

Follow-up Evaluation of Development Studies (Port and Water Supply)



Project Sites Indonesia, Sri Lanka, Philippines, Kenya, Mauritius

1. Background and Objectives of Evaluation Study

With a call for greater transparency in ODA projects, there is 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 monitoring, as well as studies on the application of the contents of study reports. Evaluations on "Developments Studies" addressed with 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 establishment of evaluation techniques are essential. The sector-approach-based evaluation study aimed to utilize lessons from evaluation results and improve the quality of the development study scheme for the targeted sector, ports and water.

2. Evaluated Projects

This study, which examined development studies in the field of ports and water supply, which were conducted in Asia and Africa. The selected studies for evaluation were port studies in Indonesia, the Philippines, and Sri Lanka; and water supply studies in Kenya and Mauritius. Tables 1 and 2 refer to the list of evaluated projects.

3. Members of Evaluation Team

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Table 1 List of Evaluated Projects <Ports>

Country	Project	Type of Study	FY
Indonesia	Development Plan of the Port of Semarang (Phase I)	M/P+F/S	1978
Indonesia	Development Plan of the Port of Semarang (Phase II)	M/P+F/S	1986
Philippines	Development Study for Batangas Port Development	M/P+F/S	1985
Philippines	National Ferry Transportation Plan Study	M/P+F/S	1992
Sri Lanka	Study on the Development Project of the Port of Colombo	M/P+F/S	1980
Sri Lanka	Study on the Development of the Port of Colombo	M/P+F/S	1989
Sri Lanka	Development of the New Port of Colombo	M/P+F/S	1996

Table 2 Evaluated Projects <Water Supply>

Country	Project	Type of Study	FY
Kenya	Water Supply Reinforcement Plan for the Mombasa District	F/S	1981
Kenya	Malewa Dam Construction Plan	F/S	1990
Kenya	Development Study on the Water Supply Plan for Meru County	M/P+F/S	1997
Mauritius	Water Supply Plan for Port Luis City	F/S	1989
Mauritius	Water Supply Plan for Port Luis City	D/D	1991

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4. Period of Evaluation

<Indonesia>

5 – 12 November 2000

<Sri Lanka>

12 – 16 November 2000

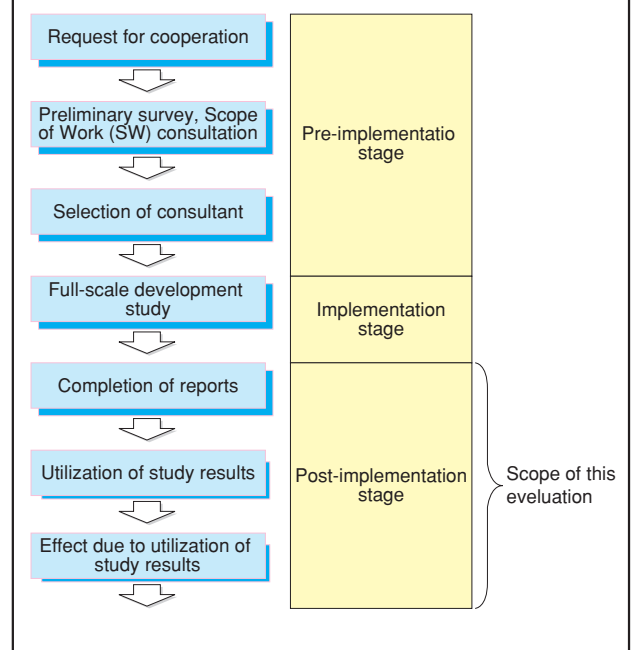
<Philippines>

16 – 24 November 2000

< Kenya >

19 November – 4 December 2000

Figure 1 Flow of Social Development Study



<Mauritius>

4 – 11 December 2000

5. Methods of Evaluation

(1) Scope of Evaluation

The scope of this evaluation study includes the whole procedure of development study, namely, 1) full-scale development study ¹⁾, 2) completion of reports ²⁾, 3) utilization of study results ³⁾, and 4) effects from the utilization of study results ⁴⁾.

(2) Method of Implementation

Information for the study was gathered through questionnaires sent beforehand, interviews, the collection of related documents, and on-site studies.

- 1) The "full-scale Development Study" is the stage from when a study team comprised of Japanese consultants is dispatched and commences study with the counterpart government study team to when the final report of the study results is written.
- 2) "Completion of report" is when the study team submits the final report to the counterpart government.
- 3) Utilization of the study results points to where the counterpart government, based on the recommendations of the final report, applies the transferred techniques and technology to other cases, or where a continuing phase of the study based on the recommended framework is implemented, or preparations for the realization of the project are underway.
- 4) Effects from utilization of the study results point to the stage that, as a result of preparations for project realization, the counterpart government applies the transferred techniques and technology to other cases or obtains the initial objectives through project realization.

6. Results of Evaluation

<Ports Sector>

(1) Indonesia: Development Plan of the Port of Semarang Phases I and II (M/P and F/S)

1) Outline and Background of Project

The Semarang Port, one of Central Java's main ports, is located on Java Island. When the government of Indonesia requested a development study on this port, the maximum water depth of the port was only 4m due to drift sand from littoral currents. As a result, medium- to large-sized boats was not able to enter the port directly and had to discharge cargo afloat.

		Objective	
Phase 1	1977.9~ 1978.8	M/P	To plan the enlargement of Semarang Port as a part of a long-term, comprehensive infrastructure development plan in Central Java
		F/S	To conduct an economic and financial analysis of the Semarang Port Emergency Rehabilitation Plan
Phase 2	1985.5~ 1986.8	M/P	To design the Semarang Port up to the year 2005
		F/S	To design an emergency rehabilitation plan

2) Evaluation results by the five evaluation criteria

a) Relevance

As the importance and necessity of rehabilitating the container cargo port was recognized in the National Development Plan during both Phases I and II of the study, relevance was very high.

b) Effectiveness

Plans designed under Phases I and II were based on sufficient socioeconomic analysis and met the expectations of the counterparts. However, the environmental assessment conducted in Phase I was not conducted in Phase II. Considering the occurrence of the

land subsidence of Semarang City, which had affected port rehabilitation, it is deemed to be a necessary environmental assessment in Phase II as well. The plans formulated through both phases were materialized as recommended.

c) Efficiency

Overall, the efficiency of the study was high, as the scope of the JICA study team, data collection, and communication between the Indonesian counterparts and JICA study team was sufficient during both phases.

d) Impact

As a result of the Semarang Port Development Project, the amount of cargo handled increased and the number of docking days required at the port was reduced. In addition, the area surrounding the port has seen an increased number of manufacturing companies, which implied the project's contribution to the economic development of the area.

The Phase I study proposed the "improvement of the port administration and system" and the Badan Pengusahaan Pelabuhan (BPP), which, although responsible for port management, was recognized by the Indonesian side to be inefficient. As a result of this proposal, a new decree was issued in 1983 transferring port management to the public cooperation, PERSERO, resulting in improvement of port management efficiency. Furthermore, PERSERO was transferred to PERINDO Co. Ltd., which is 100% owned by the government.

The counterpart Directorate General of Sea Communications (DGSC) conducted its own Phase III of the development study based on the methodology used in Phases I and II. The Phase III report was completed in October 1999 and proposed projects in this report is to be implemented.

e) Sustainability

High levels of sustainability can be confirmed by the fact that DGSC has taken initiative for Phase III and was utilizing the study techniques transferred during the previous phases.

2) Lessons Learned

Phases I and II of the development study are judged to be successful as the studies were conducted efficiently and have led to other projects in addition to Phase III. In order to further improve the quality of development studies, the evaluation study has identified the followings.

a) Planning of the Semarang Development Plan from domestic and international comparative advantage as well as competitiveness point of view



Panoramic view of the Port of Semarang

- b) Planning based on the decentralization of government functions
- c) Socioeconomic impact of community relocation

(2) Sri Lanka: "Study on the Development Project of the Port of Colombo (M/P and F/S)," "Study on the Development of the Port of Colombo (M/P and F/S)" and "Study on the Development of the New Port of Colombo (M/P and F/S)"

1) Outline and Background of Projects

The port of Colombo is not only a key junction of marine transportation linking Europe and the Far East, but also one of the major ports of South Asia. In the late 1970s, port development became increasingly important for the Sri Lankan government in promoting economic development. Therefore, it became necessary to upgrade the facilities of the Port of Colombo as a major international port to cope with increased cargo volume and worldwide trends in cargo transportation. As a result of these changes, the Sri Lankan government requested a Development Study.

		Objective	
Project of Port of Colombo	1988.11~1989.11	M/P	To draw up a basic plan of development of the Port of Colombo up until the year 1988
		F/S	To draft an emergency rehabilitation plan with 1993 as its target year and to conduct an economic and financial analysis
Development of Port of Colombo	1985.5~1986.8	M/P	To draw up a Master Plan for 2001
		F/S	To draw up a short-term development plan based upon the framework of the Master Plan until 1993 and to implement an economic and financial analysis
New Port of Colombo	1985.5~1986.9	M/P	To draft a Master Plan for the development of the Port of Colombo until the year 2015 and Sri Lanka's port development policy
		F/S	To draft a short-term development plan until the year 2005 for the new Colombo port development with economic and financial analysis. The plan should also include an immediate plan for urgent needs.

2) Evaluation Results

a) Relevance

The "Study on the Development Project of the Port of Colombo" is deemed relevant as development of the Port of Colombo became indispensable in the 1980s when the Sri Lankan government promoted the establishment of free-trade, investment promotion zones, and trade liberalization policies.

Before implementing the "Study on the Develop-



Container Terminal of the Port of Semarang

ment of the Port of Colombo," the Port of Colombo became the largest cargo transportation port in South Asia due to the government's active promotion of port liberalization. Consequently, the port was required to handle more cargo than predicted. Therefore, it can be concluded that this study, which aimed to draw up a new M/P, was highly relevant.

By the time the "Study on the Development of the New Port of Colombo" was conducted in 1995, it was expected that the amount of containers handled at the Port of Colombo would further increase as Sri Lanka was experiencing economic growth and neighboring India had shifted towards economic liberalization. Therefore, this study could be considered to be highly relevant as it aimed to draft a plan for existing facilities for the Port of Colombo, as well as for neighboring areas to develop new ports.

However, the Sri Lankan government issued a call to private companies for alternative development plans utilizing the BOT method at around the same time the "Study on the Development of the New Port of Colombo" was conducted. As a result, a consortium of private shipping companies submitted an alternative development plan. This occurred as a result of a change in administration just after the study commenced and the new government promised to promote privatization. This change was not predicted and was unavoidable.

b) Effectiveness

The final reports of all three development studies were in line with the original Scope of Work (S/W), structured logically, and achieved targeted objectives. All of the proposed projects, except several projects proposed in the "Study on the Development of the New Port of Colombo" were implemented. Techniques necessary for port development were transferred to the counterpart through each study and, as

counterparts utilized these techniques to further projects, it can be concluded that these studies have effectively achieved their objectives.

c) Efficiency

The study teams of the three studies were appropriate in terms of input sizes. The final report of the development studies were distributed to the ministries and institutions concerned. Discussions between concerned ministries and the study team after each study were particularly efficient.

d) Impact

Most of the projects proposed in the "Study on the Development Project of the Port of Colombo" and the "Study on the Development of the Port of Colombo" were implemented and the reports were fully utilized. Some project plans proposed in the "Study of the Development of the New Port of Colombo" were implemented. In addition, the study's demand forecast was utilized in the "National Port and Marine Policy (1996)" of the Sri Lankan government.

The direct impact of the project in terms of the development of the Port of Colombo is evidenced by

an increase in foreign currency earnings as a result of handling reshipping cargo and strengthening cargo-handling capacity. In addition, indirect impacts were seen in the promotion of domestic industries mainly in export-processing zones. Overall, a favorable impact was observed as a result of the gradual implementation of the projects proposed in the three studies, and the fact that the Port of Colombo has become a hub port in the South Asian region.

e) Sustainability

Facilities constructed as a result of the three studies have been managed and operated by the counterparts. However, due to changes in the international trend in marine transportation and port management methods, as well as domestic considerations including civil war, there is some concern as to whether the studies can be utilized in the future. As these situational changes were not predictable at the time of the studies, it still could be concluded that the proposed projects in the three studies were fully sustainable at the time of the studies.

3) Lessons Learned

Although the objectives of the three studies were attained, in order to further improve the quality of development studies, it is necessary to involve capacity analyses of the institutions responsible for port development and management. It is also particularly necessary to explicitly refer to the necessary authority and roles of port development and management, expertise, and incentives in further studies.

This is because precedent development studies including the "Study on the Development of the New Port of Colombo" only touched on the issues of authority, roles, and expertise of implementing institutions. However, it did not actually refer to changes in these areas and necessary authority, role, and expertise to cope with them as a result of institutional reform. When those reforms are expected, the report of development studies should cover those issues as well.

In addition, lack of incentives for the implementing organizations may lead to the proposed projects not being implemented, which leaves room for examination of the structure of incentives surrounding the project.

(3) Philippines: Development Study for Batangas Port Development (M/P and F/S)

1) Outline and Background of Project

The Batangas Port is a good natural harbor situated approximately 100 km from the Greater Manila area on the southwest island of Luzon. However, the use of land



Container Terminal of the Port of Colombo



Panoramic view of the Port of Colombo (from South to North)

and water around the port has not been planned systematically. In addition, the facilities at the Batangas Port have deteriorated and port congestion has grown over the years. Therefore, the Philippine government requested the Japanese government to conduct a Development Study.

		Objective	
Study of Batangas Port development	1984.9~1985.12	M/P	To develop a long-term development plan up until FY2000 based upon the basic strategy and cargo demand projection
		F/S	To draft a short-term development plan up until FY1990, based upon the long-term development plan and to be able to handle the predicted cargo demand, as well as to conduct an economic and financial analysis

2) Evaluation Results

a) Relevance

The relationship between the study objectives at the time of the study, the Philippine National Development Plan (1984 – 1987) and the Southern Tagalog Region Development Plan (1984 – 1987) were consistent. In addition, the study was relevant since implementation of the proposed projects went underway soon after the study, and the project almost completely reflected that proposed in the study report.

b) Effectiveness

The objectives were fulfilled as the final report was based on the S/W. In addition, the contents were logical and easy to understand. However, environmental impact and community relocation analyses should have also been included in the study. The objectives of the study appear to have been achieved since most proposed projects in the "Short-term Development Plan" were implemented as proposed, and the implementation of proposed projects of the "Long-term Development Plan" were underway. Knowledge on port development was transferred to the counterpart throughout the study and those techniques and know-how were adequately utilized. Therefore, the technology transfer was achieved.

c) Efficiency

The implementation structure and scope of the study appeared to have been efficient, and the study team members were also judged as appropriate. However, there was some concern that the participation in the study of the Philippines Ports Authority (PPA) was limited due to the shortage of personnel of the PPA. Moreover, there seemed to be some degree of inefficiency in the schedule.



The Batangas Port

ciency in the schedule.

The study itself was conducted efficiently with adequate quantitative and qualitative data available. Feedback of the results and proposals of the study were obtained through seminars with the related institutions.

d) Impact

The results of the study have been utilized in JICA studies such as the "Calabarzon Integrated Regional Development Study (1991)" and the "Greater Capital Region Integrated Port Development Study (1994)".

In addition, OECF (currently JBIC) implemented the "Batangas Port Development Project (I)" based on the "Short-term Development Plan," and completed in March 1999. Projects (II)I through (IV) of the "Batangas Port Development Project" were also being implemented through JBIC loans based on the "Long-term Development Plan" of the study. Therefore, the overall goal of the study, which proposed projects to be implemented, has been achieved.

Examples of direct impacts from implementing the "Batangas Port Development Project" are the improvement in the efficiency and safety of port management through the construction of berths based on different objectives, such as Roll-on Roll-off (Ro/Ro) ferries, high-speed boats, and normal cargo. Examples of indirect impacts are the improvement of distribution and increase of passengers on routes to and from Mindoro Island, and establishment of industrial parks in Batangas, with the Port used as a shipping point.

e) Sustainability

The facilities constructed based on the "Development Study for the Batangas Port Development (I)" are being managed by the Port Management Office (PMO) under the PPA, which is privately operated.

Despite some minor problems with cargo handling, sustainability appears secure. However, it is noted that port management in the Philippines is undergoing decentralization and privatization, therefore it may greatly change in the future. Sustainability of projects after the "Batangas Port Development Project (II)" might be threatened, as there had been problems with land commissioning and a lack of road maintenance.

3) Lessons Learned

Since this study was conducted efficiently and effectively and the proposed projects were subsequently implemented, the study from an overall point of view is seen to have been a success. However, the following problems concerning project implementation must be solved to increase the quality of future development studies.

- (a) Planning with consideration for squatters and community relocation
- (b) Importance to integrate port and hinterland developments, including access roads.
- (c) Analysis of development and management capacity of the port institution.

(4) Philippines: National Ferry Transportation Plan Study (M/P and F/S)

1) Outline and Background of Project

In an island country such as the Philippines, domestic passengers and cargo are transported mainly via roads and sea. Ferry transportation in particular is important means of transportation between main islands such as the island of Luzon, the Bisaya islands, and Mindanao. However, ferry transportation management administration was not established and the level of facility maintenance was low at the time of the study. Therefore, improvement in facility maintenance, transportation safety, and efficiency was in need. Under these conditions, the government of the Philippines requested assis-

tance from the government of Japan in formulating a national ferry transportation plan. In response to this request, the Japanese government decided to conduct a Development Study.

		Objective	
National Ferry Transportation Plan Study	1991.4~1992.8	M/P	To draft a Ro/Ro ferry transportation system M/P in the Philippines and to ensure efficient policy guidelines on Ro/Ro ferry transportation and to select priority routes
		F/S	To conduct an economic and financial analysis of Ro/Ro terminal facility maintenance of the Iloilo and Bacolod ports

2) Evaluation results by the five evaluation criteria

a) Relevance

In the infrastructure development plan of the 1991 Philippines Development Report, the improvement of ferry service efficiency was proposed to bring down local transportation costs. The JICA study on National Ferry Transportation was noted as a high-priority project. Therefore, the relevance of the study at the time of implementation is considered to be high.

The study itself proposed a plan to keep maintenance costs low by avoiding steel and using concrete for port structures. Such consideration by the study was deemed highly important as the financial situation of the country remained tight.

On the other hand, when examining the relevance from the point of view of project implementation based on the proposal of the study, there is a very low possibility that the proposed projects will be implemented.

b) Effectiveness

According to the counterpart, the final report followed the original scope of work, and the contents were easy to apply. Those comments show that the report was written in line with the expectations of the counterpart.

Transfers of study methods from the study team to the Philippine counterparts were conducted, and have improved the capacity of the counterpart.

c) Efficiency

The study was conducted efficiently as there were no communication problems between the study team and the Philippine government during the study period. In particular, the study team explained the implementation process and progress several times throughout the study, eliciting comments that this contributed to



The Batangas Port (Passenger ship terminal)

raising the efficiency of the study.

d) Impact

The counterpart Department of Transportation and Communications (DOTC) distributed the final report to relevant authorities and the Asian Development Bank (ADB). The DOTC also made efforts to implement the projects proposed in the plan by constructing and maintaining several ports with its own finances.

As the use of M/P is not monitored by the DOTC, details of project implementation (implementation year, financing, and implementation contents) are not available. JICA experts dispatched to the DOTC were currently monitoring the progress of M/P implementation. Therefore, it was difficult to evaluate the socio-economic impact of project implementation, as no information had been found on particular progress.

e) Sustainability

Due to the lack of information regarding whether or not the proposed project would be implemented, the sustainability of the project could not be examined for the moment.

3) Lessons Learned

The study itself was efficiently conducted with its proposals given high priority within the National Development Plan, thereby achieving its objectives. On the other hand, as the projects proposed in the study had not been implemented, the overall goal had not yet been achieved. Observations that could contribute to improving future development studies are as follows.

- a) Staff from counterpart DOTC, as well as from the National Economic and Development Authority (NEDA), Philippines Ports Authority (PPA), Maritime Industry Authority (MIA), and the Department of Public Works and Highways (DPWH) was involved in the study. As it was necessary to study a wide area including not only the port itself, but also access road to the port, involvement of such relevant authorities contributed to data collection and the scheduling of appointments. However, it was pointed out that this also contributed to frequent interruptions in the study as decision-making authorities were not clearly allocated to any of these organizations.
- b) The fact that the actual organization in charge of the execution of what was proposed in the study was unclear was seen as an obstacle to the implementation of projects. Therefore, it is important to develop a system whereby one certain institution is responsible for the entire process from



The Batangas Port (Ro/Ro ferry terminal)

study implementation to follow-up monitoring. This would be an important factor for leading to a smooth project implementation based on the proposal of the study.

- c) One of the reasons for the delay in project implementation was due to a lack of funding. Another reason for the delay was that the actual management of port development was not authorized to the DOTC, which was the counterpart organization of the study. If a review of the study is to be conducted, it is necessary to examine coordination of related implementing institutions and the procuring of financing for implementation of the proposed projects.

<Water Supply Sector>

(5) Kenya: Development Study on the Water Supply Plan for Meru County (M/P and F/S)

1) Outline and Background of Project

Water supply facilities in Kenya's Eastern Province lagged far behind the level set as national goal. The water supply system of Meru city could only meet 20% of water demand and existing water facilities were in a deteriorated condition. At the same time, water was scarce in Isiolo city as the Isiolo River dried up during the dry season. Therefore, there was an urgent need to develop a filtration plant in order to meet the demand for water in Eastern Province. The Kenyan government requested the Japanese government to implement a study that would help improve the water supply system for six districts of Eastern Province.

The characteristics of this project are as follows: a) the investment and management capacity of the Kenyan implementation side was fully considered in the design of the facilities, the community participated from the planning stage, and many social aspects were fully exam-

		Objective	
Water supply plan for Meru County	1996.7~1997.11	M/P	To develop sewage works in 6 municipalities and 1 area in Kenya's Eastern Province by the year 2010
		F/S	To conduct an F/S targeting the year 2005 in areas that had been selected as priority improvement areas for the water supply system amongst the M/P target area of 182 km ²

ined, and b) conditions were set that the plan would be implemented through grant aid, only with the full implementation of a metering system, and the commencement of a reduction program targeting non-revenue water.

2) Evaluation results by the five evaluation criteria

a) Relevance

This Development Study was conducted as part of a National Water Resources Master Plan conducted by JICA in 1992. After completion of the study, the projects proposed in the study were integrated within the National Development Plan. At the same time, the projects proposed through the study met needs at the time of evaluation, and basic designs for after implementation were currently being drafted. Therefore, this study could be considered relevant.

b) Effectiveness

The contents of the final report fully considered the financial state of the Kenyan implementing institutions and met the needs of the Kenyan side. Payment capabilities of the community were also carefully examined. Pipelines for the community were proposed in areas where the community could not bear the cost of household water pipes. The study can be highly evaluated as community participation was encouraged and the conditions of the community were fully considered.

A revision of water charges was proposed in the study. This was based on the fact that although the existing level of water charges could cover maintenance costs, they could not cover facility investment costs. Therefore, it can be concluded that the study was conducted effectively and achieved its objectives.

c) Efficiency

The study appears to have been conducted efficiently. There were no major communication problems between the Japanese and Kenyan teams during implementation, with reliable data from the Kenyan side greatly contributing to the efficiency of the study. On the other hand, as data was analyzed in Japan, the

Kenyan counterparts could not acquire data analysis techniques. There were also some members that lacked adequate English communication skills, which led to some inconvenience in discussions, affecting the efficiency of the study.

d) Impact

For some time after the final report was submitted in September 1996, there was no action from the Kenyan side. After a while, some action was taken with a basic design study conducted by Japanese consultants under grant aid in November 2000. A detailed design study and construction of sewage facilities is planned for 2001 and beyond.

e) Sustainability

As this project was at the basic design stage, it is too early to make conclusions regarding sustainability.

3) Lessons Learned

The scope of the full-scale study depends largely on the study design at the preliminary study stage. Examination of the social aspects including the collection of water rates is indispensable for the implementation of water supply projects. Thus, it is important to draw a study design that encourages the examination of social aspects from the preliminary study stage.

In the proposal of the study, the following conditions were set based on the presumption that the proposed plan would be implemented by grant aid cooperation.

- Full implementation of metering system
- Commence non-revenue water reduction program
- Provision of Japanese or foreign aid in the fields of non-revenue reduction, organizational capacity building, and construction management

Such conditions could have helped promote Kenyan initiatives. Therefore, it is concluded that although Japanese cooperation should be based on requests from the government, the Japanese stance should also be clearly communicated to the government.

(6) Kenya: Malewa Dam Construction Plan

1) Outline and Background of Project

This Development Study was implemented with the objective of developing and strengthening water supply to Kenya's Greater Nakuru District in the eastern part of Kenya's Rift Valley Prefecture, which includes three municipalities: Nakuru, Giruguru, and Naibasha; and two rural areas of Giruguru and Eburu.

		Objective	
Malewa Dam Construction Plan	1989.1~1990.11	F/S	To conduct an F/S of dam construction in the Malewa River Valley, which was planned as part of the Greater Nakuru District Water Supply Plan To decide on the appropriate scale and volumetric distribution of the Malewa Dam For the Kenyan side to acquire dam construction planning techniques through technology transfer

2) Evaluation results by the five evaluation criteria

a) Relevance

The basic concept was to construct a dam at the Malewa River and intake facilities at the Trashe River, using the surface water of both rivers. Discussions with the counterpart in November 2000 revealed that the construction of the Malewa Dam was regarded as the most effective way to cope with the increasing demand for water by the Nakuru municipality at that time.

There were high expectations that water supply volume would meet demand and a stable supply of water could be provided if the proposed projects of the study were implemented. In addition, it was expected to have a great impact especially in rural areas where the water supply volume was insufficient and the quality of water low.

b) Effectiveness

The study was conducted according to the scope set out in the scope of work. According to the Japanese study team, the proposed plan of the study i) reflected the budget capability of the Kenyan implementing institution for dam construction, and ii) carefully considered water charges by understanding the capacity of the investment recovery of Kenyan institutions and the community's capability. However, the Kenyan counterpart has pointed out that i) had not been fully considered. As for ii), examination of the decision-making process through community participation was not included in the S/W and therefore not included in the study.

c) Efficiency

The study appears to have been conducted efficiently. The Kenyan team participated actively in the study and there were no major problems, with smooth communication between the Japanese and Kenyan sides.

d) Impact

It was predicted at the preliminary study stage that



Water purification plant under Greater Nakuru District Water Supply Plan (constructed by Yen-loan)

the construction of the Malewa Dam would invite several environmental problems such as a fall in the water level of Lake Naibasha, increase in the water level of Lake Nakuru, and water pollution. There were requests from the Kenyan side to implement the study on dam construction. However, in the end, the government had to abandon the plan when an environmental conservation group campaigned against construction of the dam. As the proposed projects were deemed to cause environmental destruction, the plan has not been implemented.

e) Sustainability

Although the proposed projects have not been implemented, counterparts have fully utilized the results of the study by giving feedback to the relevant institutions.

3) Lessons Learned

The study was conducted as a result of the strong initiative of the Kenyan government despite potential problems such as a reduction in the water level of Lake Naivasha, increase in the water level of Nakuru Lake, and pollution as predicted in the preliminary study report. This is because the Kenyan government prioritized increasing the water supply of the Nakuru city.

At the time of the study, the Malewa Dam construction project was a forced-choice between "development" or "environment." If construction went ahead as planned, the environment of the Naivasha and Nakuru Lakes could have been destroyed, but if the construction were abandoned, the development of Nakuru, which was experiencing economic and population growth, would have been hampered.

Lessons learned as a result were that there is a need to be flexible in the implementation of development studies even after formal commitment to a study. Also, when antagonistic issues such as "urbanization and

environmental conservation" are involved in a study, consideration should be given to methods such as the reutilization of water or water circulating systems that meet water supply demands as a result of population growth.

(7) Kenya: Water Supply Reinforcement Plan for the Mombasa District (F/S)

1) Outline and Background of Project

This study aimed to conduct an F/S to increase water supply and predict water demand up to the year 2000 for Mombasa city, seven small to medium rural villages, and the rural area extending from the Sabaki River in the North, the coastal area in the East, the Tanzanian border in the South, and the Tsavo National Park in the West.

		Objective	
Water Supply Reinforcement for the Mombasa District	1980.2~1981.9	F/S	a) To accurately predict water demand up until the year 2000 for the Eastern and coastal area and to study the potential of water resource development. b) To draft a medium-term water supply plan and conduct an F/S of the project as an imbalance of water supply and demand is predicted after 1985, although the Sabaki River may continue to be able to supply water until then. c) To transfer technology on water supply planning.

2) Evaluation results by the five evaluation criteria

a) Relevance

According to WHO statistics, the infant mortality rate was high in 1980 due to malaria, enteritis, and diarrhea, and low sanitation levels were prevalent largely as a result of poor water quality. By recognizing

this situation, the Kenyan government prioritized the improvement of the water supply and the level of people's health, and founded the Water Resources Ministry. In addition, water supply became a major topic in the Fourth National Development Plan (1979-1983).

This Development Study was conducted with the goal of increasing and stabilizing the water supply and was congruent to Kenyan government policy at the time. The Kenyan counterpart remains committed even today to the implementation of the plan once financial resources can be procured.

b) Effectiveness

According to the Kenyan counterpart, the final report met the expectations of the Kenyan government. The community's payment capacity for water rates was also adequately analyzed with the proposed projects meeting almost all the needs of the community.

c) Efficiency

The study was conducted efficiently. Communication between the Japanese and Kenyan teams was fairly smooth and there were no major problems. The Kenyan team provided reliable data.

d) Impact

In 1992, bidding for consulting services on the F/S and Detailed Design Study of the World Bank financed Mombasa Water Supply Plan, which included the Second Mujima Pipeline Plan, was held. As a result, an Italian consulting firm won the bid in 1994 and implemented the F/S and D/D from 1996 to 1998. At a field study in November 2000, the Kenyan counterparts stated that they would like to implement this series of plans once financial resources were secured.

It is too early to discuss impact, as the proposed projects of the study have not yet been realized.

e) Sustainability

Although the proposed projects of the study have not been implemented yet, the counterpart credits this study as a link to the World Bank loan financing study. In addition, the counterpart commented that the report was distributed to relevant ministries and institutions and were effectively utilized.

3) Lessons Learned

This study points out the importance of the investment screening capacity of implementing institutions. To be more precise, it is important to 1) estimate the approximate investment costs of the proposed project at the preliminary study stage and 2) judge whether these costs can be procured by the implementing institution. Proposing alternative plans or scaling-down



Sewage disposal facility in Nakuru District

project investment costs at an early stage of a study for implementing institutions in case project investment costs cannot be procured.

(8) Mauritius: Water Supply Plan for Port Louis

1) Outline and Background of Project

The water demand increased rapidly in Port Louis city as a result of quantum development of light industries and population concentration. Meanwhile, problems of supply had emerged such as deteriorated water pipelines, seasonal differences in water supply. The study was conducted to formulate a water resource plan to improve water supply for Port Louis by understanding the above-mentioned situation.

		Objective	
Water supply plan for Port Louis City study	1988.4~1989.6	F/S	a) To draft several dam development plans and to select the best plan b) To conduct an F/S on the best water supply plan c) To draw up a detailed design of the dams and water filtration facilities proposed in the F/S d) To transfer techniques on water supply planning to the study counterparts, the Ministry of Energy, Water Resources and Postal Services and the Central Water Authority (CWA)

2) Evaluation results by the five evaluation criteria

a) Relevance

This study was highly relevant to Mauritius government policy at the time of implementation. However, when completed, the government decided not to implement the projects proposed in the study, and the plan was consequently left out of Mauritius' Five-Year Development Plan and regional development plans. This was due to the fact that the amount of the proposed investment was too high at the time and the proposed project's water production cost per 1m³ was larger than the Midland Dam Plan, which was already underway.

b) Effectiveness

The proposed projects and the final report of the development study have met the needs of the community and the Mauritius government. However, the Mauritius counterpart commented that the study did not fully consider the financial capacity of the implementing institution.

c) Efficiency

The study appears to have been implemented

without any major problems with active participation of the Mauritius team and smooth communication between the Japanese and the Mauritius teams.

d) Impact

The proposed projects in the study have not been implemented. Therefore, it is not possible to gauge its socioeconomic impact.

e) Sustainability

The proposed projects in the study have not been implemented. It is not possible to judge sustainability of the project.

3) Lessons Learned

A lesson learned from the study is that it is important to analyze the investment capacity of the implementing institution. If the investment cost of a project is larger than the implementing agency can procure, it is necessary to scale down the project or propose an alternative plan to the implementing institution at the beginning of the study.

7. Lessons Learned and Recommendations

(1) Ports Sector

1) Formulate National Port Plan consistent with public benefit and efficiency

In recent years, decentralization and privatization to improve the efficiency of the public sector and reduce the fiscal burden of the central government has become a trend in both developing and industrialized countries. This trend is also being found in the development and management of public facilities including the ports sector. In Sri Lanka, for example, the participation of private companies has been promoted through the introduction of BOT in the development and management of the port. In Indonesia, it was predicted that port management would change as the central government decentralized its functions. The decentralization and privatization of port management were also considered in the Philippines.

This trend is particularly visible in container ports where international competitiveness is required and cost reduction to pursue efficiency became the major theme. At the same time, BOT is slowly being recognized as a valuable container port development method, which may reduce the enormous investment required for port development under the tight fiscal conditions of the government.

2) Analysis on the development and management body of the port sector

As mentioned above, port development and manage-

ment have gradually been transferred from a public port corporation under the central government to various other bodies as a result of decentralization and privatization. As a result, each port has come to deal with development and management individually, which may result in posing difficulty for the national marine transport and port development policy. At the same time, although a reduction in the number of workers is in sight to pursue efficiency, this needs to be carefully examined since public facilities, including ports, provide employment opportunities.

Reflecting the situation, there is an increased importance to draft a comprehensive national port development plan, supervising various plans executed by individual port management bodies. Development studies concerned with national ports are now required to analyze the financial, human and other organizational capacities of the current port management body, and to help their capacity building which can achieve both efficiency and a public nature of the ports.

3) Introduce social analysis and consideration to the targeted area to promote efficient implementation of the proposed project in the study

In the Batangas Port, for example, community relocation created a problem that consequently delayed project implementation. At the same time, it is predicted that similar problems may occur in the Semarang Port development for many squatters that inhabit the intended project area.

Problems related to community relocation, as mentioned above, are considered to be the responsibility of the counterpart government. However, as long as the objective of development studies is to implement projects by utilizing the result of studies, the social aspects of the targeted area must be considered and the scope of study must include countermeasures for these factors.

In many developing countries, land ownership is frequently unclear and it is difficult to distinguish legal and illegal occupation. Therefore, social surveys should be conducted of not only landowners, but also squatters. This is particularly important for port development in coastal areas where many squatters live.

(2) Water Supply Sector

1) Implement policy proposal-type study that includes revision of water rates and management capacity building

Promoting investment without consideration for management problems of the implementing bodies has

the potential to aggravate the problems. Japan may be able to assist with investment funds, but cannot support maintenance costs. Therefore, it is indispensable to develop management capacity including to recover investment for sustainable water project development. Policy studies that examine the revision of water rates, investment recovery, and management capacity should be introduced.

2) Implement studies focusing on urbanization and environmental protection

As seen in the example of the Kenya Nakuru River area, it appears that there will be an increase in development studies focusing on urbanization and environmental protection. Therefore, it may become increasingly important to plan a water supply for urbanization by recognizing the possibility of environmental destruction, and that environmental destruction has to be avoided. Measures such as water recycling or circulatory water supply systems are specific examples and possibilities that might meet the growing demand for water supply as a result of population growth.

3) Promotion of designs that examine social aspects from the preliminary study stage

The Study on the Water Supply Plan for Meru County demonstrates that the study design at the preliminary stage defines the scope of the study itself. In order to implement the proposals of water plans, considerable examination of both the infrastructure and social aspects are required, with a study design that examines the social aspects introduced from the preliminary stages of a study.

(3) Process of Development Studies

1) Rough estimates of investment costs and projection of fund raising capacities of local implementing bodies

As mentioned in evaluations of the "Water Supply Reinforcement Plan for the Mombasa District" and the "Water Supply Plan for Port Luis City," it is important to roughly estimate the costs of the envisioned project at the preliminary study stage and to determine whether the local implementing body is able to raise these funds. If the funds cannot be procured by the local implementing body for the envisioned project, it is necessary to propose a scaling-down of plans or an alternative plan to the implementing institution at an early stage of the study.

2) Flexibility in study implementation post-adoption

Despite predictions of grave environmental problems

of the Malewa Dam in the preliminary study report, the Kenyan counterpart continued to request a full-scale study for dam construction. It must have been difficult for the Japanese side to reverse the decision regarding the already approved construction plan. In future cases, it is important to be able to reverse decisions to implement or provide assistance in the form of development study if new facts are found after project approval.

3) Further efforts on technology transfer

In the hearing conducted in Kenya in November 2000, the counterparts of the three development studies that were evaluated pointed out that "as data analysis was conducted in Japan, the Kenyan team had little opportunity to learn the process." This highlights the need for JICA to further clarify in the terms of reference issued before the bidding for the study, and what techniques are to be transferred by the consultants to the counterpart.