

**Ex-Post Project Evaluation 2011:
Package IV -2
(Indonesia, Thailand, Mongol)**

December 2012

JAPAN INTERNATIONAL COOPERATION AGENCY

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Preface

Ex-post evaluation of ODA projects has been in place since 1975 and since then the coverage of evaluation has expanded. Japan's ODA charter revised in 2003 shows Japan's commitment to ODA evaluation, clearly stating under the section "Enhancement of Evaluation" that in order to measure, analyze and objectively evaluate the outcome of ODA, third-party evaluations conducted by experts will be enhanced.

This volume shows the results of the ex-post evaluation of ODA Loan projects that were mainly completed in fiscal year 2008, and Technical Cooperation projects and Grant Aid projects, most of which project cost exceeds 1 billion JPY, that were mainly completed in fiscal year 2007. The ex-post evaluation was entrusted to external evaluators to ensure objective analysis of the projects' effects and to draw lessons and recommendations to be utilized in similar projects.

The lessons and recommendations drawn from these evaluations will be shared with JICA's stakeholders in order to improve the quality of ODA projects.

Lastly, deep appreciation is given to those who have cooperated and supported the creation of this volume of evaluations.

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Masato Watanabe
Vice President
Japan International Cooperation Agency (JICA)

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Indonesia

Ex-Post Evaluation of Japanese Technical Cooperation Project

“The Project on Self-Sustainable Community Empowerment Network Formulation in Nanggroe Aceh Darussalam Province”

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Foundation for Advanced Studies on International Development (FASID)

0. Summary

The main objectives of this project were to assist 1) income generation activities of those who lost livelihood because of tsunami in 2004, 2) human resource development of local government officials responsible for recovery projects, and 3) development projects of Banda Aceh city by promoting Urgent Reconstruction and Rehabilitation Plan for Banda Aceh City (URRP) assisted by Japan to be enacted as the city ordinance. The relevance of the project is high since it is consistent with the policy of the Government of Indonesia to recover from tsunami disaster, development needs of the local people, and Japan’s policy to support them. The Effectiveness and the impact are fair since the project did not achieve the overall goal of formulating the network among income generation groups although the project was effective in supporting income generation activity to assist people’s livelihood, contributing to human resource development in local governments, and promoting Banda Aceh city recovery plan. The efficiency is high since the budget and the time period of the project was within the plan. The sustainability is low since the project did not have an organizational arrangement to ensure the sustainability of the project. Although some income generation activities continue, it does not have a mechanism to sustain ACE (Activity for Community Empowerment) groups. In light of the above, this project is evaluated to be partially satisfactory.

1. Project Description



(Aceh Province, Indonesia)



(People engaged in income generation activities)

1.1 Background

Because of earthquake and tsunami on December 26, 2006 in Indonesia, 130,000 people died, 337,000 people were missing, and 500,000 became refugees. In addition to loss of human lives, many houses were lost, infrastructure, public facilities and private capital were all damaged, and Aceh province had the most serious damages since it is located in the northernmost part of Sumatra island.

Prior to this project, JICA implemented the urgent rehabilitation and reconstruction support program (March 2005 – March 2006) for formulating Urgent Reconstruction and Rehabilitation Plan for Banda Aceh City, recovering land registration, and rehabilitating sanitation facilities and others. Together with the assistance from other donors, the rehabilitation of roads, houses and others was in progress.

About two years later after the earthquake and the tsunami, the rehabilitation in construction of infrastructure was progressing. However, those who lost family members who were the main earner of income, and those who lost means of income were still in difficult situations. Local governments lost many officials by earthquake and tsunami, and their capabilities remained low, and this affected the reconstruction processes. The assistance for the citizens and the governments in their human resource development were delayed, and these became issues.

1.2 Project Outline

This project consisted of 1) assistance for people to improve their livelihood, 2) human resource development of local government officials, 3) follow-up for Urgent Reconstruction and Rehabilitation Plan for Banda Aceh City (URRP) , and 4) publicity and awareness raising activities. Among these components, assistance for people's livelihood and human resource development of local governments were particularly important, and the project attempted to achieve the outputs during the project implementation, and establish the organizational arrangement to disseminate the model to improve people's lives and transfer the programs developed by the project for human resource development of local governments officials to each local government.

Overall Goal	Community empowerment network is expanded and self-sustainability of community activities is strengthened.
Project Objective	Community activities are activated through enhancement of community capacity

Outputs	Output 1	Revitalization of disaster/conflict affected people is enhanced and capacity of local government authorities, local expertise and people on ACE planning and implementation are increased.
	Output 2	Technical and administrative capacities of local governments are increased.
	Output 3	Reconstruction plan of Banda Aceh City (URRP) is updated and policy framework on regional development is recommended to BRR and local governments.
	Output 4	Public awareness and preparedness on earthquake and tsunami are increased
Inputs	Japanese Side: 1. Six Experts 2. Local Cost 32 million yen (1 yen = 0.00819 rupiah as of March 2009 applied) Indonesian Side: 1. Four Counterparts	
Total cost	234.21 million yen	
Period of Cooperation	March 1, 2007 – March 31, 2009	
Implementing Agency	Rehabilitation and Reconstruction Agency of Aceh and Nias: BRR) ¹	
Cooperation Agency in Japan	none	
Related Projects (if any)	Urgent Rehabilitation and Reconstruction Support Program for Aceh Province and Affected Areas in North Sumatra (Urgent Reconstruction and Rehabilitation Plan for Banda Aceh City) March 2005 – March 2006	

1.3 Outline of the Terminal Evaluation

1.3.1 Achievement of Overall Goal

The project components of Activity for Community Empowerment (ACE) and training programs for local government officials covered one city and six regions, and the public awareness activities by radio programs covered one third of the tsunami-affected areas, and the project achieved most outputs by implementing its

¹ BRR was established by the Presidential Decree on April 16, 2005. Its main task was to promote recovery and reconstruction projects by regional governments in collaboration with domestic and international organizations, following the guidelines of the national budget expenditure. Originally, BRR was to be dissolved on March 2009, and it was actually dissolved in September 2009.

activities in each area. Thus, the terminal evaluation concluded that the overall goal was likely to be achieved.

1.3.2 Achievement of Project Objective

ACE program established 34 groups with many member households' income increased. Over 70% of the trainees of capacity building programs for the local government officials used their training contents and disseminated them to their co-workers, and the terminal evaluation confirmed a certain degree of effectiveness of this component. URRP was not only an urban planning of Banda Aceh city but also useful for the formulation of disaster prevention plan, and development plan of infrastructure and public facilities. From the above, the terminal evaluation concluded that the project objective was likely to be achieved.

1.3.3 Recommendations

ACE program promoted people's capability and self-sustenance and much contributed to poverty reduction. In order to sustain and further develop ACE activities, it is important that local governments take the leadership for formulating and implement the ACE activities.

In order to actualize the effect of the reconstruction and administrative capability of the local governments in the long term, their capabilities suitable for their assignments at the city and regional level should be further developed, for which it is recommended to strengthen the organizational arrangement to implement trainings and have the adequate budget.

2. Outline of the Evaluation Study

2.1 External Evaluator

Keiichi Takaki, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

Duration of the Study: November 2011 – January 2013

Duration of the Field Study: March 15 – April 1 & June 19 – June 30, 2012

2.3 Constraints during the Evaluation Study (if any)

BRR, the implementing agency, was dissolved in 2009, and officials involved in this project were assigned to their own organizations. This caused difficulty in collecting

information necessary for the evaluation.

This project does not have the logic that outputs lead to the achievement of project objective. This caused a certain degree of difficulty in evaluation.

3. Results of the Evaluation (Overall Rating: C²)

3.1 Relevance (Rating: ③²)

3.1.1 Relevance with the Development Plan of Indonesia

The Government of Indonesia included the capacity building of organizations in charge disaster management, reduction and prevention of disaster risk, and strengthening of community capabilities for preventing and being prepared for disasters at the national and regional level together with early recovery of disaster affected-areas in the annual action plan for 2007 which was grounded on the medium term national development plan (2004 – 2009)

“The issue and action plan for the national development (2004-2009)” in the medium term national development plan by the Government of Indonesia included the recovery and rehabilitation plans of the Provinces of Northern Sumatra and Aceh and this covered from the emergency stage to reconstruction stage. Furthermore, Aceh was one of the priority areas in the country as “the actualization of safe and peaceful Indonesia” stated the necessity to emphasize fairness for Aceh in order to prevent sectionalism.

The Government of Indonesia established BRR (Badan Rehabilitasi dan Rekonstruksi = Agency for the Rehabilitation and Reconstruction of Aceh and Nias) by the Presidential decree in April 2005 with the purposes of the comprehensive coordination of projects for recovery and rehabilitation projects, and reconstruction of people’s life and infrastructure by strengthening communities. This project has the purpose of recovery and further improvement of the basis of living with the community as the main actor, and improve administrative capacities of the city and regions that are responsible for recovery and reconstruction. Thus the project and development policies of Indonesia are consistent.

3.1.2 Relevance with the Development Needs of Indonesia

Because of earthquake and tsunami of December 26, 2004 in Indonesia, 130,000 people died, 337,000 people were missing, and 500,000 people became refugees and Aceh province had the most serious damage, as it is located in the northernmost part of

² ③: High, ② Fair, ① Low

Sumatra.

Although many donors assisted Aceh for their loss because of earthquake and tsunami, they were mainly for constructing infrastructure such as roads and houses. On the one hand, many people lost their job, and local governments lost their officials, and their administrative capabilities were still low, which had negative impact on their reconstruction work. Thus, there was still much to be done for reconstructing people's lives and recovering administrative capabilities of local governments. This project aimed to recover and further develop livelihood of tsunami-affected people and strengthen government officials' capabilities. URRP that was formulated with the assistance of Japan needed some more support to be enacted as the city ordinance. From the above, this project is consistent with the development needs.

3.1.3 Relevance with Japan's ODA Policy

Japan's ODA charter and medium term plan had priorities in the engagement with global issues, and the disaster engagement was a high priority. Japan's ODA policy for Indonesia had priorities in peace building and reconstruction. Furthermore, ODA development plan for Indonesia (2004) stated that the assistance for Aceh reconstruction was a part of peace and stability program. Thus, this project is consistent with Japan's ODA policies.

This project has been highly relevant with the country's development plan, development needs, as well as Japan's ODA policy, therefore its relevance is high.

3.2 Effectiveness and Impact (Rating: ②)

3.2.1 Project Outputs

3.2.1.1 Project Output

1) Output 1: Revitalization of disaster/conflict affected people is enhanced and capacity of local government authorities, local expertise and people on ACE planning and implementation are increased.

This output entailed organizing people into groups and to promote self-sustained participatory development of people and community by promoting income generation activities and strengthening recovery and reconstruction capacity of the people. For this purpose, ACE group was established.

ACE groups were not registered bodies in the local government, and they had 8

members on average, 80% of them were women, the youngest member was 17 years old, and the oldest member was 70 years old (JICA document). The locations of ACE groups are listed in Table 1.

The first indicator of Output 1 was “the number of ACEs implemented” and this meant the number of established ACE groups. The procedure of ACE group formulation was that the project team determined the districts to establish ACE based on the annual budget of local governments, poverty rate and other factors, organized community meetings to have dialogues with local people, and asked for the application of ACE candidate groups. Later, each ACE group candidate prepared and submitted business plans. The project team eventually selected 21 ACE groups with business plans that they assessed as good. These ACE groups received seed money of 20 million rupiah and started their businesses.

Later, nine groups were newly established from the original 21 groups. The reasons of starting these nine groups were as follows; for those groups that were successful in their businesses, they wanted to expand their businesses, and for those groups whose merchandise did not sell well, some members planned to sell other merchandise that may sell well, for which they started new groups. Prior to the project, JICA Indonesia office supported four ACE groups in Ulele area in Banda Aceh city, and these four groups still existed. At the time of the project completion, there were 34 ACE groups. Table 1 lists 25 groups (21 groups and 4 groups established prior to the project in Ulele area) with their location, business content, and the number of members. From the above, more than 21 ACE groups were established and it can be said that the first indicator was achieved.

Table 1. ACE group

Location (City or Regions)	Activities	The number of members at the time of project completion
Banda Aceh city	Making and selling cake	10
	Sewing and embroidery	3
	Cake making and selling	8
	Fish processing	4
	Embroidery	4
	Sewing	3
Ace Besear	Lobster farming	3
	Making coconut spice	5
	Cake making and selling	10
	Cake making and selling	15
Pidie	Embroidery	10
	Making Melinjo ³ Crisp	20
	Cake making and selling	10
	Making and selling ice candy	6
Bireun	Making and selling snacks	6
	Tofu making	7
	Raising chicken raising for egg	8
	Raising chicken for meat	6
Aceh Tengah	Cake making and selling	8
	Fish farming	5
Aceh Barat	Cake making and selling	5
	Cake making and selling	15
	Fish farming	8
Aceh Jaya	Ox fattening	5
	Ox fattening	10
	Ox fattening	6

Source: JICA document

The second indicator was “the amount of household income before and after the implementation of ACE.” 60% of the ACE group members were affected by tsunami and conflicts, and their main sources of income were their own businesses. Their income before tsunami in 2003 was 601,700 rupiah on average. After participating in ACE activities, their income became 673,700 rupiah, which was an increase by 12% (JICA documents, 2009).

This ex-post evaluation conducted the beneficiary survey⁴ with ACE group members as respondents. The beneficiary survey asked about improvement in livelihood,

³ Melinjo is a species of Gnetum native to Indonesia.

⁴ The procedure of the survey is described in the annex.

quality and productivity of products that ACE group members produce and sell, and sales amount of the products. Table 2 shows the summary of their responses. These responses to these questions were by the scale of 5=much useful, 4=useful, 3=fairly useful, 2=not so useful, 1=not useful.

The result of the beneficiary survey shows that the degree by which ACE group activities were useful for improving livelihood was 3.73 on average, indicating that ACE activities were mostly useful. This shows that ACE activities contributed to improving livelihood. Thus it can be said that the second indicator was achieved.

I analyzed the factors by which ACE activities contributed to increasing income by the mixed effect model that is described in the annex of this report. The result of the analysis indicated that age, educational level, activeness in ACE group activities, participation in ACE festivals, knowledge of ACE manual, cooperativeness of ACE group members, contacts with other ACE group members were statistically significant in contributing to increased income (the details are described in the annex).

The beneficiary survey asked about effectiveness of ACE activities on improving quality and productivity of products and on increasing sales. The results are in Table 2, and the degree of usefulness of ACE activities in improving quality and productivity of products was 3.71 on average, and the degree of usefulness in increasing sales was 3.19 on average, meaning they were mostly useful. The reason why ACE activities were useful may be that ACE group members had some knowledge and skill before they participated in ACE activities, but did not have knowledge about book-keeping and sales, which they learned in the ACE activities (JICA document). Other reasons may be that ACE activities promoted information exchange to improve quality and productivity within and between ACE groups, and the project provided the funds for purchasing equipment (interview at ex-post evaluation).

Table 2. Usefulness of ACE group activities

Variable	Min.	Max	Means	Standard deviation
The degree by which ACE group activities were useful for improving livelihood	2	5	3.73	0.78
The degree by which ACE group activities were useful for improving quality and productivity of products	1	5	3.71	0.80
The degree by which ACE group activities were useful for increasing sales amount	1	5	3.19	1.07

Source: Beneficiary survey

The third indicator was “the number of distributed ACE manuals.” 70 manuals in English and 194 manuals in Indonesian were distributed to international organizations and visitors to the project office (JICA document). This manual contains four sections that cover general description of ACE activities, how to prepare business plan, how to implement it, and how to monitor. This manual was prepared with an intention that ACE activities would be adopted by other organizations and be disseminated to other regions. However, it is not confirmed that ACE activities were adopted by other organizations or it was disseminated to other regions. Since there not sufficient information, this indicator cannot be evaluated.

The forth indicator was “the number of meetings of Joint coordinating Committee (JCC) and ACE working groups.” It is to check whether JCC and working groups fulfilled their designated roles. The implementation arrangement of this project was that under BRR, the implementing agency, there was JCC that did the overall decision-making and coordination for any problems. JCC had project manager, representatives of BRR, Aceh Provincial government, and Banda Aceh city on the Indonesian side, and JICA experts on the Japanese side. JCC was the substantial decision making arrangement, and decided which ACE groups to support and the contents of training programs that will be described later.

JCC had three working groups each of which was in charge of ACE activities (Output 1), Capacity building of local government officials (Output 2), and URRP (Output 3). Each working group was engaged with issues and problems in planning and implementation. Each working group was consisted of officials in charge of relevant sector of the local governments.

JCC was held five times during the project implementation and confirmed the progress of the project, and made decision for the improvement of the project implementation. ACE working group was organized for 24 times with the participation of officials of the local governments and had important roles for implementing ACE activities that included receiving request of assistance from the pertinent sections of local governments, selection of areas to establish ACE groups within each of city and region (JICA document). Thus, it can be said that the fourth indicator was achieved.

The fifth indicator was “1) the number of orientations for ACE members/local expertise/local government, 2) ACE manual use, 3) the numbers of community

exchanges and ACE workshops,” and the project implemented 37 orientations, 25 ACE workshop, and four ACE festivals.

The project organized 37 orientations for ACE group members, local government officials, NGOs and consultants that supported ACE groups with the content of how to formulate ACE activities, and how to examine business plan. The breakdown was two times in each of one city and six regions (one each for ACE group members and local government officials), totaling 14 times organized. In the implementation of ACE activities, NGOs and consultants assisted ACE groups in planning and implementation. For the purpose of training these people, 23 orientations were organized, and these make 37 orientations organized.

ACE manuals contributed to ACE activities by improving common understanding the implementation of ACE activities among ACE members, implementing agencies and officials of the local governments.

Four ACE festivals were organized to bring together groups located in various areas in Aceh province to publicize their activities to other groups, people involved in the project, and the general public, and to organize opportunities to promote sales of their products for local people and government officials. They were organized in four locations closest to each locality so that as many local people and government officials as possible can participate in the ACE festivals.

At the ACE festivals, community exchanges were organized. In addition to ACE group members, 100 to 250 people of government officials, NGO staff, and local people participated in the occasion, and contributed to expanding networks and promoting exchanges of knowledge and information among ACE groups. This occasion exposed ACE group products to many people and contributed to publicity of ACE activities and increase of sales.

The beneficiary survey asked about usefulness of ACE festivals. 37 out of 134 respondents (26.6%) participated in the ACE festival, and I asked them how useful ACE festival was in general, and in what aspect they were useful. The response was in five scale (5=very useful, 4=useful,3=fairly useful, 2=not so useful, 1=not useful). The results are shown in Table 3.

The usefulness of ACE festival in general was 3.86 on average, and its usefulness in

expanding networks with other ACE groups was 3.35 on average. Its usefulness for exchanging information and learning new knowledge was 3.27 on average, and its usefulness for promoting sales was 3.14 on average. These indicate that ACE festivals were mostly useful.

Table 3. Usefulness of ACE festivals

Variable	Min.	Max.	Means	Standard deviation
The degree by which ACE festivals were useful in general	3	5	3.86	0.71
The degree by which the festivals were useful for networking	2	5	3.35	0.71
The degree by which the festivals were useful for information exchange and learning new knowledge	1	5	3.27	0.87
The degree by which the festivals were useful for promoting sales	2	5	3.14	0.71

Source: Beneficiary survey

25 ACE workshops were organized in total. They were organized in one city and six regions with the intention that many ACE members and local government officials could participate. The content of the first workshop was about ACE planning, the second was about ACE implementation, and the third was about monitoring and evaluation, and 21 workshops were organized. In addition, four ACE workshops were organized when ACE festivals were held for ACE group members for improving quality and productivity and sales promotion. In total, 25 ACE workshops were organized.

The beneficiary survey asked about usefulness of ACE workshops. 42 out of 134 respondents (31.3%) participated in ACE workshops, and I asked how usefulness ACE workshops were in learning new skills and knowledge with the five scale (5=very useful, 4=useful, 3=fairly useful, 2=not so useful, 1=not useful). The result is in Table 4 and is 3.63 on average, indicating that it was mostly useful. However, since only 42 respondents (31.3%) participated in the workshops, the effectiveness was limited.

The beneficiary survey asked whether the respondents know ACE manual, and only 3 out of 134 respondents (2.2%) said that they know it. I asked them its usefulness in learning knowledge and skill with the five scale (5=very useful, 4=useful, 3=fairly

useful, 2=not so useful, 1=not useful), and the result is 3.67 on average (Table 4), indicating mostly useful. However, only 3 respondents (2.2%) knew about the manual, thus the effectiveness of the manual was limited.

From the above, the fifth indicator of “1) the number of orientations for ACE members/local expertise/local government, 2) ACE manual use, 3) the numbers of community exchanges and ACE workshops,” were organized as planned, and useful in publicizing, raising awareness of and promoting understanding of ACE activities. On the one hand, the effectiveness of ACE manuals and ACE workshops were rather limited. From the above, it can be said that the achievement of the fifth indicator was fair.

Table 4. Usefulness of ACE workshops and ACE manual

Variable	Min.	Max.	Means	Standard deviation
The degree by which ACE workshops were useful in learning new skills and knowledge	3	5	3.63	0.65
The degree by which ACE manuals were useful in learning new knowledge and skills	3	4	3.67	0.57

Source: Beneficiary survey

The sixth indicator is “the number of interactive radio program on ACE,” and 10 radio programs for publicizing ACE activities were broadcasted from November 2008 to January 2009.

The content of radio programs on ACE were talk-shows for 1) publicizing ACE activity and their products by inviting ACE members and people involved with the project as speakers, 2) discussing community development and how to improve productivity, and how to do marketing by inviting government officials such as BRR and university teachers. The survey conducted by the project team had the result that these programs increased customers for ACE group business by informing more people of the project. Thus the sixth indicator was achieved.

From the above, the third indicator could not be evaluated since the use of ACE manuals was not confirmed in the project implemented by the local government offices or donors. The achievement of Indicator 5 was fair since effectiveness of ACE manual and ACE workshops was limited. Other indicators were mostly

achieved. Thus Output 1 was mostly achieved.

2) Output 2: Technical and administrative capacities of local governments are increased.”

Because of tsunami and conflicts, local governments lost many officials. Although they attempted to fulfil the vacancy by new recruits, they were not sufficient. They attempted to fulfil the vacancy by training those who were already working for their own local governments. Output 2 was to assist their efforts in this direction. The contents of the training programs were selected from those contents not yet assisted by other donors and local governments have the high priority of.

The first indicator is “the number of technical and administrative trainings conducted on local government administrators” and the project had trainings in four sectors that were performance based budgeting, quality control on road and bridge construction, environmental management, and public health with 12 modules developed. The project implemented 20 technical and administrative training programs with 621 trainees from one city and six regional governments.

After participating in the training programs, trainees said that the training content was useful, since it was much relevant to their routine work. Another trainee in the training program on the quality control on road and bridge construction said that he never had the training specialized in the operation and maintenance of roads and bridges and learned how to assess the damage of roads and bridges and figure out measures in accordance with the degree of the damage (JICA document).

Trainees in the training programs on budgeting learned about a new ordinance on budget management that he previously did not understand. Trainees in the training program on the public health said that many representatives of health center never participated in the training programs on planning and management in the health sector, and they learned them, and they were very useful (JICA document).

This ex-post evaluation asked 36 former trainees on how much useful their training was when they completed the training program with the five scale (5=very useful, 4=useful,3=fairly useful, 2=not so useful, 1=not useful). Although these 36 trainees were not randomly selected and their responses cannot be generalized to the whole trainees, the average of their responses was 4.52, indicating mostly useful.

From the above, it can be said that the training programs were conducted as planned, and trainees mostly found them useful. Thus, it can be said that the first indicator was achieved.

The second indicator is “the percentage of training participants who utilized training experience in daily work.” The project team asked 621 respondents after the trainings whether they use the training contents in their daily work with the following results; 84% for performance based budgeting, 72% for quality control on road and bridge construction, 71% for environmental management, and 44% for public health (JICA document). The numbers of trainees were different from sector to sector, and I made adjustment with the weight in accordance with the number of trainees, and 72% of the all trainees used the training contents. Thus it can be said that the achievement of the second indicator was fair.

Table 5. Use situations of training contents of human resource development for local governments

	The number of participants	Percentage of use	weight	Percentage of use with weight added
Performance based Budgeting	281	84	0.45	37
Quality control on road and bridge construction	144	72	0.23	16
Environmental management	166	71	0.26	18
Public health	30	44	0.04	1
Total	621			72

Source: JICA document

The third indicator is the “percentage of training participants who disseminate training experience to co-workers.” The survey also asked the trainees whether they disseminated training experiences to co-workers and the results are as follows; 75% for performance based budgeting, 79% for quality control on road and bridge construction, 86% for environmental management, and 67% for public health (JICA document). The numbers of trainees were different from sector to sector, and I made adjustment with the weight similarly to the calculation of the percentage of use, and 74% of the all trainees disseminated the training experience to their co-workers.

Thus it can be said that the achievement of the third indicator was fair (Please refer to Table 6).

Table 6. Dissemination of training contents of human resource development for local governments

	The number of participants	The percentage of transmission	Weight	Percentage of dissemination with weight added
Performance based Budgeting	281	75	0.45	33
Quality control on road and bridge construction	144	79	0.23	18
Environmental management	166	86	0.26	22
Public health	30	67	0.04	2
Total	621			75

Source: JICA document

From the above, the first indicator was achieved, and the achievement of the second and the third indicators were fair. Thus, the achievement of Output 2 was fair.

3) Output 3: Urgent Reconstruction plan of Banda Aceh City (URRP) is updated and policy framework on regional development is recommended to BRR and local governments.

URRP was formulated by the Urgent Rehabilitation and Reconstruction Support Program for Aceh Province and Affected Areas in North Sumatra (Urgent Reconstruction and Rehabilitation Plan for Banda Aceh City) for making recommendations to reconstruct affected Banda Aceh city and rehabilitate public facilities such as roads, hospitals, and schools. Later it was revised to become a long-term blueprint of urban planning that emphasized disaster prevention and economic development.

URRP as the urban planning was based on the principle of Islamic value and emphasized integrated Aceh society with citizens at its center, and listed promotion of disaster prevention and economic development as the important policies. URRP also had the demarcation of land use for government offices, commercial activities, schools,

and residential areas from the perspectives of predicted population increase, economic development, and making city prepared for disaster. It also has the projection of necessary social infrastructure such as water facilities and waste treatment facilities based on the prediction of population, demand of water and volumes of sewage, and waste.

The first indicator of Output 3 was “URRP being enacted as the city ordinance.” During the project implementation, JICA experts promoted citizens to participate in enacting processes by publicity and awareness campaigns through radio programs, news paper advertisement, leaflets, boards and others (JICA document).

After the project completion, Banda Aceh city spent 50 million rupiah for publicity activities and public hearing for city councilors, city officials, and citizens. In 2009, three public hearings were held with about 100 participants. By these activities of the city government and the project, city councilors, city government officials, and the citizens understood better and had opportunities to express their opinions. Through these processes, URRP was enacted as the city planning with the time horizon of 20 years following the change in the domestic law (URRP was originally for 10 years). From the above, the first indicator was achieved.

The second indicator was “activities of BRR and local government based on the URRP.” BRR and local government organizations implemented 47 emergency recovery and rehabilitation projects while the original proposal included 42 projects. Thus, the second indicator was achieved.

From the above, all the indicators were achieved, and it can be said that Output 3 was achieved.

4) Output 4: increased public awareness and preparedness on earthquake and tsunami

Output 4 was for the purpose of providing information on the progress of reconstruction for affected people and contributing to raising awareness on disaster prevention.

The first indicator was “the number of radio programs for the publicity,” and the total of 62 radio programs for the publicity were broadcasted from 2007 to 2009 with the purposes of providing advice for citizens who were affected by tsunami and conflicts

on recovering living and on gender, raising awareness of citizens and related organization on disaster prevention, publicity on ACE activities.

The project team conducted survey with the listeners as the respondents in 2009, and 67% of the respondents knew JICA, 61% knew that the radio programs were supported by JICA. 62% ever listened to the radio programs, and 35 % listened to them more than 20 times. 84% were aware of support programs including ACE activities. Furthermore, 86% responded that these radio programs were the efficient means to know the progress of rehabilitation projects by BRR and other organizations, and 87% said that it was useful in raising their awareness on disaster prevention (JICA document).

From the above, the radio programs were broadcasted as planned, and the survey for the listeners indicated that radio programs were useful means to know the progress of rehabilitation project and to raise their awareness on disaster prevention. Thus, it can be said that Output 1 was achieved.

3.2.1.2 Achievement of Project Objectives

Project objective: Community activities are activated through enhancement of community capacity.

1) The first indicator was the number of activated communities, and this indicator refers to the number of ACE groups established. This is same as the first indicator of Output 1. As mentioned before, 34 ACE groups were established, and this indicator was achieved.

2) The second indicator was “the number of community meetings by communities, government officials, JICA experts and others,” and community exchanges were organized in each of the four ACE festivals, and ACE group members, government officials, NGO staff, and general public participated, and promoted ACE group activities. Thus, this indicator was achieved.

From the above, each indicator was achieved, and the project objective was achieved. ACE groups were established and economic activities of the people were supported and their income increased.

On the one hand, the project objective has logical problem with its relations with

outputs. The project objective of the activation of communities is same as Output 1 that entailed people formulating groups, and their economic activities being promoted to improve their livelihood. About achievements of each output, it was fair for Output 2 for human resource development of local government officials with about 70% of the trainees using the training contents and disseminated them to their co-workers. As for Output 3, URRP was enacted as the city ordinance of Banda Aceh city and is used as the blue print of the urban planning. As for Output 4 of publicity and awareness raising activities, it contributed to raising people's awareness on disaster prevention, and it was achieved. However, these Outputs 2, 3, and 4 had no direct connection to the project objective, and does not constitute the logical relationships that achievements of outputs lead to achievement of the project objective.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

The overall goal: Community empowerment network is expanded and self-sustainability of community activities is strengthened.

1) The first indicator was the number of communities that constituted network, and this means the number of ACE groups that formed networks. In reality, ACE group members had interactions with others in the ACE festivals and other occasions for exchange of information. This was network nurtured by ACE group members.

The terminal evaluation mentioned that the expansion of the network was to be expected after the project completion. However, the beneficiary survey found that 22 out 134 respondents (16%) have contacts with members of other ACE groups. This means that the first indicator was not achieved. The reason is that use and maintenance of networks is left to individual members, and the project did not construct a mechanism for these purposes. Although the project considered the form and purpose of the networks, community exchange was the only project activities to promote networks. At this occasion of community exchange, ACE members formed networks with other members through showing their products and sharing their business experiences and information of their products (JICA document) there was no other project activities to establish a mechanism to maintain and promote networks. From the above, the first indicator was not achieved.

The Current status of ACE groups at the time of the ex-post evaluation is as in Table 7.

24 groups are active with 208 members in total. 10 groups were dissolved because leaders moved out and poor business performance.

Table 7. Current situations of ACE groups (1)

Location (City or Regions)	Activities	Active or dissolved (reasons of dissolution)	The number of members as of ex-post evaluation
Banda Aceh city	Making and selling cake	Active	10
	Coffee making	Dissolved (poor performance)	0
	Sewing and embroidery	Active	3
	Making and selling cake	Active	9
	Processing fish	Dissolved (Leader moved out)	0
	Sewing	Active	2
	Lobster farming	Dissolved (poor performance)	0
Ace Besar	Making coconut spice	Active	10
	Making coconut spice	Dissolved (poor performance)	0
	Cake making and selling	Active	10
	Cake making and selling	Dissolved (poor performance)	0
	Cake making and selling	Active	10
	Sewing	Active	13
Pidie	Making melinjo crisp	Active	20
	Procuring and selling melinjo crisp	Dissolved (poor performance)	0
	Making and selling ice candy	Active	10
	Making and selling ice candy	Active	11
	Making and selling snacks	Active	8
Bireun	Tofu making	Active	7
	Raising chicken for egg	Active	6
	Making and selling rat traps	Active	6
	Raising chickens for meat	Active	8
	Cake making and selling	Active	8
	Cake making and selling	Active	9
	Growing Cassava	Dissolved (Cultivation land became unavailable)	0

Table 7. Current situations of ACE groups (2)

Location (City or Regions)	Activities	Active or dissolved (reasons of dissolution)	The number of members as of ex-post evaluation
Aceh Tengah	Fish farming	Active	7
	Cake making and selling	Active	5
	Cake making and selling	Dissolved (a leader moved out)	0
Aceh Barat	Cake making and selling	Active	12
	Cake making and selling	Active	9
	Fish farming	Dissolved (poor performance)	0
	Cake making and selling	Dissolved (poor performance)	0
Aceh Jaya	Ox fattening	Active	5
	Ox fattening	Active	10
Total			208

Source: beneficiary survey

2) The second indicator was the number of community dialogue and exchange. The project organized four ACE festivals and held community exchange during these occasions and ACE group members, government officials, NGO staff and general public participated with the objective to construct networks among ACE groups. The result of beneficiary survey indicated that the usefulness of ACE festivals was 3.35 on average, meaning it provided useful opportunities for expanding networks. On the one hand, there is not mechanism to sustain networks and only 16% of the respondents maintain the networks with other ACE groups. Thus it cannot be said that community dialogue and exchange contributed to expand and develop networks. Thus, it cannot be said that this indicator was achieved.

3) The third indicator was “the number of radio programs for ACE publicity and awareness raising.” From November 2008 until January 2009, ten programs were broadcasted with the purpose of publicizing ACE activities by inviting ACE group members and others involved with ACE activities, and presenting ACE group activities and their products, and of discussing community development, productivity improvement, and marketing by inviting officials of governments such as BRR and university teachers. According to the survey by the project team with listeners as the respondents, these programs broadly publicized ACE activities. From the above, this indicator was achieved. On the one hand, there is a problem of logic of this indicator

vis-à-vis overall goal because although radio programs were useful for publicizing the ACE activities to the general public, it did not lead to expansion and development of networks.

Another project impact is the village economic development program implemented by Banda Aceh city with their own budget since June 2009. It was expected that ACE activities to be continued by the city and regional governments, and the memoranda of understanding were signed for the purpose of transferring this project to each of these local governments. After the memoranda of understanding signed, the project organized workshops on ACE activities for officials of city and regional governments. After the project completion, these city and regional governments have programs to assist local residents in their income generation activities with their own budget and only Banda Aceh city continues ACE activities for their village economic development program, and schemes by other regional governments are implemented without connection of ACE activities.

Banda Aceh city formulated the village economic development program in 2009 with the assistance of JICA experts and NGO. In selecting the beneficiaries, they use their experiences of ACE activities and select those with knowledge and skills for their businesses for ensuring sustainability.

This program provides loan, not grant, and use the model of Grameen bank. The beneficiaries are required to make a group of five to six members, and make repayment in 40 weeks. When a member cannot repay on schedule, other members have to pay instead.

The budget of the program is in Table 8 and it increased from 4 billion rupiah in 2009 to 7 billion rupiah in 2011. The number of beneficiary groups increased from 80 in 2009 to 313 in 2011, and the number beneficiaries increased from 449 in 2009 to 1813 in 2011. The loan disbursement increased from 1,186 million rupiah in 2009 to 5,836 million rupiah, and the repayment amount increased from 2.71 million rupiah in 2009 to 4,282 million rupiah in 2011. The repayment rate is 85% in each year.

Table 8. Budget and expenditure of Banda Aceh City “Village economic development Program”

Year	budget (billion rupiah)	expenditure	
		The number of groups	The number of beneficiaries
2009	4	80	449
2010	7	194	1,149
2011	7	313	1,813

Source: interview with officials of Banda Aceh City

Table 9. Loan and repayment amount of Banda Aceh City “Village economic development Program”

Year	Loan amount (million rupiah)	Repayment amount (million rupiah)
2009	1,186	271
2010	3,368	2,303
2011	5,836	4,282

Source: interview with officials of Banda Aceh City

5) In order to find out the current status of the former trainees of the training programs for local government officials (Output 2), I asked 36 former trainees on how much the training content is useful at the time of the ex-post evaluation with the scale of 5=much useful, 4=useful, 3=fairly useful, 2=not so useful, 1=not useful and the response was 4.34 on average, indicating that they are still useful at present.

I had interviews with former trainees and asked how they use the training contents. One former trainee who is now working for the impact assessment section of Aceh Besar regional government said that he assesses environmental impact by studying the business plan submitted by private companies with the plan to start mining in Aceh Besar. I asked how useful the training content was with the previous scale, and he said that prior to the project, he had no knowledge of environmental assessment, and his response was 5 (very useful). I interviewed another official working for audit office of Ace Besar regional government, and his work involves checking whether sanitary facilities such as toilet of the regional government office, whether emission of vehicles that regional government procures comply with environmental guideline of the government. He rated the usefulness of the training content as 4 (useful).

3.2.2.2 Other Impacts

Other impact is ACE group contribution to raising women's status. The beneficiary survey asked whether ACE group contributed to improving women's status with the scale of 5 =much contributed, 4=contributed, 3=fairly contributed, 2=not so contributed, and 1 =not contributed at all and the result is as in Table 10, and the average is 3.84. One ACE member said in the interview that income from ACE activities much helped household income, and it raised her status in the family. 72.3% of the respondents of the beneficiary survey are women, and the survey result indicates that ACE group contributed to raising women's status, which supported what she said in the interview.

Table 10. ACE group activities and the status of women

Variable	Max.	Min.	Means	Standard deviation
The degree by which ACE activity contributed to promoting women's status	1	5	3.84	1.075

Source: beneficiary survey

The evaluation of effectiveness and impact are fair. This is because although project objective was achieved (although there is a problem of logic that achievements of Outputs 2, 3, and 4 do not lead to project objective), overall goal of expansion and development of networks of ACE group members was not achieved, because the project did not sufficiently consider what the networks should be, and thus activities to construct them were not sufficient.

3.3 Efficiency (Rating: ③)

3.3.1 Inputs

Table 11. The plan and the actual of the inputs

Inputs	Plan	Actual Performance
(1) Experts	seven experts (Reconstruction advisor 1 & 2, Community empowerment advisor 1 & 2, Local administration advisor, and Reconstruction model formulation advisor)	Six experts (Chief technical advisor/Reconstruction advisor 1 Reconstruction advisor 2, Community empowerment advisor 1 & 2, Local administration advisor 1 & 2) (Total 45.96 M/M)
(2) Training (implemented in the country)	Fields of training: Technical training: construction, civil engineering, agriculture, quality control Administrative training: Land management education administration, health administration, ordinance enactment	Fields of training: Performance based Budgeting, Quality control on road and bridge construction, Environmental management, and Public health
Total Project Cost	About 300 million yen	234.21 million yen

Source: JICA document

3.3.1.1 Elements of Inputs

The number of JICA experts was planned to be seven who were reconstruction advisor, community empowerment advisor, local administration advisor, and reconstruction model formulation advisor. The actual number of expert inputs was six who were reconstruction advisor, community empowerment advisor, local administration advisor, and the inputs of JICA experts were mostly as planned.

With regards to inputs for training, the plan was that they will be conducted in the country, and the training sectors were construction, civil engineering, agriculture, quality control for technical training, and land management, educational administration, health management and law formulation for the administrative training. The actual training content was determined on the grounds that they were not assisted by other donors and the city and regional governments had high priority, and they were performance based budgeting, quality control on road and bridge construction, environmental management, and public health, and implemented in the country. The actual was different from the plan, but it was to meet the needs of local governments. Thus it was mostly done properly.

3.3.1.2 Project Cost

The plan was about 300 million yen, and the actual was 234.21 million yen (78%). Thus, it was lower than planned.

3.3.1.3 Period of Cooperation

From the above, the project period was from March 2007 to March 2009. It was as planned (100%).

The inputs were appropriate for producing outputs and achieving the project objective, and both project cost and period of cooperation were mostly as planned, therefore efficiency of the project is high.

3.4 Sustainability (Rating: ①)

3.4.1 Related Policy towards the Project

The national medium development plan (2010-2014) is the current national development plan of Indonesia at the time the ex-post evaluation and this includes prosperity, democracy and justice as the basic principle and has the poverty reduction and decentralization as priority areas. ACE activities of Output 1 was to contribute to poverty reduction, and human resource development of Output 2, and supporting enactment of URRP of Output 3 were to strengthen local governments. Thus the project is still relevant at the time of ex-post evaluation.

3.4.2 Institutional and Operational Aspects of the Implementing Agency

BRR, the implementing agency, was dissolved in April 2009, and the staff members were transferred to their original organizations, and assets such as buildings of BRR were transferred to governments of province, city and regions. Although the project outputs were to be transferred to one city and six regional governments, it was not actualized, and there is no implementing agency that sustains the project outputs.

The terminal evaluation made recommendation that in order to sustain and develop ACE activities, local government should take initiatives in implementing ACE activities, and JICA expert teams had meetings with the sections of each of the city and regional governments in charge of community development, and had memoranda of understanding for transferring ACE activities. After the memoranda of understanding signed, JICA expert teams held three workshops in each of the city and regional governments. On the one hand, whether the methods of ACE activities

would be used for their community development was left to the city and regional governments after the project completion.

After the project completion, only Banda Aceh city uses the methods of ACE activities. The beneficiary survey asked the respondents how much they were supported by the city and regional governments with the scale of 5=much supported, 4=supported, 3=fairly supported, 2=not so supported, 1=not supported. The average was 1.14, and this indicated that the city and regional governments hardly contribute to sustainability of ACE group activities.

With regards to capacity building of city and regional government officials, the project intended that training programs developed by the project to be transferred to these government offices. The terminal evaluation recommended to strengthen organizational arrangement and to ensure the budget of the sections in charge of budget, civil engineering, environment, and health. However, in accordance with the survey conducted by the JICA experts prior to the project completion, only one regional government mentioned that the training texts of this project were used for developing their own training texts, and only two regional governments mentioned that their trainees became trainers for their own training programs.

The city and regional governments have their own human resource development schemes by which their officials participate in training programs relevant to their duties and they attend graduate schools for acquiring Master's degree. However, it was not known whether these schemes had any relationship with human resource development component of this project.

URRP was enacted as the formal urban development plan and is referred to for planning public project in each year.

Since the project achievements were to be transferred to the local governments, the project took this into account and involved these local governments in the decision-making processes. However, under the situation where the implementing agency, BRR, was dissolved, it was not easy for them to receive and continue various projects, and there were issues of further use of the project achievements by these local governments except Banda Aceh city.

3.4.3 Technical Aspects of the Implementing Agency

With regards to technique for implementing projects using ACE activities, Banda Aceh city is implementing village economic development project and use technique of ACE activities in selecting beneficiaries, implementing trainings and organizing groups. On the one hand, although other regional governments support people in their income generation activities, they do not use technique of ACE activities in selecting beneficiaries and organizing groups. Thus, it cannot be said that local governments as a whole continue to use the technique of ACE activities sufficiently.

As for human resource development of regional government officials, former trainees still use the training contents in environmental assessment for their work, and other 36 former trainees said the training contents are still useful. It can be estimated that many former trainees still use the technique such as environmental assessment.

3.4.4 Financial Aspects of the Implementing Agency

Since the implementing agency was dissolved, and no project outputs were transferred to other organizations, there is no relevant budget.

3.4.5 Sustainability of Project Effectiveness

The project attempted to sustain ACE groups and the implementation of ACE activities by Banda Aceh city and six regional governments after the project implementation. As stated in the section of impact, the number of ACE groups was reduced from 34 to 24 at the time of this ex-post evaluation, or decrease by about 30%. Ten groups were dissolved and the reason of the dissolution for the seven out of these ten groups was poor performance. Before the project completion, nine groups were newly organized from the original 21 groups. Some of these new groups were organized by members whose original groups did not sell their products well, and they planned to have products of which they can see good prospects of selling. These indicate that business performance is the key for sustaining ACE groups. There is no support mechanism for ACE groups when they had difficulty in their business and it is also possible that more groups may dissolve because of poor performance. As for the continuation of ACE activities, only Banda Aceh city still uses their experiences of ACE activities but not other regional governments.

It was expected that local governments continue to use the training programs developed by the project. However, no local governments use them, there is no mechanism to sustain the project achievements in the component of human resource

development of local governments.

The rating of sustainability is as follows. With regards to ACE activities, the project helped establishing 34 groups and 24 still exists, and there is no mechanism to support these groups. It was expected that each local governments to continue to use ACE activities in their supporting economic activities, only Banda Aceh city is doing this, and other six regional governments are not doing it. Training programs for training government officials are also not used. Thus, the sustainability of the project achievements is low.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The main objectives of this project were to assist 1) income generation activities of those who lost livelihood because of tsunami in 2004, 2) human resource development of local government officials responsible for recovery projects, and 3) development projects of Banda Aceh city by promoting Urgent Reconstruction and Rehabilitation Plan for Banda Aceh City (URRP) assisted by Japan to be enacted as the city ordinance. The relevance of the project is high since it is consistent with the policy of the Government of Indonesia to recover from tsunami disaster, development needs of the local people, and Japan's policy to support them. The Effectiveness and the impact are fair since the project did not achieve the overall goal of formulating the network among income generation groups although the project was effective in supporting income generation activity to assist people's livelihood, contributing to human resource development in local governments, and promoting Banda Aceh city recovery plan. The efficiency is high since the budget and the time period of the project was within the plan. The sustainability is low since the project did not have an organizational arrangement to ensure the sustainability of the project. Although some of income generation activities continue, it does not have a mechanism to sustain ACE groups. In light of the above, this project is evaluated to be partially satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

ACE group networks did not sufficiently expand. The result of the beneficiary survey indicated that only 22 out of 134 respondents (16.4%) had contacts with other ACE groups. On the one hand, the result of analysis of the beneficiary survey in the annex indicated that networks among ACE groups contributed to increasing income.

From the above it can be said that promoting networking can improve effectiveness of ACE activities. Local governments should promote exchange opportunities for ACE groups in each locality on a regular basis and promote expanding networks. The issue of this project was that it was left to individual members to construct networks. Thus, it is recommended that local governments should consider how to make a mechanism to maintain and expand networks.

Since not only Banda Aceh city but also other regional governments implement income generation activities for the people, they should support the ACE groups possible within their own scheme, and learn practices of selecting participants of ACE activities, how to formulate groups by having hearing from ACE members with reference to ACE manuals, and use them for their own schemes.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

The implementing agency of this project was to be dissolved after a certain period of time, and the project intended to transfer its achievements to the local governments that were to continue to exist. For this purpose, the project had the memoranda of understanding signed by the local governments. However, there were issues of the sustainability of the project achievements with the local governments except Banda Aceh city. As described in the section of the Institutional and Operational Aspects of the Implementing Agency of the sustainability, the project should sufficiently involve organizations that are to continue the project achievements in the decision-making processes, and have their organizational intentions reflected in the decisions during the project implementation, and it is necessary to construct an appropriate mechanism that takes into account the transfer of the project achievements.

Under the situation where the assistance has to be provided for the temporary organization for reconstruction like this project and has to ensure the sustainability, the project should have sufficient considerations about the transfer of the project achievements after the dissolution of the implementation agency and have them reflected in the project activities and the implementation arrangement before the project implementation begins.

From the analyses of the beneficiary survey in the annex, cooperation within each ACE

group and networks among ACE groups were useful in ACE activities. Because of Tsunami, many lost their business partners, as part of the ACE activity, people formed a new group with new partners and constructed network, which expanded possibility of cooperation and promoted income increase. However, in order to expand the network as part of the project, it should determine what network would be useful, and government and NGOs should make an arrangement to construct, expand and maintain the networks.

Annex: Beneficiary survey

1. General description

I conducted the beneficiary survey to analyze the achievement of ACE activities. The respondents were all the members of ACE groups (208 members), and the survey actually had 134 respondents (64%). The respondents had 97 women (72.4%), and 37 men (27.6%), and their ages were from 15 to 67 years old with average of 41.03. The number of years for attending school was from 0 to 17 and the average was 9.04 years.

2. The analysis of income increase by ACE activities

In order to find factors that contributed to increasing income from ACE activities, I analyzed income transformed by logarithm function as the dependent variable with the mixed effect model. Data are by the recollection of the respondents for five years from 2007 to 2009 during the project implementation, and 2010 and 2011 after the project completion. The sample size is 134 respondents for five years, making it 670.

The result of analysis is in Table 12, and the coefficients with asterisks are statistically significant. Factors that are worthwhile to note are the degree by which members are cooperative and contacts with members of other ACE groups. Many of ACE group members lost their co-workers and business partners because of tsunami in 2004, and ACE activities provided opportunities to meet co-workers and business partners, and these may be contributing to improving skills and quality of the products and expanding sales network, thereby contributing to increasing income. Contacts with members of other ACE groups may be also improving skills and quality of products, and expanding sales network, thereby improving business performance and sustainability of the group.

Table 12. Mixed effect model of income increase by ACE activities

Variable	Coefficients
Age	0.01***
Sex	0.06
Educational level (the number of years attending school)	0.04***
Activeness in ACE group activity	0.14***
Skillfulness	0.09
Participation in ACE festivals	0.33**
Participation in ACE workshops	-0.23
Whether the respondents know ACE manual	0.58*
Support by city and regional governments	-0.00
Cooperativeness of ACE group members	0.46***
Whether the respondents have contacts with members of other ACE groups	0.35**
The period of ACE group activities	-0.04
Intercept	-1.78***
sigma_u	0.48
sigma_e	0.49
rho	0.48
R ² Within=0.70	Between=0.61
Overall=0.66	Pob>Chi2 = 0.000

*** p<0.01 ** p<0.05 * p<0.1

Thailand

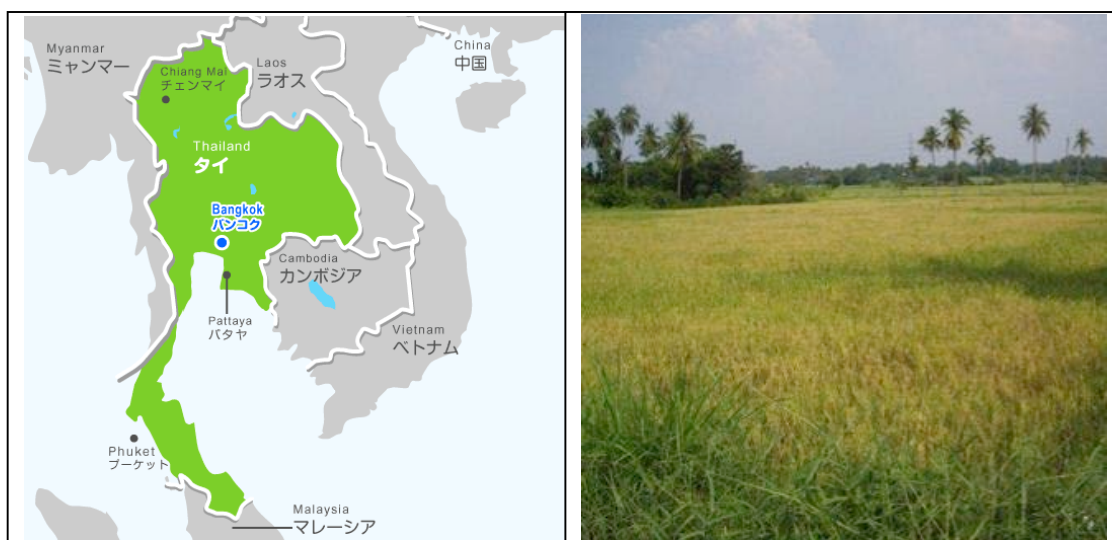
Ex-Post Evaluation of Japanese Technical Cooperation Project
“Agricultural Statistics and Economic Analysis Development Project”

External Evaluator: Keiichi Takaki,
Foundation for Advanced Studies on International Development (FASID)

0. Summary

The objectives of the project were to develop human resources for agricultural statistics and economic analysis in Thailand and to assist ASEAN member countries to develop their human resources in agricultural statistics. Relevance of the project is high since development policies of the Government of Thailand emphasized improving agricultural statistics, Thailand had development needs to improve capacity for data collection and analyses of agricultural statistics, and ASEAN member countries had development needs to be assisted in developing their human resources in agricultural statistics. Japan’s ODA policies also had priorities in assisting agricultural policies and promoting accurate food and agricultural statistics. Effectiveness and impact of the project are fair since the capacity to collect and analyze data in Thailand was enhanced as planned but assisting ASEAN member countries to develop human resource development was not achieved because of inadequate English proficiency of OAE (Office of Agricultural Economics) staff. Efficiency of the project is high since the budget and period was within the plan. Sustainability of the project is fair since the project achievements in agricultural statistics for Thailand continue to be used. The contribution to human resource development for ASEAN member countries is not sufficient. In light of the above, this project is evaluated to be highly satisfactory.

1. Project Description



(Project Location)

(Rice field in Thailand)

1.1 Background

The Government of Thailand used agricultural statistics provided by OAE and the results of analyses of the statistical data as the basic information for the formulation and implementation of agricultural policies. Prior this project, the accuracy of the result of the economic analysis was inadequate and the publication of the results took more than one year, which was inadequate for making and implementing agricultural policies that required timely statistical data and the results of analyses.

ASEAN member countries needed to develop human resources in agricultural statistics, and ASEAN + 3 (China, Japan, South Korea) Agricultural Ministerial Meeting in April 2001 requested the research be undertaken on food problems and food security information system. In response to this, it was expected that ASEAN Food Security Information and Training Center (AFSIT Center) be established within OAE to manage ASEAN Food Security Information System (AFSIS)¹ and to promote human resource development in agricultural statistics to contribute to agricultural development and food security in ASEAN member countries.

These circumstances required OAE train their staff to acquire knowledge and skills to collect and analyze agricultural information, and improve their organizations for data collection and analyses in Thailand, and have the capability to develop agricultural statistics and economic analyses so that they can disseminate these knowledge and skills to ASEAN member countries. With this background, the Government of Thailand made the request to the Government of Japan for the technical cooperation to develop capacities in agricultural statistics and economic analyses.

1.2 Project Outline

The main components of the project are to enhance the organization of OAE to improve statistical information and economic analyses, and to enhance the capability to assist human resource development in agricultural statistics of ASEAN member countries. The sequence of these components are; 1) to develop human resources in agricultural survey and the computer system, and to improve the organization for data collection in

¹ AFSIS is being developed as a mechanism to collect and share information of demand and supply of agricultural food products among 13 countries that include ASEAN member countries, China, South Korea, and Japan (ASEAN + 3) through constructing an information network system among those countries, and human resource development of officials responsible for agricultural statistics in ASEAN member countries.

order to improve the quality of statistical information, 2) to enhance OAE staff skills in economic analysis, and actually analyze the data of improved quality for agricultural policies of the Government of Thailand, and 3) to train officials responsible in agricultural statistics in ASEAN member countries to teach them the methods of agricultural statistics and economic analyses that OAE staff learned in the project to. This project was funded by the trust fund of the Japanese Ministry of Agriculture, Forestry, and Fisheries, and was also assistance to the training component of the AFSIS project that aimed to develop human resources and construct networks to collect and share information of food security for ASEAN member countries.

Overall Goal 1		Statistical information and methodology of economic analysis developed by AFSIT center are utilized by ASEAN member countries.
Overall Goal 2		Policies and programs for the agricultural sector are formulated and implemented by the MOAC in a more effective and efficient manner through accurate statistical information and economic analysis provided by the OAE
Project Objective		The OAE is strengthened as a central institution for statistical information and economic analysis for agricultural policy in Thailand and for supporting human resource development in the AFSIS
Output(s)	Output 1	Human resources of OAE are developed for data collection methodology, an information network system, and agricultural economic analysis including demand-supply forecasting to assist ASEAN member countries
	Output 2	Data collection methodology (mainly for major food crops that include rice, cassava, sugarcane, maize and soybean) in OAE and the 9 ROAEs is improved.
	Output 3	An information network system among OAE and 9 ROAEs is established and developed further.
	Output 4	Methodology of agricultural economic analysis is developed
	Output 5	Training capacity of OAE staff members is developed.
Inputs		<p>Japanese Side:</p> <p>3. Cumulative total: 19 Experts 9 long-term experts and 10 short-term experts</p> <p>4. 60 trainees received (Thai side paid for air fare, allowance</p>

	<p>and accommodation for 27 trainees)</p> <p>5. Cumulative total of technical exchange²: 19 staff</p> <p>6. Equipment: 60 million yen for vehicles, computers and others</p> <p>Thai Side:</p> <p>2. 73 Counterparts</p> <p>3. Equipment: 60 million yen for vehicles, computers and others</p> <p>4. Land and Facilities: Project office and utilities</p> <p>5. Local Cost: about 290 million yen for expenses of survey, training and part of the expenses for training in Japan</p>
Total cost	436.47 million yen
Period of Cooperation	July 16, 2003 – July 15, 2008
Implementing Agency	Office of Agricultural Economics (OAE), Ministry of Ministry of Agriculture and Cooperatives (MOAC)
Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries
Related Projects	ASEAN Food Security Information System Project ³ (AFSIS project): Phase I (2003 – 2007) and Phase II (2008-2012)

1.3 Outline of the Terminal Evaluation

1.3.1 Achievement of Overall Goal

OAE was about to have the budget and the adequate organizational arrangements for operating and sustaining the project achievements that included capacities to implement yield surveys by the crop-cutting survey method, area surveys, to maintain and operate the web based database system, and to assemble input-output (I/O) tables in the agriculture sector. OAE was also expected to contribute to efficient and effective policy making and implementation by MOAC as stated in the overall project goal.

The AFSIS project Phase II started its implementation with the objective of constructing ASEAN food security information system, and OAE was expected to

² It is an activity to assist the AFSIS project to share needed skills among ASEAN member countries. The project sends experts with needed skills to another ASEAN member country for providing trainings.

³ The project budget is provided by the trust fund of the Japanese Ministry of Agriculture, Forestry and Fisheries.

continue to play the leading role in technical transfer to ASEAN member countries in agricultural statistics, economic analysis, and information network system. From the above, the terminal evaluation concluded that the overall project goal would be achieved.

1.3.2 Achievement of Project Objective

The project achieved the most objectives of the capacity development of OAE. This significantly contributed to improving the quality of statistical information that OAE submitted to policy sections in Thailand. As for training of OAE staff to be instructors for the training programs of the AFSIS project, they were occupied by other duties, and could not have sufficient experiences to become the trainers. Thus, the project could not fully achieve the objectives.

1.3.3 Recommendations

OAE should strengthen its organizational capacity to coordinate sections responsible for implementing surveys. OAE should review and organize yield survey by crop cutting method, area survey and interview survey that had been already implemented since before the project.

2. Outline of the Evaluation Study

2.1 External Evaluator

Keiichi Takaki, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

Duration of the Study: November 2011 – January 2013

Duration of the Field Study: April 16–May 1, 2012 and June 30–July 7, 2012

2.3 Constraints during the Evaluation Study (if any)

none

3. Results of the Evaluation (Overall Rating: B⁴)

3.1 Relevance (Rating: ③⁴)

3.1.1 Relevance with the Development Plan of Thailand

The 9th National Economic and Social Development Plan (2000-2006) of the

⁴ ③: High, ② Fair, ① Low

Government of Thailand stated, “In order to achieve good governance, it is necessary to improve efficiency and effectiveness of government functions by enhancing government capabilities and having adequate information network.” The strategic plan (2004-2008) formulated by MOAC emphasized “improving agricultural information networks and transmitting accurate agricultural information” so as to have efficient administration in the agricultural sector. The 10th National Economic and Social Development Plan (2007-2011) emphasized stable economy, rather than rapid economic growth, and actualizing prosperous society, for which “human resource development” was mentioned as one of the important strategies.

Thailand had the central role in food security in ASEAN, and she was expected to contribute to improving agricultural statistics in the region. The ASEAN + 3 Agricultural Ministerial Conference in April 2001 expressed that research on food issue and food security information system in East Asia should be conducted. It was expected to establish AFSIT center, within OAE of MOAC, that would become the managing organization of AFSIS to promote human resources in agricultural statistics for agricultural development and food security of ASEAN member countries, and it became one of the priorities of MOAC to assume this role.

For this purpose, the Government of Thailand intended MOAC to acquire refined skills of data collection and analyses, to improve their activities in agricultural statistics, and to develop agricultural statistical models to be disseminated to ASEAN member countries. From the above, it can be stated that this project is consistent with the development policies of Thailand.

3.1.2 Relevance with the Development Needs of Thailand

As Thai economy grew rapidly, supply and demand of agricultural commodities, productivity and cost of agriculture and the structure of food related industry changed rapidly. After joining WTO (World Trade Organization), the Government of Thailand intended to quickly reform domestic agricultural policies such as liberalizing international trade and reducing subsidies in the agricultural sector in order to follow the international trade rules set by WTO.

For these reasons, MOAC needed to formulate and implement appropriate policies in agriculture and other relevant economic sectors, for which it became necessary and essential that OAE provide MOAC with accurate and reliable agricultural data and results of data analyses. From the above, it can be stated that development needs of

Thailand and the objective of this project is highly consistent.

ASEAN member countries needed assistance to develop their human resources in agricultural statistics and economic analyses for food security. This project was to assist human resource development in agricultural statistics in ASEAN member countries. Thus, it can be stated that it was consistent with development needs of ASEAN member countries.

3.1.3 Relevance with Japan's ODA Policy

Japan's Medium-Term Policy on ODA described in ODA white paper 2002 had a priority in capacity development of government officials as a part of human resource development and intellectual support. It also had a priority in enhancing information network system and supporting networking as a part of assistance in IT sector.

Japan's ODA policies had a priority to assist Asian countries and had implemented projects that emphasized poverty alleviation through economic growth, human resource development, and institutional development as her development strategy. Furthermore, JICA's country program for Thailand in 2002 had its priority in assisting agricultural policies and promoting the provision of accurate food and agricultural statistics and information.

Japan's ODA white paper 2002 stated her policies in contributing to reducing inequality among ASEAN member countries, strengthening cooperation with ASEAN member countries, and the linkage with regional cooperation. From the above, it can be said that Japan's development policies were highly consistent with this project.

This project has been highly relevant with Thai development plan, Thai and ASEAN member countries' development needs, as well as Japan's ODA policy, therefore its relevance is high.

3.2 Effectiveness and Impact (Rating: ②)

3.2.1 Project Outputs

3.2.1.1 Project Output

1) Output 1: Human resources of OAE are developed for data collection methodology, an information network system, and agricultural economic analysis including demand-supply forecasting to assist ASEAN member countries

1) Indicator 1:

OAE has the numbers of staff members who can be instructors at AFSIS training courses for data collection methodology, four staff members; for data processing and information network system, five staff members; and economic analysis, four staff members.

OAE staff members were trained by Japanese experts for acquiring technical skills and had experiences of lecturing and presenting in AFSIS training programs, workshops, international conferences, on-site instructions. As the result, the project recognized 10 OAE staff members as the AFSIS trainers. Its details that include the percentages of the numbers of recognized trainers vis-à-vis the target numbers are as below:

1. Five instructors in data collection methodology (the target was four, and the percentage of the achievement was 125%),
2. Two instructors in data processing and information network system (the target was five, and the percentage of the achievement was 40%), and
3. Three instructors in economic analysis (the target was four, the percentage of the achievement was 75%.)

The reasons of not achieving the target were that they were occupied with other duties and could not have sufficient experiences and others.

2) Output 2: Data collection methodology (mainly for major food crops that include rice, cassava, sugarcane, maize and soybean) in OAE and the 9 ROAEs is improved.

Output 2 aimed to improve the organization of OAE for the data collection. At OAE, Agricultural Information Center is responsible for training OAE staff responsible for collecting data of main commodities, and for operating and maintaining facilities for the information network. The regional office of agricultural economics (ROAE) is OAE's regional office and is responsible for the nation-wide data collection and entry

Prior to the project implementation, OAE was using survey manuals that included data collection instructions and questionnaires. Their updates were once in four to five years, and did not take into account changes in the reality of agricultural production, and this made the accuracy of data and efficiency in data collection inadequate. The reason why the update of the manuals was once in four to five years was that, according to an OAE staff member, OAE staff did not have skills to update the computer programs for data entries, and had no budget for ordering external agents to

update them every year.

The project changed the data entry programs from excel based to web based, and trained OAE staff so that they can update them every year. Since then, the manuals have been updated every year.

The procedure to update the survey manuals entails 1) reviewing the manuals of the previous year, 2) updating the contents as necessary, 3) pretesting with the revised manuals, and 4) revising them as necessary the result of the pretest and finalizing it.

After the finalization of the manuals, OAE trains the trainers of all ROAEs in Bangkok so that responsible sections and staff will be familiar with the contents of the manuals. After the training in Bangkok, they return to each ROAE and train their staff in charge of the data collection and entry. By this arrangement, data collection and data entries had become effective and efficient. The achievements of indicators for Output 2 are as below.

1) Indicator 1:

The production survey is conducted during the harvest time of each major food crops by July 2007.

By the project implementation, yield surveys (survey on production amount per area unit) were conducted for the five major food crops during the harvest periods before the project completion of July 2007. Thus, Indicator 1 was achieved.

2) Indicator 2:

Reliable statistical survey results on the production of major food crops are available within four months after the survey.

Due to the introduction of the web based data entry and processing system, the results of the yield surveys of the major food crops except maize and soybeans of the dry season became available within three months in the fourth year of the project implementation. Thus, Indicator 2 was achieved during the project implementation.

3) Indicator 3:

The precision of sample survey estimates of major food crop yield is no more than 5% (regional level) and 3%(national level), respectively.

The yield survey of the five major commodities in the fourth year achieved the goal of less than 3% at the national level, although some regions did not achieve the goal of less than 5%.

From the above, it can be stated that the data collection of the five major commodities was improved, and OAE established the organizational arrangements to collect and enter accurate data efficiently before the project completion. Output 2 was achieved.

3) Output 3: An information network system among OAE and nine ROAEs is established and developed further.

Output 3 aimed at constructing and improving the information network among OAE and ROAEs. Prior to the project implementation, OAE and ROAEs were already networked. At the time of the data collection, data were entered in the computers at ROAEs and transmitted to OAE. Output 3 concerned constructing and enhancing the network system. The project introduced the web based data entry and processing system, and OAE introduced the frame relay system⁵ with its own budget. This made the network fast and reliable, and the data processing time was substantially reduced. The achievements of the indicators of Output 3 are as below.

1) Indicator 1:

Time period required for data input and processing at ROAE and OAE for production surveys of major food crops is shortened by 50% compared with that of 2003.

Prior to the project implementation, data entries and processing entailed OAE sending the data entry programs to ROAEs by email, and each ROAE entering the data and sending them by email. OAE combined all the data sent from each ROAE. These steps involved complicated processes and were not efficient.

The project changed the processes. ROAE staff members download the data entry programs by the intranet faster and more stable than before. The data entry staff enter the data, their supervisors check and verify them, and transmit them to OAE. Data entry staff of ROAEs at Chonburi and Nakorn-Rachasima said, "Since the data entry program was changed from excel based to web based, the data entry interface is

⁵ It is one type of the packet transmission system. It divides data into small packets and speeds up the data transmission.

simpler and easier to use.” Another ROAE staff said, “Previously, the connection was by dial-up, and was not stably connected. Even when it was connected, the network speed was slow and the transmission of the data took time.”

The system for data collection became more efficient, and the time periods of data entry and processing were shortened by 72.0% for major rice, 81.3% for cassava, and 66.7% for soybeans of the rainy season. These were well above the target of 50%. On the one hand, the time periods for the data entry and processing were only shortened by 41.7% for second rice, 44.4% for soybeans of dry season, and it was lengthened by 16.7% for maize. This was because although the data collection system was developed for these commodities, ROAEs were occupied with other task at the same time and did not achieve the target.

Mid-term evaluation recommended constructing the database to annually accumulate the data. In response to this recommendation, the data processing program was developed to accumulate the results of yield surveys for multiple years, and the graph function to monitor and check the data was also developed.

As for the evaluation of the achievement of Indicator 1, the average percentage of the shortened time periods for data collection and processing was 48.2%. Thus, it can be stated that Indicator 1 was mostly achieved.

2) Indicator 2:

Web sites are newly established in 9 ROAEs, through which regional statistics are available to the public.

By February 2005, all the ROAEs opened their websites, and have been updating the information and engage themselves in publicity activity as recommended by the mid-term evaluation. Thus, Indicator 2 was achieved

From the above, Indicators 1 and 2 demonstrated that the information network among OAE and 9 ROAEs were constructed and improved. Thus, the project mostly achieved Output 3.

3) Output 4: Methodology of agricultural economic analysis is developed.

Indicator 1:

To publish more than two reports of economic analyses that are supervised by OAE.

The project improved the accuracy of data, which made economic analyses more important policy instruments. Four reports of economic analyses were published in the first and the second year of the project implementation, seven reports in the third year, and 6 reports in the fourth year. Thus, Indicator 1 was achieved.

Indicator 2:

The submission of the reports of input output (I/O) table of the agricultural sector (to be updated every five year), macro economic model, commodity demand-supply model (to be renewed every year) to OAE.

During the project implementation, the I/O table of the agricultural sector was submitted once in the second year and twice from the second to the fourth year. The report of macro economic model was submitted once, and the reports of commodity demand-supply model were submitted twice. Thus, Indicator 2 was achieved.

Indicator 3:

A workshop is held for presenting the analyses of Indicator 2, with more than one hundred participants from the public and private sector at least once a year.

During the project implementation, nine workshops and seminars were held with more than 100 participants for each workshop and seminar. Thus, Indicator 3 was achieved.

From the above, each indicator was achieved, and Output 4 was achieved.

5) Output 5: Training capacity of OAE staff members is developed.

In order to sustain the project achievements, the project aimed to improve the training capacities of OAE in the following areas.

In the area of data collection, OAE had to improve its training capacity because they revise the survey manuals every year, and OAE had to organize trainings for their staff responsible for data collection and data entry every year. In the area of data processing and information network system, OAE had to train their staff so that they can maintain and operate the information networks. In the area of economic analysis, OAE had to

train their staff because it became more important policy instruments. The achievements of Output 5 were as below.

Indicator 1:

To organize eight training programs for OAE and ROAE staff in the area of statistical survey, data processing and information network system, and economic analyses with three hundred participants.

As Table 1 shows, ten to twenty-three training programs were organized in each year, and the numbers of participants since the 2nd year were above the goal of 300 from 337 to 677. Thus, Indicator 1 is achieved.

Table 1. Organized Training Programs

Year	The numbers of training programs	Total numbers of participants
1st year (July, 2004 - June 2005)	10	274
2nd year (July, 2005 - June 2006)	21	677
3rd year (July, 2006 - June 2007)	23	590
4th year (July, 2007 - June 2008)	12	337

Source : JICA documents

Indicator 2:

OAE has 15 staff members who can teach agricultural statistics and indicators to ROAE staff and each ROAE has 3 staff members who can teach survey methods to the surveyors.

OAE has 22 staff members who accumulated teaching experiences, and each ROAE has three or more staff members who can train their survey and data entry staff. Thus, Indicator 2 was achieved. From the above, each indicator was achieved, and Output 5 was achieved.

3.2.1.2 Achievement of Project Objectives

Project Objective: The OAE is strengthened as a central institution for statistical information and economic analysis for agricultural policy in Thailand and for supporting human resource development in the AFSIS

1) Indicator 1:

The statistical information and economic analysis officially issued by OAE are utilized by public and private organizations concerned.

Before the project completion, OAE published 33 reports, and some agricultural statistical information and economic analyses were used by National Economic and Social Development Board (NESDB), MOAC, FAO, AFSIS, universities, and research institutions. For example, NESDB used them as the basic data for preparing GDP, "I/O table," and "economic outlook." OAE established Agricultural Information Center as its one division responsible for overseeing the data collection of agricultural statistics of OAE, and was engaged with promoting publicity activities as recommended by the mid-term evaluation. From the above, Indicator 1 was achieved during the project implementation.

2) Indicator 2:

Percentage of AFSIS training courses instructed by OAE is not less than 50% of all AFSIS training courses.

As recommended by the mid-term evaluation, the project implemented technical exchange program with neighboring countries, and OAE staff demonstrated and lectured what they learned in the project in English. The percentage of OAE staff members who were the instructors in the AFSIS Training courses on data collection method, economic analysis, and data processing and information network system among all the instructors was 43%. Thus, Indicator 2 was not achieved.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

The project has two overall goals. I will describe them one by one.

1) Overall goal 1. Statistical information and methodology of economic analysis developed by AFSIT center are utilized by ASEAN member countries.

Indicator 1:

The AFSIS database is regularly updated and utilized in ASEAN member countries.

The purpose of the AFSIS database for food security of ASEAN member countries is to contribute to the formulation and implementation of agricultural policies of ASEAN

member countries. It is regularly updated more than once a year, and is always accessible for ASEAN member countries. In January 2008, the AFSIS project Phase II was started in order to further improve AFSIS information network system. The AFSIS database continued to be updated and used by ASEAN member countries. Table 1 indicates the access numbers to the database by countries and shows that it is accessed by ASEAN member countries that included the Philippines, Malaysia, Singapore, and Indonesia.

AFSIS project secretariat said that the purpose of the most accesses are for research and only few for policy making and implementation that are the intended main purposes of this database. Thus, the achievement of Indicator 1 is limited.

Table 1. Access Statistics of AFSIS Database
(June 2010 to February 2011)

Rank	Country	Access frequency
1	The United States	250
2	The Philippines	237
3	Japan	117
4	Malaysia	98
5	Singapore	82
6	Indonesia	72
7	Vietnam	28
8	China	23
9	Laos	23
10	South Korea	18
11	India	16
12	Australia	11
13	France	8
14	Italy	7
15	Cambodia	6

Source: AFSIS secretariat

Indicator 2:

OAE continues to provide assistance to ASEAN member countries in agricultural statistics/information and economic analysis

During the project implementation, OAE contributed to the AFSIS project through training courses and seminars. In Phase II of the AFSIS project, OAE was expected to continue to contribute to play the pivotal role to enhance agricultural statistics of ASEAN member countries.

After the project completion until the time of the ex-post evaluation, AFSIS project had four training programs for which only two instructors out of total eight were OAE staff members. This is 25% (2 out of 8) and is lower than during the project implementation that had 43%. OAE officials said that OAE staff do not have English proficiency sufficient for lecturing. Other instructors were university teachers and others, and the problem was that their training contents were mostly theoretical, and not so practical. Since not many OAE staff members can be instructors, OAE cannot transfer their accumulated capabilities in agricultural statistics to ASEAN member countries. Thus, the achievement of Indicator 2 is limited.

2) Overall goal 2. Policies and programs for the agricultural sector are formulated and implemented by the MOAC in a more effective and efficient manner through accurate statistical information and economic analysis provided by the OAE.

Indicator 1:

Improved survey system and economic analysis method continue to be used by OAE.

The project introduced the statistical survey system and economic analysis, and OAE already had the budgetary provision to use them for their routine work before the project completion. As described in the section of sustainability, OAE continue to use them, and regularly hold training programs on agricultural statistics and economic analyses in order to maintain the necessary skills and capacities. Thus, Indicator 1 was achieved.

Indicator 2:

Statistical data and analysis results are published periodically and referred to or used in documents prepared by MOAC.

At the time of the ex-post evaluation, OAE periodically publicize the statistical data and the results of analyses. During the project implementation, MOAC used analyses of I/O table of OAE for its policy making. After the project completion, data and

analyses of OAE are necessary for MOAC to make policies. For example, MOAC uses the forecast of rice production for calculating the budget for the income guarantee scheme for rice growing farmers to purchase rice from them. MOAC also uses the analyses of I/O table to examine the impact of the farmers' income guaranteed by the scheme on agriculture and other sectors. Thus, Indicator 2 was achieved.

3.2.2.2 Other Impacts

Project has unexpected impact. Prior to the project, ROAEs only collected information and data from farmers for area surveys. Since during the project implementation, ROAE provided farmers who were survey respondents with information and data such as the result of yield survey that has the scientific base. Such information was useful for farmers, and farmers had better impression of and trusted ROAEs more than before. Because of this, farmers are more cooperative when they are respondents of the survey. At the time of the ex-post evaluation, the similar impact is still present.

3.2.3 Summary of effectiveness and impact

The project improved capacities of OAE in statistical information and economic analyses and they are used in the agricultural policies of Thailand. For example, improved accuracy of rice production forecast is used for calculating the budget for income guarantee scheme for rice growing farmers, and I/O table is used for examining the impact of the income guarantee scheme on agriculture and other sectors. On the one hand, OAE's contribution to human resource development in agricultural statistics of ASEAN member countries through the AFSIS project is limited since OAE did not achieve the goal of lecturing at more than half of the training programs. Thus, this project has achieved some objectives, but has not sufficiently achieved other objectives, and therefore its effectiveness is fair.

3.3 Efficiency (Rating: ③)

3.3.1 Inputs

Inputs	Plan	Actual Performance
(1) Experts	Four long-term experts (chief advisor, project coordination/training, data collection/information network system, agricultural statistical survey) Two short-term experts (as necessary)	Cumulative total: nine long-term experts (chief advisor, project coordination/training, agricultural statistical survey, data analysis, information network system, assembling and analyzing agricultural input output table, macro economic model) Cumulative total: 10 Short-Term experts Total inputs of experts: 259MM
(2) Trainees received	About three trainees in a year (agricultural statistics as necessary)	Cumulative total: 60 trainees (Thai side paid for air fare, allowance and accommodation for 27 trainees) Cumulative total of technical exchange: 19
(3) Equipment	Computers, vehicles, equipment for crop cutting survey and others	Vehicles, computers for about 60 million yen
Total Project Cost	640 million yen	436.47 million yen

3.3.1.1 Elements of Inputs

Planned inputs were four long-term experts (chief advisor, project coordination/training, data collection/information network system, and agricultural statistics, and two short-term experts as needed. The actual inputs were more than the plan with the accumulated total of nine long-term experts (chief advisor, project coordination/training, agricultural statistics, data analysis, information network system, assembling and analyses of agricultural I/O table, macro economic model), and the

cumulative total of 10 short-term experts. The reason why more experts were input than the plan was that experts in agricultural I/O table, macro economic model were added so that OAE staff can analyze the data of which accuracy was improved by the project so that their outcomes are used for agricultural policies. As described in the section of effectiveness, the results of the economic analyses are used for agricultural policies, and this justified the additional experts. Despite these additions, the total project cost was within the plan.

3.3.1.2 Project Cost

The planned project cost was 640 million yen whereas the actual expenditure was 436.47 million yen (68.2%), which was lower than planned.

3.3.1.3 Period of Cooperation

The period of cooperation was from July 16, 2003 to July 15, 2008, which was same as the plan.

The inputs were appropriate for producing outputs and achieving the project objective, and both project cost and period of cooperation were within the plan, therefore efficiency of the project is high.

3.4 Sustainability (Rating: ②)

3.4.1 Related Policy towards the Project

The 10th National Economic and Social Development Plan (2007-2011) being implemented at the time of the project completion emphasized stable economy rather than rapid economic grow, and actualizing prosperous society. Based on the idea of sufficient economy, it emphasized promoting sustainable agriculture by reducing the risk of changing prices, increasing the value of agricultural commodities, for which the integration of knowledge of local communities and agricultural experts, the adjustment of production systems and the expansion of agricultural land were considered to be necessary. In order to implement these policies, human resource development in agricultural statistics and economic analysis were considered to be important. The current 11th National Economic and Social Development Plan (2012-2016) aims to meet the international standard of the database in the agricultural sector by integrating the databases owned by various government organizations in the sector.

The AFSIS Project Phase II implemented training programs on the data analysis on

food self-sufficiency and others, and the forecast of production, consumption, import and export of rice and maize. After the completion of the Phase II in 2012, under the consideration are whether it will become an international organization from 2013, whether they will continue the activities of the AFSIS projects, whether the financial source will be from ASEAN + 3 cooperation fund among others, and ASEAN + 3 Ministerial meeting in September 2012 meeting were to approve the outcomes of these considerations. After the AFSIS project becomes an international organization, OAE is expected to contribute to human resource development of ASEAN member countries.

From the above, although the contribution to AFSIS is not yet clear, the sustainability of this project with respect to Thai policy is high.

3.4.2 Institutional and Operational Aspects of the Implementing Agency

The responsibilities of OAE are to analyze agricultural development policies, data collection and analyses of agricultural commodities, research on economic and social situations, analyses of economic development of sectors related to agricultural policies, and monitoring and evaluation of agricultural policies and programs. In order to fulfill these responsibilities, OAE has Office of the Secretary, Centre for Project and Program Evaluation, Centre for Agricultural Information, Bureau of Agricultural Economic Research, Bureau of Agricultural Development and Policy and Planning, and ROAEs. The specific tasks of these sections are summarized in Table 2.

Most OAE staff members that were trained by the project are assigned to Centre for Agricultural Information and Bureau of Agricultural Development and Policy and Planning, and are responsible for agricultural statistics, economic analysis, and management of information network, and they continue to use the achievements of the project. About the relationship with AFSIS project, Secretary General of OAE directly supervises the AFSIS project manager.

Table 2 : Sections and functions of OAE

Sections	Functions
Office of the Secretary	<ul style="list-style-type: none"> • Finance and accounting, and general affairs
Centre for Project and Program Evaluation	<ul style="list-style-type: none"> • To plan , implement and evaluate agricultural policies • To supervise project implementation
Centre for Agricultural Information	<ul style="list-style-type: none"> • To oversee data collection and processing to be submitted to MOAC • To register private firms related to agriculture • To apply Geographical Information System (GIS) to agricultural development plans • To manage and operate information network system for agricultural statistics and information at MOAC • Periodicals : Survey Report (22 types , annual) , Agricultural Fundamentals (annual), Foreign Trade Statistics (annual)
Bureau of Agricultural Economic Research	<ul style="list-style-type: none"> • To research on production, market, price and demand of agricultural products and commodities • To research on social and economic conditions of farmers • Periodicals : Agricultural Economics Magazine (monthly) Weekly news (weekly)
Bureau of Agricultural Development and Policy and Planning	<ul style="list-style-type: none"> • To make policy recommendations on agricultural development on national and international levels • To formulate master-plans of agricultural development program • To make policy recommendations for budgetary allocation • To monitor budgetary expenditure for agricultural development programs • Periodicals : Agricultural economic Outlook (annual) , Agricultural Economic Situation and Trend (quarterly)
ROAE Regional Office of Agricultural Economics	<ul style="list-style-type: none"> • Research and survey of agricultural commodities of assigned region • To conduct survey for data collection • To monitor and evaluate project implementation in the assigned region • To formulate development plans and strategies of the assigned area • The number of ROAEs was nine at the time of the project implementation, and now it is eleven. The new two ROAE offices have the benefits of the project achievements in organizational arrangements for the data collection and networking with OAE.

Source : OAE

At each ROAE, Director heads the organization with the sections of Administration, Agricultural Information, Agricultural Plan, and Research and Evaluation. Agricultural Information Data is responsible for data collection and entry. ROAEs in Chonburi have six data collection staff and three data entry staff, and that in Nakorn-Rachasima had ten data collection staff and three data entry staff.

The information network constructed during the project implementation is operational at present without problems although it may be slow when the network is busy. Servers at OAE and ROAE have back-up batteries that can shutdown down the system without damaging the programs and losing the entered data when the electric outage happens. Some computers for data entry have back-up batteries at some ROAEs. Other computers without the back-up batteries automatically save the data and they do not lose entered data. The network security is sufficient since the firewall was strengthened, and users are limited to those with passwords

The ROAEs continue to use the data entry programs introduced by the project. They make some modifications of the data entry programs every year as the questionnaires are revised. They ensure the security of the entered data by assigning passwords unique for each data entry staff and requiring to enter them to use the data entry programs.

Information Technology Division of Agricultural Information Center purchase all new computers, do the necessary setup and install them at each ROAE. Each ROAE has staff members specialized in computers and are responsible for the daily maintenance and management of the computers.

From the above, OAE has the appropriate structure to ensure the sustainability of the project. OAE improved coordination among its sections in charge of surveys as recommended by the terminal evaluation.

3.4.3 Technical Aspects of the Implementing Agency

On the technical aspects of the agricultural statistics, each ROAE has staff with necessary skills of data collection and data entry. To ensure the efficient operation of data collection and entry, OAE implement trainings for the staff, for which OAE and ROAEs have staff that can implement the necessary trainings.

The data collected in 2011 maintains the level of accuracy achieved during the project as follows. For cassava, it was from 2 to 3% at the regional level, and 1.81% at the national level. For soybeans, it was 8 to 4% at the regional level, and 2.76% at the national level. For maize, it was from 2 to 1 % at the regional level, and 0.8% at the national level. For major rice, it was from 0.75% to 2.05%, and 0.62% at the national level. For second rice, it was 0.90% to 2.05% at the regional level, and 0.69% at the national level.

As for the time periods from the data collection to the end with necessary corrections made and ready to use in 2011 were four months for second rice, five months for major rice, three months for both soybeans and maize. It was six months for cassava because cassava has the longer range of harvesting periods than other products, and this affected the time period for the data collection. The time periods for the data collection were mostly similar to during the project implementation, and has maintained the similar level of efficiency. From the above, it can be stated that OAE has the necessary technical capability in agricultural statistics after the project implementation.

As for the management and the operation of the network system, OAE and each ROAE have staff specialized in computer programming or other computer fields. One ROAE staff responsible for the data entry operation said that she can always enter data without any problems, and has no problem in the network for transmitting the data. Thus, OAE has necessary technical capability for management and operation of the network system.

Capabilities in economic analysis and its use are as follows. The project substantially improved the accuracy of data collected every year, and improved capacities in agricultural economic analysis. The collected data and results of data analyses became necessary for the formulation and implementation of agricultural policies in Thailand. For example, the Government of Thailand started the income guarantee scheme for rice growing farmers by purchasing their rice in October 2011, and they calculate its budget based on the forecast derived from the production data collected by crop-cutting survey that was introduced by this project. They use outcomes of the analyses of the I/O table in determining the rice price of the income guarantee scheme for rice growing farmers by drawing scenarios of different impact on the agricultural and other sectors. Another example was that in making policy decision to promote organic agriculture, they used the I/O table and simulated

production cost of organic agriculture.

In order to maintain these skills and capabilities, OAE implements trainings by itself. In the area of agricultural statistics, they organize training on data collection and data entry every year. In the area of information network system, they organize trainings on data processing, and operation and maintenance of networks about 10 times (one-two days for each), for which 80% of the instructors are OAE staff, and others are university lecturers. In the area of economic analysis, they implement trainings on econometrics and other subjects at least once a year. Their lecturers are OAE staff and university lecturers.

From the above, the counterpart has sufficient technical capability on agricultural statistics and analyses in their domestic role. However, their contribution to AFSIS is not sufficient because of the inadequate English proficiency, although they have technical capability in agricultural statistics and analyses.

3.4.4 Financial Aspects of the Implementing Agency

The actual expenditures from 2008 to 2011 by OAE for the data collection and processing are as in Table 3 for training, purchasing fuel for transporting the survey staff and other purposes. Fuel for the transportation of survey staff can be expensive because of recent increase of the oil prices, and the budget may not be sufficient. However, ROAEs use budget allocated to other activities, and have not affected the quality of collected data. From the above, OAE has adequate budget after the project implementation, and the project is sustainable in the financial aspects.

As described in the section of institutional and operational aspects of the implementing agency, it is under consideration whether AFSIS continues to exist as an international organization, and whether its budget is going to be funded from ASEAN + 3 cooperation fund.

Table 3 : Actual expenditure for data collection and processing

Expenditure for data collection and processing, and operation and maintenance of information network at OAE (unit : Baht)	
2008	62,709,400
2009	81,714,300
2010	62,493,500
2011	84,808,500
Total	291,725,700

Source : OAE

3.4.5 Continuity of Effectiveness

The data collection and data entry by crop cutting survey introduced by the project continue to be part of the routine work. As recommended by the terminal evaluation, yield survey by crop cutting survey, area survey, interview survey, and other surveys are systematically reviewed and organized as OAE reviews and revises the survey manuals every year.

OAE continues to use web based data entry programs that were introduced by the project and modify them as they revise questionnaires. OAE continues to maintain and operate the network constructed during the project without problems as described in the section of sustainability in the technical aspects.

Since the shortened period for the data collection and processing, and the accuracy of the data are maintained, the effect actualized by the project in the area of collection and processing is sustained. The effect in the area of economic analysis is maintained since OAE regularly publishes the outcomes of economic analysis by periodicals and they are used for policy formulation and implementation.

From the above, no major problems have been observed in the policy, structural, technical, and financial aspects of the executing agency in their domestic role. However, as for the contribution to the human resource development in agricultural statistics for ASEAN member countries for the construction of AFSIS, the percentage by which OAE staff lectured for the AFSIS training programs is lower than the expectation at the time of the project implementation. Thus, the sustainability of the effect of the project is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The objectives of the project were to develop human resources for agricultural statistics and economic analysis in Thailand and to assist ASEAN member countries to develop their human resources in agricultural statistics. Relevance of the project is high since development policies of the Government of Thailand emphasized improving agricultural statistics, Thailand had development needs to improve capacity for data collection and analyses of agricultural statistics, and ASEAN member countries had development needs to be assisted in developing their human resources in agricultural statistics. Japan's ODA policies also had priorities in assisting agricultural policies and promoting accurate food and agricultural statistics. Effectiveness and impact of the project are fair since the capacity to collect and analyze data in Thailand was enhanced as planned but assisting ASEAN member countries to develop human resource development was not achieved because of inadequate English proficiency of OAE staff. Efficiency of the project is high since the budget and period was within the plan. Sustainability of the project is fair since the project achievements in agricultural statistics for Thailand continue to be used. The contribution to human resource development for ASEAN member countries is not sufficient. In light of the above, this project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

As the result of the project implementation, OAE succeeded in improving accuracy of the agricultural statistics and capabilities in economic analyses. After the project completion, the OAE staff members have accumulated experiences in data collection and analyses every year. In order to transfer these technical capabilities to ASEAN member countries, it is recommended that OAE staff improve English proficiency.

4.2.2 Recommendations to JICA

None

5.3 Lessons Learned

The contribution to the human resource development in agricultural statistics of ASEAN member countries was not sustainable. It was because the necessary skillset was not adequately understood. Although OAE staff members have capabilities in data collection and analyses, they do not have English capability sufficient to give lectures in English, and their contribution to human resource development of ASEAN

is limited. In order to use the skills transferred by the project and to meet the project objective, it is necessary to confirm the necessary skillset adequate for the objective and take the following actions; (1) assisting organizations and people with such skillset, (2) requesting staff assignment with sufficient skillset, and (3) taking appropriate measures during the project implementation if the assignment of the staff with necessary skills being not made.

Mongolia

Ex-Post Evaluation of Japanese Technical Cooperation Project

“The Enhancement of Tax Administration Project in Mongolia”

External Evaluator: Maki Hamaoka

Foundation for Advanced Studies on International Development (FASID)

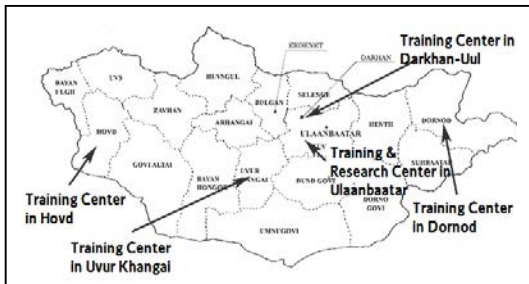
0. Summary

Prior to this project, JICA implemented development studies on tax administration in Mongolia in four phases from 1998.¹ This project was implemented as a summary of the series of Japan’s cooperation activities on tax administration in Mongolia in order to further strengthen the functioning of tax administration of the Mongolian Tax Authority (hereinafter designated as “MTA”). The objectives of this project, which are tax reform and the enhancement of tax administration, are relevant with the development policy of Mongolia by aiming to stabilize the country’s revenue for sound socio-economic development, as well as its development needs. It is also relevant with Japan’s ODA policy, which includes assistance for the shift of the market economy into its priority areas. Therefore, the relevance of the project is high. Through the implementation of the project, learning opportunities for tax administration officers were enlarged, tax collection (including taxation and tax audit) was improved and services to taxpayers were strengthened. The objectives of these components were achieved as expected. In addition, in regard to the overall goal, the number of registered taxpayers has steadily increased and the rate of tax payment by the due date² has improved. Therefore, the effectiveness of the project is high. The inputs were appropriate for producing the desired outputs and achieving the project objectives, and both the project cost and period of cooperation were within the plan. Therefore, the efficiency of the project is high. No major problems have been observed in the policy background or the structural, technical and financial aspects of the MTA. Therefore, the sustainability of the project effects is high. In light of the above, this project is evaluated to be highly satisfactory.

¹ The four studies were: ① The Study on the Support for the Economic Transition and Development in Mongolia, ② The Study on the Support for the Economic Transition and Development in Mongolia (Tax Collection Enhancement 2) ③The Study on the Support for the Economic Transition and Development in Mongolia (Tax Collection Enhancement 2:Support to Taxpayer Information System Establishment) and ④ Study for Establishment of Tax Education System. The present report refers to these four development studies as Phase 1, Phase 2, Phase 3 and Phase 4 respectively.

² See footnote 26.

1. Project Description



(Project Locations)



(Call center in the GDT of the MTA in Ulaanbaatar)

1.1 Background

Mongolia shifted from a socialist system to a market economy in 1990. Since there was not a modern tax collection system under the socialist regime, Mongolia faced constant budget shortfalls due to a chronic shortage of revenue immediately following the transition to a market economy. In order to stabilize socio-economic development, it was important to solidify the country's financial base by establishing an appropriate framework for the enhancement of tax administration. From 1998, Japan extended its assistance to the MTA to establish a tax collection system and a taxpayer information database. This assistance had brought visible positive impacts. For instance, tax revenue had increased three times from 1999 to 2004.

When Phase 4 of the Japanese cooperation (Study for Establishment of Tax Education System (2003-2005)) concluded, the tax administration system had improved to some extent. There were, however, still many issues to be addressed, since the MTA was a relatively new agency (established in 1992). There were not yet a sufficient number of staff members who had full knowledge of the institutional and legal framework of the tax system, and who were able to utilize the improved system effectively. Therefore, continuous assistance in the form of technical cooperation was launched as a summary of the previous series of assistance studies. The project consisted of three major areas: (i) assistance for the establishment of a human resource development framework and training system, (ii) assistance for the enhancement of proper and fair tax administration, and (iii) assistance for the improvement of taxpayer services.

1.2 Project Outline

Overall Goal	<p>1: Realization of proper and fair tax administration 2: Improvement of taxpayers' compliance³ and increase in number of tax filers</p>	
Project Objective	<p>1: To enhance the human resource development system and training system of MTA by implementing the Short Term Action Plan, and to improve the job performance of the MTA staff 2: To improve MTA's operation in tax collection (including taxation and tax audit) 3 : To improve MTA's taxpayer services</p>	
Output(s)	Output 1	<p><u>Output for Project Objective 1: Human resource development and training</u> 1-1: Improvement of the training system, curriculum, training course materials and instructor's teaching guidelines based on the Short Term Action Plan of the MTA 1-2: Increase of training opportunities including those in rural areas by the improvement of training facilities and introduction of distance learning 1-3: Enhancement of the MTA instructors' capacity for teaching 1-4: Improvement of training environment (facilities and equipment) 1-5: Establishment of staff training system which is linked with overall human resource development plan of the MTA</p>
	Output 2	<p><u>Output for Project Objective 2: Tax collection (including taxation and tax audit)</u> 2-1: Decrease of unregistered taxpayers through improvement of manuals, etc. 2-2: Capacity improvement of tax auditors in their auditing skills after the implementation of training courses for them. Also, achievement of fair, efficient and effective tax collection made possible through review and improvement of their works. 2-3: Improvement of job performance through collaboration with other related agencies (such as court and police), and through enhanced functions of information systems including the Third Party Information System (hereinafter referred to as "TPI")⁴</p>
	Output 3	<p><u>Output for Project Objective 3: Taxpayer services</u> 3-1: Increased convenience on the part of taxpayers by the improvement of service mind of the MTA staff, establishment of additional taxpayer service centers and introduction of information technology (IT) 3-2: Improvement of contents of public relations activities for taxpayers 3-3: Consideration for introduction of accredited tax accountant system based on advices</p>

³ Taxpayer compliance means that taxpayers file and pay their taxes correctly by themselves.

⁴ TPI is the system of matching taxpayer information held by the MTA and other agencies' information. Referred information is used for the tax audit.

Inputs	<p>Japanese Side:</p> <ol style="list-style-type: none"> 7. Experts 8 for Long-Term, 0 for Short-Term 8. 35 Trainees received (counterpart training in Japan) 9. 0 Trainees for Third-Country Training Programs (total) 10. Equipment: approximately 700 million yen (Equipment to the tax training & research center in Ulaanbaatar, the two training centers in two provinces, the model service center and the call center) 11. Local Cost: approximately 20.88 million yen 12. Others (incl. dispatch of related missions): 0 yen <p>Mongolian Side:</p> <ol style="list-style-type: none"> 6. 21 Counterparts 7. Project Office in the GDT 8. Local Cost (counterpart travel allowance, installation of the model service center and the call center, public relations for tax payers, printing of manuals for tax auditors, renovation for electronic filing of Value Added Tax (hereinafter designated as “VAT))
Total Cost	210 million yen
Period of Cooperation	January 2006–July 2008
Implementing Agency	Mongolian Tax Authority (MTA) (the main agency was General Department of Taxation (GDT))
Cooperation Agency in Japan	National Tax Authority, National Tax College
Related Projects (if any)	<p>[Development Studies]</p> <ol style="list-style-type: none"> 1. The Study on the Support for the Economic Transition and Development in Mongolia (September 1998–March 2000) 2. The Study on the Support for the Economic Transition and Development in Mongolia (Tax Collection Enhancement 2) (June 2000–July 2001) 3. The Study on the Support for the Economic Transition and Development in Mongolia (Tax Collection Enhancement 2:Support to Taxpayer Information System Establishment) (November 2000–February 2003) 4. Study for Establishment of Tax Education System (November 2003–June 2005) <p>[Country focused training]</p> <ol style="list-style-type: none"> 1. Capacity building of MTA tax inspectors (November 2008–March 2011) <p>[Follow-up cooperation]</p> <ol style="list-style-type: none"> 1. Support by JICA Mongolia to the MTA for the preparation of teaching materials for tax education and the implementation of a tax education program (2009–2010)

1.3 Outline of the Terminal Evaluation

It was evaluated that project activities were completed almost as planned, producing the expected results.

1.3.1 Achievement of Overall Goal

The overall goal of the realization of proper and fair tax administration was expected to be achieved at a level higher than at the time of the terminal evaluation, if the MTA would continue effective tax collection (including taxation and tax audit) and further improve taxpayer services through human resource development. The second overall goal of an improvement of taxpayers' compliance and increase in the number of tax filers was also expected to be achieved if incentives for taxpayers to file correct returns would be generated through improved taxpayer services, and tax inspection and tax administration officers' knowledge and ethical and moral awareness would be improved.

1.3.2 Achievement of Project Objective

The first project objective was to enhance the human resource development system and training system of the MTA by implementing the Short Term Action Plan and to improve the job performance of MTA staff. It was expected that this objective would be achieved since it was judged that MTA staff knowledge had been surely increased, and experiences gained through project activities would contribute to the improvement of MTA staff job performance.

With regard to the second project objective, to improve MTA's operation in tax collection (including taxation and tax audit), it was confirmed that the MTA improved tax inspection and tax delinquency management and that tax penalty cases against audited taxpayers increased. It was therefore concluded that the project had achieved the second objective.

The third project objective, the improvement of MTA's taxpayer services, was judged as achieved considering that taxpayer services had been greatly enhanced in both hardware and software aspects, e.g., the installation of taxpayer at tax offices and services to taxpayers through taxpayer service centers (hereinafter called "service centers") and a new website.

1.3.3 Recommendations

The following recommendations were made to the MTA by the terminal evaluation mission:

(1) To continuously make sufficient efforts to enhance taxpayer convenience, such as the increase in the number of taxpayer service centers functions and the improvement in

website functions.

(2) To further enhance methods of taxpayer management, selection of taxpayers to be audited and field audits in order to establish more appropriate and fair tax administration.

(3) To enhance human resource development and training together with active efforts to improve the curriculum, course materials and implementation of correspondence courses, etc., since it is the highly qualified staff of the MTA who enable the effective implementation of appropriate and fair tax administration and taxpayer services.

(4) The objectives that were not fully achieved in the project period, such as the selection of taxpayers to be audited, field audits and methods for field audits, and taxpayer management, are to be continuously pursued on the MTA's self-help basis as well as be taken up in the agenda of the new training program in Japan.

2. Outline of the Evaluation Study

2.1 External Evaluator

Maki Hamaoka, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

Duration of the Study: November 2011–January 2013

Duration of the Field Study: March 26, 2012–April 7, 2012, June 11-16, 2012

2.3 Constraints during the Evaluation Study (if any)

None

3. Results of the Evaluation (Overall Rating: A⁵)

3.1 Relevance (Rating: ③⁶)

3.1.1 Relevance with the Development Plan of Mongolia

The objective of this project was consistently relevant with the national development plan of Mongolia at the time of both the ex-ante evaluation and the project completion. The Action Plan of the Government of Mongolia for 2000-2004, which was a national development plan at the time of the ex-ante evaluation, included the enhancement of education, equal distribution of wealth, introduction of social welfare and social

⁵ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁶ ③: High, ② Fair, ① Low

insurance, and alleviation of regional disparities in the objectives. These undertakings of the state required sufficient state revenue that is supported by stable tax revenue. The enhancement of the tax system and tax administration was judged to be contributing to social development and healthy economic development as stated in the national development policy.

The development policy at the time of the terminal evaluation (2008), Millennium Development Goals-based Comprehensive National Development Strategy of Mongolia, was formulated in January 2008 and aims to increase state revenues through expansion of the taxation base and the improvement of tax collection as a tax system policy for macroeconomic development. These objectives were in accordance with the direction of the project.

3.1.2 Relevance with the Development Needs of Mongolia

The direction of this project was relevant with the development needs of Mongolia from the time of the ex-ante evaluation until the end of project.

As stated in 1.1 Background, Japan extended its assistance for the establishment of a tax system framework and tax information system from 1998. At the time of the ex-ante evaluation of this project in 2005, there was not yet a sufficient number of staff in the MTA who had full knowledge of the institutional and legal framework of the tax system improved by the previous phases. Therefore, it was still necessary to continue follow-up capacity building of MTA staff based on the progress of the Short Term Action Plan formulated under the development study in the previous phase, Study for the Establishment of a Tax Education System (2003–2005).

In regards to tax collection, it was imperative for the MTA to improve the filing of returns by strengthening tax audit since the number of non-taxpayers was unknown. In this regard, it was necessary for the MTA to increase working efficiency by developing tax audit manuals and casebooks of best practice and to improve the third party information system and estimate taxation.

Regarding taxpayer services, it was necessary to create an environment in which taxpayers feel free to contact the MTA for tax consultation and to file returns. This was done by expanding service centers as well as improving services and introducing an accredited tax account system. Furthermore, due to an increase in taxpayer knowledge and awareness of tax payment and tax functions, it was necessary to vary

the forms of public relations (that had been previously limited) in accordance with various types of taxpayers.

At the time of the terminal evaluation, MTA staff had gained basic knowledge and skills. However, the need for capacity building on tax collection and taxpayer management was judged as high from issues identified in the terminal evaluation as follows:

- It was necessary for the MTA to enhance the methods of taxpayer management and selection of taxpayers to be audited in order to conduct more efficient and effective tax audit.
-
- For this purpose, it was necessary for MTA tax inspectors to acquire a series of works at a higher level such as taxation, tax collection, and collection of delinquent tax.

To improve these issues, capacity building of MTA tax inspectors was implemented after the conclusion of this project, from November 2008 to March 2011.

3.1.3 Relevance with Japan's ODA Policy

This project is highly consistent with one of the priority areas of the Country Assistance Program for Mongolia (November 2004), which is support for institution building and human resource development for promoting a market economy. Therefore, the project direction was highly relevant with Japan's ODA policy.

This project has been highly relevant with the Mongolia's development plan, development needs, as well as Japan's ODA policy, therefore its relevance is high.

3.2 Effectiveness and Impact⁷ (Rating: ③)

3.2.1 Project Outputs

3.2.1.1 Project Output

- 1) Output 1⁸ (Human resource development and training component)

⁷ Sub-rating for Effectiveness is to be put in consideration of Impact.

⁸ Output 1-2 "Increase of training opportunities including those in rural areas by the improvement of training facilities and introduction of distance learning" was initially designed to achieve project purpose 1. After the review of logical relationship of project approaches, it was considered as indicator of project purpose to be achieved by the end of the project period through achievement of other outputs.

Output 1 covered components regarding human resource development and training. Based on the program developed under the MTA Human Resources Development Plan 2006–2008 which was formulated in Phase 4, the implementation plan for MTA training was updated annually. Based on this action plan, counterpart personnel of the MTA developed a casebook for tax audit and tax audit manuals for specific industries, in cooperation with Japanese experts. These materials were utilized in MTA training courses.

The MTA introduced distance learning and increased the number of training centers through the provision of equipment. In 2006, the number of training centers in rural areas increased from two to four. Thus, learning opportunities for MTA staff increased, particularly in remote areas.

MTA instructors enhanced their teaching capacity through participation in training courses abroad or studying in universities in the country.⁹ Moreover, a system to track and record MTA staff achievement and performance in training courses through a personnel information system was established by the Directive by Director General No. 109.

In light of the above, an environment for human resource development was well established. Output 1 was therefore judged as achieved.

2) Output 2 (Tax collection (including taxation and tax audit) component)

With regard to tax audit, a risk management system to divide taxpayers into five grades with eight indicators was introduced. This system enabled the MTA to focus on tax audit quality rather than quantity. In the past, the MTA audited all registered corporations every three years. The risk management system allowed the MTA to decrease the number of tax audits by focusing on prioritized taxpayers.

The following manuals were developed: a casebook for tax audit, tax audit manuals for five specific industries¹⁰ and estimate taxation manual¹¹.

⁹ Two out of seven attended the counterpart training implemented under this project and two participated in training in Turkey and China. One pursued a postgraduate degree and two pursued a doctor's course in Mongolia.

¹⁰ The five industries included vehicle sales, condominium sales, liquor production and trade, mining and banking.

¹¹ Estimate taxation is applied when income cannot be identified through taxpayer documents. In this method, the amount of income tax or corporation tax is decided or amended based on indirect documents such as the status of property, increase and decrease of debt, the status of

Regarding tax collection, the MTA introduced several measures to promote tax payment within the due date and to improve the situation of unpaid taxes: the MTA obliged private sectors to submit certificates of tax payment when they participated in bid by government, introduced self-enforcement,¹² amended the system of sending letters of advice¹³ and strengthened public relations activities regarding tax filing and payment within the due date.

Moreover, the MTA promoted the utilization of the TPI that was introduced in Phase 3 (Tax Collection Enhancement 2(Support to Taxpayer Information System Establishment) in 2000–2003. When the project began, the Mongolia Customs Authorities and the Ministry of Food, Agriculture and Light Industry were major organizations that provided their information for the TPI. During the project period, the number of government agencies collaborating with the TPI increased to seven. For instance, the TPI was connected to the Ministry of Finance regarding information on government procurement, and the Administration Office of State Registry of Titles regarding ownership of immovable properties. Along with the increase in the number of collaborating agencies, the data volume in the TPI increased (see 3.2.1.2 Achievement of Project Objectives, 4) Indicator 4: Increase in the number of MTA staff who uses the TPI).

In light of the above, the groundwork for efficient and effective tax audit and collection was laid. Therefore, Output 2 was judged as achieved.

3) Output 3 (Improvement of MTA's taxpayer services component)

This output intended to achieve the improvement of MTA's taxpayer services through the following: increased convenience for taxpayers by the improvement of customer service on the part of MTA staff, expansion of taxpayer service centers and the introduction of information technology (IT); improvement of the contents of public relations activities for taxpayers; and consideration of the introduction of an accredited tax accountant system based on expert advice.

The number of service centers was 12 in 2005 and increased to 25 in 2008. These

profit and loss, and the production volume.

¹² The state and regional entities were given authority to collect claims of tax levies without legal process in the case of non-payment of taxes.

¹³ In the past, when a delinquent refused a letter of advice, the MTA was unable to collect delinquent taxes. With the amended system, it was deemed that the MTA was authorized to collect delinquent taxes upon the delivery of a letter of advice, despite the delinquent's refusal to receive the letter.

service centers were established through MTA efforts. The Japanese side assisted the MTA in creating a model service center at Songinokhairkhan district tax office to improve software aspects. This included the introduction of call notification devices for latency reduction (which had long been one of the major complaints from visitors to the service center), installation of a reading space, and installation of personal computers with which the service center staff instruct visiting taxpayers on electric filing.

Regarding IT, the MTA introduced a Content Management System (CMS)¹⁴ in 2006 for prompt provision of information to taxpayers. In addition, the Japanese experts assisted the MTA to develop software for VAT invoice inputting.¹⁵ The MTA began providing services using IT, such as electronic filing through the MTA's website. The MTA improved its website, referring to the composition and the contents of the website of the National Tax Agency of Japan. As a result of the improvement of services to taxpayers through IT, the number of times the MTA's website is accessed has increased from 14,247 in 2005 to 55,027 in 2007.

Public relations activities were previously limited in scope and were undertaken only on Taxpayer Day in May. Upon advice provided by the Japanese experts, public relations activities came to be provided through various media, i.e., newspapers, radio, television and brochures. The contents offered to taxpayers include information on tax related laws and regulations, consultation page and advice on tax filing, introduction of the work of tax offices, procedures for electronic filing and frequently asked questions (FAQs) on the MTA's website.

Regarding the introduction of an accredited tax accountant system based on expert advice,¹⁶ seminars, meetings and discussions were held four times among the related

¹⁴ CMS is a system that enables the adding of information on several web pages, the modifying and deleting of links automatically or semi-automatically and the prompt changing of web design without advanced IT expertise. This system makes it possible to update the website easily and to provide information promptly.

¹⁵ VAT is a tax on consumption of goods and services. Business operators are to pay 10 % (which is added to the value-added component — the amount obtained by deducting the purchase from sales) to the national treasury via tax offices. VAT is imposed on 1) consumption of goods and services in the country, 2) exported goods, and 3) imported goods.

¹⁶ An accredited accountant is a tax expert who provides services such as acting as a tax agency, preparation of tax documents, and tax consultation from an independent and fair position. In Mongolia, a seminar on the introduction of an accredited tax accounting system based on expert advice was held in December 2004. Just after this seminar, the Accredited Tax Accounting Association was established in line with the objectives of the Ministry of Finance, the MTA, supervising agencies and business organizations. Accredited tax accountants licensed by the MTA and the Accredited Tax Accounting Association began opening tax accountancy firms.

parties, such as the MTA, the Ministry of Finance, the Mongolia Institute of Certified Public Accountants and the Accredited Tax Accounting Association. Although tax accountants had begun their work, it was necessary to add laws on accredited tax accountant and ethic regulations needed to the general tax law in order to officially institutionalize the accredited tax accounting system. Since some ministries had not approved a bill regarding this system, the debate on this bill remained as an issue to be tackled by the Mongolian side.

In light of the above, taxpayer services and taxpayer convenience were improved by the enhancement of the service level of MTA staff, expansion of service centers and introduction of IT. Therefore, Output 3 was judged as achieved.

3.2.1.2 Achievement of Project Objectives

There are three project objectives:¹⁷ to enhance the human resource development system and training system of the MTA by implementing the Short Term Action Plan and to improve the job performance of MTA staff; to improve MTA operations in tax collection (including taxation and tax audit); and, to improve MTA taxpayer services. Since indicators set for the respective project objectives did not properly represent what the project intended to achieve, the following indicators were newly set for this ex-post evaluation through a review of the logical relationship of the outputs and project objectives through interviews with concerned parties and a review of existing documents.

【Human resource development and training component】

Indicator 1: Increase in the number of MTA staff who received distance learning¹⁸

Indicator 2: Increase in the number of MTA staff who received training¹⁹

【Tax collection (including taxation and tax audit) component】

Indicator 3: Increase in the amount of tax penalty²⁰ imposed on audited taxpayers²¹

However, it was necessary to institutionalize accredited tax accountancy practices by establishing an independent law on accredited tax accounting.

¹⁷ In planning and managing a project based on the Project Design Matrix (PDM), there should only be one project objective. However, three objectives were set for this project. Initially, a project was planned to focus on the enhancement of the training system. However, as a result of a participatory workshop attended by concerned stakeholders from both the Mongolian and Japanese sides, components on the improvement of tax collection and the improvement of the MTA's taxpayer services were added.

¹⁸ This was originally an indicator for the output for the final evaluation. As a result of a review on the logical relationship between the outputs and the project objectives, it was changed to an indicator for the project objectives.

¹⁹ Idem.

Indicator 4: Increase in the number of MTA staff who use TPI²²

【Taxpayer services component】

Indicator 5: Improvement in the satisfaction level of visitors to the model service center

Indicator 6: Increase in the number of cases where taxpayer services were provided by using IT²³

1) Indicator 1: Increase in the number of MTA staff who received distance learning
Distance learning on bookkeeping and accounting was tested in Hovsgol aimag (province) in 2007. “A regulation on distance learning for state tax inspectors” was established as operating and teaching guidelines of distance learning. Distance learning started officially in March 2008 and 159 staff from eight aimags received distance learning until May in 2008.

Table 1 Number of MTA staff who received distance learning

Year	2008	2009	2010
Number of participants	157	398	477
Number of aimags	8	17	20
Average score of exam.	54.2	75.2	

Source : MTA

2) Indicator 2: Increase in the number of MTA staff who received training
The number of MTA staff who attended continuous training programs increased greatly compared to at the time of project commencement. Two training centers in Darkhan-Uul and Uvurkhangai aimags were established in 2006 and the total number of training centers increased from three to five. The Japanese side provided training equipment to the three training centers: training and research center in Ulaanbaatar and two newly launched training centers. The MTA increased the number of instructors. Thus, the capacity of accommodating trainees was enhanced and the number of MTA staff who received training increased significantly.

²⁰ In cases in which the amount of tax paid by individuals or corporate bodies is found to be lower than the due amount because of tax evasion or a failure to declare the payment, penalty tax is added. This project is intended to reinforce the identification of tax evasion and failure of declaration by improving tax audit while controlling the number of audits.

²¹ This indicator was newly added for this ex-post evaluation.

²² See footnote 18.

²³ See footnote 18.

Table 2 Number of MTA staff who received training

No	Training Center	Training Course	2006	2007	2008	2009	2010	2011
1	Ulaanbaatar Training & Research Center	Introductory	112	104	109	102	84	107
		Intermediate	261	562	744	735	713	755
		Advanced					471	497
2	Darkhan-Uul Training Center	Introductory	81	30	32		29	19
3	Uvurkhangai Training Center	Introductory	25	72	34	46	52	42
4	Hovd Training Center	Introductory	23	21		27		
5	Dornod Training Center	Introductory	30	120				
	Total		532	909	919	910	1,349	1,420

Source : MTA

3) Indicator 3: Increase in the amount of tax penalty imposed on audited taxpayers

While the MTA decreased the number of tax audits in 2007,²⁴ the amount of tax penalties increased in the same year. This result shows that the selection of taxpayers to audit is effective and the TPI is used efficiently for tax audit and collection.

Table 3 Tax penalties imposed on audited taxpayers

Unit : Million Tg

Year	2004	2005	2006	2007	2008	2009	2010	2011
(a) Amount of tax penalty	14,397	27,856	27,639	55,551	14,993	68,429	54,138	260,149
(b) Audited taxpayers	9,677	13,291	14,122	11,749	6,845	11,986	12,604	13,101
Amount of tax penalty per audited taxpayer ((a)/(b))	1.5	2.1	2.0	4.7	2.2	5.7	4.3	19.9

Source : MTA

4) Indicator 4: Increase in the number of MTA staff who use the TPI

The data volume of the TPI in 2007 increased by 11 % when compared to the project commencement (2005 data) (see Table 4). Comparing the incidence of use of the TPI by tax auditors at the project end with that of the project commencement, data on customs increased by 340% and data on VAT invoices increased by 70% (see Table 5). This significant increase in the use of the TPI was caused by the following: the information management system was improved to enhance data compatibility among

²⁴ The MTA decreased the number of tax audits for the following reasons: the district and aimag tax offices requested a decrease in the number of tax audits; the MTA decreased the number of tax auditors along with the personnel relocation after setting up new sections in charge of the TPI and information collection of taxpayers; and, the project placed emphasis on the enhancement of tax audit quality rather than tax audit quantity.

all ministries, and reference to the TPI by tax auditors was required in the tax audit manuals and manuals by specific industries.

Table 4 Data volume in the TPI

	2004	2005	2006	2007	2008	2009	2010	2011
Information collected in the TPI	262,460	247,155	182,457	274,687	1,010,423	1,180,243	2,549,246	3,124,710

Source : MTA

Table 5 TPI use by MTA staff

Item	2005	2006	2007	2008	2009	2010	2011
Customs	146,061	300,990	645,067	220,040	181,332	178,330	181,807
VAT invoice	59,202	120,508	100,503	167,633	786,530	1,177,096	1,867,198
Third party information	14,740	15,107	16,500	19,449	13,330	20,391	87,010

Source: MTA

5) Improvement in the satisfaction level of visitors to the model service center

The Songinokhairkhan District Tax Office in Ulaanbaatar was a model service center. The project made various efforts to improve services to visitors, such as providing training on customer service along with a manual to its employees, installing call notification devices to solve long queues, and setting up a reading space to facilitate information provision. According to the surveys on customer satisfaction implemented three times during the project implementation, the ratio of visitors who answered “satisfactory” in regards to customer service of the employees of the model center changed as follows: 100% in February 2007, 22% in November 2007 and 65% in June 2008. Considering that customer satisfaction had increased at the time of project completion and that no unsatisfactory case was observed in other survey questions (such as the understandability of explanations by service center staff and waiting time) the service to taxpayers was improved to some extent in the model service center.

6) Increase in the number of cases where taxpayer services were provided by using IT
Through the MTA’s website, from 2007 taxpayers were able to input VAT invoices and to file tax returns on VAT, corporate income tax, and individual income tax. Convenience for taxpayers was thus improved.

This project has largely achieved its objectives. Therefore, its effectiveness is high.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

In this ex-post evaluation, indicators of the overall goal (project effect that is expected to be achieved 2-3 years after the project completion) are reviewed through existing documents and interviews with major parties concerned. The following are considered as indicators of the overall goals of the realization of a proper and fair tax administration, the improvement of taxpayer compliance and an increase in the number of tax filers.

Indicator 1: Increase in the number of registered taxpayers²⁵

Indicator 2: Increase in the rate of tax payment by the due date²⁶

Indicator 3: Increase in the amount of paid taxes among unpaid taxes of the previous year²⁷

1) Indicator 1: Increase in the number of registered taxpayers

The number of registered taxpayers has been increasing in terms of corporate taxpayers as well as personal income taxpayers. This seems indirectly to be caused by a reduction in tax rates²⁸ and recent economic growth. At the same time, the MTA's continuous efforts, such as strengthening public relations activities and tax education, the expansion of service centers and the improvement of services to taxpayers, seem to have contributed to the enhancement of taxpayer compliance.

²⁵ This was originally set as an indicator for the overall goal and Output 2. Through interviews with Japanese project experts and a review of existing documents, it was found that the project intended initially to increase the number of registered taxpayers in the long term. Therefore, this indicator is treated as an indicator for the overall goal only.

²⁶ Rate of tax payment by the due date means rate of taxes paid by the legal due date against the total amount of tax to be collected in the relevant fiscal year. This indicator was newly added for this ex-post evaluation after the evaluator analyzed what the project intended to achieve after the project completion, interviewed Japanese project experts and reviewed relevant documents.

²⁷ Idem.

²⁸ In January 2007, the Mongolian general tax law was revised. The personal income tax rate was 10%, 20% and 30% based on a progressive rate of taxation. It is now a uniform rate of 10%, excluding some income. Regarding the corporate income tax, the two-step progressive rate was 15% and 30% and has now become 15% and 25% respectively. The VAT has been amended to 10% from 15%.

Table 6 Registered taxpayers

Category	2005	2006	2007	2008	2009	2010	2011
Corporates/organizations (Corporate taxpayers)	30,401	34,500	40,909	48,592	52,846	62,232	73,287
Individual ²⁹	720,848	779,799	944,096	996,528	1,078,732	1,189,308	1,553,697

Source: MTA

2) Increase in the rate of tax payment by the due date

The rate of self-assessed tax payment by the due date was 80-85% from the project commencement to 2010, and it reached 99% in 2011. It is reported that this remarkable improvement has been brought about by a series of efforts on the part of the MTA: taxpayer compliance and comprehension of proper tax filing have been promoted by enhancing tax education and public relations activities, and the convenience of tax filing and the return on the part of taxpayers have been enhanced by the expansion of service centers and the introduction of electronic filing. For instance, seminars for taxpayers were organized for a total of 7,000 companies by 31 tax offices in 2010. According to the MTA, insufficiencies in documentation for tax audit and failures to declare due to a lack of knowledge on the tax law have decreased.

There has not been a remarkable change in the rate of audited tax payments by the due date. Even though failures to declare and tax evasion are identified by tax audits, in many cases, taxpayers are unable to pay the due amount due to taxpayers' conditions. The MTA is now considering separating tax inspectors for tax audit and ordinary tax collection and strengthening capacity to receive tax payment through telephone calls.

²⁹ Individual registered taxpayers are the sum of individual taxpayers who pay tax collected at the source, personal income tax, fixed asset tax, gun tax and auto tax.

Table 7 Tax payment rate

Unit : Billion Tg

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Total amount of unpaid taxes at the end	47.9	38.4	45.5	58.3	88.7	106.1	171.3	217.2	292.8	237.2	318.9	102.3
2. Amount of paid taxes among the unpaid taxes of previous year												
Taxed	34.9	47.9	38.4	45.5	58.3	88.7	106.1	171.3	217.2	292.8	237.2	318.9
Collected	26.5	35.7	25.4	25.7	36.9	62.1	81.9	142.7	147.3	195.1	188.8	239.4
Balance	8.3	12.2	13	19.8	21.4	26.6	24.2	28.6	69.9	97.7	48.4	79.5
Rate of paid taxes %	75.9	74.5	66.1	56.5	63.3	70.0	77.2	83.3	67.8	66.6	79.6	75.1
3. Amount of tax payment by self-assessment												
Taxed	145.7	186.1	168.0	161.1	315.6	386.0	797.9	1,181.0	1,276.5	1,072.0	1,752.3	1,719.4
Collected	108.1	165.7	138.6	126.4	252.6	311.5	657.8	1,003.6	1,057.7	893.0	1,495.2	1,709.9
Balance	37.5	20.3	29.4	34.7	62.9	74.5	140.2	177.4	218.7	179	257.1	9.5
Rate of paid taxes %	74.2	89.0	82.5	78.5	80.0	80.7	82.4	85.0	82.7	83.3	85.3	99.4
4. Amount of tax payment by tax audit												
Taxed	6.4	9.8	15.3	9.3	11.2	13.8	17.4	37.1	13.7	39.1	36.8	32.9
Collected	4.3	3.9	12.3	5.4	6.9	8.8	10.4	25.8	9.6	26.6	23.4	19.6
Balance	2	5.8	3	3.8	4.3	5	6.9	11.2	4.2	12.5	13.4	13.3
Rate of paid taxes %	67.2	39.8	80.4	58.1	61.6	63.8	59.8	69.5	69.5	68.0	63.5	59.5
5. Total												
Taxed	187.1	243.9	221.8	216.0	387.9	488.7	921.4	1,389.4	1,507.4	1,403.9	2,078.7	2,123.6
Collected	139.0	205.4	176.3	157.6	298.4	382.5	750.1	1,172.1	1,214.6	1,114.7	1,707.4	1,968.9
Rate of paid taxes %	74.3	84.2	79.5	73.0	76.9	78.3	81.4	84.4	80.6	79.4	82.1	94.2

Source: MTA

3) Indicator 3: Increase in the amount of paid taxes among the unpaid taxes of the previous year

The rate of paid taxes among the unpaid taxes of the previous year has gradually improved in comparison to the data from the project commencement (2005 data)³⁰. The MTA has taken various measures such as adopting executive powers to collect unpaid taxes on its own through legal process, amendments to the system of letters of advice and upon advice from the Japanese expert, reminder telephone calls by tax offices.

Overall goal was largely achieved for its target indicators, therefore its impact is high.

3.2.2.2 Other Impacts

1) Expansion of service centers

When this project finished in 2008, there were 25 service centers. In 2009, the number had increased to 31 nationwide.³¹ Following the improved services trialed in the

³⁰ In 2008, a general pardon was granted that cancelled unpaid taxes identified before 2008. The rate of paid taxes among the unpaid taxes of the previous year decreased temporarily.

³¹ There are 31 taxpayer service centers as of March 2012: 21 in the tax offices in all of the 21 aimags, in the 9 district tax offices in Ulaanbaatar and the service center for high-income taxpayers.

model service center, other centers have been improving services to taxpayers by introducing number indication devices and improvements in notices and reference materials. The MTA continued its efforts to improve further services to taxpayers. For instance, monitoring of visitor satisfaction regarding service center staff was introduced by the MTA in 2010.

2) Enhanced satisfaction of taxpayers

In this ex-post evaluation, a beneficiary survey was conducted to see taxpayer satisfaction with the MTA’s services.³² All respondents noticed that the service level of service centers has been improved. Specific improvements include: the reduction of long waiting lines by the introduction of a waiting number indication device; staff are able to deal with visitors quickly; and, centers have become more comfortable and well arranged.

83% of respondents have used the MTA website so far and all of them recognized improvements in the website. 86% of them listed “input of tax filing data” and “preparation of tax documentation on the website” as specific improvements. This shows that enhanced convenience for taxpayers has been recognized by taxpayers themselves.

Table 8 Improvement of the service level of service centers

(Have you noticed that services have improved these 2-3 years?)

Answers	Count	Ratio (%)
Improved greatly	99	82.5
Improved to some extent	21	17.5
Yes and no	0	0
Not improved much	0	0
Not improved at all	0	0
Total	120	100

Table 9 Nature of improvement (Multiple answers)

Answers	Count	Ratio (%)
Waiting time	57	47.5
Facilities and environment of the center	56	46.7
Service manners of center staff	55	45.8
Notices	17	14.2
Others	20	16.7

n=120

³² The questionnaire survey was conducted in March 2012, targeting 120 visitors: 30 from the four respective service centers in Ulaanbaatar. The four service centers are located in Sukhbaatar district, Chingeltei district, Khan-Uul district and Songinokhairkhan district.

Table 10 Improvement of the MTA website
(Have you noticed that the website has improved these 2-3 years?)

Answers	Count	Ratio (%)
Improved greatly	77	86.5
Improved to some extent	12	13.5
Yes and no	0	0
Not improved much	0	0
Not improved at all	0	0

n=89



On-the-spot evaluation of staff of service centers (Uvurkhangai tax office)

Table 11 Nature of improvement of the website
(Multiple answers)

Answers	Count	Ratio (%)
Input and tax return filing	77	86.5
Online help facility	31	34.8
Information on tax	29	32.6
Frequently asked questions	9	10.1
Others	2	2.2

n=89



Tax education for taxpayers (Darkhan-Uul tax office)

Through implementation of the project, project objectives were achieved judging from the increased learning opportunities for MTA staff, improved efficiency in tax collection and enhanced services for taxpayers. Moreover, the overall goals have been achieved as planned considering the increasing number of registered taxpayers and improved rate of tax payment by the due date.

This project has largely achieved its objectives, therefore, its effectiveness is high.

3.3 Efficiency (Rating: ③)

3.3.1 Inputs

Inputs	Plan	Actual Performance
(1) Experts	0 for Long-Term 4-6 for Short-Term 30-35 persons/month in total	0 for Long-Term 8 for Short-Term 32.49 persons/month in total
(2) Trainees received	10 persons x 1 (approximately 2-3 weeks) for tax administration In country training as per necessity	[Counterpart training in Japan in tax administration] · Year 2006: 8 trainees · Year 2007: 15 trainees · Year 2008: 12 trainees Total: 35 trainees

(3)Third-Country Training Programs	None	None
(4) Equipment	Equipment necessary for project implementation (equipment for MTA staff training)	The following equipment was provided <ul style="list-style-type: none"> • For tax training and research center in Ulaanbaatar (PC, printer and copier) • For Uvurkhangai province and Darkhan-Uul province training center (PC, printer, projector, copy machine, chairs) • Songinokhairkhan district taxpayer service center (PC, copy machine, desk and chair, etc.) • Call center in the GDT (PC, headset, desk, etc.)
Total Project Cost	250 million yen	210 million yen
Total Local Cost	n.a.	3.8 million yen ³³

3.3.1.1 Elements of Inputs

Inputs on both the Japanese side and the Mongolian side were provided as planned.

(1) Inputs by the Japanese side

1) Japanese experts

The amount of inputs, quality and dispatch timing of JICA short-term experts were appropriate. In particular, products such as training materials, manuals and casebooks for effective tax audit and collection are highly appreciated by not only the MTA but also other donors and private companies in Mongolia. This appreciation shows that the inputs of experienced experts were effective to produce outputs at a higher level.

Regarding the implementation structure, Japanese experts repeated short-term stays in Mongolia for two weeks to one month. In this implementation structure, local coordinators played a key role in linking communications between Japanese experts and their Mongolian counterparts during the absence of Japanese experts. For instance, Japanese experts left assignments for their counterparts before leaving Mongolia and they monitored the progress of the assignments and verified if the counterparts had any questions or concerns through local coordinators. Then, they checked the results of the assignments during their next dispatch. This method allowed the Mongolian counterparts to coordinate their ordinary duties and project activities and encouraged the counterparts' initiative.

³³ 38,164,000 Tg (1 Mongolian Tugrig was calculated as 0.1 yen, based on the average exchange rate from January 2006 to July 2008)

2) Counterpart Training in Japan

The contents, period and timing of counterpart training courses in Japan were appropriate. The trainings were effective inputs since trainees made great use of what they learned in Japan in their duties afterwards. In this ex-post evaluation, 13 ex-trainees out of 35 ex-trainees responded to the questionnaire on training impacts. Regarding the quality, duration and timing of the training, 10 of them answered “very good” and three of them answered “good”. Regarding the usefulness of the training, 10 of them answered “very useful” and three of them answered “useful”. All of them made use of what they learned in the training (e.g. setting up a call center in the GDT, further improvement of the TPI, and improvement of tax collection and tax audit).

3) Provision of Equipment

Equipment was appropriately provided to the MTA in terms of type, amount, quality and timing of provision. It was effectively used for the project implementation. For instance, the two training centers in Uvurkhangai and Darkhan-Uul are using PCs (notebooks) and projectors provided under the project for different purposes other than training courses in the training centers, such as tax seminars at kindergartens, schools and seminars by specific industries.

(2) Inputs by the Mongolian side

1) Deployment of Counterparts

The amount and the quality were appropriate. Deployed counterparts always completed assignments given by the Japanese experts by the deadline. They were highly motivated, making suggestions for improvements on their own.

2) Local cost

The local costs were borne by the Mongolian side as described in 1.2 Project Outline. Self-efforts made by the Mongolian side, such as a significant increase in the budget for MTA public relations and a steady expansion of service centers, contributed to producing project outputs.

3.3.1.2 Project Cost

The project cost borne by the Japanese side was lower than the planned cost. The actual cost was 210 million yen against the planned cost of 250 million yen (equal to 84% of the planned cost).

3.3.1.3 Period of Cooperation

The actual project period was 31 months against the planned period of 37 months (84%).

The inputs were appropriate for producing outputs and achieving the project objective, and both project cost and period of cooperation were within the plan, therefore efficiency of the project is high.

3.4 Sustainability (Rating: ③)

3.4.1 Related Policy towards the Project

The Millennium Development Goals-based Comprehensive National Development Strategy of Mongolia (formulated in January 2008) aims at increasing state revenues through the expansion of the taxation base and the improvement of tax collection as a tax system policy for macroeconomic development.

In addition, the Mongolian government places emphasis on support to small and medium-sized enterprises and the improvement of business conditions. An amendment of the general tax law is currently underway to ensure such conditions. In particular, it places emphasis on the enhancement of tax reform and tax administration, along with the development of the mining sector.³⁴ Therefore, the sustainability of this project is high in terms of policy aspects.

3.4.2 Institutional and Operational Aspects of the Implementing Agency

The MTA employs 1,803 staff members as of March 2012. The MTA's turnover rate is quite low compared with other government organizations. The staff members build their capacity incrementally following the Continuous Training Program of the MTA that was developed by a series of JICA development studies and the technical cooperation project. The system of tracking training results and the job performance of each staff member has been functioning.

Moreover, the MTA has been strengthening its organizational capacity following recommendations made by the Japanese experts during the project implementation in order to improve risk management. In this regard, the MTA set up a risk management division and legal division.

While the number of registered taxpayers has been increasing, the number of MTA

³⁴ Interview with the MTA and the Ministry of Finance (March 28 and April 5, 2012 respectively)

staff has remained unchanged since 2006. Due to the relocation of staff to newly established divisions, the number of staff in charge of tax audit has been decreasing. Though it may be difficult to increase significantly the number of government employees due to government policies, the MTA is taking different measures: it is planning to employ 50 tax inspectors this fiscal year in order to strengthen tax audit and to reduce the ratio of companies to audit from the current 16-18% to 12%.

In light of the above, this systematic human resource development has been functioning and the MTA has been strengthening its organization and reviewing its duties appropriately. Therefore, the institutional and operational aspects of the MTA are high.

3.4.3 Technical Aspects of the Implementing Agency

The MTA has been fully making use of techniques transferred by the Japanese experts. Therefore, technical sustainability is high.

1) Distance learning and introduction of online learning

The MTA continued distance learning after the project completion. In 2009, 298 persons from 17 aimags received distance learning. Afterwards, the MTA introduced online learning experimentally instead of distance learning based on experience in distance learning gained through the project. As of March 2012, 800 employees of the MTA, approximately 40% of the total MTA staff, are registered for online learning. The MTA shifted to online learning from distance learning after recognizing inefficiencies: it took time to send materials from aimag to soum (administrative units under the province level in Mongolia) and to send back exams from trainees. The MTA therefore decided to introduce online learning, taking advantage of networks between tax offices and the training and research centers in Mongolia.

2) Utilization and maintenance of equipment supplied under the project

The equipment is all used as per its objective and well maintained. As mentioned earlier, the equipment is used for tax seminars that the tax offices organize outside of their offices. In addition, the Darkhan-Uul tax office moved the supplied printer from its training room to the service center to use the printer effectively for multiple purposes.

3) Utilization of tax audit manuals developed by the project

During the project implementation, tax audit case books of 24 cases and tax audit manuals for five specific industries were produced. After the project completion, the

MTA increased the type of tax audit manuals to 30 types, adding other industries such as building, farming and insurance industries.

All manuals developed during the project implementation and after the project completion were distributed to 31 tax offices in the country. They are still being effectively used by the tax auditors. They conduct field tax audits, referring to the manuals to verify key considerations of relevant industries.

3.4.4 Financial Aspects of the Implementing Agency

The budget for the MTA has been stable and there are no problems in implementing its duties from a financial aspect. The difference between the income and the expenditure of the MTA has been in surplus since 2009. The MTA has been provided with a budget for business investment since last year. For instance, the MTA needs to replace 700 computers operating in the GDT and local tax offices. It is planning to replace 600 of them with new ones and to strengthen the data transmission speed in each tax office with the budget of the 2012 fiscal year.

Along with the development of the mining sector, tax revenues are expected to increase. As the enhancement of tax administration is likely to be continuously prioritized, the budget for the MTA is expected to increase.³⁵

3.4.5 Continuity of Effectiveness/Impact

Since the MTA has been using knowledge and techniques transferred by the project, the project effects remain as follows:

(1) Tax collection

1) Collaboration with other agencies regarding the TPI

Seven agencies provided the MTA with relevant information during the project period. The number of collaborating agencies has increased to 20 as of March 2012. The increase in the type of information enhances efficiency and effectiveness of tax collection and tax audit. Tax inspectors are able to verify more information in receiving tax returns and in conducting tax audits.

³⁵ Interview with the Ministry of Finance (April 2012)

Table 12 Collaboration with other agencies on the TPI

No.	Content of Information	Information Provider	No.	Content of Information	Information Provider
1	Information on duties	Customs Authorities	11	Study on visa duration of	Mongolian Immigration
2	Information on bidding	Ministry of Finance	12	All kind of economical study	State Development and
3	Ownership of immovable properties	Administration Office of State Registry of Titles	13	Loan and aid information provided by Ministry of	Small and medium enterpreses Department
4	Information on mineral resource license possessors /license validity, extension of possession, transferring the possession right	Mineral Resources Department	14	Study on foriegn invested entities	Foriegn Investment Agency
5	Information on social insurance	State Social Insurance General Office	15	Shareholders information	State property department
6	liquor production and trade	Ministry of Food, Agriculture and Light Industry	16	Information on entity	State Registration Authority /Corporate registration department/
7	Government procurement	Mnistry of Finance	17	Information on personal	State Registration
8	Information on all kind of	Transportation authority	18	Locational map of Buildings,	Land administration,
9	Information on schools and kindergartens in Ulaanbaatar	Education department of Municipality	19	Introduction of E service	Golomt bank
10	Information on Monopoly manufacturer in the market	Fair competition and consumer protection	20	Codification of economical, goods and service sector	National Statistical Office

Source: The MTA

Note: №1 ~ 7 are agencies that have been providing their information since project implementation. №8~20 were added after the project completion.

2) Data volume of the TPI and use of the TPI by MTA Staff

Information cases kept in the TPI have significantly increased from 274,687 in 2007 to 3,124,710 in 2011 (approximately eleven fold). As a result, opportunities for MTA staff to use the TPI have significantly increased. Comparing the result of 2011 with that of 2007, the use of VAT invoices increased 18 times and third party information increased five times (see Tables 4 and 5).

(2) Taxpayer services

1) Tax consultation at the call center

Consultation cases at the call center have increased from 4,205 in 2008 to 46,235 in 2011. Continuous efforts such as an increase in the number of staff at the call center and the strengthening of public relations activities raised taxpayer interest.

Table 13 Tax consultations at the call center

	2008	2009	2010	2011
Total	4,205	8,805	28,431	46,235
(Breakdown)				
Consultation by telephone	4,184	6,531	21,256	30,333
Consultation by auto-answers	0	2,204	7,067	15,580
Visits to the call center	21	70	84	245
Answers through official documents			24	77

Source: MTA

2) Access to the MTA website

Access to the MTA website has also significantly increased. The monthly average was 4,586 in 2007, and has increased to 66,583 in 2011, an increase of 14 times. Improvements in the website functions and the growing penetration of internet use have promoted access to the MTA website. The MTA is planning to introduce electronic signatures for tax returns from 2013.³⁶ If convenience for taxpayers continues to be enhanced, access to the MTA website is also expected to increase continuously.

3) Tax education

The MTA established a working group in collaboration with the Ministry of Education, Culture and Science in 2009 to promote tax education at school. The working group formulated an education program for future taxpayers, referring to the Japanese tax education system, relevant teaching materials and manuals. Following this program, the MTA implemented the following under the follow-up assistance by the JICA Mongolia Office: development of teaching materials for primary, secondary and high school students; posters and manuals for teachers; training for teachers in social studies; and development of a TV program. Tax education at school was officially introduced in social studies for grades 7, 8, 9 and 11 in September 2010.

4) Accredited tax accountant system

Since the MTA submitted the first bill on an accredited tax accountant system in 2007, the MTA has continued discussions with relevant government organizations such as the Ministry of Finance and the Ministry of Justice. The second bill, which was submitted to the Diet in December 2011, is due for discussion as of June 2012. Although it takes time to create a legal environment, 300 tax accountants and 9 tax accountant corporations have already engaged in tax accounting business. Therefore, it can be regarded that tax accounting has been acknowledged in practice, and it is highly likely that it will be officially institutionalized.

No major problems have been observed in the policy background, the structural, technical, financial aspects of the executing agency, therefore, sustainability of the project effects is high.

³⁶ Currently, taxpayers need to go to the tax office to submit printed tax return documents after preparing them on the website. The introduction of electronic signatures will allow taxpayers to file a tax return entirely online. After the act on electronic signatures was approved by the Diet in December 2011, electronic signatures are being experimentally used by 25 companies in March 2012.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

Prior to this project, JICA implemented development studies on tax administration in Mongolia in four phases from 1998. This project was implemented as a summary of the series of Japan's cooperation activities on tax administration in Mongolia in order to further strengthen the functioning of tax administration of the MTA. The objectives of this project, which are tax reform and the enhancement of tax administration, are relevant with the development policy of Mongolia by aiming to stabilize the country's revenue for sound socio-economic development, as well as its development needs. It is also relevant with Japan's ODA policy, which includes assistance for the shift of the market economy into its priority areas. Therefore, the relevance of the project is high. Through the implementation of the project, learning opportunities for tax administration officers were enlarged, tax collection (including taxation and tax audit) was improved and services to taxpayers were strengthened. The objectives of these components were achieved as expected. In addition, in regard to the overall goal, the number of registered taxpayers has steadily increased and the rate of tax payment by the due date has improved. Therefore, the effectiveness of the project is high. The inputs were appropriate for producing the desired outputs and achieving the project objective, and both the project cost and period of cooperation were within the plan. Therefore, the efficiency of the project is high. No major problems have been observed in the policy background or the structural, technical and financial aspects of the MTA. Therefore, the sustainability of the project effects is high.

In light of the above, this project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

Under the current situation in which the number of tax inspectors will not increase dramatically, it is necessary to strengthen work efficiency further by devising strategies for staff assignment and continuing the improvement of tax audit such as focusing on large-scale enterprises rather than small and medium enterprises.

4.2.2 Recommendations to JICA

Along with the development of the mining sector, the number of foreign companies operating their business in Mongolia has been increasing. MTA staff members are urgently required to obtain adequate knowledge of international taxation and international tax administration in order to properly conduct tax audits of these foreign

companies. In order to enhance the sustainability of the project effect, it is recommended that JICA considers some sort of assistance to strengthen this area. Tax administration is one of the areas of comparative advantage of Japan's assistance since methods of human resources development, such as training of instructors and technology transfer by Japanese experts to MTA staff and products (materials and teaching guidelines), have been highly appreciated not only by the Mongolian government but also by other donors.

4.3 Lessons Learned

In this project, the Japanese experts respected the opinions and initiatives of their Mongolian counterparts and tried to complete their assignments within their short dispatch period in an efficient manner through local coordinators. This approach seemed to promote sustainable technology transfer to the MTA. As the period of stay of the Japanese experts is relatively short, it is important to secure an effective coordinator and to devise ways to facilitate joint work between the Japanese experts and their counterparts in the executing agencies to ensure a high-level of project effectiveness and sustainability.

Box Japan's Cooperation in Mongolia for Tax Administration to complement the development of Mongolia

Mongolia faced constant budget shortfalls due to a chronic shortage of revenue immediately following the transition to a market economy. In 1998, Japan began providing assistance to Mongolia to enhance its tax administration, which provides a major part of the country's revenue. The following is an outline of development studies on tax administration in Mongolia in four phases, which were implemented prior to the technical cooperation project "The Enhancement of Tax Administration Project in Mongolia" targeted by this ex-post evaluation.

●Phase 1: The Study on the Support for the Economic Transition and Development in Mongolia (September 1998–March 2000)

Phase 1 was implemented to assist the MTA to formulate a concrete economic reform program and to cultivate human resources capable of making economic policy for Mongolia. Various recommendations were made to improve areas such as the taxation system, organizational aspects of tax collection and human resources development systems. Based upon the recommendations of Phase 1, the MTA completely restructured the tax collection framework and officially introduced a system of statutory bill of receipt.

●Phase 2: The Study on Economic Transition and Development Support in Mongolia (Tax Collection Enhancement 2) (June 2000–July 2001)

Based on the results of the comprehensive study of Phase 1, recommendations for improvements in the taxation system, tax auditing methods and tax payment environment were provided in Phase 2. These recommendations placed emphasis on the following points: (1) appropriateness and fairness, (2) inexpensive tax collection costs, (3) urgency of the issue and ease of implementation, and (4) expansion of the tax base instead of upgrading it. In this phase, recommendations on the introduction of real estate acquisition law and special stamp tax law and amendment of major tax laws, such as individual income tax, corporate tax and value added tax, were made. The creation and amendment of these laws were enacted in the Diet in 2001.

●Phase 3: The Study on Economic Transition and Development Support in Mongolia (Tax Collection Enhancement 2: Support to Taxpayer Information System Establishment) (November 2000–February 2003)

The MTA had enhanced its capacity for tax auditing compared with at the time of commencement of Phase 1. In the process of conducting the studies in Phase 2, it became apparent that the development of a Taxpayer Information System was essential to enhance

the tax collection rate. Phase 3 was thus implemented to establish a Third Party Information (TPI) system to enhance tax auditing effectiveness by sharing information among MTA tax auditors. In enhancing the efficiency of tax auditing, the TPI system was effective in significantly increasing the amount of tax collected such as additional taxes, interest and penalties.

●Phase 4: Study for Establishment of Tax Education System (November 2003–June 2005)

Through the assistance that was provided up to Phase 3, the foundation for institutional arrangements and an information management system had been put in place. However, the lack of specialized tax knowledge and tax accounting capabilities on the part of MTA staff had resulted in substantial lost opportunities for tax collection. Taking this into consideration, Phase 4 focused on establishing a structured tax education system that would enable the MTA to adjust its methods for taxation and tax collection according to changing economic conditions in the future.

[Achievements and impacts of 10 years of cooperation activities]

Through the series of Japan’s cooperation activities on tax administration, the functioning of tax administration has been greatly enhanced. Along with recent remarkable economic growth, tax revenue has also significantly increased. Moreover, the fiscal revenue and expenditure passed into the black in 2005 and showed a bigger surplus in 2006. It is concluded that Japan’s cooperation activities on the tax administration system reform and the functioning of tax collection have contributed to the strengthening of the fiscal base through stabilizing tax revenue, a common overall goal from the commencement of the activities.

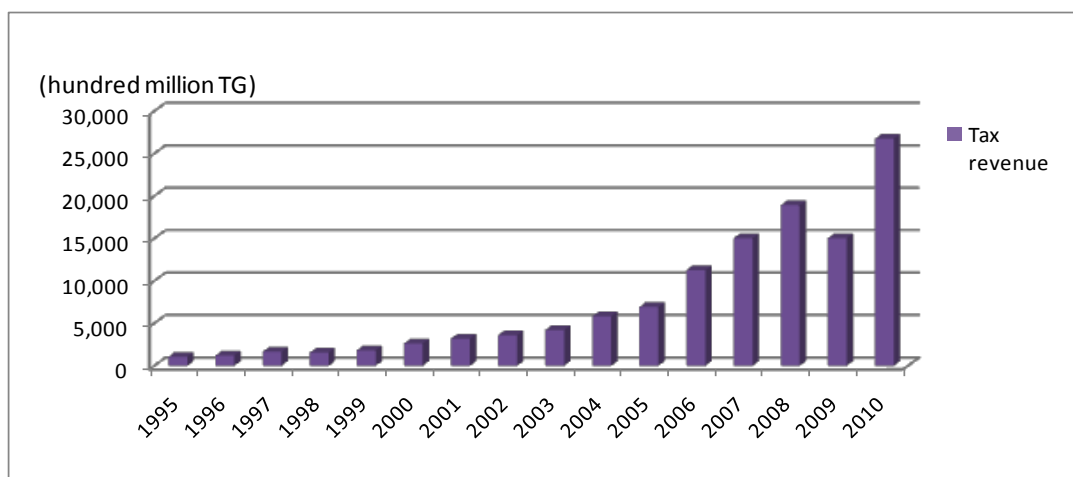


Figure 1 Trend in tax revenue

Source: The National Statistical Office of Mongolia

[Inputs (lessons) gained from 10 years of cooperation activities]

➤ **Importance of programmed approach to cooperation aiming at institutionalization**

It takes time to enhance capabilities in tax collection and administration in any country, not only in Mongolia. The series of cooperation activities on tax administration in Mongolia established a process of institutionalizing the tax administration system through Japan's long-term assistance. It shows that it is not easy to institutionalize a system within a single project and that it takes a considerable time to complete it. In order to establish a strong/stable institution, it is important that implementation is flexible and strategic and takes a long- and medium-term approach from the stage of project formulation.

➤ **Conditions for the firm establishment of an institution**

In long- and medium-term cooperation aiming at legal reform and the establishment of an institution like the present case in Mongolia, strong ownership by the counterpart country of the project or program is important. Mongolia was supported by the IMF and the World Bank in promoting a market economy. Under these support programs, tax administration enhancement was attached higher importance. By showing an overall picture of tax-related issues in Mongolia where the tax administration and collection system were insufficiently developed, Japan's assistance raised awareness on the Mongolian side in regards to various tax-related issues. Japan's assistance began with relatively urgent priorities in order to improve tax-related issues step by step. Such an approach enabled the parties concerned in Mongolia to become aware of improvements and enhance their ownership in the cooperation. These visible improvements seem to create incentives at the field level and confidence in the counterpart personnel.

➤ **Importance of selection and concentration**

The series of cooperation activities can be divided into three stages: (1) institutional arrangements, (2) strengthening of individual issues, and (3) summarization of all of the issues. In Phases 1 and 2, Japan's assistance focused on institutional arrangements to create a base to strengthen the functioning of tax collection. In the next two phases, namely Phases 3 and 4, Japan's assistance aimed at strengthening individual issues, taking into consideration the level of urgency and importance of the issues. Phase 3 focused on the establishment of an information management system and Phase 4 focused on the establishment of a tax education system. Phase 5 covered all issues treated in the previous phases in order to improve them to a higher standard. Phase 5 proved very successful in each issue. As a result of effective selection and concentration, an institutional structure

for tax administration has been well established.

➤ **Fundamental basis of technical cooperation – human resource development**

When MTA staff members recalled Japan's assistance, they noted that, "We conveyed to the Japanese experts what we wanted to do, while telling them directly that some of their recommendations seemed difficult to accept in Mongolia. We sometimes had heated discussions with them. But, we could proceed in the direction we intended." Like the establishment of an institution, it takes time to develop people's skills. In undertaking project activities jointly, the Japanese experts respected the autonomy of their Mongolian counterpart personnel without imposing a Japanese tax administration system. Their approach seems to adhere to a fundamental standpoint of human resources development through JICA's cooperation and the project sustainability.

Ex-Post Evaluation of Japanese ODA Grant Aid Project
“The Project for Improvement of Waste Management in Ulaanbaatar City”

External Evaluator: Nobuko Fujita,

Foundation for Advanced Studies on International Development (FASID)

0. Summary

This project was implemented to improve waste management including the collection, transportation, and disposal of waste in the midst of a growing need for better waste management in line with the rapidly increasing population of Ulaanbaatar, therefore its relevance was high. The construction of a new disposal site and procurement of compactors and dump trucks for waste collection helped introduce sanitary landfill management and efficient garbage collection, and thereby increased the capacity of waste disposal. Furthermore, the sanitary landfill method employed has helped improve the environment near the disposal site as well as provide a safer working environment for waste pickers. A considerable impact of the project is that the sanitary landfill method employed at the new disposal site has begun to spread to cities in other prefectures, making it the national standard for waste disposal. Despite the harsh Mongolian winters that limited the time available for construction, the project was completed in time and under budget. There is no major problem regarding the systemic, technological, and financial sustainability of the project’s operation and maintenance. In light of the above, the project is evaluated to be highly satisfactory.

1. Project Description



Project Location



Narangiin Eger Disposal Site

1.1 Background

In 2006, Mongolia had a population of approximately 2.59 million and a GDP per capita of US\$998. Its largest city and capital, Ulaanbaatar, had a population of 970,000¹. A rapidly growing population and a changing life style which have led to an increase in garbage production have raised serious challenges regarding waste management. Trucks for garbage collection/transportation were decrepit and insufficient in numbers. Furthermore, at final disposal sites, waste was simply dumped and not

¹ Mongolian Statistical Yearbook 2009. In 2011, population in Mongolia was 2.81million, and per capita GDP grew to US \$2,562(<http://www.mofa.go.jp/mofaj/area/mongolia/data.html>).

covered by dirt. Especially at the largest disposal site, Ulaan Chuluut Disposal Site, trash which had scattered to the neighbouring area, had severely damaged the environment, while frequent fires broke out from incinerated coal ash. This posed a threat to the residents in neighbouring district as well as the waste pickers at the disposal site.

In this project, a new waste disposal facility, the Narangiin Enger Disposal Site (NEDS) was to be built to replace the Ulaan Chuluut Disposal Site, which was approaching its capacity. In addition, heavy machineries would be provided to make sanitary landfill possible, and vehicles for waste collection would be provided to improve waste collection, and thereby improve waste management in Ulaanbaatar city.

1.2 Project Outline

The objective of this project is: to properly collect, transport, and dispose waste in Ulaanbaatar city by constructing the Narangiin Enger Disposal Site (NEDS); to procure tools and equipment for landfill, waste collection, and the Central Workshop; and to deliver technical assistance.

Grant Limit / Actual Grant Amount	1,014 million yen / 990 million yen
Exchange of Notes Date	June, 2007
Implementing Agency	City Maintenance and Public Utilities Agency under the Mayor of Ulaanbaatar City(CMPUA)
Project Completion Date	December, 2008
Main Contractor(s)	Dai Nippon Construction
Main Consultant(s)	Kokusai Kogyo, Co. Ltd.
Basic Design	“Basic Design Study on the Project for Improvement of Waste Management in Ulaanbaatar City in Mongolia” JICA/Kokusai Kogyo, Co. Ltd., May, 2007
Detailed Design	July-September, 2007
Related Projects	“The Study on Solid Waste Management Plan for Ulaanbaatar City in Mongolia”(2004-2007) “Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City”(2009-2012) Senior Overseas Volunteer (Waste management, Maintenance of collection trucks. 2005-2007, 2010-2012) Japan Overseas Cooperation Volunteer (Environmental education, 2006-2012)

	Recycle Grant Assistance for Grassroots Human Security (Kawasaki city 2006, Sapporo city 2007) Donation of used collection trucks (Kashiwa city, 2006)
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2. Outline of the Evaluation Study

2.1 External Evaluator

Nobuko Fujita, The Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

Duration of Study: November 2011–January 2013

Duration of Field Study: March 26th, 2012 –April 7th, 2012 and June 11th – June 16th, 2012

2.3 Constraints during the Evaluation Study (if any)

None.

3. Results of the Evaluation (Overall Rating: A²)

3.1 Relevance (Rating: ③²)

3.1.1 Relevance with the Development Plan of Mongolia

In the development plan of Ulaanbaatar city, “Ulaanbaatar City Development Strategy” (2001~2020), the reduction of environmental pollution, and the building of a system for solid waste management are listed as goals. The current national development strategy, “Millennium Development Goals Based Comprehensive National Development Strategy of Mongolia” (2008-2012) stresses the improvement of waste management in Chapter 6 “Environmental Policy.” In “The Study on Solid Waste Management Plan for Ulaanbaatar City in Mongolia” (2007, hereafter M/P)³, the construction of a new disposal site and improving waste collection are identified as priority projects.

3.1.2 Relevance with the Development Needs of Mongolia

Ulaanbaatar’s rapid population growth was becoming a challenge in regards to waste management. Especially in the Gel area, Zodo (damage to crops and livestock caused by extreme cold weather) generated a population influx which expanded its residential area and increased the area that needed waste collection. To date, the influx of rural population to the capital continues and garbage

² ③: High, ②: Fair, ①: Low

³ Japan International Cooperation Agency conducted “The Study on Solid Waste Management Plan for Ulaanbaatar City in Mongolia” from November 2004 to February 2007, and formulated a M/P drawing a road map to improve waste management in Ulaanbaatar by 2020.

output per capita has also been increasing, resulting in a large growth of waste generation⁴. Furthermore, the Ulaan Chuluut Disposal Site, an open dump⁵ established without any environmental considerations to its neighbouring area, was about to shut down at the end of 2008 and a replacement was urgently needed.

3.1.3 Relevance with Japan's ODA Policy

Japan's Country Assistance Program for Mongolia (2004-2009) lists environmental preservations as one of the four important areas for cooperation and in particular stresses the improvement of urban environments.

This project has been highly relevant with the country's development plan, development needs, as well as Japan's ODA policy, therefore its relevance is high.

3.2 Effectiveness⁶ (Rating: ③)

3.2.1 Quantitative Effects (Operation and Effect Indicators)

For this project, two quantitative indicators were set and accomplished: waste collection rate and ratio of sanitary landfills. Furthermore, the capacity to dispose waste was enhanced.

(1) Waste Collection Rate

This project aimed at an increase in the waste collection rate in Ger area by procurement of 43 compactor/dump trucks and another 43 dump trucks to be purchased by Ulaanbaatar city. The city purchased 70 Chinese dump trucks and 13 compactors in 2009, exceeding their procurement plan. In consequence, as shown in table 1, collection rate in Ger area increased from 42% (2007) to 83% (2011), exceeding its target of 80% (2010).

⁴ The population of Ulaanbaatar has increased from 0.97million in 2007 to 1.16million in 2011. (Ulaanbaatar City Statistics Department)

⁵ Open dump is a way to simply dump and stack the garbage. Garbage decomposes little by little but non-degradable plastics often make the environment surrounding the dump area deteriorated. Natural fire by fermenting and heat of combination could easily occur as well in open dump. In a sanitary landfill, on the other hand, garbage is pressed with heavy machinery and covered with dirt within a day of dumping, thereby preventing bugs and flies. Also, pipes to allow gas to escape from underground are placed to prevent explosion, and exudation from garbage to underground water is prevented by seepage control work.

⁶ Sub-rating for Effectiveness is to be put with consideration of Impact.

Table 1 Waste Collection Rate and Sanitary Disposal Rate

Indicators	Baseline (2007)	Target (2010)	Actual (2011)
Waste collection rate per population	100%	100%	100%
Apartment area	42%	80%	83%
Ger area			
Sanitary disposal rate of the garbage generated in Ulaanbaatar city	0%	More than 90%	About 95%

Source : Basic Design Study for 2007 and 2010. CMPUA for Collection Rate in 2011 (calculated from garbage generation per capita and amount brought in to the disposal sites). Sanitary disposal rate is calculated from Table 3.

Table 2 : Collection Rate for Garbage Collection Fee

	Baseline	Actual
Apartment area	86% (2007)	100% (2012)
Ger area	12% (2004)	80% (2012)

Source : M/P for baseline and CMPUA for actual

According to the Ulaanbaatar City Environmental Pollution and Waste Management Department (EPWMD), upon completion of this project in 2009, the waste collection rate in the Ger area had surpassed 90%. Later in July of 2011, the method of fee collection was changed from a door to door collection method to a system which tacked the waste collection fee on to the electricity fee. That helped increase the collection rate substantially (Table 2). It also meant that there was an increase in the number of households qualifying for garbage collection, resulting in an overall decrease in the frequency of collection⁷. Nowadays collection service is once every two months on average in Ger area where it used to be once a month in 2006 (a collection frequency target was not set at the time of the Basic Design of this project, however it was planned for twice a month in 2010 in M/P)⁸.

Furthermore, the population of the Ger area has increased much more than the M/P estimation (Figure 1) and increased waste contributed to the cut in collection frequency. Heavy traffic on main

⁷ Rate of fee collection in Ger area was 12% in 2004 (Table 2), and assumedly it was about 40% in 2007 (Table 1). With door to door collection, only households who paid the fee were eligible for collection service, but currently 80% (Table 2) are eligible for the service. Calculated from the number of household in Ger area, eligible households increased from 62,000 in 2004 to 246,000 in 2007 and 575,000 in 2011. Furthermore, since it is unclear whether or not a particular household paid its electricity fee, virtually all households connected to electricity lines are entitled to service. Also, there was confusion right after changing the fee system, such as garbage collectors doubly charging fee for household, or collecting commercial waste first if paid extra cash. (Ger area survey. Ger area survey was conducted from April 1st to 6th, 2012 with face-to-face interviews using a questionnaire targeting 50 households living in seven districts prior to 2007)

⁸ Ger area survey. When collection service is not available, garbage is stored on the premises of residents, or brought to disposal sites by private vehicles. However, some garbage stacks can be seen on roadsides in the Ger area. The study shows the dissatisfaction of residents toward the frequency of collection service (96% of the respondents) followed by the irregularity of service (54% of the answers to open-ended question).

streets also capped the number of trips that could be made.

Ulaanbaatar city is implementing a plan to double the number of collection trucks in 2012. As of June 2012, 28 trucks had been procured by the budget of Ministry of Nature, Environment and Tourism and 162 trucks were in the process of being procured by each district with funds budgeted by Ulaanbaatar city (see 3.5.3(3)). Furthermore, in order to avoid traffic, construction of another disposal site on the east side of the city is underway (figure 2)⁹ which should lead to an increase in the rate and frequency of waste collection in the Ger area by the end of 2012.

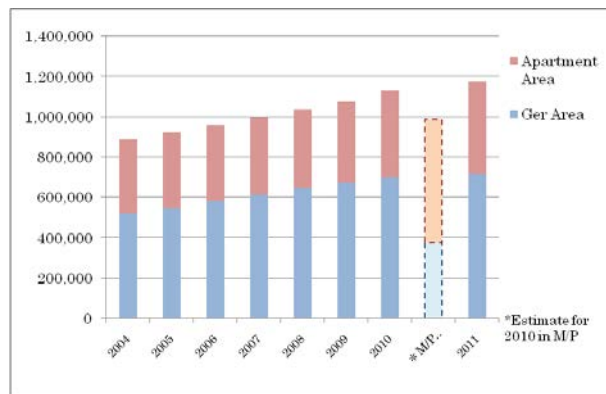


Figure 1 Population of Apartment and Ger Area in Seven Districts in Ulaanbaatar City¹⁰

Source : M/P for 2010 estimate, Ulaanbaatar City Statistics Department for others

⁹ Tsugan Davaa Disposal Site in Bayanzurkh district. 30% of the waste (from two eastern districts) currently brought into NEDS will be handled. As of June 2012, environmental impact study, feasibility study are already completed and detailed design study is being conducted. It is planned to commence operation by the end of 2012 (CMPUA hearing).

¹⁰ Ulaanbaatar consists of nine districts (six central districts, the Nalaikh district adjacent to the central districts, and two remote districts). This project targeted the six central districts and the Nalaikh district.

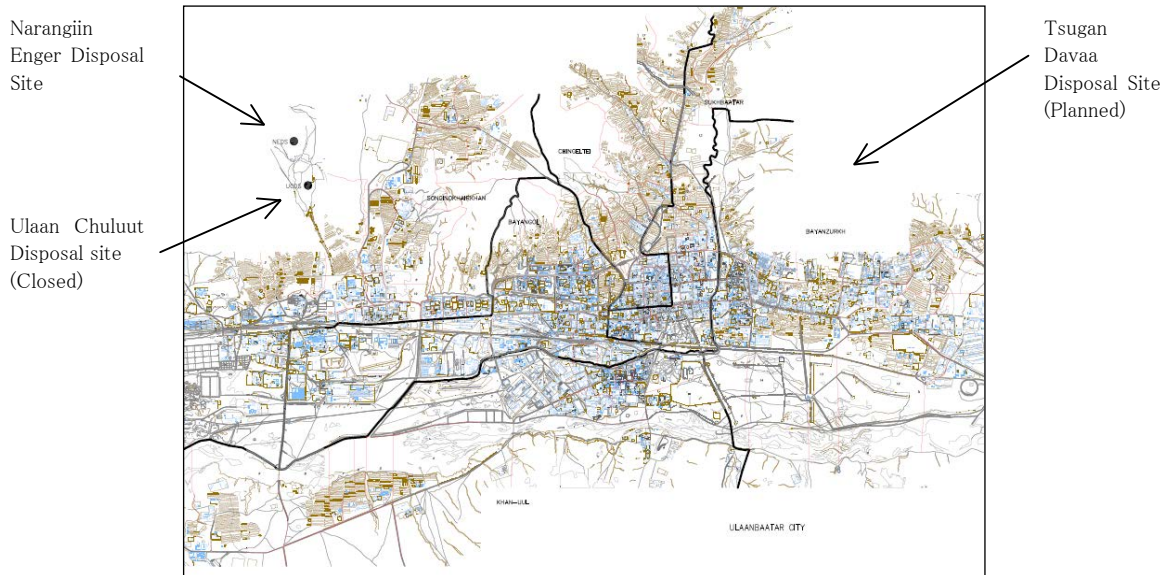


Figure 2 Central Ulaanbaatar City and Disposal Sites

(2) Sanitary Landfill Rate

In regards to sanitary landfill rate, all the waste brought into NEDS are compressed and covered by dirt within a day. NEDS staff using heavy machineries provided by the project also conducted improvement work in May 2011 on the Morin Davaa Disposal Site (a smaller landfill in the southwest of the city which used to be run on open-dumping), and this site is now capable of semi-sanitary landfill¹¹. The project has achieved one of its primary goals in that within Ulaanbaatar, today, only a few small landfills are still running on open-dumping, and over 90% of waste qualifies for sanitary landfill.

¹¹ The difference between a sanitary landfill and semi-sanitary landfill is the presence of facilities for garbage flying prevention, gas removal, and fire prevention.

Table 3 Amount of Waste Treated at Disposal Sites in Ulaanbaatar City

Disposal method	Disposal site	2006 (t/day)		2011 (t/day)		Note	%
		summer	winter	summer	winter		
	Ulaan Chuluut	summer	340	—		Closed in 2009.	
		winter	85				
Sanitary landfill	Narangiin Enger (NEDS)	—		summer	1011.8	Constructed by this project and started operation in 2009. All waste is processed by sanitary landfill.	94.6~
		—		winter	961.4		
	Morin Davaa	summer	19	summer	97.1	Open dump since 1958 and improvement work conducted in May, 2011. Now semi-sanitary landfill.	94.7
		winter	6	winter	64.4		
Open dump	Nalaikh	summer	11	54.0~58.0		Started operation in 2010. Open dump using a hole used as a coal mine.	5.3~
		winter	6				
	Khoroo 21	summer	4	summer	3.8	Unattended dump in Khoroo 21, Songinokhairkhan district	5.4
		winter	6	winter	5.7		

Source : M/P for 2006. CMPUA and Nalaikh District Office for 2011. Amount for Khoroo 21 is estimated based on population (5,500 in the end of 2011)

(3) Waste Processing Abilities

In the summer and winter of 2011, the amount of waste being processed at NEDS was 1011.8t/day and 961.4t/day respectively, exceeding the estimated value of 704.7t/day (2010) by 30~40%. As the amount disposed after the project is 2~3 times greater than the amount disposed at the Ulaan Chuluut Disposal Site prior to the project (Table 3), it can be said that the garbage processing ability of Ulaanbaatar city has been enhanced greatly.



Entrance to NEDS



Heavy machineries provided by the project working at NEDS



Warm garage at Central Workshop

3.2.2 Qualitative Effects

(1) Enhancement of Waste Collection System

After the implementation of this project, the waste collection system was strengthened. Before the project, waste collection and transportation was conducted by each district's urban maintenance public corporation called TUK¹² and some Khoroo (administrative units under the district), using vehicles which belonged to Ulaanbaatar city. The number of collection trucks in 2006 was 136 (compactors and dump trucks combined), most of them were decrepit and frequently had mechanical troubles. Currently, waste is being collected with 177 trucks belonging to the CMPUA, TUK, some districts, Khoroo, and two private companies¹³.

This project has increased the number of garbage collection trucks by 43 (compactors and dump trucks combined, Figure 3). Moreover, it is apparent that these 43 Japanese trucks incur far fewer breakdowns, and CMPUA and TUK truck drivers have emphasized their reliability and safety during a hearing. The reliability of the project trucks can be deduced from the ratio of the number of trucks possessed and operating. Although project trucks make up 24% of the entire trucks possessed (177), they make up 33% of all operating trucks (43 out of 130)¹⁴.

For waste collection, 14 out of 20 used garbage collection trucks donated by the Recycle Grant Assistance for Grassroots Human Security (2006, 2007) are also operating in good condition. A Senior Overseas Volunteer (hereafter, SV) helps to maintain project trucks as well as these 14 recycled Japanese trucks.

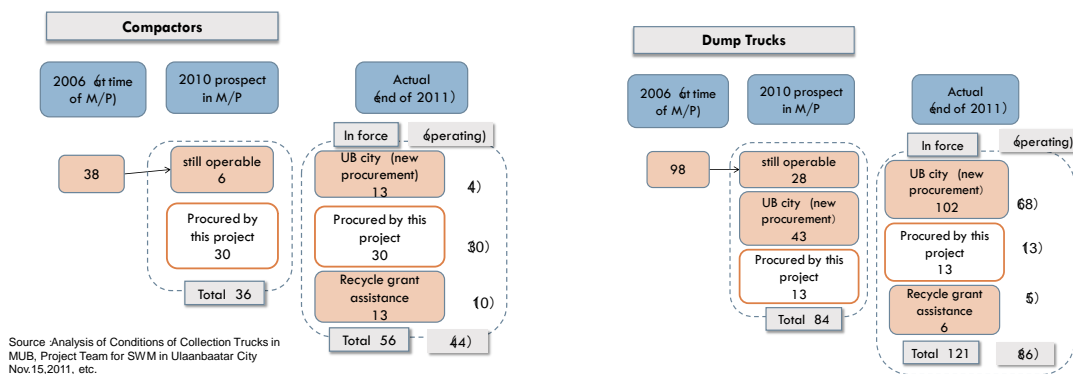


Figure 3 : Number of Collection Trucks (compactors and dump trucks)

¹² TUKs were privatized except for Nalaikh district.

¹³ On top of it, some TUKs use leased trucks from private companies as necessary.

¹⁴ As of the end of 2011, out of 85 Chinese trucks (13 compactors and 72 dump trucks) procured by Ulaanbaatar city, 30% or 28 trucks are inoperable, while all the project trucks are operating without major problems. For example, TUK in Han-Uul district, at least one of 12 Chinese trucks comes back broken every day while two project trucks have no problem (Khan-Uul TUK mechanic hearing).

(2) Environmental Improvement surrounding NEDS

The surrounding areas of NEDS have changed drastically compared to the time when the Ulaan Chuluut Disposal Site was in operation. According to a survey conducted in the area, a major change has been a decrease in the number of fires, as well as the smoke and dangers that accompany them¹⁵. This change can be attributed to sanitary landfill, and the newly installed water truck and heavy machineries that put out flames before a full fire emerges. In addition, citizens have been cleaning their neighbourhoods more often, helping with the hygienic image of the community. Closer ties to neighbouring people compared to before the project was also reported (figure 4)¹⁶.

Sanitary landfill method and fire extinguishing instructions were conducted at the project site at Ulaan Chuluut during M/P study, and knowledge was quickly transferred to the new NEDS staff. Furthermore, the soft component of this project followed the technical instruction provided during the M/P study. And as stated in the M/P, “Technical Cooperation Project for Strengthening the Capacity for Solid Waste Management in Ulaanbaatar City” (2009-2012, hereafter T/C) further enhanced the ability to manage the facility. Currently, NEDS employees manage the facility without any particular difficulties¹⁷.

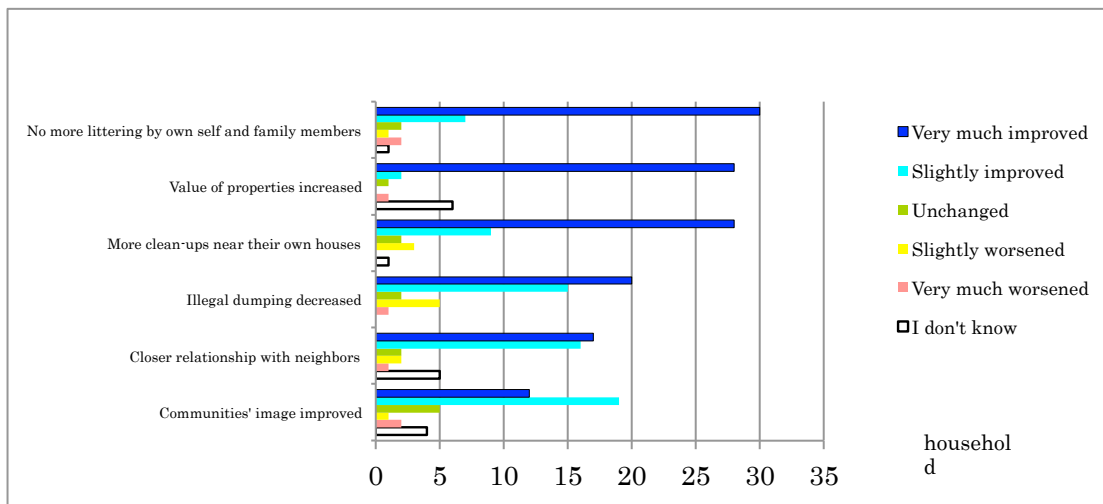


Figure 4 Change in Ger Area near Disposal Sites

¹⁵ The survey of residents in neighbourhoods near disposal sites was conducted with 43 households in the vicinity of the NEDS and Ulaan Chuluut Disposal Sites (both disposal sites are situated next to each other) from March 28th to 31st, 2012, using a face to face interview with a questionnaire.

¹⁶ The survey of residents of neighbourhoods near disposal sites

¹⁷ NEDS staff hearing

3.3 Impact

3.3.1 Intended Impacts

(1) Environmental Improvement of the Ger Area

It was assumed that illegal dumping would decrease if the collection rate in Ger area increased and that this would contribute to a better living environment. Before the collection fee system changed, illegal dumping in the Ger area decreased due to the increase in collection but also due to the installation of a Weigh bridge¹⁸ at NEDS which made it possible for truck drivers and operators to keep a record of how much trash they carry. The amount recorded is reflected in their salary, and in effect encourages the picking up of illegally dumped garbage on the way to disposal site. As mentioned in 3.2.1 (1), reasons outside of the project have caused a decrease in collection frequency, however this situation will be improved by the end of 2012.

(2) Decrease in Illegal Dumping of Waste

In addition to the reasons mentioned above, illegal dumping of waste has also seen a decline in apartment areas due to the effect of a series of cooperation in the waste management field offered by Japan that has started to spread. The city's "Clean-up Campaign" has also been a success, as the citizens have adopted an attitude of "garbage is not something to throw away, but something that must be brought to a disposal site and properly dealt with." This caused a substantial decrease in public littering at places such as bus stops¹⁹.

As for illegal dumping near disposal sites, it used to be that waste was dumped anywhere in the general vicinity of the disposal site since no clear boundary existed between the site and its vicinity. NEDS has improved this situation by limiting the number of entrances to one, and fencing off the land thereby prevented illegal dumping of waste.

3.3.2 Other Impacts

(1) Impact on the Environment

Environmental impact assessment was conducted in February 2006 and approved by the Ministry of Nature, Environment, and Tourism. Presently, monitoring is conducted by employees who work at NEDS, who test water samples and gas once every week. No irregularities have been found. In October of 2010, the EPWMD confirmed the monitoring guidelines developed by T/C. Based on the guidelines, the Ministry of Nature, Environment and Tourism, Ulaanbaatar city, the Songinokhairkhan district (where NEDS is located), the residents of the district, and an NGO have made a monitoring committee that has met twice so far to discuss environmental implications and the management of the disposal site. No major problem was pointed out.

¹⁸ The system is installed based on M/P.

¹⁹ Ger district residents' survey

As already mentioned, garbage, dust, and fires have been reduced substantially in the area surrounding NEDS.

(2) Land Acquisition and Resettlement

There was no resettlement or acquisition of land due to the project.

(3) Other Impacts

(3)-1. Safe Co-existence with Waste Pickers

At NEDS, depending on the season and weather conditions, between 100~500 people per day come to search recyclables. Because of the change of method of disposal from open dumping to sanitary landfill, the working environment for these workers has greatly improved. According to the survey targeting the waste pickers, reductions in the number of fires and the amount of flying waste are listed as significant changes before and after the project (figure 5) ²⁰.

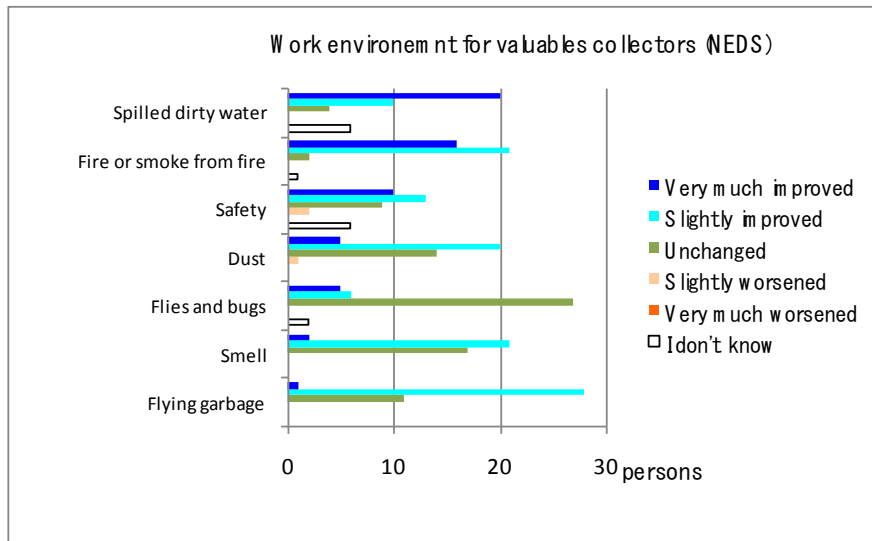


Figure 5 Change of Environment in NEDS (Result of survey on waste pickers)

To protect these workers and for efficient landfill, the work face is divided into sections such as placing, collection, landfill, back-up, and these lots are used in turn. This made collection work much safer and 78 % of respondents in the survey of waste pickers said injuries are fewer if compared to the Ulaan Chuluut Disposal Site. Since its opening, there have been no accidents involving waste pickers at NEDS. The fact that activities related to the improvement of the disposal process (such as truck control, placing waste, collection of recyclables, and land filling) were introduced as early as the M/P study period, and that their effectiveness was examined by both Mongolia and Japan side as they tried to make improvements, helped smooth the operation of

²⁰ Survey of waste pickers. This survey was conducted with forty waste pickers who have worked both at Ulaan Chuluut and NEDS by face to face interview using a questionnaire from 28th to 31st of March, 2012.

NEDS.

(3)-2. Dissemination of Sanitary Landfill

When the Ulaan Chuluut disposal site was closed down in 2009, NEDS was able to use its machinery to conduct sanitary landfill (this work was conducted by the Mongolian side). The new disposal site that will be built on the east side of the city will also employ the sanitary landfill method. Introduction of sanitary landfill is being considered at Nalaikh open dump as well ²¹.

The practice of sanitary landfill has been spreading to other prefectures outside of Ulaanbaatar as well. After a seminar organised by T/C for persons in charge of waste management from different prefectures to learn how NEDS is operated, Bulgan and Gobi sunbel prefectures have begun planning the renovations of their disposal sites. NEDS has helped spread knowledge of the sanitary landfill method all over the country. The shift from open dumping to sanitary landfill as a standard of final disposal method for Mongolia is a great impact of this project. The funds provided by the Ministry of Nature, Environment, and Tourism to help these undertakings is also a big push in this direction.

This project has largely achieved its objectives, therefore its effectiveness is high.

3.4 Efficiency (Rating: ③)

3.4.1 Project Outputs

The project's output was produced as planned. Under CMPUA's management, machinery from NEDS can be transferred and is used when needed where needed with no problems posed. Among the undertakings of the Mongolian side, planting trees on NEDS's greenbelt was not completed because nursery trees could not survive due to strong winds, dry weather, and rocky soil. CMPUA is planning to plant trees when NEDS is closed down in 2020²². The distance from the highway to the entrance of the disposal site is 2.9km, 1km of which used to be a gravel road. Ulaanbaatar city converted the road into asphalt in September of 2010, 2 years after the project, allowing for easier transportation of collection trucks, and reducing dust and flying garbage from rocking trucks. Main output is listed in table 4.

²¹ Nalaikh district office hearing

²² CMPUA hearing

Table 4 Summary of Output

	Items	Planned	Actual
< Japan side >			
Facility	Construction of disposal site	Narangiin Enger Disposal Site	As planned
Equipment	Waste collection equipment (number)	Compactors (30) Dump trucks (13) Wheel loader (1)	As planned (Wheel loader is used at Central Workshop)
	Landfill equipment (number)	Bulldozer (3) , Excavator (1) , Dump truck (2) , Water truck (1) , Wheel loader (1) , Environmental monitoring equipment (gas detector) (2)	As planned (Wheel loader is used at Central Workshop)
	Equipment for Central Workshop	Maintenance equipment	As planned
Soft Component	Management and operation of disposal site		• Sanitary landfill (8 participants), Environmental monitoring (6 participants) • organizing waste pickers. Holding 11 meetings for safe collection with 10 group leaders, OJT for sanitary landfill.
		maintenance of equipment	• 18 participants
	Dispatching plan		• 2 participants
			Total 3.49MM
< Mongolia side >			
Items	Telephone and electricity line installation		Electricity line is installed. Cell phone is used instead without any particular inconvenience.
	Access road		Constructed.
	Construction of Central Workshop		Constructed.
	Greenbelt for NEDS		Planting was tried but did not survive.

3.4.2 Project Inputs

3.4.2.1 Project Cost

The project cost was lower than planned as shown in table 5.

Table 5 Project Cost

	Planned	Actual
Japan side	1,014 million yen	990 million yen (97.6%)
Mongolia side	512.3 million MNT (51.2million yen ²³)	350million MNT (68.3%) (27.6 million yen ²⁴)

3.4.2.2 Project Period

Project period was as planned. Although temperatures in Mongolia can fall to 30 degrees Celsius below zero and limit the months in a year that can be used for construction, the project was completed in 19 months as planned, from June 2007 to December 2008.

Both project cost and project period were mostly as planned, therefore efficiency of the project is high.

3.5 Sustainability (Rating: ③)

3.5.1 Structural Aspects of Operation and Maintenance

EPWMD, newly established by the Ulaanbaatar's Mayor Office in January 2009, is in charge of policy planning and coordination related to organizations in the field of waste management, and CMPUA, a subsidiary of the Mayor's office, manages waste disposal sites and part of waste collection.

Collection and transportation of waste is handled by TUK, and other private institutions in addition to CMPUA. Its break down is shown in the table below. Since there are many parties involved in waste management, EPWMD was established as a coordinating agency. However, since this department is new with a total of 7 officials (a director and one official for each of the 6 central districts), the T/C project is currently working on its human resource development.

²³ It is calculated at 9.83MNT/1yen (based on Basic Design Study Report) .

²⁴ It is calculated at 12.67MTG/yen at median rate of 2008.

Table 6 Waste Collection in 7 Districts of Ulaanbaatar city

	percentage (based on population)		
	Apartment area	Ger area	total
CMPUA	9.9	17.4	14.6
TUKs	70.8	60.5	64.3
Khoroo, private institutions, etc.	19.3	22.1	21.1
total	100.0	100.0	100.0

Source : Population and Waste & Fee Collection Organizations by Khoroo (2012/3/29)

CMPUA has 280 employees as of March 2012, with 37 at NEDS²⁵, 86 at the Central Workshop²⁶, 68 working for public cleaning, 20 in management, and 69 working in other positions. Because of a planned new disposal site, it is anticipated that the number of workers for disposal sites will double to 74. At the Central Workshop, with the addition of 11 new garbage trucks in May 2012, it is estimated that workers will total 122. NEDS, which is under CMPUA management, along with the Central Workshop have enough workers for operation and maintenance.

3.5.2 Technical Aspects of Operation and Maintenance

With regards to the technical aspect of the final disposals, there were some problems with installation of gas pipes at the time of starting operations. However, with the timely start of T/C in September 2009, technical advice was provided, and now NEDS is operated without any problems. Appropriate steps are also followed in terms of sanitary landfill to protect waste pickers.

In Mongolia, vehicle maintenance is generally conducted by its drivers. As for soft component²⁷ for vehicle repair, operation and maintenance technique is reinforced by timely technical advice by SV stationed at the Central Workshop, and maintenance seminars run by T/C team (covering hands-on training on fieldstrip of cylinder, way to reinforce hinge, fixing oil leak from hydraulic cylinder, etc.), therefore there is no particular problem. In October 2010, SV in maintenance of collection trucks was timely and properly introduced and has been stationed at the Central Workshop since March 2011. SV is offering support for checkups and repair for trucks which spent four harsh winters in Ulaanbaatar and started showing some minor problems.

At the Central Workshop, periodical check-ups on the procured vehicles are conducted twice a year. T/C team gives technical advice on check-up items and the timing to change parts.

²⁵ Break down of these 37 employees are 2 managers, 2 experts(1 each for landfill and hazardous waste), 1 mechanic, 4 registrars in charge of Weigh bridge, 3 truck control, 8 heavy machinery operators, 3 boiler men, 3 cleaners (all for NEDS), 6 staff for Morin Davaa, and 2 staff for Ulaan Chuluut.

²⁶ Break down of the 86 employees of the Central Workshop are 1 director, 3 mechanics, and the rest are truck drivers, operators, boiler men, and cleaners.

²⁷ Out of the 18 participants including mechanics and drivers, who undertook Soft Component training in operation and maintenance of equipment, 15 still remain showing a high retention rate.

3.5.3 Financial Aspects of Operation and Maintenance

(1) Composition of Fund for Waste Management

The financial resources for waste management come from the city budget, which is used for NEDS's operation, and collection fees, which is used for collection by CMPUA, TUKs, and other waste collectors. The current amount collected far exceeds the planned amount due to subsidies from the districts (See table 7). Necessary funding is provided and no financial problems have been observed.

Table 7 Source of Waste Management (comparison with the plan, million MNT)

		2004 Actual	2010 Planned	2011 Actual	2012 Expected
city	Collection fee	1,506	4,225	4,300	5,000
	General budget	28	591	680	1,050
	Others	18	0	0	0
	Sub-total	1,553	4,816	4,980	6,050
District	District budget	0	0	2,700	5,560
total		1,553	4,816	7,680	11,610

Note: Rounding error may be found in "2004 actual." Source : M/P for 2004, B/D for 2010, EPWMD for 2011-12

(2) Fund for Final Disposal

CMPUA's waste disposal budget is based on the amount of waste processed and is provided by the general budget of the city. The budget for the final disposal is noted in the graph below, and as can be seen, the budget is proportional to the amount of waste processed.

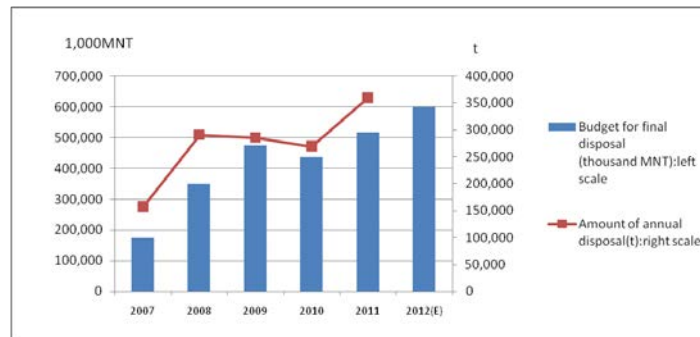


Figure 6 CMPUA's Budget and Annual Amount of Final Disposal

Source : CMPUA

(3) Fund for Collection and Transportation

Waste collection, including the cost for fuel and operation and maintenance is financed by

collection fees. In Apartment areas, collection fees are paid together with maintenance fees, through the housing service company to the district. In Ger area, it is collected on top of electricity fees through an electricity distribution company and paid in to the district development account after deducting a 25% commission. Then, it is distributed to each waste collector (Figure 7).²⁸ The collection fee is 2,500MNT/HH/month²⁹, and the annual amount collected is estimated to be about 4,300 million MNT (2011) , which is about equal to the planned amount, 4,225 million MNT (2010).

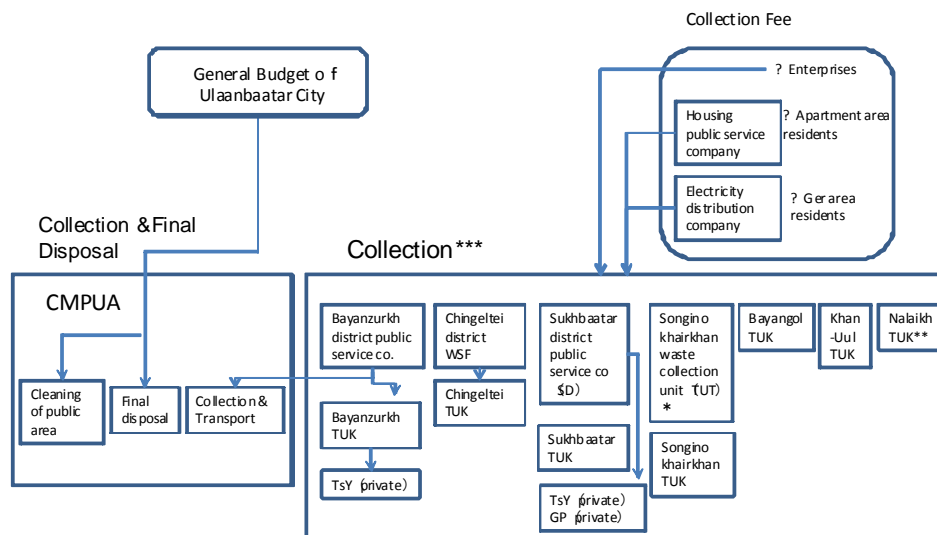
Of the 43 procured trucks, 31 collection trucks are rented to TUK (a private entity), but ownership remains with the Mayor's office (table 8). CMPUA collects 200,000 MNT/month/truck from TUKs, for check up and maintenance. Some TUKs are behind in this payment; however Ulaanbaatar city and the TUKs signed a new contract in January 2012 to improve this situation.

Funds to purchase parts for vehicles and do necessary repairs by CMPUA and TUKs comes from waste collection fees and is currently secured. Increases in personnel, fuel, and operation/maintenance costs are expected with the increase in the number of vehicles. As to the cost uncovered by collection fees, the City Council is going to assess the cost increase, and the city will authorize a budget to cover necessary costs³⁰. As already mentioned, in 2012, 28 new collection trucks are being procured by the Ministry of Nature, Environment and Tourism, and an additional 162 trucks are in the process of procurement by city budget (about 14,850 million MNT).

²⁸ Collection fees go into a Waste Service Fund in Chingeltei district. The Waste Service Fund, which was established in each district in 2007 was dissolved in November 2011, except in the Chingeltei district.

²⁹ In the Nalaikh district, the collection fee is 1200MNT in apartment area, and 1500MNT in Ger area.

³⁰ CMPUA hearing



* In Songinokhairkhan district, Khoro 021, which cover, collection of fee and waste together is excluded.
 ** Only Nalaikh TUK is not privatized and belong to the district
 ***Each TUK is in charge of public area cleaning just like CMPUA, and its cost is financed by each district.

Figure 7 Flow of Fund for Waste Management

Table 8 Main Users of Equipment Procured by the Project

	CMPUA		TUK							Total
	NEDS	Central Workshop	Chingeltei district	Khan-Uul district	Bayanzurkh district	Bayangol district	Sukhbaatar district	Songino khairkhan district	Nalaikh district	
Compactor	-	-	5	2	5	7	5	4	2	30
Dump Truck	3	11	-	-	-	1	-	-	-	15
Water Truck	1	-	-	-	-	-	-	-	-	1
PC200 (Excavator)	1	-	-	-	-	-	-	-	-	1
D65 (Bulldozer)	3	-	-	-	-	-	-	-	-	3
CASE (Wheel loader)	-	2	-	-	-	-	-	-	-	2
Total	8	13	5	2	5	8	5	4	2	52

Source: NEDS, Central Workshop, TUKs

3.5.4 Current Status of Operation and Maintenance

(1) Final Disposal Site

NEDS is working with no particular problems. The scattering of garbage has been reduced by installing fences and with regular cleaning and, because the water content of the waste is low, no run off has been observed.

(2) Collection Trucks and Machinery

Garbage collection trucks run 6 days a week, and heavy machinery is used regularly for sanitary landfill. Including the trucks rented to TUKs, there have been no major problems with vehicles. Minor breakdowns are fixed either by the drivers or the central workshop.

As for procurement of spare parts, compared to Russian and Chinese manufacturers, Japanese parts are more expensive and take longer to obtain, but there have not been much difficulty in acquiring the parts so far. This is due to finely-textured assistance from Japan, which included conducting a joint market survey (Japan and Mongol sides) from the time of the M/P study up to the T/C. For heavy machinery, a contract is signed between the CMPUA and the local agent of the manufacturer, so that maintenance can be done by a specialist.

It is expected that collection trucks will be kept in good condition by semiannual check-ups, and prompt repair. Most drivers are in charge of a particular vehicle and look after their assigned vehicles as if they were their own: washing and checking their assigned vehicle for any problems on a daily basis. Maintenance supplies are stored and used at the central workshop without any problems.

No major problems have been observed in the operation and maintenance system, therefore sustainability of the project effect is high.



Changing tires outside the Central Workshop. Trucks can leave only after passing a harsh braking test.



A compact cluster of houses (Chingeltei district)

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was implemented to improve waste management including the collection, transportation, and disposal of waste in the midst of a growing need for better waste management in line with the rapidly increasing population of Ulaanbaatar, therefore its relevance was high. The construction of a new disposal site and procurement of compactors and dump trucks for waste collection helped introduce sanitary landfill management and efficient garbage collection, and thereby increased the capacity of waste disposal. Furthermore, the sanitary landfill method employed has helped improve the environment near the disposal site as well as provide a safer working environment for waste pickers. A considerable impact of the project is that the sanitary landfill method employed at the new disposal site has begun to spread to cities in other prefectures, making it the national standard for waste disposal. Despite the harsh Mongolian winters that limited the time available for construction,

the project was completed in time and under budget. There is no major problem regarding the systemic, technological, and financial sustainability of the project's operation and maintenance. In light of the above, the project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

In order to continue semiannual vehicle inspections, CMPUA needs to work with TUKs in full cooperation. In the Ger district, while the frequency of collection is expected to increase, fixing the date/time should also be considered since there were strong requests (according to the Ger area residents' survey) for the scheduling of waste collection times. Furthermore, although waste management capacity has surely been enhanced, from now on, measures to reduce waste generation should be enhanced.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

This project was conducted as a priority project based on M/P which contained a road map for waste management policies up to 2020 with concrete halfway goals and strategies in the field of waste management in Ulaanbaatar city which did not have clear strategies before. The city also made a great effort to realize M/P by prompt procurement of additional collection trucks and worked sincerely to improve waste management, which led to a great achievement.

This project was also conducted as a part of a series of cooperation for improvement of waste management which started with the M/P study in 2004 and included the dispatching of JOCV (in the field of environmental education) and SV (in the field of urban sanitation, and maintenance of collection trucks), and an ongoing technical cooperation project. The effectiveness of this project can be attributed to the timely implementation of T/C and the dispatching of SV. T/C was implemented immediately after this project and helped in the maintenance of the procured vehicles, management of final disposal site, and dissemination of sanitary landfill method. SV, who was dispatched after the TC started, contributed enormously to the operation and maintenance of the procured vehicles. It can be said that this is a good example that the formulating of an M/P in an area with clear development needs, and providing a series of appropriate components of comprehensive cooperation following M/P finally paid off.