

JBIC ODA Loan Project Mid-Term Review

Time of Mid-Term Review Field Survey: May 2006

Project Name: Sri Lanka "Greater Kandy Water Supply Project"

**[Loan Outline]**

Loan Amount/Contract Approved Amount/Disbursed Amount: 5,151 million yen/4,873 million yen/2,588 million yen (as of May 2006)

Loan Agreement: Agreement entered March 2001 (Fifth years following the conclusion of L/A)

Final Disbursement Date: June 2008

Executing Agency: National Water Supply and Drainage Board (NWSDB)

**[Project Objective]**

By providing water supply facilities, this project aims to expand and stabilize the water supply in the Greater Kandy city and the northern region in the Kandy area, thereby improve public hygiene and the living environment.

Consultants: NJS Consultants (Japan) • Nihon Suido Consultants (Nissuicon) (JV) (Japan) Contractors: Hitachi, Ltd. (Japan) • Taisei Corporation (JV) (Japan)

Item	Results of ex-ante evaluation (at time of appraisal)	Ex-post evaluation results as estimated at time of mid-term review
<p><b>[Relevance]</b> (1) National policy level</p> <p>(2) Policy level</p> <p>(3) Project level</p>	<p>(1) The Sri Lankan government made the provision of "Safe Water for All by 2010" one of the nation's objectives, and to that end had been working to expand the water supply network. In its six-year development plan (1999-2004), the government established the following concrete targets with the provision of water supply facilities and safe drinking water.</p> <ul style="list-style-type: none"> <li>• The provision of safe drinking water under a socially appropriate tariff system</li> <li>• The provision of water supply facilities capable of supplying water for 24 hours a day</li> <li>• The use of private capital</li> <li>• Transfer of project control to local governments</li> <li>• The efficient use of water resources</li> <li>• The establishment of a sustainable operation and maintenance system</li> </ul> <p>(2) In 1998 the percentage of population served with water (access to safe water) in Sri Lanka was merely 65%. Specifically, 28% of the population received piped water while 37% were supplied from wells. NWSDB enacted a Corporate Plan (1999-2005) which set a goal for 79% of population served by 2005.</p> <p>(3) Whereas the water supply capacity in the Greater Kandy area in 1997 was roughly 60,000m<sup>3</sup>/day, peak demand was roughly 130,000m<sup>3</sup>/day. The water shortage was particularly acute in the Kandy city region and northern part of the Greater Kandy area. Even in areas where water supply facilities had been provided, because of the limited water supply, both the number of days and the time over which water was supplied were restricted in each region. At the time of the appraisal, it was estimated that peak water demand would reach roughly 170,000m<sup>3</sup>/day in 2015, so expanding the water supply capacity was an urgent matter. A 2001 census confirmed the fact that the population in the Greater Kandy area was increasing. Moreover, a detailed design study conducted in 2002 indicated that the water shortage was severe. As this project aimed to mitigate the gap between the water supply and demand step by step, its priority was quite high.</p>	<p>(1) The development policies promulgated by the Mahinda Rajapaksa administration, which came to power in 2005, are indicated in "Mahinda Chintana" (Mahinda Vision) and the policy framework outlined under the title "Creating Our Future. Building Our Nation: The Economic Framework of the Government of Sri Lanka." Those policies aim to provide state support for the provision of infrastructure ; thereby correct regional income disparities and redress the imbalanced distribution of wealth, and aim to provide vital regional investment that can serve as a foundation for growth in local areas. As investment targets, focus is placed on providing a road network, expanding power supply capabilities, providing harbors and ports, providing water supply and sewerage, and providing other infrastructure found to be lacking in rural areas.</p> <p>(2) In its National Policy on Drinking Water Supply and Sanitation, 2004, the NWSDB sets the following water supply targets.</p> <ul style="list-style-type: none"> <li>• Percentage of population served with safe water: 85% by 2015, and 100% by 2025</li> <li>• Percentage of population served with piped water: 100% in urban areas, and 75% in rural areas by 2015.</li> </ul> <p>Located in a mountainous region in the central area of the country, Kandy is Sri Lanka's second largest city, serving as an important hub for tourism, culture, and administration. The population in the Greater Kandy area has expanded rapidly in recent years, and the demand for water is extremely high. The water shortage in Kandy city and the northern part of the Greater Kandy area is particularly acute. Despite the fact that it is the nation's second largest city, the percentage of population served for the Greater Kandy area was only 35% as of 2005. With the target reach set at 85% for 2015, progress is well behind schedule. (The national percentage of population served including rural areas is 28% , and this too is a low rate.)</p> <p>(3) In 2005 NWSDB conducted its review on the Master Plan "The Study on Greater Kandy and Nuwara Eliya Water Supply &amp; Environmental Improvement Plan(1992)," prepared by Japan International Cooperation Agency (JICA ) at the stage of formulating the project. According to the study, whereas the water supply volume was roughly 60,000m<sup>3</sup>/day in the Greater Kandy area, peak demand was 130,000m<sup>3</sup>/day. By 2015 peak water demand is expected to reach 180, 000 m<sup>3</sup>/day. Given the continuing water supply shortage, expanding the water supply capacity to provide safe water has become a pressing matter. As this project aims to mitigate the gap between the water supply and demand step by step, its priority continues to be high.</p>

<b>[Effectiveness]</b>	(1) Operation and Effect Indicators		(1) Operation and Effect Indicators	
		Conditions in 2001 (at time of appraisal)	2006 target figures (year project expected to be completed)	Actual figures in 2005 (at the time of the mid-term review)
	Water supply volume (capacity addition by the Project)	-	33,000m <sup>3</sup> /day →36,670m <sup>3</sup> /day	Water supply volume (average volume to be added by the Project)
	Population served	-	232,500 people	Population served
	Water supplied hours per day 1) Inside Kandy city	20 hours /day	24 hours /day	Water supplied hours per day 1) Inside Kandy city
	2) Outside Kandy city	7 hours / day	20 hours / day	2) Outside Kandy city
	<p>Water supply volume: The water supply volume to be supplied was expanded at the time of 2001 Project Memorandum following the preliminary appraisal.</p> <p>Population served: This figure consists of the target population to be served with the water supply as indicated in the Request for Concurrence submitted to JBIC in August 2003 for reducing the project scope. The figure includes the population to be served through existing reservoirs as well as the population targeted by 19 distribution reservoirs to be constructed by this project.</p>			<p>Water supplied hours per day: Target water supply hours at the time of project completion for outside of Kandy was changed to 24 hours per day at the time of the mid-term review.</p> <p>Population served: As the project scope was reduced, the population served initially targeted at time of project completion was changed to 147,130 people (the Request for Concurrence submitted to JBIC in August 2003 for reducing the project scope). The actual figure of population as of 2005 shown above indicates those who receive water from existing water supply facilities in areas with 19 distribution reservoirs which are under construction (that is, the figure does not include the population served by water from other reservoirs' area).</p> <p>Unaccounted for water rate 1) Inside Kandy city 2) Outside Kandy city</p> <p>Percentage of population served</p> <p>Water supply per capita (average)</p>
	<p>(2) Factors which may influence the effectiveness and impact</p> <p>1) Approval from the Ministry of Environment relating to the performance of reclamation work in some areas was received without a hitch. There were no signs of negative impact on the environment.</p> <p>2) Water quality monitoring of the Mahaweli river is conducted continuously at the several designated locations, and no major problems in water quality have been detected. The monitoring of water quality is carried out under its own management system.</p> <p>3) At the time of the appraisal, 13 farming households were estimated to reside in the construction target area, meaning that land acquisition was necessary for the construction work. However, it eventually turned out that only two households had been temporarily relocated and other lands acquired were farmlands and forests. Acquisition of forests and fields was completed before starting the actual construction work, and construction has been proceeding using those lands. Land acquisition was implemented in accordance with the Land Acquisition Act (1950). There are 17 lots of farmlands and forests targeted for acquisition. The first land was acquired in October 2000, and the last acquisition was completed in December 2003. Regarding the price of the acquired land, the executing agency is allowed to set prices in line with market prices after submitting an application to the cabinet and receiving its approval. The cabinet application procedure was completed, and the formal approval was granted in a cabinet meeting held in April 2006. The government issued a formal notification of that approval, and the payments will be conducted based on the approval. Complaints for noise, traffic blockage, and vibrations caused by the construction were received, but the NWSDB has mitigated their effect, provided relief, made repairs, and offered compensation to the individual complaint. No lawsuits have been filed.</p> <p>(3) Factors which may influence the sustainability</p> <p>1) The provision of sewerage facilities is lagging in target areas. The provision of water supply facilities increase burden on the environment. It is vital that parallel measures be taken for the disposal of sewerage water along with the provision of water supply facilities.</p> <p>2) Six administration improvement measures were scheduled to be implemented to strengthen NWSDB's financial capacity. These measures include reducing expenditure, formulating an appropriate water tariff policy, strengthening the finance department and inventory management, reducing unaccounted-for water rate, strengthening the bill collection system, and ensuring that new investment plans are appropriate. NWSDB has gathered these measures into one project plan and has been implementing them. A review is being conducted under the annual corporate action plan, but the input for the implementation is not sufficient; for instance, measures to redress un-accounted for water rate which were assumed under JICA's master plan, have not been included in the loan package.</p>			<p>20 hours/day</p> <p>4-10 hours/day</p> <p>46% (2004)</p> <p>28%</p> <p>57%</p> <p>159 liters</p>
Information for reference				

<p><b>[Efficiency]</b> (1) Outputs</p>	<p>(1) Outputs</p> <ul style="list-style-type: none"> <li>Construction of water intake and water conveyance pipelines</li> <li>Construction of water treatment plant</li> <li>Construction of transmission facilities</li> <li>Construction of water distribution facilities and chlorination facilities</li> <li>Procurement of equipment for operation and maintenance</li> <li>Consulting services (total 184 M/M, foreign staff: 66 M/M, local staff: 118M/M)</li> </ul> <table border="1" data-bbox="537 369 1484 1052"> <thead> <tr> <th></th> <th>Initial plan (at time of the appraisal)</th> <th>Changes based on design details (May 2002)</th> </tr> </thead> <tbody> <tr> <td>Intake Structure</td> <td>115,000m<sup>3</sup>/day</td> <td>115,000m<sup>3</sup>/day</td> </tr> <tr> <td>Water Conveyance Pipelines</td> <td>2,200m</td> <td>1,433m</td> </tr> <tr> <td>Water Treatment Plant</td> <td>33,000m<sup>3</sup>/day</td> <td>36,670m<sup>3</sup>/day</td> </tr> <tr> <td>Transmission Pipelines</td> <td>39,290m</td> <td>41,585m</td> </tr> <tr> <td>Distribution Facilities</td> <td>18 locations</td> <td>19 locations</td> </tr> <tr> <td>Reservoir capacity of Distribution Facilities</td> <td>9,358m<sup>3</sup></td> <td>12,710m<sup>3</sup></td> </tr> <tr> <td>Distribution Pipelines</td> <td>Approx. 30,000m</td> <td>27,687m</td> </tr> <tr> <td>Equipment for Operation and Maintenance</td> <td>Water quality testing equipment, water leakage testing equipment, truck with crane, etc.</td> <td>same as initially planned</td> </tr> <tr> <td>Consulting Services</td> <td>Foreign staff: 66 M/M Local staff: 118 M/M</td> <td></td> </tr> </tbody> </table>		Initial plan (at time of the appraisal)	Changes based on design details (May 2002)	Intake Structure	115,000m <sup>3</sup> /day	115,000m <sup>3</sup> /day	Water Conveyance Pipelines	2,200m	1,433m	Water Treatment Plant	33,000m <sup>3</sup> /day	36,670m <sup>3</sup> /day	Transmission Pipelines	39,290m	41,585m	Distribution Facilities	18 locations	19 locations	Reservoir capacity of Distribution Facilities	9,358m <sup>3</sup>	12,710m <sup>3</sup>	Distribution Pipelines	Approx. 30,000m	27,687m	Equipment for Operation and Maintenance	Water quality testing equipment, water leakage testing equipment, truck with crane, etc.	same as initially planned	Consulting Services	Foreign staff: 66 M/M Local staff: 118 M/M		<p>(1) Outputs</p> <p>Project costs increased in the bidding for the construction work, and to keep the costs within the loan amount limits a portion of the project scope had to be reduced, and thus project output was changed.</p> <table border="1" data-bbox="1516 369 2196 1041"> <thead> <tr> <th></th> <th>Target values at the time of the mid-term review</th> </tr> </thead> <tbody> <tr> <td>Intake Structure</td> <td>115,000m<sup>3</sup>/day</td> </tr> <tr> <td>Water Conveyance Pipelines</td> <td>969m</td> </tr> <tr> <td>Water Treatment Plant</td> <td>36,670m<sup>3</sup>日</td> </tr> <tr> <td>Transmission Pipelines</td> <td>27,111m</td> </tr> <tr> <td>Distribution Facilities</td> <td>4 locations</td> </tr> <tr> <td>Reservoir capacity of Distribution Facilities</td> <td>5,900m<sup>3</sup></td> </tr> <tr> <td>Distribution Pipelines</td> <td>17,366m</td> </tr> <tr> <td>Equipment for Operation and Maintenance</td> <td>Cancelled</td> </tr> <tr> <td>Consulting Services</td> <td>Foreign staff: 48.75 M/M Local staff: 549 M/M</td> </tr> </tbody> </table> <p>Note: During the project execution stage, the construction period was delayed. On account of the delay, it became necessary to increase the amount of consultants' work.</p> <p>1) Detailed designs following the loan agreement finished within the expected work period, but at the stage of starting the actual construction work, it was pointed out that there was a gap between the results of the detailed design and the actual conditions at the construction site. The degree of the design accuracy and work volume estimates deviated from the actual condition, and so revisions to the design were implemented before starting the construction.</p> <p>2) The executing agency positively undertook coordination with two steering committees (see note) or other committees. There were no cases of insufficient coordination turning into a major problem in the context of obtaining approval. On the other hand, in the monitoring of construction work progress, these institutions did not function effectively, and so it was not possible to prevent delays or take recovery measures.</p> <p>3) Budgetary constraints made it inevitable for a portion of the project scope to be curtailed in the provision of water pipes and distribution facilities. The cutbacks of the project scope resulted in the reduction in the effectiveness of the project partly. Financial relevance was also affected.</p> <p>Note: The two steering committees were Steering Committee on Japanese ODA Projects and Provincial Steering Committee. The Steering Committee members on Japanese ODA Projects includes; Ministry of Urban Development and Water Supply, the Ministry of Finance, Central Bank, Embassy of Japan, NWSDB, JBIC, and related agencies such as Road Development Authority, etc. The members of the Provincial Steering Committee are; Representatives of the Province, Secretaries of the Districts, Secretaries of Divisions, the Road Development Authority, Survey Superintendent, Representatives of related government offices and agencies of the area, and NWSDB.</p>		Target values at the time of the mid-term review	Intake Structure	115,000m <sup>3</sup> /day	Water Conveyance Pipelines	969m	Water Treatment Plant	36,670m <sup>3</sup> 日	Transmission Pipelines	27,111m	Distribution Facilities	4 locations	Reservoir capacity of Distribution Facilities	5,900m <sup>3</sup>	Distribution Pipelines	17,366m	Equipment for Operation and Maintenance	Cancelled	Consulting Services	Foreign staff: 48.75 M/M Local staff: 549 M/M
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<p>(2) Project period</p>	<p>(2) March 2001-May 2006 (63 months)</p>	<p>(2) March 2001-January 2007 (projected) (70 months)</p> <p>Bidding for the main construction work began earlier than initially planned. Bids exceeded the loan budgets, and some time was needed to settle that. Contract signing was not delayed from initial plan, and was completed in November 2003. The current expected date of completion, including for payment, is January 2007.</p>																																																		

<b>Results of survey on degree of satisfaction with Special Yen Loan (* )</b>	<p>This project has been implemented under Special Yen Loan. Though the rationale is not necessarily evident, NWSDB has pointed out that one of the reasons for the increased project cost was that the procurement under Special Yen Loan was Japan-tied (see note). The contractor did not directly refer to the project cost or the quality itself, but they pointed out the delay of the construction work due to the lack of sufficient preparation by NWSDB. On the other hand, the consultants claim that the both sides have not been fully aware to receive the high quality Japanese technology and know-how through Special Yen Loan, and have not been able to appropriately respond to it up to date.</p> <p>Note: As a procurement condition for the Special Yen Loan, total cost of goods procured from Japan shall be no less than 50% of the total amount of contracts financed by Special Yen Loan.</p>
<b>Lessons learned and recommendation</b>	<p>Lessons learned When the budget exceeds the initial plan and cutbacks in the project's scope is necessary, measures should be considered which include Special Assistance for Project Implementation (SAPI), etc. to cope with and mitigate the reduction of the project's effectiveness.</p> <p>Recommendations At the time of the loan agreement, NWSDB made a commitment to improve its management and strengthen organizational capacity. As for the improvement of its management, it depends on the implementation of the NWSDB's plan. However, the parts of the Master Plan "The Study on Greater Kandy and Nuwara Eliya Water Supply &amp; Environmental Improvement Plan" covering the specific areas including the measures coping with the unaccounted-for water rate, were not attended by the Yen Loan package and project plans to improve management are thus being carried with insufficient input. We recommend that NWSDB and the Sri Lankan government provide sufficient necessary investment in its long-term plans and implement the project.</p>
<b>Indicators set for the ex-post evaluation</b>	<p>After discussion with NWSDB, it was agreed to use the following indicators after the project completion and when the operation starts.</p> <p>(Operation indicators)  (1) Population served with water  (2) Water supply volume (max. and avg.)  (3) Rate of facility utilization  (4) Unaccounted-for water rate  (5) Water quality</p> <p>(Effect indicators)  (1) Percentage of population served  (2) Water supply per capita (max. and avg.)  (3) Water supply volume</p>

(\* ) It was planned that the survey on degree of satisfaction with Special Yen Loan would be conducted at the time of the Ex-Post Evaluation (Ex-Post Evaluation is conducted two years after the completion of the project). However as no Special Yen Loan projects are yet to reach the timing of the ex-post evaluation for this fiscal year, the survey was provisionally conducted at the time of the Mid-Term Review. More specific survey on degree of satisfaction with Special Yen Loan should be conducted at the time of the Ex-Post Evaluation when the project is completed and the facility starts its operation, to research appropriately the degree of satisfaction of the recipient country with Special Yen Loan including the aspect of cost-effectiveness as well as the quality of the project. At the time of ex-post evaluation, JBIC is determined to conduct the survey properly as soon as possible in light of the remarks of the concerned parties expressed in this Mid-term Review report. Some improvements have been already made at the time of the transition from Special Yen Loan to Special Terms for Economic Partnership (STEP), and if further issues are identified in the future at the time of Ex-Post Evaluation, we will re-examine implementation method of the yen loan for necessary improvement.