

Democratic Socialist Republic of Sri Lanka

Ex-Post Evaluation of Japanese ODA Loan Project  
“Lunawa Environment Improvement and Community Development Project”

External Evaluator: Tomoko Tamura, Kaihatsu Management Consulting Inc.

0. Summary

The objective of the project was to reduce flood damage and improve the living environment of the area around Lunawa Lake, which is around 15 km south of the Colombo city, the commercial center of the country. This was to be achieved through constructing drainage, implementing a program to improve the living environment of the underserved communities and others.

Flood prevention and improvement of the living environment in urban areas were in line with Sri Lankan development policy, both at the time of planning and ex-post evaluation of the project, and the need for flood prevention in the target area was very high. Therefore, relevance of the project is high.

It was found that the number of houses flooded, the frequency, length of time and depth of inundation, were reduced remarkably when comparing the situation before and after the project. It was found that flood damage was almost eliminated. In the target area, hygiene and living environment was also improved, and the residents have better access during the rainy season. Therefore, effectiveness and impact of the project is also high.

Efficiency of the project is fair, as the project period was significantly longer than planned, although the project cost was within the plan. Sustainability of the project effect is fair because one of the municipalities, that is responsible for the target area, has several problems in operation and maintenance of the drainage system constructed by the project. It did not assign an adequate number of staff for the work, responsibility for the work is not clear, and cleaning of the drainage was not conducted periodically.

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

## 1. Project Description



Project location



Drainage constructed by the project

### 1.1 Background

The target area of the project was Lunawa Lake and its surrounding area. Lunawa Lake is around 6 km<sup>2</sup> in land extent. It is 15 km south of Colombo city, the commercial center of Sri Lanka. The target area had been developed as a residential area, as it is within commuting distance for work and schools in Colombo city. It has also been developed as an industrial area, with factories making garments, pharmaceuticals, etc. Before the project was implemented, frequent flooding in the area caused inundation of houses, factories, roads and bridges, and disrupted travelling and transport. Flooding caused a bottleneck in the daily life and economic activities of people in the area.

The project implemented activities including new construction and rehabilitation of the drainage system, and a programme to improve the living environment of the under-served communities, with the objective of reducing flood damage and improving the living conditions of people in the target area.

### 1.2 Project Outline

The objective of the project was to reduce flood damage in the area around Lunawa Lake, by means of constructing and rehabilitating the drainage system, thereby contributing to an improved hygienic and living environment for people in the area.<sup>1</sup>

Loan Approved Amount/ Disbursed Amount	6,906 million yen/6,339 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	November 2001/December 2001

<sup>1</sup> There were around 15,000 households in the target area, according to an estimate made from statistics submitted by the village administration officers at the time of the ex-post evaluation.

Terms and Conditions	<p>Civil Works and Procurement: Interest Rate: 1.7%</p> <p>Repayment Period: 30 years (Grace Period: 10 years)</p> <p>Conditions for Procurement: General untied</p> <p>Consulting Services: Interest Rate: 0.75%</p> <p>Repayment Period: 40 years (Grace Period: 10 years)</p> <p>Conditions for Procurement: Bilateral tied</p>
Borrower/Executing Agency	<p>Government of Sri Lanka/ Ministry of Water Supply and Drainage</p>
Final Disbursement Date	<p>April 2010</p>
Main Contractor (Over 1 billion yen)	<p>Keangnam Enterprises Ltd. (South Korea)</p>
Main Consultant (Over 100 million yen)	<p>NJS Consultants (Japan)</p>
Feasibility Studies, etc.	<p>SAPROF “Lunawa Environment Improvement and Community Development Project” by JICA (2001)</p>
Related Projects (if any)	<p>ODA Loan Projects</p> <ul style="list-style-type: none"> <li>- Greater Colombo Canal and Drainage System Rehabilitation Project E/S (L/A: 1990)</li> <li>- Greater Colombo Canal and Drainage System Rehabilitation Project (L/A: 1990)</li> <li>- Greater Colombo Flood Control and Environment Improvement Project (I) (L/A:1992)</li> <li>- Greater Colombo Flood Control and Environment Improvement Project (II) (L/A: 1994)</li> <li>- Greater Colombo Flood Control and Environment Improvement Project (III) (L/A: 1996)</li> </ul>

## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Tomoko Tamura, Kaihatsu Management Consulting Inc.

### 2.2 Duration of Evaluation Study

Duration of the Study: September 2012 – July 2013

Duration of the Field Study: November 5 - December 8, 2012; March 21 - 27, 2013

### 2.3 Constraints during the Evaluation Study

At the time of project planning, the operation and effect indicators of the project were identified as the area of inundation, number of houses flooded, etc. This was to measure the level of reduction of flood damage. It was planned that these indicators would continue to be measured after completion of the project. However, the measurement did not continue, because the necessary budget for the measurement was not allocated for various reasons. These included the ministry in-charge of the project was changing, as a result of restructuring of ministries, and also as a result of deterioration in the financial situation of the country due to acceleration of the civil war. Therefore, the external evaluator could not obtain a record of measurements of the above-mentioned indicators with regard to the reduction of flood damage.

## 3. Results of the Evaluation (Overall Rating: B<sup>2</sup>)

### 3.1 Relevance (Rating: ③<sup>3</sup>)

#### 3.1.1 Relevance with the Development Plan of Sri Lanka

Construction and rehabilitation of drainage systems, with the perspective of improving hygiene and environmental conditions in urban areas, was one of the most important tasks in *Vision 2010* (2001), the mid- and long-term national development policy of Sri Lanka at the time of project planning. Prevention of flooding in urban areas was identified as an urgent issue in the *Greater Colombo Regional Development Plan*, developed in 1998. *Mahinda Chintana*, which is the mid- and long-term national development policy of the country at the time of the ex-post evaluation, also states that prevention of flooding and improvement of hygiene and



Figure 1 Map of Lunawa Lake and Surroundings

<sup>2</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>3</sup> ③: High, ② Fair, ① Low

environment conditions in urban areas is one of the most important development tasks of the country.

In summary, both flood prevention and improvement of hygiene and environmental conditions in urban areas were important development tasks of the country both at the time of planning and the ex-post evaluation of the project. Therefore, the relevance of the project in terms of development plan is high.

### 3.1.2 Relevance with the Development Needs of Sri Lanka

The target area of the project was affected by frequent flooding – on average, four to six times a year - because the area was low and the drainage system in the area was not developed, according to a survey conducted by the Sri Lanka Land Reclamation and Development Corporation (SLLRDC) at the time of project planning. The amount of flood damage to households and individual assets was estimated as LKR 22 million a year on average; this was around 17 per cent of the total annual income of the affected households. This shows that the frequent flooding caused serious damage to the social and economic activities of people in the area.

The target area had become more important as a residential and commercial area at the time of the ex-post evaluation, due to the development of commercial buildings and other facilities. However, the area is still at a low elevation and prone to flooding.

The need for flood prevention was high at both the time of planning and ex-post evaluation of the project. Therefore, relevance of the project in terms of development needs is high.

### 3.1.3 Relevance with Japan's ODA Policy

The Medium-Term Strategy for Overseas Economic Cooperation Operations of Japan International Cooperation Agency (JICA) at the time of project planning prioritized projects that provided benefit to low-income families. The Country Assistance Strategy for Sri Lanka prioritized implementing projects for the improvement of the urban living environment. Therefore, the project had high relevance with Japanese cooperation policies.

In conclusion, the 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<sup>4</sup> (Rating: ③)

### 3.2.1 Quantitative Effects (Operation and Effect Indicators)

At the time of project planning, the number of houses inundated, depth and length of

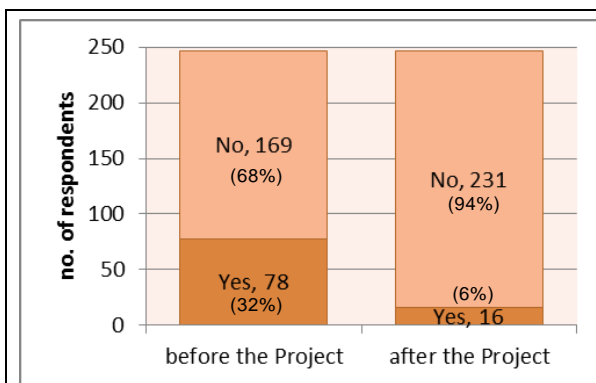
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<sup>4</sup> Sub-rating for Effectiveness is to be put with consideration of Impact.

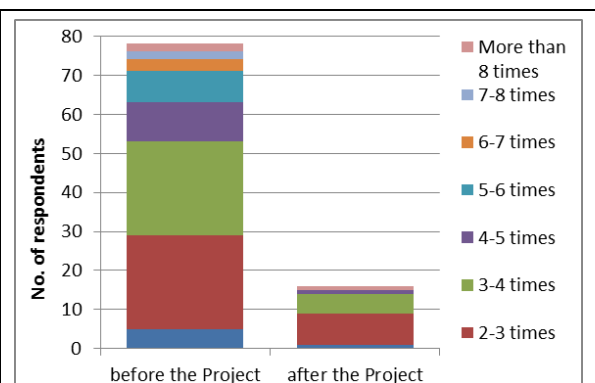
time of inundation and other factors were identified as operation and effect indicators to measure the effect of flood prevention. However, measurement of these indicators did not continue after the project, as mentioned earlier. Therefore, the ex-post evaluation studied reduction of flood damage by carrying out interviews of the key stakeholders, and conducting a questionnaire survey of 250 households that were randomly selected from households in the target area (247 households out of the 250 replied to the questionnaire).

Residents and management staff of the municipal councils in the project area, stated in interviews that after the project, there had been almost no flooding in the area. They had almost no flooding when cyclone “Laila” hit the country in May 2010, or when the parliament building was flooded and 36,000 people in the country were affected by torrential rain in November 2010.

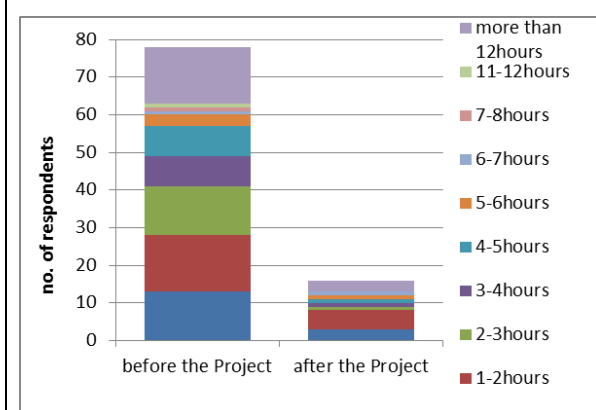
Figures 2 - 5 show the results of the questionnaire survey. It was found that after the project there was a remarkable improvement in the number of houses flooded, and the frequency, length of time, and depth of inundation.



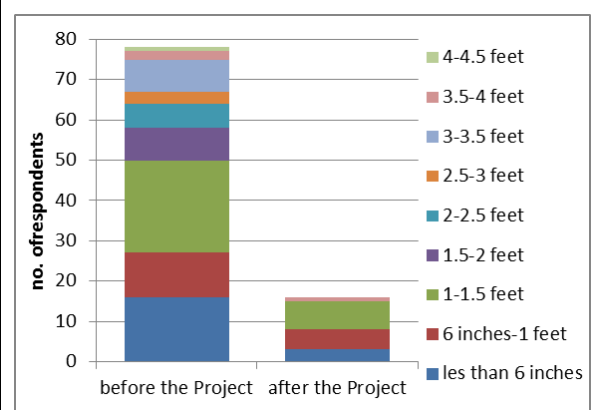
**Figure 2 Was your house inundated before and after the project?**



**Figure 3 How many times a year was your house inundated in average?**



**Figure 4 How many hours was your house inundated in average?**



**Figure 5 What was the average depth of inundation of your house?**

Source: Beneficiary survey conducted in the ex-post evaluation

In the project, the drainage system was designed so that all the households in the target area, apart from a few that were lower than the roads or drainage channels, would be prevented from flooding. As Figures 2 - 5 show, some households are still getting flooded even after the project; however, most of them are located lower than the roads and drainage channels. Flood damage was also reduced by the project for these households, as the figures show that the frequency, length of time, and depth of inundation they suffered were all reduced after the project.

The project was designed with the protection level at two-year recurrence probability, which was rainfall of 70 mm per hour in the area. It was found from rainfall data that it rained more than 70 mm per hour in two days in 2010. This fact also shows that it is acceptable from the viewpoint of evaluation of the project effect, that some flood damage remained in the target area after the project.

In the preceding projects, Greater Colombo Flood Control and Environment Improvement Project (II) and (III), main and secondary drainage channels had been constructed; however, micro and side drains had not been constructed in residential areas in most of the target area. This had led to local flooding even after those projects. The current project prevented flooding more effectively, as it also constructed micro and side drains in residential areas; it learnt this lesson from the preceding projects.

Similarly, flooding sometimes still occurred after completion of the preceding projects, because the drainage channels constructed by the projects overflowed. This happened because the residents threw their garbage into the drains every day, blocking them. This was partly because there was no regular garbage collection by the municipality, and partly because there was inadequate awareness creation programme on the issue among residents. As mentioned later, the project conducted a programme to improve solid waste management, and carried out activities to create awareness among residents of the need to stop throwing garbage into the drains in an effective manner. This was one of the factors that helped the project to achieve effective flood prevention.

In summary, the project has achieved the expected effect of reducing flood damage.

**Box 1 Reduction of Flood Damage and Improvement of Living Conditions  
(Members of the Sadaham Uyana Community Development Society)**

We did not have any flooding after the rehabilitation of the drainage system by the project, even though we had heavy rains several times. The drains have never been over-flooded. It was an amazing improvement. Our house was inundated three to four times a week in the rainy season before the project. It had been flooded even twice a day. We really had a hard time when water levels went up again as soon as we had cleaned the house after flooding.

I remember very well that it was flooded on the day before my wedding, and the day I came back home from hospital with a newborn baby. I will never forget that we could not carry the

coffin of my father due to a flood at his funeral.

It smelt very bad when the water in the drains overflowed, as it was contaminated with waste water from factories, sewage water and garbage. We had to wash the walls and floors of the house with soap after inundation as they smelled bad otherwise. I could not invite friends to my home as our living environment was very bad. I used to leave home in normal clothes and



sandals to go to school on rainy days. Then I changed into my school uniform and shoes at a temple, which is higher than the house, on the way to school. I was frustrated when I was told in a job interview that “you cannot attend work when the house is flooded”, when they saw my address.

We are very happy now, as we are free from cleaning work after flooding, and the house is always clean. There is no problem with schooling or attending work, even when it rains heavily. The living environment has improved remarkably. The area has become clean and beautiful. The change of environment has given us self-confidence and a sense of safety. I think many people in the area have become more active in study and work.

### 3.2.2 Qualitative Effects

Some of the qualitative effects expected as a result of the project were improved hygiene and living conditions, improvement of economic activities, and improvement in travelling and transport.

The following table shows the result of discussions the external evaluator conducted with seven community based organizations (CBOs), living in the settlements, where the programme of “improvement of living environment of the under-served communities” was intensively implemented.<sup>5</sup> The degree of change in the environment after the project was mainly discussed with the CBOs. All the CBOs agreed that the hygienic environment, including scenery, solid waste and wastewater management, and living environment, such as travelling and transport during the rainy season, were “much improved” or “improved” after the project. They also agreed that the changes were realized as a result of the project.

All the CBOs, apart from one, agreed that “odor” was “much reduced” or “reduced” after the project. One complained that the nearby apartments are discharging sewage to the drainage channel in the settlement. It seems that there was no significant improvement in general in the amount of dust, as two CBOs answered as “worsened” and one answered as “no change”. These CBOs explained that they have more dust after the project as the operation and maintenance (O&M) road, which was constructed along the drains for the

<sup>5</sup> The programme was implemented as a sub-component of the project in eleven settlements, which were slum areas and settlements of low-income families. These were located along the drainage channels and surrounding the lake. The programme included construction of wastewater and rainwater drains, introduction of wastewater treatment systems, and construction of internal roads and community halls.



purpose of operation and maintenance of the drainage system, is utilized for travelling by residents, and a lot of vehicles go through on the roads.

**Table 1 Opinion of the Members of CBOs on Improvement of Living Conditions**

Item		Much improved	Improved	No change	Worsened	Much worsened
(1)	Scenery	✓✓✓✓ ✓✓	✓			
(2)	Solid waste management	✓✓✓	✓✓✓✓			
(3)	Wastewater management	✓✓✓	✓✓✓✓			
(4)	Odor	✓✓	✓✓✓✓	✓		
(5)	Dust	✓✓✓	✓	✓	✓✓	
(6)	Travelling and transport during rainy season	✓✓✓✓ ✓✓✓				

Source: Discussion with CBOs in the ex-post evaluation

Note: “✓” shows one CBO’s opinion.



The external evaluator discussed with the CBOs on other changes and improvements. As shown in the following table, there were some positive effects with regard to self-confidence, unity and friendship, and an increase in land value. It seems that the project has not yet created a remarkable impact on economic activities in general, as three CBOs answered “no change” to the question about increase of income and employment opportunities.

**Table 2 Opinion of the Members of CBOs on Other Improvements**

Item		Much improved	Improved	No change	Worsened	Much worsened
(1)	Self-confidence and self-respect	✓ ✓ ✓ ✓ ✓ ✓	✓			
(2)	Unity and friendship among the neighbors	✓ ✓ ✓	✓ ✓ ✓ ✓			
(3)	Income and employment opportunities	✓ ✓	✓	✓ ✓ ✓		
(4)	Land value around your house	✓ ✓ ✓ ✓ ✓ ✓ ✓				

Source: Discussion with CBOs in the Ex-post Evaluation

Note: “✓” shows one CBO’s opinion.

When the questions in Table 1 and 2 were asked in the questionnaire survey for 250 households, more than half of the households answered that scenery, solid waste management and land value were “much improved” or “improved” after the project. However, most of them answered the other questions as “no change”. Very few answered “worsened” or “much worsened” to any of the questions. From these facts, it is possible to conclude that the project was very effective on improvement of hygiene and living conditions in the area where the programme for improvement of living environment of the under-served communities was conducted; and it was effective to a certain extent in the whole target area of the project.

### 3.3 Impact

#### 3.3.1 Intended Impacts

##### (1) Provision of Fair and Adequate Amount of Compensation and Participatory Process in the Involuntary Resettlement

According to the Land Acquisition Act of Sri Lanka, non-title holders (illegal settlers) are not entitled to obtain compensation in involuntary resettlement. However, some compensation and support were provided to such people in recent years, especially in donor-assisted projects. Yet, in most cases the compensation and support provided by these projects was not adequate for them to re-establish their life and livelihood.<sup>6</sup> Even for title-holders, compensation was often not adequate. The project-affected persons (PAPs) were often not able to purchase the same size and quality of land with the amount

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<sup>6</sup> For example, in the preceding project of “Greater Colombo Flood Control and Environment Improvement Project (I) (L/A: 1992), land for resettlement, basic infrastructure, housing loan and a small amount of resettlement allowance were provided to non-title holders. The Resettlement Framework for RDA (Road Development Authority) of Sri Lanka, which was developed with the technical assistance of the Asian Development Bank in 2005, stated that it was not necessary to pay the value of the land the non-titleholders occupied, but to pay the value of the development they have made to the land.

of compensation they were provided based on the valuation of market price. It sometimes happened that PAPs lost their living space or livelihood when a part of their land or building was acquired by a project, and later they found it difficult to live or carry out economic activities with the land and the house left for them.<sup>7</sup>

To address this issue, the *National Involuntary Resettlement Policy* (NIRP)<sup>8</sup> was approved by the government in 2001. The project designed entitlement package and was obtained an additional allocation,<sup>9</sup> necessary to implement the involuntary resettlement according to the newly-approved policy.

Almost 2,000 households were affected by the project, in terms of involuntary resettlement and land acquisition. The main difference with regard to compensation between the involuntary resettlement of this project and that of earlier projects, was that non-title holders were provided with free land and houses, compensation was paid for the replacement cost, and resettlement expenses and allowance for recovery of income and livelihood were provided in addition to the compensation provided to the PAPs in general.

In addition, there were several notable features in the approach of the involuntary resettlement of the project. These included flexible modification of the original resettlement plans following participatory consultation with the PAPs, housing designs that reflected individual needs, payment of compensation through banks, monthly meetings with the households to be resettled, consultation and provision of information conducted for the PAPs at the community information center established by the project, and a grievance settlement mechanism arranged by the entitlement committee.<sup>10</sup> One of the aims of the payment of compensation through banks was to achieve financial inclusion of underserved communities. The payment was deposited in a joint account of two, wife and husband, to avoid a problem that one of them spending the payment for the purpose not related to the resettlement, without the other knowing.

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<sup>7</sup> “Southern Transport Development Project: Experiences and Lessons for Livelihood Restoration Assistance”, Mansi Kumarasiri, *Involuntary Displacement and Resettlement – Policy Practice*, Centre for Poverty Analysis, Sri Lanka, 2009.

<sup>8</sup> NIRP of Sri Lanka was approved by the cabinet of ministers and is advised to be applied for all development-induced land acquisition; however, it does not have any mandatory power or penalty for violation.

<sup>9</sup> The original allocation for involuntary resettlement of the project at the time of project planning was LKR 1.19 million, which was equal to JPY 1.15 million at the exchange rate at that time. Later, LKR 6 million (JPY 5.8 million) was approved by the cabinet to implement the involuntary resettlement according to NIRP.

<sup>10</sup> For example the external evaluator’s report on “Greater Colombo Flood Control and environment Improvement Project (I)” mentioned that the PAPs had not been relocated by force, but relocation was not voluntary either. They had only given up living in their original place when they thought there was no other option. The evaluation report also stated that the staff of the implementing agency was always under mental pressure to implement the civil work as scheduled. They did not conduct any participatory discussions with PAPs, such as consultation and modification of the plan according to their preference.



A report written by a member of the Project Management Unit (PMU) stated that the provision of fair and adequate amount of compensation and the participatory process of resettlement had created the following impact:

- All households which had been living on unauthorized land or on government permits had accepted the entitlement package offered and resettled voluntarily.
- Only 29 households, less than one percent of the total number of households subject to resettlement, took legal action against the project by expressing dissatisfaction with the plan of resettlement or amount of compensation.<sup>11</sup>
- There are a lot of examples showing that the PAPs who used to live in unauthorized land have escaped from poverty and improved the quality of their life after resettlement.

A report written by UN-HABITAT<sup>12</sup> stated that the PAPs had improved their living and hygienic environment had as follows:

- They had escaped from the status of illegal settlers and obtained legal title to land and a house.
- Most of them were living along the drainage channels and were affected by frequent flooding. They are now free from flood damage. Their hygiene and living environment had improved.
- They had lived in a poorly constructed house but now live in permanent houses with tiles on the floor.

<sup>11</sup> It is difficult to understand whether involuntary resettlement was conducted smoothly by only using the number of households who took legal action as the indicator. The number would be small when there were few PAPs who were against the resettlement. However, the number would also be small when the PAPs did not have knowledge or experience to take legal action. Twenty-nine households took legal action against the project, as they were against resettlement or not satisfied with the amount of compensation. According to the explanation of the implementing agency, all the case judges justified the process of valuation and amount of compensation the project had offered.

<sup>12</sup> "Innovative Approaches for Involuntary Resettlement, Lunawa Environmental Improvement and Community Development Project", UN-HABITAT, 2009.

- There is an expectation that the value of the land provided to them will be increased.
- They hope to build rooms upstairs, rent them out and gain additional income.
- They used to use common toilets and water taps, but now use individual toilets and piped water.
- Public security has been improved after the resettlement.

The above-mentioned impact of the resettlement was confirmed by discussion with the PAPs during the ex-post evaluation. They expressed great satisfaction with the fact that the project had resulted in them obtaining legal title to land and a house, better living conditions and a hygienic environment, and becoming free from flood damage.

The basic infrastructure, such as internal roads, electricity supply, water supply, drains and wastewater treatment facility, was constructed before the resettlement actually took place, and was no problem with it. Community halls and children's playgrounds were also constructed in some of the settlement sites; these were well utilized by the residents.

It was found at the time of the ex-post evaluation that some of the PAPs were concerned that payment of compensation for the land acquisition had not been completed. The Ministry of Water Supply and Drainage explained that there were some delays in payment, as the valuation of some land took longer than expected because ownership or boundaries of land were not clear. The Ministry was working on this, and would complete all the payment of compensation and delayed interest to the PAPs by the end of 2013.

### **Box 2 : Life of a Resettled Family at Riverside Garden**

We made this house colorful just as we wanted. It was easy because my husband is a painter. I'm very glad that I can now live in a permanent and sunny house with tiles on the floor and a nice kitchen. We built the house so that we can extend it upstairs. We made the staircase, but did not start building rooms upstairs, yet. We will do it later little by little when money is available. We are grateful that we live in a better environment. We were given title to the land and the house, which gave us a sense of security.



I was worried about resettlement at first. However, I felt relieved later as the staff of the project visited and explained to us in detail about the resettlement many times. There was no problem with the process of resettlement and the payment of compensation. The land price around here has gone up, as there is no flooding. I can feel confident because the value of our land and house are also going up.

#### **(2) Increase of Value of Lands and Houses in the Project Area**

It was clarified by interviews with real estate agencies, staff of the municipalities and residents in the target area that the land value of the target area had increased two or three times, even up to ten times in some places, compared with the value before the project. The land value in the suburbs of Colombo has been increasing in general; however, the value in the project area, where the environment was improved, has increased remarkably according to respondents of the interviews. Several residents stated that before the project they could not contemplate selling the land or house, as they were frequently flooded; now, they can sell it at a good price or rent it out.

#### **(3) Community Empowerment by Implementation of Community Contracts<sup>13</sup>**

Twelve CBOs undertook community contracts under the project. These contracts were for the construction of drainage systems in the settlement, sewerage systems, community halls and others. The main outcomes expected as a result of the community contracts were expected to include: enhanced capacity of the CBOs; an uplifting sense of ownership among community members of the infrastructure constructed by the contracts; provision of employment opportunities; and raising funds for the CBOs.

It was found in the ex-post evaluation that out of the 12 CBOs that undertook

<sup>13</sup> Community contract is a system whereby a CBO becomes an executing agent and contractor for undertaking civil works. It is defined in a procurement guideline of the Sri Lankan government. The government institution and a CBO sign a contract according to the unit rates defined by the government. The National Housing Development Authority first introduced this in 1986 in a housing development programme for low-income families (1984–1989).

contracts, only 4 were continuing some kind of activities, contributing to improved living standards of community members by utilizing the funds raised through the community contracts, and actively involved in maintenance of the infrastructure constructed by the contracts with a sense of ownership. Other CBOs were not active or did not utilize the funds. The main reasons for inactiveness are considered to be:

- The residents were encouraged to form CBOs to undertake community contracts. When the contracts were over, the CBOs had no activity to do.
- Staff of the project and municipalities could not carry out adequate follow-up activities after the project or provide assistance to re-activate the CBOs, either by occasional advisory visits or encouraging them to take part in events or activities of the municipalities.
- The CBOs did not have adequate opportunities to enhance their capacity through community contracts, because the civil works of the contracts were not carried out by them but by sub-contractors in most of the contracts, and also because several contracts were implemented outside their residential area.

The civil works were conducted by subcontractors mainly because there was not enough time for the PMU to provide intensive training to the community members on civil engineering and administration of construction work, of which they did not have much knowledge and experience, as the project was behind schedule. The opportunities for employment in the community contracts were also limited for the same reason.

As mentioned above, the CBOs undertook community contracts not only in their residential area, but also outside of it. For example, Dheewara Niwasa Community Organization undertook 13 contracts in total, of which 4 contracts were conducted in their residential area and 9 were conducted out of it. The leaders and the members of the CBO commented in the ex-post evaluation that they did not remember where these contracts were conducted and what kind of civil work was carried out. It seems that the CBO signed the contracts, including those to be conducted outside of their area, for convenience in obtaining the commission that would be saved as their funding. They had a limited opportunity to learn or enhance their capacity through the contracts.

### 3.3.2 Other Impacts

(1) Regular cleaning of the drainage channels and the side drains by the residents, and preventing garbage being thrown into the drains

The Integrated Solid Waste Management Programme was implemented as one of the sub-programmes of the project in the target area. The programme included an awareness creation programme about solid waste management through campaigns, events and a school programme. The programme was conducted using participatory methods,

including role play, group works, street drama and an essay competition, so the residents could discuss and understand the following topics:

- Review the amount, type and magnitude of waste discarded by the community
- Discuss social, economic and environmental effects of solid wastes
- Discuss how indiscriminate garbage disposal would block the drains
- Learn how to separate wastes according to their types
- Learn how to generate income by selling compost fertilizer and use organic fertilizer for home gardening.



Residents cleaning drains at the time of the ex-post evaluation

After the awareness creation programme, collection and sales of recyclable waste, demonstration of compost production and distribution of compost barrels were conducted in the pilot area.

The residents living along the drains mentioned that they used to throw garbage into the drains on a daily basis before the project. They swept their houses and threw the waste into the drains. They put kitchen waste into plastic bags and threw them into the drains. However, as a result of the awareness creation programme of the project, they stopped throwing garbage to the drains, and now clean the drains and side drains in front of their houses. A lot of residents stated in the interviews of the ex-post evaluation that they had become used to doing this, as the programme of the project has taught them the importance of not throwing garbage into the drains, and the need to clean drains in front of their houses by them. Some stated that “We feel guilty to throw garbage into the drains as the drains were well rehabilitated”. At the time of the field visit, it was found that most of the side drains were cleaned properly. It was also observed that residents cleaned the drains on their own initiative.

### **Box 3: Suggestions taken from the programme with community participation**

Several programmes with community participation were implemented in the project. The following suggestions are taken from the analysis of the characteristics and effects of such programmes.

(1) As described in page 9, it was observed that the resettled families showed more understanding and satisfaction with the resettlement, as they were recognized well by the project through the use of participatory planning, provision of information at the information center, etc. These arrangements were made and carried out smoothly, as the



executing agency had adequate capacity. In addition to the director for the technical component, the project had a director for the community development component. This was to help with smooth implementation of the component, including the involuntary resettlement. The project employed several external staff members with expertise on involuntary resettlement to work under the director. The project also obtained assistance of UN-Habitat and NGOs. In order to implement these arrangements in an involuntary resettlement programme, it is necessary to ensure the capacity of the executive agency by obtaining assistance from external organizations and staff, as needed.

(2) As mentioned in page 12, it was expected that the outcome of the community contracts would include enhanced capacity of the CBOs, and an uplifting sense of ownership among community members of the infrastructure constructed by the contracts. However, these have only been partially achieved. This example shows that the followings are necessary in a programme of community contracts to help achieve expected outcomes: (a) the civil works should be undertaken by the CBOs themselves; (b) the civil works should be carried out in the area where the community lives but not outside of it; and (c) according to their needs, a follow-up programme is required for CBOs, even after completion of the community contracts.

(3) As mentioned in pages 12-13, the perceptions of the residents changed as a result of the solid waste management programme implemented under the project. Most of them stopped throwing garbage into the drains, and they got used to cleaning the drains. It was also observed that several associations of CBOs carry out cleaning campaigns, and negotiate with the municipalities after building a consensus among residents in the area. However, it was learned that there were some residents who did not cooperate with cleaning the drains and do not clean the drains periodically. According to the municipalities, the interest and awareness of residents on solid waste management has reduced after the project. We can learn from this that it is necessary to continue implementing effective awareness-creation activities with perseverance in order to change lifestyle habits of the residents.

It was also found that the drains were not being properly cleaned by the municipality in some areas. This needs to improve in future, as it will only be possible to keep the drains in a good condition, and for the effects of the project to be sustained, when the efforts of the community and proper maintenance work by the municipalities go together.

## (2) Improvement of Water Quality of the Drainage System and Lunawa Lake

According to the interviews and questionnaire survey conducted during the ex-post evaluation, the residents appreciated that the water quality of the drainage system has

improved because drainage water runs down without getting blocked and being overflowed as it used to, and also because garbage was rarely thrown into the drains after they had been rehabilitated. However, the residents and the municipalities expressed concern about a strong odor from some of the drains, as a result of discharge of effluent water from factories and workshops, and from sewerage connections of neighboring apartments that had been constructed for families affected by the tsunami.

The water quality of Lunawa Lake was greatly improved as a result of dredging and periodic removal of the sandbar.<sup>14</sup> After the project, fish and birds live in and by the lake; before the project it was a “dead lake”, where no living matter could survive. The peripheral road of the lake, which was constructed by the project, was being developed as a jogging path at the time of the ex-post evaluation.



### (3) Assistance for Tsunami-Affected People

The coastal zone of the project target area was hit by the 2004 tsunami in the Indian Ocean, which was caused by an earthquake off Sumatra. Houses and shops that were destroyed by the tsunami had to be relocated away from the coast; the government prohibited reconstruction of buildings in the coastal area, as security of the area was not ensured. The project provided 100 tsunami-affected households with land in the four resettlement sites developed by the project.

### (4) Collaboration with JICA Volunteers, UN-HABITAT and non-government organizations (NGOs)

Several JICA volunteers, consultants of UN-HABITAT and two local NGOs worked for the project. They facilitated communication with the residents, assisted the PMU with

<sup>14</sup> A sand bar develops through deposit of sand at the sea outfall, where the lake water runs to the sea. It should be periodically removed to prevent overflow of the lake water and backflow of the drainage water.

involuntary resettlement and the integrated solid waste management programme, and used their expertise and experience to contribute to effective implementation of the project.

#### (5) Impacts on the Natural Environment

There was no negative impact on the natural environment observed as a result of the project. The external evaluator asked residents whether they were affected by dust, noise and water pollution during the construction of the project. Several residents said that it had been dusty and noisy, but they further commented that they did not care about this as they believed in the importance of the project, or accepted it as unavoidable as the construction had to be carried out in a residential area. It was also found that the contractor tried to reduce dust by spraying water where necessary in the mornings and evenings, and limited the time for construction to daytime. The quality of the water in the drains was monitored during the construction, and no problem was found with regard to water pollution. The soil obtained from dredging the lake was used for earth filling for the road construction. There was no problem with regard to waste disposal during construction.

This project has largely achieved its objectives and created various positive impacts, including improvements of living standard of the households resettled by the project; therefore its effectiveness is high.

### 3.4 Efficiency (Rating: ②)

#### 3.4.1 Project Outputs

As shown in the following table, the expected outputs of the project were attained almost as planned. The length of the drainage channels, the O&M roads and the lake peripheral road were extended as a result of modifying the original plan after due consideration. This was to enhance the effectiveness of flood prevention and operation and maintenance. The increase in length was also made as the project accepted as many suggestions and requests from the residents and municipalities as possible during project implementation, after studying the technical adequacy and necessity.

**Table 3 Planned and Actual Outputs of the Project**

Plan	Actual	Reasons for changes
<b>A. Component of Drainage Improvement</b>		
<b>A.1 Main Civil Works (Drainage and others)</b>		
(i) Drainage improvement (rehabilitation and construction) (a) Main drains: 6.7 km (b) Secondary drains: 4.2 km (c) Side drains: 76.4 km Total: 87.3 km	(a) Main drains: 6.8 km (b) Secondary drains: 7.7 km (c) Side drains: 123.4 km Total 137.5 km	It was found in the detailed designing that the length of drains which needed rehabilitating had increased due to urbanization, increase of encroachment and deterioration of the condition of the drains.
(ii) Lunawa Lake dredging (a) Dredging at outlets of three main drains (b) Earth filling and development of the southern part of the lake by using earth dredged. (c) Construction of roads necessary for dredging: around 700 m	(a) The Coastal Resource Management Project (CRMP), which was implemented in the project area in parallel to the project, undertook dredging of the entire lake area. (b) As planned (c) Lake peripheral road (3.9 km) was constructed.	(a) CRMP secured the budget for dredging the entire lake. (c) Construction of the lake peripheral road was identified as necessary to facilitate O&M and prevent encroachment.
(iii) Sea outfall improvement	As planned	
(iv) Others (a) Construction of O&M roads (b) Reinstatement of roads Length is not available for (a) and (b).	(a) Construction of O&M roads (15.7 km) (b) Reinstatement of roads (40.9 km)	
<b>A.2 Procurement of Equipment</b>		
(a) O&M equipment (Equipment for rehabilitation of drainage system) (b) Equipment for survey (c) Vehicles for transport of O&M equipment	As planned	
<b>A.3 Construction of resettlement sites</b>		
Construction of four resettlement sites and development of basic infrastructure	As planned	
<b>B. Community Development Component</b>		
<b>B.1. Involuntary Resettlement</b>		
(a) Number of households to be resettled: 450 (b) Development of the resettlement sites: to be conducted considering the needs of PAPs.	(a) Number of households subject to land acquisition and/or resettlement: 1,925 in total. (b) Development of the resettlement sites: As planned	The number of households was underestimated at the time of project appraisal. • During detailed design it was found that the number of drainage channels to be

### Numbers of Involuntary Resettlement and Land Acquisition

Item	Plan	Detailed Design	Actual
No. of households resettled*	450	55	899
Land acquisition	-	1,027	1,026
Total	450	1,882	1,925

\*Including on-site resettlement.

Source: JICA document and document submitted by the implementing agency of the project

rehabilitated had increased due to urbanization, increased encroachment, and deterioration of the drainage system

- The number of households subject to land acquisition without resettlement was not estimated at the project appraisal.

### B.2. Upgrading of Underserved Settlements

The following activities to be conducted in 11 underserved settlements severely affected by flooding.

- (i) Improve living environment through community contracts, including for construction and rehabilitation of rainwater drains, drainage, sewerage, internal roads, and garbage disposal systems.
- (ii) Form community organizations among the PAPs (formation of CBOs, awareness creation programme, community action planning, training, etc.)

Implemented in 11 settlements as planned.

- (i) Twelve CBOs, in the resettlement sites and in the area where the programme for upgrading underserved settlements was implemented, conducted 177 community contracts in total, including construction of drainage, sewerage, and community halls.
  - (ii) Awareness creation programme, training, formation of community development plans were conducted for the 17 CBOs which were formed by the project.
- <Additional activities conducted>
- Integrated Solid Waste management Programme
  - Construction of individual toilets
  - Improvement of water quality of the drainage

### B.3. Capacity Building

UN-HABITAT will provide technical assistance to the PMU and the municipalities on formation, administration and fund management of the Housing and Community Development Committee (HCDC) and the project cells and on implementation of social surveys and others

Almost as planned

- UN-HABITAT provided consultation and advice on the plan and implementation of the community development component.
- Meetings of the HCDC were held for around 3 years.
- A project cell was not established at the municipalities. Instead, several staff members of the municipalities joined the PMU of the project and participated in activities and meetings on

		community development.			
<b>C. Consulting Services</b>					
Plan and Actual of the Consulting Services				Period of assignment of the local consultant was extended as a result of the extension of the project period. Data on the actual period of assignment of the international consultant was not available.	
Item	Plan				Actual
	Component A	Component B	Total		Total
International	120 MM	4 MM	124 MM		Not available
Local	246 MM	36 MM	282 MM	486 MM	

Source : JICA documents, replies to the evaluation questionnaire and interviews conducted at the time of ex-post evaluation



### 3.4.2 Project Inputs

#### 3.4.2.1 Project Cost

The project cost was planned as JPY 9,423 million, including a Japanese ODA (Official Development Assistance) loan of JPY 6,906 million. The actual cost was JPY 8,265 million, including a Japanese ODA loan of JPY 6,340 million. The project cost was lower than the plan (88 per cent of the original plan). The project cost was reduced mainly as a result of effective international competitive bidding.

#### 3.4.2.2 Project Period

The project period was planned as 69 months, from December 2001 to October 2007. However, the project was completed in April 2010. This was significantly longer than the plan (161 per cent of the original plan). The main reason for the delay was that 29 households filed court cases against the project, as they were not satisfied with the land acquisition and resettlement; of these, 12 appealed to a higher court, and it took around three years to settle them.<sup>15</sup> The court cases seriously affected the progress of the project,

<sup>15</sup> It is usual for a court case to take around three years in Sri Lanka. The court cases of the project did not

as it could not hand the lands under dispute over to the contractor to carry out the civil works until the cases had been settled, because the courts issued stay orders.

As mentioned earlier, the number of households for involuntary resettlement was underestimated at the time of project planning. In the original work schedule of the project, the land acquisition and involuntary resettlement had been scheduled to commence soon after the signing of the loan agreement, and to be completed in two and a half years.<sup>16</sup> It was also believed that that all the PAPs would be willing to resettle themselves voluntarily and that there would be no court cases at all.

### 3.4.3 Results of Calculations of Internal Rates of Return (IRR)

Analysis of the internal rates of return was not possible at the time of the ex-post evaluation due to the fact that the actual cost of operation and maintenance of the drainage rehabilitated under the project was not fully available.

Although the project cost was within the plan and the outputs were attained to a higher degree than expected, the project period was significantly longer than the plan; therefore, efficiency of the project is fair.

## 3.5 Sustainability (Rating: ②)

### 3.5.1 Institutional Aspects of Operation and Maintenance

Operation and maintenance of the drainage system constructed by the project is undertaken by Dehiwala-Mt. Lavinia Municipal Council (DMMC), Moratuwa Municipal Council (MMC) and Sri Lanka Land Reclamation and Development Corporation (SLLRDC) according to the area and work shown in the following table. Each organization recognizes the assigned work, and there is no problem in demarcation of responsibility. This is because the project involved both the municipalities from the beginning of the project, and let them participate in project administration and construction of the drains; this was a lesson learned from preceding projects. It is appreciated that a sense of ownership of the project was created among the municipalities, and therefore, the transfer of responsibility for operation and maintenance of the drainage took place smoothly.<sup>17</sup>

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take an especially long time.

<sup>16</sup> Usually, the number of households to be affected by the project due to land acquisition and involuntary resettlement is confirmed after the detailed survey has been conducted.

<sup>17</sup> Transfer of responsibility for operation and maintenance was not smoothly conducted in the preceding project, "Greater Colombo Flood Control and Environment Improvement Project (II)". The place of responsibility was not clear at the time of the ex-post evaluation of the project. One of the reasons for this was because Colombo Municipal Council had not been involved in implementation of the project, and did not have a sense of ownership of the drainage constructed by the project.

**Table 4 Demarcation of Responsibility on Operation and Maintenance of the Drainage System and other Facilities Constructed by the Project**

Facilities	Responsibility for O&M
(1) Earth sections and gabion sections* of the drainage	SLLRDC
(2) Other drainage and O&M roads in the area of DMMC	DMMC
(3) Other drainage and O&M roads in the area of MMC	MMC
(4) Dredging of Lunawa Lake	SLLRDC (surface cleaning of the lake is conducted by the Sri Lankan Navy at the moment)
(5) Removal of the sand bar of Lunawa Lake	MMC
(6) Peripheral road of Lunawa Lake	MMC

\*Note: Gabion is a cage or cylinder filled with rocks and sand.

The two municipalities proposed to increase the number of employees to the cadre commissioned during the project, so that operation and maintenance of the drainage system constructed by the project would be implemented properly. However, the proposals were not accepted due to budget constraints during the final stage of the civil war.

The drainage section of the DMMC, which was established in the preceding project,<sup>18</sup> is undertaking operation and maintenance of the drainage system constructed by the project. The drainage section is headed by a drainage engineer and has full-time staff. According to the drainage section, there is no issue on demarcation of responsibility and the administrative arrangement for the operation and maintenance work. There is a shortage of manual labors and drivers; however, they are managing the work somehow by undertaking double duties and adjusting the working schedule.

The MMC did not have a section in charge of operation and maintenance of drainage. It was planned to establish a drainage section after the project. However this has not happened yet, mainly because the proposal to increase the number of employees was not accepted, as mentioned above. Currently, the MMC is conducting cleaning and weeding of the drainage by transferring a supervisor and 10 manual labors from the Health Section as a temporary measure. Demarcation of responsibility and administrative arrangements for the operation and maintenance work are not clearly defined within the organization, and there is a considerable shortage of manual labour to carry out cleaning of the drainage constructed by the project as a routine work.

<sup>18</sup> Greater Colombo Flood Control and Environment Improvement Project (III).



The drainage and reclamation division of SLLRDC is undertaking the operation and maintenance of the drainage constructed by the project. There are no vacancies or double duty for the posts, and there is no issue with regard to the institutional aspects of operation and maintenance.

Seven “Neighborhood Forums”, which are associations of the CBOs, were formed under the project; currently three of them are functioning. The forums play a role to formulate opinions of community members, negotiate with the municipalities, and conduct cleaning campaigns periodically.

The executive agency of the project was the Ministry of Housing at the time of project appraisal. The executive agency and the officers responsible for the project in the ministries changed several times during implementation, due to frequent re-organizations of ministries and departments. The executive agency of the project at the time of completion and the ex-post evaluation of the project was the Ministry of Water Supply and Drainage. However, the ministry could not play an active role working with the municipalities and the community for sustainability of the effect of the project, at the moment because it does not have overall control of drainage system, but only of water supply and sewerage.

### 3.5.2 Technical Aspects of Operation and Maintenance

There are several underground drains constructed by this project and the preceding project in the DMMC’s area. Staff members of the municipality have to go into these to clean them periodically. Training on cleaning of the underground drains was conducted during the project, and equipment, such as masks and sucking machines, were provided by the project. However, according to the DMMC, the cleaning had not been conducted because the supervisors do not have much practical experience and confidence, and feel hesitant about letting staff go into the underground drains, where there could be poisonous gas, even though they had obtained technical knowledge about this during training. Another reason was the unavailability of equipment necessary for cleaning, such as lighting equipment and a fan. Apart from this problem, the DMMC does not have a technical problem on operation and maintenance of the drainage. The SLLRDC and the MMC do not have a technical problem on operation and maintenance of the drainage system under their responsibility.

### 3.5.3 Financial Aspects of Operation and Maintenance

The DMMC allocated around LKR 55-65 million for the maintenance of the drainage system, roads and bridges in every year recently. The SLLRDC allocated around LKR 9 million every year for the operation and maintenance of the drainage system constructed

by the project. In addition, the SLLRDC allocated around LKR 30 million every three years for large-scale maintenance work, such as dredging and rehabilitation of drainage banks. These budgets were allocated by the central government.

The budget allocated for the DMMC and the SLLRDC covered necessary costs for human resources and operation and maintenance of the machinery and equipment, and there has been no financial problem. It was difficult to identify the amount of budget and expenditure of the MMC for the operation and maintenance of the drainage system, because there is no particular section in charge of the drainage, and staff members from the health section were assigned temporarily for cleaning the drainage, as mentioned above.

#### 3.5.4 Current Status of Operation and Maintenance

The drainage section of the DMMC has an annual work schedule for the operation and maintenance. The drainage section was not in a position to conduct the operation and maintenance work exactly according to the schedule due to shortage of staff; however it implemented as much as possible by prioritizing the area with urgency. Most of the residents of the DMMC area stated at the time of the ex-post evaluation that the DMMC conducted cleaning of the drainage periodically, and also stated that when the residents request the drainage section, staff members of the section come and do necessary work on cleaning the drains.

The MMC does not have an annual work schedule or record of work conducted. Due to the shortage of staff, the MMC does not carry out cleaning of the drainage periodically, but conducted cleaning in an ad hoc manner of only the drains that needed cleaning most urgently. A lot of residents in the MMC area complained at the time of the ex-post evaluation that the MMC did not clean the drains. The MMC attended to removal of the sand bar of the Lunawa Lake as a priority work, and the residents had no complaint about this.

The SLLRDC conducts operation and maintenance of the assigned part of the drainage system according to a weekly work schedule. They plan to conduct major maintenance work such as dredging and rehabilitation of the drainage banks once in three years. The next major maintenance work is scheduled in 2013. The SLLRDC already secured the budget for this.

Effluent water from factories and sewerage from apartments are connected to the drains as mentioned in the section on “Impact” of this report. Contamination of organic matter and sewerage means the drainage channels get covered with weeds. Their condition can deteriorate, and the flow of water may get blocked, especially in the underground drains. The Ministry of Water Supply and Drainage was implementing a project on wastewater

disposal system with the assistance of Swedish International Development Agency at the time of the ex-post evaluation. According to the ministry, this project will prevent contamination by effluent water from factories. However, it will not fully prevent the connection of sewerage from apartments and houses. Therefore, the quality of the water of the drainage system is still a concern for the sustainability of the project effect.

In light of the above, some problems have been observed in terms of institutional aspects and the current status of the operation and maintenance by the MMC; although that of the DMMC and the SLLRDC is satisfactory in general. There is concern about the quality of water in the drainage system. Therefore, sustainability of the project effect is fair.

## 4. Conclusion, Lessons Learned and Recommendations

### 4.1 Conclusion

The objective of the project was to reduce flood damage and improve the living environment of the area around Lunawa Lake, which is around 15 km south of the Colombo city, the commercial center of the country. This was to be achieved through constructing drainage, implementing a program to improve the living environment of the underserved communities and others.

Flood prevention and improvement of the living environment in urban areas were in line with Sri Lankan development policy, both at the time of planning and ex-post evaluation of the project, and the need for flood prevention in the target area was very high. Therefore, relevance of the project is high.

It was found that the number of houses flooded, the frequency, length of time and depth of inundation, were reduced remarkably when comparing the situation before and after the project. It was found that flood damage was almost eliminated. In the target area, hygiene and living environment was also improved, and the residents have better access during the rainy season. Therefore, effectiveness and impact of the project is also high.

Efficiency of the project is fair, as the project period was significantly longer than planned, although the project cost was within the plan. Sustainability of the project effect is fair because one of the municipalities, that is responsible for the target area, has several problems in operation and maintenance of the drainage system constructed by the project. It did not assign an adequate number of staff for the work, responsibility for the work is not clear, and cleaning of the drainage was not conducted periodically.

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

### 4.2 Recommendations

#### 4.2.1 Recommendations to the Executive Agency

- (1) It was found through the beneficiary survey that cleaning of the drainage system was not adequately conducted, especially in the MMC area. It is recommended that the MMC keeps on trying to convince the higher authorities of the need to recruit an adequate number of staff for the drainage system, assign them with proper responsibility, establish a drainage section, and develop, implement and monitor a plan for operation and maintenance. Moreover, it is effective to develop a plan to improve operation and maintenance work for drains in their area with the available staff of the council, and to implement it.
- (2) The current status of operation and maintenance of the drainage system by the DMMC is satisfactory in general; however, it could be improved by implementing the operation and maintenance work more systematically according to the work plan and carrying out cleaning of underground drains periodically. It is expected that DMMC will continue to try to convince the higher authorities of the need to recruit the necessary number of staff, assign them with proper responsibility, obtain technical assistance from the SLLRDC or the National Water Supply and Drainage Board, and purchase the necessary equipment to conduct periodical cleaning of the underground drains.
- (3) It was found that some of the CBOs, which had been formed by the project, became inactive after the project. It is recommended that the DMCC and the MMC provide them with more support, so that they can be involved more actively in the maintenance of the infrastructure in their area, solve their problems by themselves, activate the organizations, utilize the funds, etc.
- (4) The Ministry of Water Supply and Drainage is responsible for sustainability of the effects of the project; however, it has not played an active role due to the change of scope of work of ministries. However, it is recommended that a suitable institutional structure be established, with the aim of the ministry playing a leading role in monitoring and provision of advice for operation and maintenance of the drainage system constructed by the project.
- (5) The Ministry is also expected to coordinate and facilitate the followings:
  - 1) Disconnect all the sewerage of the households and apartments connected to the drainage system, so that its water quality will be improved.
  - 2) Complete the process of payment of the valuation of the lands acquired by the project and the delayed payment of interest to the PAPs as soon as possible.

#### 4.2.2 Recommendations to JICA

There are several concerns about the sustainability of the project effect, such as institutional aspects and the current situation on operation and maintenance of the

drainage, and improvement of water quality. It is expected that JICA will monitor the progress of implementation of the above-mentioned recommendations by the stakeholders.

#### 4.3 Lessons Learned

- (1) The project attained a remarkable effect in flood control, as it had learned lessons from the preceding projects. In addition to implementing the construction of the main and the secondary drainage system, the project also constructed micro and side drains in the residential area, and carried out an awareness creation programme on waste disposal, improvements of solid waste management and other activities. It is important for a flood control project to conduct not only construction of main and secondary drainage system, but also other related sub-components in an integrated way, in order to maximize the effect of flood control.
- (2) Transfer of responsibility for operation and maintenance was carried out without a problem in this project, as the two municipalities had gained a sense of ownership to the project by taking part in its planning and implementation. This arrangement was also made after learning a lesson from the preceding projects. If the institution which implements the project is not the one which is going to undertake operation and maintenance work of the facility constructed by the project, it is important to involve the institution that will be responsible for that work in planning and implementation of the project, in order to attain a smooth transfer of responsibility for the work.
- (3) This project is a notable example, which put into effect the National Involuntary Resettlement Policy of Sri Lanka. Other projects which involve involuntary resettlement are able to learn from the approach of the project, especially, to the entitlement package, function of the community information center, process of flexible modification of the original plan in accordance with the opinion of the PAPs, and grievance settlement procedure.
- (4) The project period was extended substantially as it was found in the detailed design that the number of PAPs would double, and a few PAPs filed court cases. It is necessary, in a project that involves large-scale land acquisition and involuntary resettlement, to identify a possible increase in the number of PAPs and court cases as risk factors of the project.

### Comparison of the Original and Actual Scope of the Project

Item	Original	Actual
1. Project Outputs	<p>1. Component of drainage improvement</p> <p>(1) Drainage (rehabilitation and new construction)</p> <p>(2) Dredging of Lunawa Lake</p> <p>(3) Removal of sea outfall</p> <p>(4) Construction of O&amp;M roads</p> <p>(5) Rehabilitation of the roads damaged by the construction</p> <p>(6) Procurement of equipment</p> <p>2. Component of community development</p> <p>(1) Involuntary resettlement</p> <p>(2) Upgrading of underserved settlements</p> <p>- Formation of community organizations</p> <p>- Improvement of living environment through community contract</p> <p>(3) Capacity building</p> <p>3. Consulting services</p>	<p>Almost as planned (more than the plan)</p> <p>Implemented by another project</p> <p>As planned</p> <p>Almost as planned</p> <p>Almost as planned</p> <p>Almost as planned</p> <p>Almost as planned (more than the plan)</p> <p>As planned</p> <p>As planned</p> <p>Almost as planned</p> <p>Period of assignment of the international consultants was not available. Period of assignment of the local consultants was extended.</p>
2. Project Period	December 2001 – October 2007 (69 months)	December 2001 – April 2010 (111 months)
3. Project Cost		
Amount paid in Foreign currency	4,792 million yen	2,180 million yen
Amount paid in Local currency	4,631 million yen	6,085 million yen
	(3,216 million Sri Lanka Rupees)	(6,907 million Sri Lanka Rupees)
Total	9,423 million yen	8,265 million yen
Japanese ODA loan portion	6,906 million yen	6,340 million yen
Exchange rate	1 Sri Lanka Rupee = 1.44 yen (As of December 2001)	1 Sri Lanka Rupee = 0.88 yen (Average between December 2001 and April 2010)