development goal)
e) Basic feasibility study for comprehensive basin development (short-term development goal)
f) Study for the Center for the Promotion of Crop Diversification (short-term development goal)



Prior to the development study, the Irrigation Engineering Center (IEC) project was conducted in 1983 using grant aid. After the completion of IEC, RID employees received training intended to augment institutional development and testing and technical abilities through the "Irrigation Technical Center Plan, Phase I" project-type technical cooperation. The development study was implemented to prepare the conditions for promoting the series of projects described above. The followings are the characteristics of this development study.

a) It was a technology transfer-type (know-how support) development study, and a pioneer for its

encouragement of collaboration.

i) It aims to establish the content of the IEC constructed in 1983 with grant aid.

ii) It was coordinated with and have synergic effect with the "Management Plan for a Flood Prevention System" study done by JICA Social Development Study Division, that was implemented during the same period.

iii) It considered even the contents of some of the proposed projects including the "Water Management Model".

iv) It reviewed IEC policy objectives, short, medium and long-term goals were set, and concrete projects were presented accordingly.

v) The content of the development study report was incorporated into the plans for the "Irrigation Technology Center Plan, Phase II" project-type technical cooperation that followed the study.

b) Unlike the other development studies implemented at the time, this study was not influenced by the change of government policy that shifted its direction from large-scale irrigation development to small-scale irrigation development.

2) Conclusions derived from evaluation study

The report can be categorized as a technology transfer type M/P development study, and the points outlined below are its distinguishing aspects. The series of IEC projects have been continuously implemented for over 20 years since the grant aid cooperation in 1983, involving a dispatch of experts, provision of equipment and the implementation of development studies and JICA cooperation, targeting a specific counterpart organization and theme.

a) Relevance

The development study was implemented in line with the Water Resource Policy in the Sixth National Economic and Social Development Plan (1987 to 1991). This plan discusses the need for irrigation facilities based on the growth by improved productivity, based on the premise that farmland is a limited resource, where the conventional method simply expands farmland. The plan points out the necessity of a more efficient use of farmland through the improvement of production process and water distribution system for the Chao Phraya River Basin. Given these needs, this development study is considered relevant.

b) Effectiveness

Since all recommendations made in the development study have been implemented, the study content, scale, prerequisites for implementation and technology was considered to have been adequately planned and suggested.

"Basin Observation point" constructed under Improvement of Communication / Observation System from the suggestion in the "Water Management System and Monitoring Programme in the Chao Phya River Basin"

c) Efficiency

This development study coordinates with JICA technical cooperation schemes such as grant aid in the past and project-type technical cooperation currently in progress. This aspect in itself testifies to the efficiency of the study.

d) Impact

Through surveys and interviews, the points listed below were confirmed as impacts secured in the six projects recommended in this development study.

i) Regarding water management, the project-type technical cooperation project "Irrigation Technology Center Plan, Phase 2" was implemented.

ii) Regarding improvement of monitoring and telecommunications systems, RID facilities (four observation stations donated by JICA) improved their management, reduced breakdowns and adapted to telecommunications systems.

iii) Regarding improvement of irrigation and drainage systems, an irrigation and drainage system intended to countermeasure floods in the Kawling region is under construction using a loan from the World Bank.

iv) Regarding improvement of data management systems, it is currently underway as part of the abovementioned project-type technical cooperation, the "Irrigation Technology Center Plan, Phase 2."

v) Regarding the basic feasibility study for comprehensive basin development, it was implemented under the name "Water Management Study in Chao Phraya Basin." It had an impact

on counteracting droughts during the dry season in irrigated regions and also on developing new water resources and environmental management.

vi) Regarding the Study for the Center for Promotion of Crop Diversification, a crop diversification program to expand the land capable of producing crops other than rice in the dry season has already been completed.

e) Sustainability

With JICA's continuous cooperation, RID was enriched in knowledge covering general water management. Also, RID is now capable of conducting studies related to Irrigation Drainage System Improvement Project (Kamling Project) by itself. However, it is necessary to further obtain knowledge and know-how regarding new issues such as environment protection, methods such as development through participatory approach, and creation of organizations among local residents.

7. Evaluation results: Republic of the Philippines

(1) Ilocos Norte Irrigation Project (F/S)

1) Outline and background of project

The development study targeted the irrigated region (22,600 ha) of Ilocos Norte in the First Administrative Block. The study was implemented from August 1978 to December 1980, aimed to establish irrigation facilities and water source development projects.

2) Conclusion derived from the evaluation study

The development study is understood as the most utilized study among the five development studies of the Philippines in this evaluation. The projects were implemented as recommended in the development study (Phase 1), with the exception of some minor changes due to the including of farmer's participation. One of the main reasons for this positive impact was that the project was implemented immediately after the planning. The L/A was actually agreed by the time Phase 1 was completed. Priority given to this project as a national issue ensured that the environment was conducive to operability.

"Sol Sona Head Works established through the realization of Phase 1 of this Project (Ilocos Norte Irrigation Project(F/S)), Republic of the Phillipines

a) Relevance

The development study is understood to be consistent with the Philippine Mid-Term Development Plan (1978 − 1982). The objectives of the Mid-Term Development Plan were to promote employment in rural villages, raise farmers' incomes and increase the productivity of grains. In line with the above, recommendations of the study aimed for were to (i) increase agriculture productivity, (ii) create employment opportunities within nearby areas, and (iii) provide basic infrastructure in rural areas such as drain and dike facilities, roads, agricultural extension system, and electricity.

On the other hand, the study did not include the scope of irrigation management by using the indigenous farmers' organization, Zanjera [7]. Therefore, the study was not relevant to some extent since the recommended project did not fully reflect the needs of farmers. However, at the end, the needs of the farmers were incorporated by including Zanjera in the design of the loan aid.

b) Effectiveness

In the period between completion of Phase I's on-site study in November 1978 and the start of Phase II in January 1980, the E/N for the "Ilocos Norte Irrigation Project (Stage I)"-a loan aid project through OECF that incorporated Phase I recommendations-was agreed in November 1979 and the L/A was agreed in July the following year. Thus, it could be understood that the Philippine side had a certain idea that this study could be implemented as a loan project by the OECF. The Philippine side was capable for implementing the project because they saw high possivility of yen-loan although the proposed project targeted as large area as 10,200ha.

c) Efficiency

The Philippine side actively participated in the

[7] Zanjera is a traditional irrigation system dating from the 1630s. This method is still used in the Ilocos region. In this system, members work together in democratic collectives to collect funds for building irrigation facilities, providing materials and labor, allocating water and managing irrigation facilities

development study actively and cooperated with the Japanese team. The study was efficient, although a lack of sufficient communication between both parties occurred from time to time. Concerning technology transfer, the Philippine side was able to gain additional knowledge in specific areas through F/S and formulation of the project.

The final report of the study included both sufficient qualitative and quantitative data. However, the final report did not include the description on research on Zanjera the traditional irrigation association, and it should have been referred to at least in the section on farmers' organizations. This is probably due to the fact that the study team did not include members specializing in farmer organizations or irrigation management.

d) Impact

The proposals from the development study that were implemented include the grant aid "Ilocos Norte Region Outskirt Irrigation Facility Project" and the loan aid "Ilocos Norte Irrigation Project (Stage I)." These projects had been already in formulation during the development study, while they were included in the recommendations in Phase I of the study.

The impact by implementing "Ilocos Norte Irrigation Project (Stage I)" includes increased productivity, increased income, and more systematic organization of water utilization associations in the targeted regions.

There is clear evidence of an increase in the yield per hectare in the target region. Before the project was completed, the average yield during the dry season was 2.51 tons per hectare per year (1983－1986), which increased to 4.42 tons per hectare per year (1997－1999). In the rainy season, the annual yield per hectare almost doubled as well. Average farmer's income increased from 8,075 pesos in 1982 before project implementation, to 66,381 pesos in 1996.

Furthermore, only four agricultural organizations were registered to NIA in 1980, however by 1999, this had increased to 28. Currently, irrigation management is implemented under a system resembling a more systematic Zanjera organization with NIA cooperation and has created a more systematic and effective management in the region.

e) Sustainability

As a result of implementation of the "Ilocos Norte Irrigation Project (Stage I)", which led to the development of a national irrigation system in the targeted areas, a more systematic irrigation management based on the Zanjera system was organized. In 1994, NIA's gate manager was responsible for managing the head works, and the management of channels for irrigation and ancillary facilities was entrusted to Zanjera. Furthermore, NIA and Zanjera representatives agreed that Zanjera would pay the equivalent of 1.5 kg cavan [8] per hectare per year for over 50 years to cover the project development costs. Management of irrigation facilities by Zanjera has become even more active than before. Given these facts, the development study is sustainable.

(2) Mabini Agricultural Development Project (F/S)

1) Outline and background of the project

This development study targets 11,500 ha in the Mabini irrigation region, aiming to improve agricultural production, increase stable rice production, improve farmers' income and increase employment opportunities by establishing a project that develops water sources and prepares irrigation facilities. The study was implemented from September 1981 to March 1982.

The need for the development study was based on the Philippine Mid-Term Development Plan (1978－1982), which stressed the expansion of irrigation facilities in order to increase rice production to meet the increasing demand.

Although the proposed projects of this development study have not been not implemented, the China Chen South American Construction Contractor Co. Ltd. expressed interest in the development study and has begun to implement a more detailed study. According to NIA, the study by China could be set as one of the priority projects if it met the submitted NIA standards. The development study has the possibility to be implemented as a loan project by China, if approved by the Investment Coordination Committee (ICC).

2) Conclusion derived from the evaluation study

The evaluation has found that the condition for technology transfer was not satisfied during the study implementation stage. It has been pointed out that there was insufficient mutual understanding particularly due to the lack of language ability of the Japanese team. In addition, both parties did not regard technology transfer as one of the purposes of the study.

After completion of the development study, the recommendations of the study were not been utilized mainly due to the unclear priority for the irrigation development plans in the first half of the 1980s. However, there is a possibility to utilize the results of the study as a loan

[8] One Cavan is equivalent to approximately 50 kg of Palay Rice.

aid project by China.

Since the development study's recommendations are currently in the preparation period for operation, it is difficult to evaluate using the five evaluation criteria.

(3) Improvement Project for the Operation and Maintenance of National Irrigation Systems (AMRIS [9], 18 districts) (F/S)

1) Outline and background of the project

The development study targeted the 35,000 ha AMRIS irrigation region stretching across the Bulacan and Pampanga provinces. The goal was to establish a project to improve existing irrigation facilities and strengthen irrigation management. The study was implemented from September 1982 to February 1984.

Although the recommendations of the development study have not been directly implemented, the following projects related to the targeted regions have been implemented since the study.

i) "Up-land Field Irrigation Technology Development (Phase I)", project-type technical cooperation, 1987 to 1992
ii) "Up-land Field Irrigation Technology Development (Phase II)", project-type technical cooperation, 1993 to 1998
iii) "Repair Plan for Irrigation Regulating Reservoir in the Angat River", grant aid, 1996
iv) "Part of Irrigation Operation Support Project I", World Bank, 1988 to 1992
v) "Part of Irrigation Operation Support Project I" , World Bank financing, 1993 to 2000
vi) "Part of Water Resource Development Program" , World Bank financing, 1997 to 2002

2) Conclusions derived from the evaluation study

Since information during the study stage was not fully available, it was not possible to evaluate the cooperation process between the Philippine team and Japanese team and the efficiency of technology transfer. Based on the fact that the scope initially described in the S/W was well-covered and that sufficient data and necessary items were explained, it appears that the study was thorough.

It addition, Philippine government policy has changed its priority area from developing new irrigation schemes to rehabilitating existing irrigations after this development study. As the feasibility study recommendations were not implemented as originally intended, it was not possible to conduct an evaluation using the five evaluation criteria.

(4) Improvement Project for the Operation and Maintenance of National Irrigation Systems (UPRIIS) (F/S)

1) Overview and background of targeted proposal

This development study targeted 112,000 ha of the UPRIIS irrigation region spanning the Nueva Ecija, Bulacan and Pampanga states. Similar to the AMRIS irrigation region, the goal was to establish a project to improve existing irrigation facilities and strengthen irrigation management. The study was implemented from September 1982 to February 1984.

2) Conclusions derived from the evaluation study

The proposal concluded an L/A in September 1998, 13 years after the development study was implemented, as the loan aid "Central Luzon Irrigation Project" and was then made operable. As the project has just started, it has not been completed yet. The development study consists of three parts: (i) repair existing facilities, (ii) expand irrigation facilities, and (iii) establish irrigation management organizations for newly expanded facilities. Although part of the recommendations of the development study, regarding to the repair of existing facilities, the actual implementation will be little different from the original recommendations as government policy has changed in the course of the 13 years.

The Mid-Term Development Plan (1983 to 1987) emphasized repairing existing irrigation facilities rather than developing new large-scale irrigation facilities. As a result, the development study did not include projects for new irrigation facilities. However, 13 years later, the 1999 to 2004 development plan emphasized both new irrigation facilities and existing irrigation facilities.

Consequently, in addition to improving existing facilities, the "Central Luzon Irrigation Project" included new development of large-scale irrigation facilities. This is distinctive as a case that was applied after a considerable length of time.

a) Relevance

The development study was relevant since it was consistent with the Mid-Term Development Plan of the Philippines in those days, which aimed to improve agricultural productivity by repairing existing irrigation facilities and enhancing water/irrigation facility

[9] Upper Pampanga River Integrated Irrigation Systems (UPRIIS), AMRIS and the Magat irrigation region are all irrigation regions with large-scale water reserve ponds, and the target of this development study is the Angat-Maasim irrigation region.

management capacity.

b) Effectiveness

The final report of the development study was well covered the scope initially described in the S/W. The structure of the report was also clear.

The development plan was primarily set to (i) upgrade and repair existing facilities, (ii) establish a central supervisory system for water management, and (iii) establish farmers' organizations. For the irrigation facilities, only the rehabilitation of existing facilities was planned and the expansion of facilities was not included.

Regarding strengthening of the operation and management system, establishment of the farmers' organization for water management was based on the needs of those farmers. From these perspectives, recommendations made in the study are likely to be applicable

c) Efficiency

Concerning the efficiency of technology transfer and communication during the study, it was not possible to obtain answers during the evaluation period, since most of the counterparts have either transferred to other institutions or retired. As a result, assessment regarding efficiency was not possible.

d) Impact

The recommendations of the development study were partially applied to the loan aid "Central Luzon Irrigation Project". The loan aid project employed what was recommended in the development study, in terms of rehabilitation of existing facilities, though recommendations regarding the central supervisory system was excluded, and the number of farmer organizations to be established was reduced.

e) Sustainability

Since the "Central Luzon Irrigation Project" to which this development study's recommendations were applied has just started, it is not possible to conclude the sustainability made possible thorough project implementation.

(5) Improvement Project for the Operation and Maintenance of Magat River Integrated Irrigation(M/P)

1) Outline and background of the project

This M/P study targeted the 102,000 ha Magat River Integrated Irrigation System (MARIIS), spreading across the Isabela, Quirino and Ifugao provinces. A study was implemented from February 1986 to March 1987 to establish an overall plan for strengthening the operation and manegement system.

The Magat Irrigation System has been one of three major national irrigation systems, the others being UPRIIS and AMRIS described earlier. Feasibility studies for UPRIIS and AMRIS were already implemented before the implementation of this development study. The Philippine government requested Japanese cooperation for a study that would serve as a summarization of irrigation management plans to establish a plan to strengthen the Magat region's irrigation management system. This later led to the implementation of an M/P study.

Although it could not be ascertained that the recommendations of the M/P led directly to projects, the following projects related to the regions targeted in this M/P were implemented.

i) "Irrigation Operation Support Project I" (partial), World Bank financing, 1988 to 1992

ii) "Irrigation Operation Support Project II" (partial), World Bank financing, 1993 to 2000

iii) "Water Resource Development Program" (partial), World Bank financing, 1997 to 2002

2) Conclusions derived from the evaluation study

The stance taken in M/P studies somewhat differs from that in F/S and this M/P study has developed a framework to strengthen the irrigation system management of the entire targeted region.

The M/P study report thoroughly covered the scope of the S/W and the structure of the final report was clear. The framework suggested in the recommendation could be understood as capable for the Philippine government, apart from specific items and methods suggested.

Since there are no projects directly related to the recommendation of the M/P, it was difficult to conduct evaluation based on the five evaluation criteria.

8. Recommendations Regarding Evaluation Methods for Development Studies

(1) Clear distinction between evaluation of past development studies and the future studies

In order to examine evaluation methods for development studies, it is essential to clearly distinguish the evaluation methods of past development studies and newly formed development studies. The main difference between the two is that the former did not have evaluation plans at the initial stage, whereas the latter undergoes ex-ante evaluations.

1) Evaluation of development studies implemented in the past

Since these types of studies were implemented when evaluation was not a major concern at the initial planning stage, monitoring or ex-post evaluation plans, in other words the baseline of the project, were not established before the full-scale study. This is true of almost all development studies implemented until the time of this evaluation.

Because there has to deal with the studies with no ex-ante evaluations for a while, it is essential to gather sufficient information to accurately comprehend the circumstances when initially planned when implementing ex-post evaluations of development studies. Therefore, not only report and documents on the full-scale study are required, but also preliminary study reports are quite valuable sources of information. It is particularly important to clarify which elements had been chosen for study and which had not, by ascertaining what was included in the initial scope from the preliminary study report. By examining the documents, it becomes clear how and why problems have developed in certain cases.

2) Evaluation of future development studies

In the case of new developpment studies planned for future implementation, it is possible to consider the evaluation plan in advance. It is necessary to create a PDM after implementing preliminary studies prior to the full-scale study. By doing so, a base for preparing the respective PDM for evaluation would be prepared before the terminal evaluation or the ex-post evaluation. It will clarify what were set as outputs and the project purpose initially.

It is also preferable to clarify the goals in terms of utilization, i.e., the ways in which the development study is used. By doing this, the direction of the study will become more obvious even at the ex-post evaluation stage.

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(2) Review Evaluation Methods for Future Development Study

1) Development of evaluation methods integrating all stages from pre- to post-development studies

As described earlier, it is essential to consider evaluation methods that integrate every stage of the development study. One of the ways to do this is to prepare and utilize the PDM from before to after the implementation of the study, as in this evaluation. Also, setting application goals in the ex-ante evaluation document is another method for integrated evaluation. In any event, it is important to examine the role and how (who, when, how) to use evaluation methods in development studies.

2) Necessity to examine the evaluation perspective for each cooperation scheme

In addition to an integrated evaluation technique that covers all stages of a study, there is need to review evaluation perspectives that correspond to the diverse forms of development study in recent years. Two perspectives are needed to categorize cooperation schemes. One by format (e.g. studies that include M/P, F/S, D/D, with pilot study, etc.) and one by field (agriculture, forestry, fishery, etc.). Evaluation perspectives should be examined for both. For example, for format categories M/P can be further divided into policy-support types that set up development strategies in specific fields, or types that establish long-term or short-term plans taking execution into consideration. For field categories, for example, irrigation types and rural development types in agriculture can be considered.

(3) Set Up an Evaluation Implementation System

In the future, when establishing evaluation methods for development studies, not only should evaluation methods be examined, but it is also necessary to consider the structure for implementing evaluations.

This evaluation targeted development studies implemented in the 1980s when evaluation plans were not included at the planning stage, so the background of the request for the development studies could only be picked up from limited available information. In this case, substantial effort is needed to obtain reliable information. The following two points are recommended to improve the current situation and the efficiency and quality of the evaluation studies.

First, in order to conduct an evaluation based on highly

reliable unbiased information, a new system should be built, a system that is capable of attaining necessary information for evaluation in every stage of the development study, starting from the time of request to its completion.

For example, after receiving a request and before conducting a study, documents including important information, such as the background for requesting the study, the process of deciding the scope of the study, and why the study has been approved are prepared. By making these documents accessible at the time of evaluation, the necessary background of the study would be easily clarified. This includes what the original need of the study was, how the scope was revised through negotiations, what was finally included in the scope, and what was expected by utilizing the study.

Second, it is important that necessary information for evaluation be included in the related documents. Even if a system that ensures easy access to information were built, it would be meaningless if the necessary information for evaluation was not included.

The most important information for evaluation studies shows how the study output was expected to be applied. This clarifies the perspective necessary for measuring the use of a particular study, for example the implementation of an ex-post evaluation.

The goal for application is not only important when implementing the evaluation, but is also very important when implementing development studies. By clarifying the goals for application in advance, more feasible proposals could be derived from the full-scale study. As a result, the overall effectiveness of the development study would further improve.