

Democratic Socialist Republic of Sri Lanka

FY 2015 Ex-Post Evaluation of Japanese ODA Loan Project

“Pro-Poor Economic Advancement and Community Enhancement Project”

External Evaluators: Keisuke Nishikawa, Japan Economic Research Institute Inc.

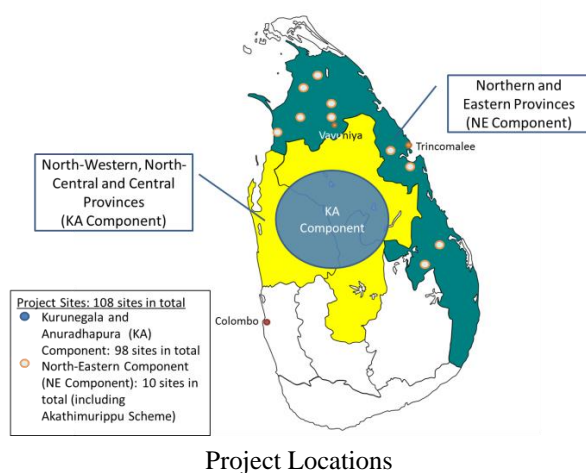
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## 0. Summary

This project was implemented in the North-Western, North-Central, Central, Northern and Eastern Provinces of Sri Lanka to develop and reconstruct rural areas by rehabilitating irrigation systems and engaging in Income Generation Activities, thereby helping reduce poverty, improving agricultural productivity and achieving sustainable rural development. At the time of appraisal and ex-post evaluation, this project was highly relevant to the development policy, sector policies and development needs of Sri Lanka in terms of poverty reduction, rural development and rehabilitation of irrigation. This project was also relevant to Japan’s ODA policy at the time of appraisal. Therefore, its relevance is high. Efficiency is fair because the total project period exceeded the plan following a three-year delay in commencement but the project cost was as planned. In terms of the project effectiveness and impact, positive qualitative effects and impacts were seen on the project sites. In terms of project effectiveness, positive qualitative effect and impacts were confirmed and the obtained data also shows that most of the actual project outcomes exceeded the target figures. Therefore, the effectiveness and impact of this project are high. As for the operation and maintenance for the project sustainability, organizational aspects and the current maintenance status does not seem to have any problems, although some technical and financial issues arose. Therefore, the sustainability was deemed fair.

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

## 1. Project Description



Field Canal: Rehabilitated during the project and maintained by the farmers (Anuradhapura District, North-Central Province)

## 1.1 Background

There were two major types of agriculture in Sri Lanka: one is the farmer's farm; focused on producing rice for domestic consumption; and the other is plantation farming, which mainly produces export crops. Rice comprised 22% of the total agricultural production and three major plantation crops (tea leaves, rubber and coconuts) made up 27% of the same, constituting a large proportion of Sri Lankan industry<sup>1</sup>. Although GDP from the agricultural sector declined to around 20%<sup>2</sup>, this sector still contributed largely to the Sri Lankan economy in terms of acquiring foreign currencies by exporting plantation products, while the high rice-sufficiency ratio also saved on food imports for domestic consumption. Since about 70% of the total population in Sri Lanka inhabited rural areas, mostly farmers<sup>3</sup>, one of the key national issues had been to ensure the employment opportunity in agriculture and related industry fields.

Dry and semi-dry areas of Sri Lanka, namely the North-Western, North-Central, Central Provinces and Northern and Eastern Provinces, were lagging behind in economic development with less income growth, and poverty ratio in rural areas were seriously high because of water shortages caused by the deteriorated irrigation systems and declining job opportunities. Rural areas in the Northern and Eastern Provinces in particular remained underdeveloped because of the civil war which lasted 20 years and required inclusive rural development projects with a view to promoting the return and resettlement of residents following the ceasefire agreement.

Based on this background, the Government of Sri Lanka (hereinafter referred to as "GOSL") adopted the policies to strengthen soft support such as capacity enhancement for maintenance and management of existing irrigation systems, facilitating Farmer Organization (hereinafter referred to as "FO") for water management, improvement of seeds and fertilizer distribution etc. In line with these policies, this project was formulated to help facilitate poverty reduction in the agricultural sector and return of farmers' home to the Northern and Eastern Provinces by leveraging Japanese experiences.

## 1.2 Project Outline

The objective of this project is to develop and reconstruct rural areas by rehabilitating irrigation systems and engaging in Income Generation Activities in the North-Western, North Central, Central and Northern and Eastern Provinces (pilot schemes), thereby helping reduce poverty, boosting agricultural productivity and achieving sustainable rural development.

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<sup>1</sup> Information from JICA

<sup>2</sup> Sri Lanka Socio-Economic Data (2001), Central Bank of Sri Lanka

<sup>3</sup> Information from JICA

<ODA Loan Project>

Loan Approved Amount/ Disbursed Amount	6,010 million yen / 5,978 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	March, 2003 / March, 2003
Terms and Conditions	Interest Rate                      2.2% Repayment Period                30 years (Grace Period)                    (10 years) Conditions for Procurement:                      General Untied
Borrower / Executing Agency	The Government of Democratic Socialist Republic of Sri Lanka/ Ministry of Irrigation and Water Resources Management
Final Disbursement Date	May, 2013
Main Contractor (Over 1 billion yen)	-
Main Consultant (Over 100 million yen)	Nippon Koei Co., Ltd. (Japan)
Feasibility Studies, etc.	“The Study for Potential Realization of Irrigated Agriculture in the Dry and Intermediate Zones of Sri Lanka” (JICA, 2000) (Created agricultural master plan for increasing income and efficient use of agricultural water in dry and intermediate zone)
Related Projects	[ODA Loans] - Construction of the Inginititiya Irrigation Dam Project (L/A signed in August, 1978) - Minipe and Nagadeepa Irrigation Rehabilitation Project (L/A signed in July, 1988) - Walawe Left Bank Irrigation Upgrading and Extension Project (E/S) (L/A signed in July, 1994) (I) (L/A signed in August, 1995) (II) (L/A signed in October, 1996) - Mahaweli System C Upgrading Project (L/A signed

	<p>in August, 1997)</p> <p>[Technical Assistance]</p> <ul style="list-style-type: none"> <li>- The Study on Increasing Integrated Management Capacity on Irrigation Sector (October 2005 – July 2006)</li> <li>- Increasing the capacity of integrated management in irrigated agriculture in dry zone (June 2007 – May 2011)</li> </ul> <p>[Other Donors]</p> <ul style="list-style-type: none"> <li>- USAID: “Irrigation Management Policy Support Activity (IMPSA)” (1990-1991)</li> <li>- World Bank: Rich in implementing projects for rehabilitation of irrigation systems. Implemented an irrigation project for rehabilitation of basic production infrastructure in North-East area. e.g.) ”National Irrigation Rehabilitation Project” (1991-1998), ”Major Irrigation Rehabilitation Project” (1981 - 1990), “Village Irrigation Rehabilitation Project” (1981-1990), “Tank Irrigation Modernization Project” (1976-1984), “North-East Irrigated Agriculture Project” (1999-2005)</li> <li>- ADB: Establishment of National Water Resources Authority, implementation of capacity development training and provision of technical assistance on infrastructure development in Kelani River. e.g.) “North-East Community Restoration and Development Project” (2001-2009)</li> </ul>
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## 2. Outline of the Evaluation Study

### 2.1 External Evaluators

Keisuke Nishikawa, Japan Economic Research Institute Inc.

Miyuki Sato, Japan Economic Research Institute Inc.

### 2.2 Duration of Evaluation Study

Duration of the Study: August 2015 – October 2016

Duration of the Field Study: November 23 – December 5, 2016 and February 22 – 27, 2016

### 2.3 Constraints during the Evaluation Study

With regard to the operation and effect indicators set in 2013, baseline and target figures of “Production Volume of Major Crops” were found to be incorrect using an unclear calculating method<sup>4</sup>. Moreover, data collection was made by following the same approach as the baseline survey but some of the data were not available because the data was not updated after the completion of the project. As a result, it was difficult to compare the target figures and baseline figures with actual figures, which meant that there was limited scope for quantitative evaluation of effectiveness. As for Northern and Eastern Provinces, no indicator was set for the evaluation because most of the data in these provinces were totally or partially lost during the civil war. Accordingly, North East Component (hereinafter referred as “NE Component”) had no choice but to evaluate the “Effectiveness” of the project qualitatively rather than quantitatively.

## 3. Results of the Evaluation (Overall Rating: B<sup>5</sup>)

### 3.1 Relevance (Rating: ③<sup>6</sup>)

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

##### 3.1.1.1 Policy on Poverty Reduction

At the time of appraisal, “Connecting to Growth: Sri Lanka’s Poverty-Reduction Strategy (Poverty-Reduction Strategy Paper/PRSP, final draft was released in June 2002)”, a development strategy of the GOSL, cited “revitalizing rural development” and “rural poverty reduction” as core issues to resolve. This project involved rehabilitating irrigation systems and conducting Income Generation Activities which could help develop plantations and manage water for poverty reduction in line with the PRSP.

At the time of ex-post evaluation, according to the Economic Policy Statement (2016) made by the Prime Minister on November 5, 2015 (hereinafter referred to as “Economic Policy Statement 2016”), 43% of the population lived at about 2 US Dollars per day, with low living standards. Therefore, GOSL focuses on increasing household income by generating job opportunities, which creates a wide and strong middle class in the country.

##### 3.1.1.2 Agricultural Policy

At the time of appraisal, “The National Agriculture, Food and Nutrition Strategy (1984)” formulated by GOSL referred to the enhancement of export products, increasing income and expanding job opportunities in the agricultural sector as some of the highlighted goals. These highlights are consistent with goal of this project which is to boost a farmer’s income. Also, according to the Government’s mid- and long-term vision, “Regaining Sri Lanka:

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<sup>4</sup> The total amount of targeted agriculture products far exceeded the total amount of whole agriculture products in Sri Lanka.

<sup>5</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>6</sup> ③: High, ②: Fair, ①: Low

Vision and Strategy of Accelerated Development” approved by the Cabinet in December 2002, aimed at improving efficiency in production of crops and processing competitive export products so as to compete more effectively in both domestic and overseas markets. This project which was designed to increase productivity and income for farmers by rehabilitating irrigation systems and a series of Income Generation Activities matches the vision of GOSL.

At the time of ex-post evaluation, agriculture remained one of the key sectors and agricultural policy is regarded as key in this country. “National Agricultural Policy”, compiled and drafted by the present government in July 2015, set its vision of this policy as “to build a nation with the agricultural sector” by means of producing high-quality seeds and saplings, promoting side businesses (running animal husbandry and inland fisheries as well as farming) and promoting home gardening, etc. These recommended activities are very close to the project activities which were implemented as Income Generation Activities. Talking of the rehabilitation of irrigation systems, the Economic Policy Statement 2016 includes a note of the need to strengthen rural infrastructure facilities such as farm roads and water tanks.

Based on the above, this project is deemed to have been highly consistent with policy on poverty reduction and agricultural policies at the time of both appraisal and ex-post evaluation.

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

At the time of appraisal, 70% and more of the population lived in the rural areas and most of the workforces were in the agricultural sector. The agricultural sector was important from a poverty-reduction perspective. In order to improve agricultural productivity, it was necessary to develop the rural and agricultural sectors in dry and semi-dry zones which occupied almost 70% of the land in Sri Lanka. The target project areas, North-Western Province (Kurunegala and Puttalam Districts), North-Central Province (Anuradhapura District) and Central Province (Matale District), were located in dry and semi-dry zones, suffered from rural development bottlenecks such as water shortages, due to the deteriorated irrigation systems and declining job opportunities. In North East Province (this Province was divided into two provinces (Northern Province and Eastern Province) after the project started) after the ceasefire agreement was reached, an inclusive rural development focusing on rehabilitation of irrigation as a core value for the traditional rural society systems was needed in order to promote resettlement of returnees from the war as part of stable rural development.

At the time of ex-post evaluation, the Economic Policy Statement 2016 pointed out that production of the Northern Province only comprised around 4% of GDP although more than

five years passed after the end of civil war. Given the considerable disparity between economic development in Colombo and its surrounding areas and the rest of the country, GOSL confirms needs to focus specifically on Northern, Eastern and North-Central Provinces when promoting economic development.

The poverty headcount index (poverty rate), which is proportion of population living below the official national poverty line<sup>7</sup>, is shown in Table 1. The poverty rate in Sri Lanka in 2012/2013 declined to 6.7% from 22.7% in 2002/2003. As for the poverty rate in rural areas, the rate declined to 7.6% in 2012/2013 from 24.7% in 2002/2003. However, about 43% of people in Sri Lanka still live on around 2 US Dollars per day, with low living standards

Table 1: Agricultural Data in Sri Lanka

Items	At the time of Appraisal (Year 2002/2003)	Ex-Post Evaluation (Year 2012/2013)
Agriculture Sector's Share in GDP	15.1% (187.1 billion Rupees.)	10.1% (353.8 billion Rupees.)
% of agricultural workers in the labor force	34.5%* (About 2.25 million people)	28.5% (About 2.4 million people)
Poverty Headcount Index (Sri Lanka)	22.7%*	6.7%
(Urban)	7.9%*	2.1%
(Rural)	24.7%*	7.6%

Source: Department of Census and Statistics of Sri Lanka

\* Northern and Eastern Provinces are excluded from the data in 2002/2003.  
(Both are included in 2012/2013.)

According to an interview with the Irrigation Management Division (hereinafter referred to as “IMD”) of Ministry of Irrigation and Water Resources Management (hereinafter referred to as “Ministry of Irrigation”), the target sites of this project covers 108 irrigation schemes (Major, Medium and Minor Irrigation Schemes + 10 pilot schemes in Northern and Eastern Provinces). Since there are around 5,500 Minor Irrigation Schemes in Kurunegala and Anuradhapura Components (hereinafter referred to as “KA Component”), covering Kurunegala, Anuradhapura, Puttalam and Matale Districts, high demand for rehabilitation still exists. While 10 irrigation schemes were selected as the pilot schemes under the NE Component, the demand for rehabilitation of the rest of the schemes also remains high.

### 3.1.3 Relevance to Japan's ODA Policy

According to the “ODA Country Data Book 2002” by the Ministry of Foreign Affairs of Japan, ODA policy for Sri Lanka advocated continuous support to develop agriculture and

<sup>7</sup> The official national poverty line was set at 1,423 Rupees per month in 2002. In 2012/2013, the poverty line was set at 3,624 Rupees. The poverty line in 2012/2013 is equivalent to about 1.5 US Dollars per day.

fisheries and to reduce poverty in the context of reconstruction in Northern and Eastern areas in line with a vision of medium- to long-term development. At the time of appraisal, JICA's ODA policy in Sri Lanka, "Country Assistance Policy for Sri Lanka (ODA Loan: November 2002)," raised prioritized areas as economic infrastructure development, foster industries, support for poor people, support for Northern and Eastern areas and this project was particularly consistent with "support for poor people" and "support for Northern and Eastern areas" of the Policy. The Policy mentioned that 85% of poor lived in rural areas and 25% of people in Sri Lanka lived on 14 US Dollars per month (1995/96 basis), which was below the official poverty line (excluding Northern and Eastern areas due to a lack of data). Accordingly, supporting the rural community and agricultural sector by rehabilitating irrigation systems was listed as measures for poverty reduction in the Policy. Also, the Policy proposed development of irrigation systems as part of a long-term support for Northern and Eastern areas. In line with the Policy advocating support for agricultural sector as part of poverty reduction, this project was expected to expand farm land, increase agricultural productivity and farmers' income through rehabilitating irrigation systems.

Accordingly, the relevance to Japan's ODA policy at the time of appraisal is deemed to have been high.

This project has been highly relevant to Sri Lanka's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

### 3.2 Efficiency (Rating:②)

This project comprises two components: the KA Component, which includes North-Western Province (Kurunegala and Puttalam Districts), North-Central Province (Anuradhapura District) and Central Province (Malate District) and the NE Component, which includes Northern Province (Vavunya, Mannar, Mullative and Kilinochchi Districts) and Eastern Province (Ampara, Batticaloa and Trincomalee Districts). Each Component also has an Executing Agency so that each Component virtually functioned as an independent project<sup>8</sup>.

#### 3.2.1 Project Outputs

This project encompasses five categories: 1) Civil Works, Procurement and Supporting Facilities (KA Component); 2) Soft Component (KA Component); 3) Consulting Services (KA Component); 4) North East Component; and 5) Others (KA and NE Components). There

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<sup>8</sup> The Ministry of Irrigation was previously the only Executing Agency to handle all targeted areas when the project started. However, with the regime change in 2004, the new Government divided the project into two components (KA and NE components) and appointed the Ministry of Relief, Rehabilitation and Reconciliation (hereinafter referred to as MRRR, later changed as Ministry of Economic Development, now it was dismantled) as Executing Agency of the targeted areas in the former North East Province (Northern and Eastern Provinces at present).



are many activities other than rehabilitating irrigation systems; activities to enhance income such as farmer’s training and microcredits etc. The activities in the NE Component were separate from those of the KA Component, because the status of NE Component was “pilot program”, and the Executing Agency was the Ministry of Economic Development, unlike that of the KA Component.

The project was implemented as planned. The major project activities are shown in Table 2.

Table 2: Major Project Activities

At the time of Appraisal	Actual	
<b>1) Civil Works, Procurement and Supporting Facilities (KA Component: North-Western, North-Central, and Central Provinces)</b>		
Rehabilitation of 8 Major Irrigation Schemes	Civil Works	Rehabilitation of 9 Major Irrigation Schemes (8 schemes + Abhayawewa scheme, Anuradhapura) + Akathimurippu Irrigation Scheme in Northern Province*
Rehabilitation of 12 Medium Irrigation Schemes		Rehabilitation of 9 Medium Irrigation Schemes
Rehabilitation of 80 Minor Irrigation Schemes		Rehabilitation of 80 Minor Irrigation Schemes
Farm road improvements		Farm road improvements
Construction of 27 Farmer Centers	Construction and Rehabilitation of Supporting Facilities	Construction of 1 Farmer Center
Upgrading Seed Farm in Galgamuwa, North-Western Province		Construction of a new water supply scheme (water distribution system) at Magadama Seed Farm in Galgamuwa, North-Western Province
Upgrading Integrated Farmer Training Center (hereinafter referred to as “IFTC”) in Nikaweratiya, North-Western Province		Rehabilitation of the IFTC (training hall) in Nikaweratiya, North-Western Province
Upgrading of one Aqua-culture Extension Center		Changed to the following rehabilitation and construction: 1) Construction of two poultry sheds in Livestock Development Farm 2) Renovation of the office building at Department of Agriculture (hereinafter referred to as “DOA”) in Anuradhapura 3) Construction of an auditorium for 60 persons at Provincial DOA, North-Central Province
Renovation of 10 Agrarian Development Centers		Rehabilitation of five facilities of Department of Agrarian Development (hereinafter referred to as “DAD”): training centers, conference halls of Agrarian Service Center in each area
Equipment necessary for implementing civil works and training sessions such as vehicles, training equipment, computers, etc.	Procurement	Vehicles for consultants, Executing Agency and PMU (including motorcycles and trucks) and office equipment
<b>2) Soft Components (Awareness and Training) (KA Component: North-Western, North-Central, and Central Provinces)</b>		
Income Generation Activities	Income Generation Activities: Provided training programs based on “Agriculture + other business (including development of minor entrepreneurship)” – livestock development, inland fisheries, manufacturing etc.	
Awareness Training: To initiate a sense of ownership among government officers, Farmers’	Awareness Training: Conducted following activities as “Social Mobilization”	

At the time of Appraisal	Actual
Organization (FO) leaders and farmers	<ul style="list-style-type: none"> <li>- Awareness Program: Targeted government officials (Project Implementing Agencies, hereinafter referred to as “PIA”: IMD, Irrigation Division (hereinafter referred to as “ID”) and DAD) and farmers. The purpose of the program was to create awareness about the project and initiate a sense of ownership among those targeted. The program trainers for government officials were consultants. And the trainers for farmers of this program were the officials of PIAs: (30 officials from IMD, ID and DAD) who took training of trainers (hereinafter referred to as “TOT”) .TOT was conducted by consultants.</li> <li>- CAP Workshop (CAP = Community Action Planning): Workshop for FO members. Farmers in FO attended the Workshop to identify their basic needs and discuss what they would like to do. Each FO clarified their needs and the kind of activities they had needed.</li> </ul>
Organizational strengthening of FOs: Water management, agricultural extension, marketing etc.	<p>Organizational strengthening of FOs: Conducted training sessions and workshops in terms of fund and contract management of FO, technical improvement of maintenance works for irrigation schemes etc.</p> <p>Improvement of agricultural extension services and technical improvement activities: increasing productivities of rice, diversifying agricultural products other than rice: maize, onions etc. Promoted commercial crops such as banana, mango, guava etc.</p>
<b>3) Consulting Services (KA Component: North-Western, North-Central and Central Provinces)</b>	
Detailed design, reviewing bidding documents, assisting in bid evaluation process, construction supervision, designing detailed Microcredit schemes, supporting soft components such as marketing support etc.	<ul style="list-style-type: none"> <li>- Planned and supervised rehabilitation works for sub-system in Major and Medium Irrigation Schemes and all works in Minor Irrigation Schemes</li> <li>- Prepared detailed design, bidding documents and assisted in bid evaluation process for sub-system in Major and Medium Irrigation Schemes and all works in Minor Irrigation Schemes</li> <li>- Supported the Social Mobilization Program (CAP Workshop and awareness programs), Income Generation Activities including Microcredit program and related coordination</li> <li>- Assisted the implementation of overseas training programs for government officers</li> </ul>
<b>4) North East Component (Northern and Eastern Provinces)</b>	
Rehabilitation of 10 pilot schemes in Northern and Eastern Provinces	Rehabilitation of 9 pilot schemes in Northern and Eastern Provinces*
Procurement for Northern and Eastern Provinces: Vehicles and equipment (for maintenance and office use)	Procurement for Northern and Eastern Provinces: Purchased equipment for maintenance and office use, vehicles and motorcycles
Soft Component for Northern and Eastern Provinces: Income Generation Activities	Soft Component for the NE Component: Social Mobilization (CAP Workshop), Income Generation

At the time of Appraisal	Actual
(livelihood support assistance), awareness program, strengthening FO capacity, agricultural extension and marketing etc.	Activities, strengthening of FOs, technical improvement of agricultural works (workshop for crop cultivation other than paddies, supplying seeds etc.)
Consulting Services for Northern and Eastern Provinces	Consulting Services for NE Component: <ul style="list-style-type: none"> <li>- Planned and supervised rehabilitation works for irrigation systems</li> <li>- Supported the preparation and implementation of bidding (prepared detailed design, bidding documents etc.)</li> <li>- Social Mobilization Program (CAP Workshop, awareness program), Income Generation Activities including Microcredit, related coordination</li> </ul>
<b>5) Others (KA and NE Component)</b>	
Establishment of the “NGO Fund ”: Grant support from GOSL for Non-Governmental Organizations (hereinafter referred to as “NGOs”) to support synergetic works in the project area. The total amount would be 10 million Japanese Yen.	Not implemented: In the original plan, NGO Fund was established through funding source for Consulting Services. However, it was not established.
Microcredit for Farmers: consultants would design in detail and implement as part of Income Generation Activities during the project	Microcredit for Farmers: consultants of this project prepared a detailed plan, which was then implemented from 2008. Funds were lent to farmers, who would start up a business besides farming. The total credit amount was 82 million Rupees from the KA Component and 22 million Rupees for the NE Component. The consultants of the project supported an implementation and monitoring for the Rural Development Bank (hereinafter referred to as “RDB”) in the KA Component and Rural Development Officer (hereinafter referred to as “RDO”) in the NE Component

Source: Information from JICA and Executing Agency

\*See (5) Transferring of the Akathimurippu Irrigation Scheme from NE Component to KA Component

The following changes were made after the commencement of the project from the appraisal:

(1) Partial change in target irrigation schemes

The Abhayawewa Scheme in Anuradhapura District was added as one of the targeted Major Irrigation Schemes for rehabilitation following a strong request from the respective beneficiaries. At the same time, the Akathimurippu Irrigation Scheme in Mannar District, Northern Province, was transferred to the KA Component (see (5) in detail). As for Medium Irrigation Schemes, three of the original 12 target schemes were cancelled due to land tenure issues and duplication of target under the ADB funded infrastructure development project.

(2) Partial change in construction and rehabilitation of supporting facilities

Following a discussion with the Executing Agency (Ministry of Irrigation) and JICA, priority was given to constructing and rehabilitating of facilities necessary to improve crop production and Income Generation Activities. Accordingly, the target facilities to be constructed or rehabilitated were partially changed from those at the time of appraisal. For example, poultry sheds at the Livestock Development Farm were constructed instead of upgrading the Aqua-culture Extension Center. According to interviews with the former Project Management Unit<sup>9</sup> (hereinafter referred to as “PMU”) members and others involved in the project, the number of Farmer Centers constructed had declined. According to PMU, as FOs’ requests for Farmer Centers went beyond budgetary limit, PMU introduced condition for application which require FOs to cover half of the total construction cost and consequently, the number of FOs applying for construction declined.

(3) Changing demarcation of scope between the Government and consultants on rehabilitating irrigation schemes

At the time of appraisal, the Consulting Services is in charge of designing and supervising rehabilitation for all irrigation systems in both KA and NE Components. However, after the regime change, the new Government expressed their intentions to handle the project by internally sourcing people (government officials) instead of “external people” such as consultants etc. Following several discussions between JICA and GOSL, they agreed to design and supervise the “main system (water tank – main canals – branch canals)” of the Major and Medium Irrigation Scheme by the Government and the rest, “sub-system (distribution canals – field canals)” of Major and Medium Irrigation Schemes, all Minor Irrigation Schemes in the KA Component and 10 pilot schemes in the NE Component, by the Consulting Services<sup>10</sup>.

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<sup>9</sup> PMU is a project management team which oversees preparation of the work plan, coordination of the agencies concerned, budget management, project monitoring and progress control. In this project, a PMU director from IMD and a deputy director from ID were appointed.

<sup>10</sup> Part of sub system rehabilitation was undertaken by the ID to reduce heavy workload of the consultants involved with the rehabilitation through FOs.

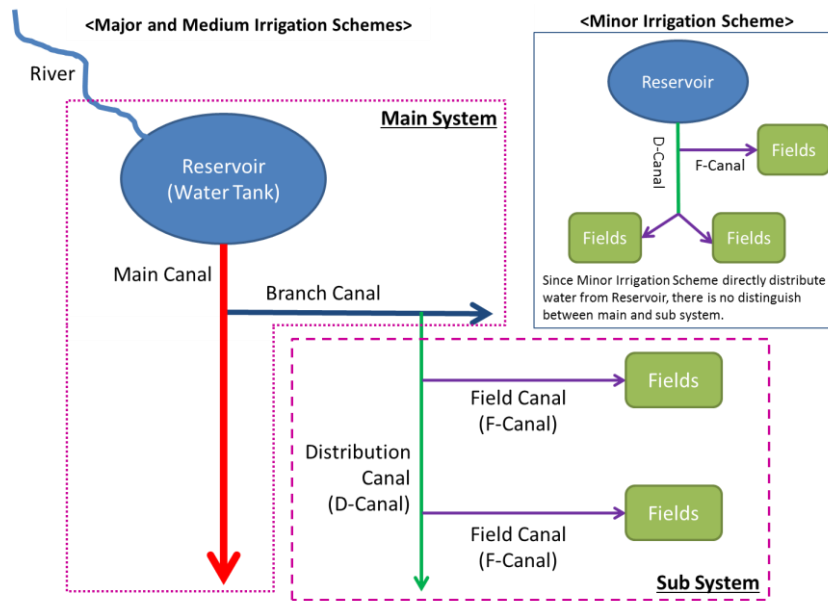


Figure 1: Irrigation Scheme (created according to interviews)

(4) Cancellation of NGO Fund

At the time of appraisal, a Community Action Planning Workshop (hereinafter referred to as “CAP Workshop”) and awareness programs were supposed to be conducted by NGOs and these activities would be funded through NGO Fund. However, at the time of regime change in 2004, the new Government insisted on “not relying on external manpower” such as NGOs and the decision was made not to establish the NGO Fund. Instead, implementation of awareness programs such as CAP workshops was taken over by the Consulting Services.

(5) Transferring of Akathimurippu Irrigation Scheme from NE Component to KA Component

The Akathimurippu Irrigation Scheme, located in Mannar District, Northern Province, was one of the 10 pilot schemes in the NE Component. However, because of the opinion of the Ministry of Irrigation that all Major Irrigation Schemes should have been managed in the KA Component, and the fact of the delay in progress of NE Component, the Akathimurippu Irrigation Scheme was transferred to KA Component.

The purpose of above changes (1) – (5) was to complete the project efficiently within a limited timeframe. Except for some changes in target rehabilitation and construction works and the implementation structure, there was no major change in output overall. Moreover, although the NGO Fund was not implemented as mentioned in (4), consultants conducted activities which NGOs had been expected to do smoothly.

### 3.2.2 Project Inputs

#### 3.2.2.1 Project Cost

The total project cost was planned to be 8,013 million yen (3,628 million yen for foreign currency portion and 4,385 yen for local currency portion), of which the ODA loan amount was 6,010 million yen.

Table 3 compares the planned and actual costs.

Table 3: Project Cost for Comparison: Planned and Actual

(Unit: million yen)

Description	Plan (At the time of appraisal)		Reallocation (2011)		Actual (2013)	
	ODA Loan	GOSL portion	ODA Loan	GOSL Portion	ODA Loan	GOSL Portion
Civil Works, Procurement, Training, and Other Related Facilities	3,294	0	3,149	0	3,145	3
North East Component	1,057	0	1,404	0	1,405	0
Consulting Services	927	0	951	0	939	0
Interest during Construction	615	0	506	0	489	0
Contingencies	117	252	0	252	0	136
Administration Cost	0	546	0	546	0	1,024
Tax	0	1,205	0	1,205	0	
Sub Total	6,010	2,003	6,010	2,003	5,978	1,163
Grand Total	8,013		8,013		7,141	

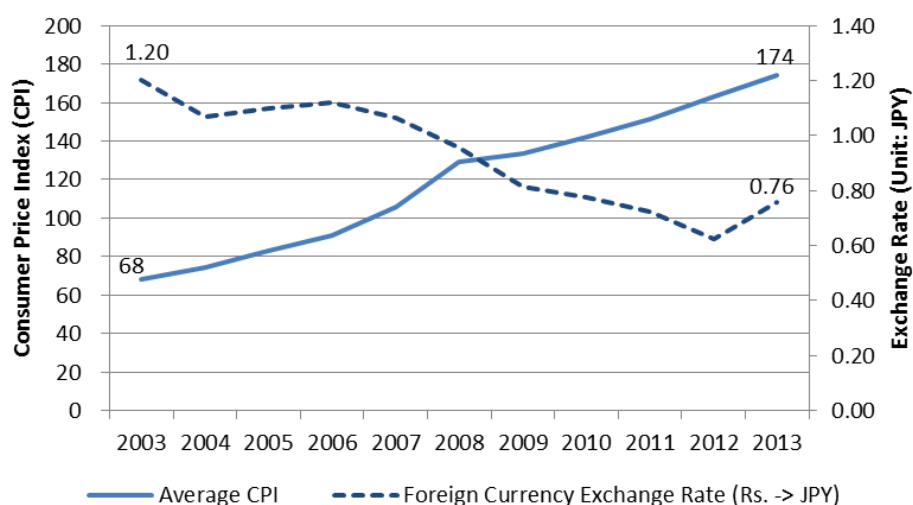
Source: Information provided by Executing Agency and JICA

\*1: 1 US Dollar=124 yen =,1 Rupee =1.29 yen (Information from JICA)

\*2: Actual (2013): Foreign Currency: 1 US Dollar=97 yen, 1 Rupee=0.85 yen (From IMF International Financial Statistics Yearbook 2015, period average between 2006 – 2013)

The cost of the project was within the plan (89% of the plan). There was a reallocation of funds for the “North East Component” and “Consulting Services” in May 2011 to cover additional manpower (M/M) in Consulting Services and the construction cost for rehabilitation work for irrigation schemes in NE Component. The actual cost was within budget. GOSL spent three million yen to cover the actual cost under the category of “Civil works, Procurement, Training and Other Related Facilities” for vehicles and some preparatory study for civil works, according to a breakdown of expenditure dated June 30, 2013 obtained from IMD. The actual administration cost of GOSL is lower than the plan. According to PMU, one of the factors was that PMU tried to save costs to retain funds for follow-up activities after the project completion.

From 2003 to 2013, the Consumer Price Index<sup>11</sup> (hereinafter referred to as “CPI”) increased from 68 to 174, rising about 2.6 times over a decade (see Figure 2). Since necessary civil works and equipment procurement were conducted mostly through Local Competitive Bidding, the equipment and services were thought to be affected by price escalation. However, besides the price competition through the bidding, about 37% yen appreciation during the project (1 Rupee = 1.20 yen in 2003 → 0.76 yen in 2013) made the actual expenditure of the project within the plan.



Source: IMF World Economic Outlook Database, April 2016

Note: The average Consumer Price between January 2006 and December 2007 is set at 100.

Figure 2: Changes in Average CPI and Exchange Rate in Sri Lanka (2003 – 2013)

### 3.2.2.2 Project Period

The planned and actual project periods are shown in Table 4.

Table 4: Comparison Table of Planned and Actual Project Periods

	Plan	Actual	Comparison
Total Period	March 2003 – March 2010 (85 months)	March 2003 – May 2013 (123 months)	145% (exceeded the plan)

The total project period was 123 months (145% - exceeding the planning period). This was due to the delay in commencing the project.

This delay was attributable to the policy change by the new Government following the

<sup>11</sup> The average consumer price between January 2006 and December 2007 is set at 100.

election in 2004. The new Government stopped contract negotiation for Consulting Services. Following the regime change, the Ministry of Irrigation expressed its intention to appoint “internal human resources (government officials)” rather than “external resources” (people outside the government) to implement the project. Following several discussions between JICA and GOSL, both sides agreed to resume contract negotiation and concluded the contract for Consulting Services in May 2006, two and half years after the interruption. The substantive project period, from the commencement of Consulting Services to the project completion, was 85 months from May 2006 to May 2013. Accordingly, this project was virtually implemented as planned.

Table 5: Chronological Summary of Loan Agreement and Consulting Services

<b>Year, Month</b>	<b>Description</b>
March 2003	Signed L/A
August 2003	Request for proposal on Consulting Services
December 2003	Evaluation of proposals for Consulting Services
January 2004	Interruption on contract negotiation of Consulting Services
May 2006	Conclusion of the contract on Consulting Services
November 2009	Amendment of the contract on Consulting Services (No. 1)
May 2011	2 year extension of L/A period Reallocation of the Loan amount
November 2011	Amendment of the contract on Consulting Services (No. 2)
December 2011	Completion of the KA Component Consulting Services
October 2012	Completion of the NE Component Consulting Services
May 2013	Project completion*

Source: Information from JICA and interviews with the people concerned

\*The “completion” of this project is defined as follows: All the construction works were completed, consultants completed the evaluation report of this project, and all the payments concerned were made.

Following the commencement of the project, the progress of NE Component was delayed due to the civil war. During wartime, construction at the pilot schemes was implemented by contractors, not by farmers because most of the farmers had evacuated and it was impossible to perform the irrigation construction work by farmers themselves. However, due to security issues, sufficient workers for the rehabilitation of irrigation systems could not be mobilized in NE Component. Furthermore, some project related members including workers and guards became victims of landmines<sup>12</sup> buried during wartime. Therefore, there were some constraints on efficient operation.

Given the above and the difficulty in completing the construction works within the planned project period, the Japanese Government and GOSL amended the date of final disbursement from May 2011 to May 2013, a two-year extension. At the same time, the

<sup>12</sup> The Embassy of Japan in Sri Lanka requested that GOSL not commence construction until “the certificate of landmine removal” had been officially issued and GOSL accepted the request.



Consulting Services contract was amended twice to cope with extended project period and increased M/M due to the additional tasks.

### 3.2.3 Results of Calculations of Internal Rates of Return (Reference only)

Due to unclear calculation sources of Economic Rate of Return (EIRR) and the non-availability of data for benefit analysis, recalculation was not performed.

Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

## 3.3 Effectiveness<sup>13</sup> (Rating:③)

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

At the time of appraisal, no operational and effect indicators were set because it was considered difficult to calculate overall project effect and it was decided that the indicators would be set based on the Baseline Survey to be conducted after signing of the Loan Agreement. However, the project proceeded without setting indicators even after the Baseline Survey on KA Component. The indicators were finally set right before the project completion. The indicators were set based on the information from Baseline Survey results (2008) and the minutes of July 2003 but part of calculation basis adopted by the baseline survey and the minutes were unclear and therefore it was difficult to calculate actual value according to original definitions and the calculation basis.

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<sup>13</sup> Sub-rating for Effectiveness is to be put with consideration of the impact.

Table 6: Achievement of Operation and Effect Indicators (KA Component)\*1

Indicators (unit)		Baseline (Year)	Target	Actual		Notes
				May 2013	After 2014 *2	
		(Please see Notes)	After the project completion	At the time of project completion	After the project completion	
Operation Indicator	Irrigated Area (ha)	14,593 (1999)	Not set	16,472	17,906	Baseline: based on the Baseline survey conducted in 2008
	Production Volume of Major Crops (ton/ha)	3.63 (2003)	Not set	4.52	4.36	Baseline: Agricultural Data in 2003
	Number of FOs self-managed in Area	120 out of 215 FOs (2003)	215 out of 215 FOs	184 out of 185	--	Baseline and Target: agreed in July 2003
Effect Indicator	Average Annual Household Income in the Project Area (Rs.)	96,800 (2003)	146,600	140,000	--	
	Number of FOs Involved in Income Generation Activities in the Project Area	0 out of 215 (2003)	215 out of 215	185 out of 185	--	

Source: Documents provided by JICA and the Executing Agency

\*1: Excluding the Akathimurippu Irrigation Scheme (Mannar District, Northern Province) which was transferred from the NE Component to the KA Component.

\*2: Year of actual figures of the KA Component (at the time of ex-post evaluation): Irrigated Area (2016), Production Volume of Major Crops (2014)

According to Table 6, actual figures of both operation and effect indicators almost achieved or exceeded the targets, meaning the objective of the project is deemed to be mostly achieved. Although no target for irrigated areas and production volume for major crops were set, actual figures of both indicators exceeded the baseline and continuous effect of the project is observed after the project completion.

As for the indicators, supplementary information is described as follows:

(1) Production Volume of Major Crops

When setting the indicator, the baseline was set as 55.05 million tons according to the Baseline Survey Report, which was created in December 2008. There were 7 target crops: paddy, onion, chili, kurakkan, maze, gingelly and soy. At the time of the field survey for ex-post evaluation, some people concerned in Sri Lanka mentioned that the baseline (55.05 million ton) exceeded the total volume for all kinds of crops in Sri Lanka and they advised resetting the baseline with corrected data. According to “AgStat”, the agricultural statistics published in 2014, the total volume of crops in Sri Lanka in 2013 was 6.68 million tons: paddy 4.62 million tons; vegetables: 1.09 million tons; fruits: 0.78 million

tons; OFC (other major crops such as maize, onion, soy, gingelly etc.): 0.39 tons, which showed only 10% of the original baseline. Following advice, the external evaluators reset the baseline as 55.05 tons/ha based on the Baseline Survey created in December 2008. However, the value still exceeds the level of data obtained from the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI, as an abbreviation), a governmental organization which collects Agricultural Data to create government statistics. The average volume per hectare (ha.) of targeted crops in 2003 was 3.63 tons, which concluded that the Baseline Survey result was 10 times higher than the data from the Agrarian Development Institute. Therefore, the external evaluators concluded to reset again.

The external evaluators adopted the production volume data and irrigation area data from the Agrarian Development Institute and calculated the average production volume per hectare in Kurunegala, Anuradhapura, Puttalam and Matale in 2003 as 3.63 tons/ha and set as alternative baseline.

- (2) Number of FOs Self-managed in the Project Area and Involved in Income generation activities (total number of FOs and actual figures in the project area)

The total number of FOs in the project area at present has declined to 185 from 215 at the time of setting baseline and target. According to interviews with former PMU members, redefining of FOs in accordance with the policy change of GOSL after setting baseline and target figures and the fact that the number of FOs outside the project target was counted at the time of data collection in 2002, were the reason for this change. As for the actual number of FOs, IMD explained that they had not counted the number of FOs involved in the Income Generation Activities because these were individual activities, not involving FO participation. Also, IMD did not count the number of self-managed FOs either. Therefore, the actual figures related to relevant indicators could not be obtained.

- (3) Average Annual Household Income

At the time of project completion in 2013, the average household income was recorded by PMU but no subsequent record was maintained. According to IMD, they have no chronological data of the average annual household income of farmers in the project area after 2014. Therefore, the external evaluators decided to adopt the average household income by District from the latest household income survey published by the Department of Census and Statistics of Sri Lanka. However, the latest data is 2012/2013, which is almost the same period as of project completion. According to a telephone interview with the Department of Census and Statistics of Sri Lanka, they are currently conducting a survey, the result of which will be released in 2017. Accordingly, the present referable data is 2012/2013, since actual data for 2014 onwards could not be obtained.

The baseline and target figures of operation and effect indicators were set for the KA Component, not including the NE Component implemented as a pilot project. Although the Baseline Survey in North and East areas was conducted in November 2009 the data required for indicators such as irrigated areas etc. could not be collected right after the civil war. GOSL was also unable to collect data in Northern and Eastern Provinces to create statistics.

For reference, Table 7 shows the irrigated area, the production volume of major crops and average annual household income in the project area in the NE Component. The baseline and target of the indicators of the NE Component was not set for the reasons mentioned above, but it is deemed that the project was beneficial to some extent according to the actual figures.

Table 7: Irrigated Areas, Production Volume of Major Crops, Average Annual Household Income of the NE Component (for reference)

Indicator (unit)	Baseline	Target (After the project completion)	Actual (After the project completion)
Irrigated Area (ha)	--	6,595 *3	8,901 (2016) *1
Production Volume of Major Crops (ton/ha)	2.35 *4	--	4.19 (2014) *5
Average Annual Household Income in the Project Area *2 (Rupee)	75,031 *4	--	80,472 (2012/2013)

Source: Information provided by JICA and Executing Agency, Department of Census and Statistics of Sri Lanka

\*1: 10 Pilot schemes including the Akathimurippu Irrigation Scheme (Mannar District) which was transferred to the KA Component from the NE Component

\*2: The average monthly household income (agricultural activities + non-agricultural activities in 7 Districts in Northern and Eastern Provinces (Mannar, Vavunia, Mullative, Kilinochchi, Batticaloa, Ampara and Trincomalee) multiplied by 12 (months)

\*3: Target set in 2002 for project completion

\*4: Calculated the data based on the Baseline Survey of the NE Component conducted in 2009. The available data from the survey are the following three crops: paddy; maze; and gingelly. Also, some data regarding the production volume and average income in Northern Province was missing due to the civil war.

\*5: Total production volume of paddy, onion, chili, kurakkan, maze, gingelly and soy in 2003

### 3.3.2 Qualitative Effects

#### 3.3.2.1 Improvement of Agricultural Production and Sustainable Productivity

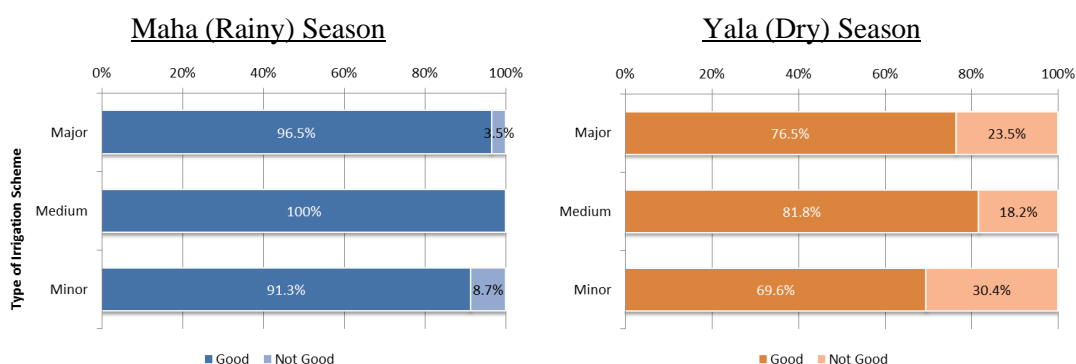
Through interviews with FOs and a Beneficiary Survey<sup>14</sup>, it was confirmed that this

<sup>14</sup> To confirm the qualitative effects and impact, a Beneficiary Survey was conducted for both the KA and NE Components in December 2015. The survey was conducted by interview to FO members whom FO leaders introduced. The detail of the survey conditions are as follows:

- Target Areas: Kurunegala and Anuradhapura(KA Component) and Trincomalee and Kilinochchi (NE Component)
- Interviewee: 190 FO members (Male: 169, Female: 21, KA Component: 121, NE Component: 69)
- Age groups: 20 – 29: 3 people, 30 – 39: 37 people, 40 – 49: 43 people, 50 – 59: 58 people, 60 and up: 59 people (KA + NE)

project helped technically improve irrigation maintenance and farming skills and enhance the capacity of self-sustainable organizational operations, even two years after the project completion. At an early stage of the project, consultants of this project visited FO leaders and members one by one on a daily basis to discuss the importance and purpose of the project, participated in the events in villages, built long-term mutual trust with farmers. As a result, farmers who effectively understood the necessity of the project acquired knowledge and skills through CAP Workshop and awareness programs.

After the active rehabilitation works and maintenance of irrigation schemes, the Beneficiary Survey shows that about 90% of 190 respondents in maha (rainy) season and 70% of those in yala (dry) season said that the water condition had improved.



Source: Beneficiary Survey

Figure 3: Water Supply Condition at the Time of Ex-Post Evaluation

Also, according to interviews conducted during the field survey, many FOs successfully increased their production volume due to expanded farmlands enabled by the improved water supply condition. The same result came from the Beneficiary Survey.

Table 8: Expansion of farmlands

Schemes	Maha (Rainy) Season			Yala (Dry) Season		
	Before	After	Expansion (%)	Before	After	Expansion (%)
Major	382.25	443.25	115.96%	295.75	400.75	135.50%
Medium	84.5	101.5	120.12%	69.0	84.5	122.46%
Minor	101.5	113.75	112.07%	63.5	86.25	135.83%

Source: Beneficiary Survey

\*1 The figure is the sum of farmland of farmers (respondents in the Beneficiary Survey). "Before" means "Before the rehabilitation works" and "After" means "after the rehabilitation works" by respective FOs

Table 9: Paddy Production Volume

Schemes	Maha (Rainy) Season			Yala (Dry) Season		
	Before	After	Expansion (%)	Before	After	Expansion (%)
Major	361,450	410,802	113.7%	295,050	341,800	115.8%
Medium	136,800	190,825	139.5%	114,400	163,725	143.1%
Minor	165,950	192,100	115.8%	97,500	147,380	151.2%

Source: Beneficiary Survey

\*1 The figure is the sum of farmland of farmers (respondents in the Beneficiary Survey). "Before" means "Before the rehabilitation works" and "After" means "after the rehabilitation works" by respective FOs

- District: Kurunegala: 3FOs (73 people), Anuradhapura: 2FOs (48 people), Trincomalee: 2FOs (44 people), Kilinochchi: 1FO (25 people)
- Questions: Maintenance conditions of irrigation systems, Water supply condition and paddy production after the rehabilitation, Inquiry about participation in Income Generation Activities and effect, knowledge-sharing among farmers after the project to brush up their skills

Particularly in the yala (dry) season, the rate of expansion of farmlands and paddy production volume exceeded those in maha (rainy) season. Many of the farmers who were unable to cultivate their lands in yala season, can now make paddies twice a year, thanks to the Project.

#### 3.3.2.2 Capacity Enhancement of Executing Agencies and Extension of Farming Skills

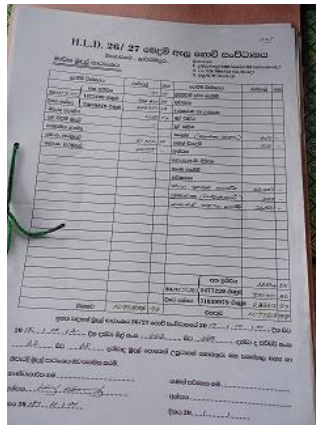
According to interviews during the field survey, the Ministry of Irrigation (both IMD and ID) said that many staff members realized the value of the trainer's training during the project. As for the extension of farming skills, FOs and the Provincial Department of Agriculture said that skills, including boosting cultivation of paddy and other crops and Income Generation Activities such as animal husbandry were still useful for farmers and well utilized. Also, some of the FO members who joined Income Generation Activities stated in the interviews that their income had increased by cultivating and selling mangos and coconuts.

#### 3.3.2.3 Promoting Participatory Development

Among 7 FOs visited by external evaluators during the field study, five of the 7 FOs repaired the canals by themselves during and after the project. One FO leader in Nachchaduwa, in the outskirts of Anuradhapura District, said that they repaired the canal on their own because the construction quality was far better than that of outsourcing contractor. Although the other 2 FOs did not repair works by themselves, they hired contractors at their own expense. All the FOs conduct canal patrol and maintenance work (grass cutting along canals etc.) periodically once or twice a season (three or four times per year).

The interviews revealed that many FOs are managing their organizations by themselves through participating in training sessions provided by the project, such as rehabilitation work for irrigation, farming skills, financial management and legal management (dealing with unauthorized use of irrigation) for FO operation.

Also, there was another effect observed in this project that the maximum contract amount approved by the government for irrigation canal rehabilitation doubled from 2 million Rupees to 4 million Rupees, as the improvements in rehabilitation capacities of irrigation facilities by FOs were recognized by the government.



Accounting book for fund management of the FO in Nachchaduwa

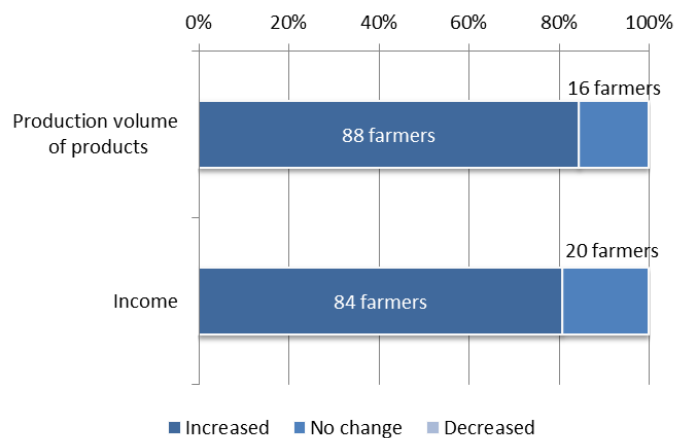
### 3.4 Impacts

#### 3.4.1 Intended Impacts

The expected project impacts were “increasing income level and generating job opportunities for farmers”, “revitalizing the rural economy” and “recovery from the civil war for Northern and Eastern Provinces”. Since there was no chance to obtain data specifically for farmers in the project area, impacts were confirmed by the Provincial and District data published by the Department of Census and Statistics of Sri Lanka.

##### 3.4.1.1 Increasing Income Level and Creating Job Opportunities for Farmers

According to the Beneficiary Survey of farmers in targeted areas, 104 farmers who participated in Income Generation Activities answered that 85% of farmers (88 farmers) had increased their production volume and 81% (84 farmers) answered that their income level had improved. This shows that many of the farmers themselves realized the positive project impact.



Source: Beneficiary Survey

Figure 4: Impact from Income Generation Activities

The average monthly household income of each district including the targeted area of the KA Component in 2012/2013 increased 1.6 times on average, up to about twice the level of 2006/2007. Although the scale of this project in each District is small, this project is thought to have helped increase farmer's income.

Table 10: Average Monthly Household Income from Agriculture and Other Activities  
(KA Component)

(Unit: Rupees)

District (Province)	2006/2007*	2012/2013	Growth Rate (%)
Matale (Central)	5,948	8,929	150%
Kurunegala (North-Western)	8,513	14,098	166%
Puttalam (North-Western)	6,516	12,984	199%
Anuradhapura (North-Central)	7,476	9,376	125%
(Reference) Sri Lanka (national average)	7,677	12,361	161%

Source: Department of Census and Statistics of Sri Lanka

\*Total income from Agricultural + Non-Agricultural activities. The data in 2006/2007 was adopted instead of that in 2002/2003 (no data), before the project started.

In the NE Component, the average monthly household income for Northern and Eastern Provinces in 2012/2013 was 4.7 times as high as that in 2002/2003. According to the interviews and the Beneficiary Survey of residents in the NE Component, increases in the number of cropping through rehabilitating irrigation systems and the recovery of farmers' lives through Income Generation Activities after they returned home are considered to have contributed partly to the overall income increases in the northern and eastern areas.

Table 11: Average Monthly Household Income from Agricultural and Other Activities  
(NE Component)

(Unit: Rupees)

District (Province)	2002/2003*	2012/2013	Growth Rate (%)
Mannar (Northern)	2,181	6,887	316%
Vavunia (Northern)	2,181	8,355	382%
Mullative (Northern)	2,181	9,321	427%
Kilinochchi (Northern)	2,181	3,992	183%
Batticaloa (Eastern)	1,762	3,936	223%
Ampara (Eastern)	1,762	6,064	344%
Trincomalee (Eastern)	1,762	8,384	476%
(Reference) Sri Lanka (national average)	6,491	12,361	190%

Source: Department of Census and Statistics of Sri Lanka

\*Data of 2002/2003 in each District are from the average agricultural and non-agricultural income of each of the Northern and Eastern Provinces as relevant data was not available.

The poverty headcount index (poverty rate) in Provinces relevant to KA and NE Components greatly declined with improving income of farmers. Since the targeted areas in



the KA Component could be cultivated even during the yala (dry) season, the cultivation area was expanded and production volume also increased, which meant farmers' income increased. In addition, since some FOs hired workers outside the FO during rehabilitation work for irrigation, this might have helped create job opportunities to some extent.

In the NE Component, the poverty rate of the targeted District also has been declined due to the increase in crop production volume and diversification of agricultural products by restarting agricultural activities. Moreover, having a side business in addition to farming through the project's Income Generation Activities also helped increase farmers' income. Furthermore, farmers who returned to their villages after the civil war might have contributed to a decline in the unemployment rate by restarting agricultural activities.

Table 12: Poverty Headcount Index and Unemployment Rate at the District Level

District (Province)	Poverty Headcount Index (%)		Unemployment Rate (%)	
	2002	2012	2002	2014
Matale (Central)	30	7.8	24.5	5.2
Kurunegala (North-Western)	25	6.5	21.2	4.0
Puttalam (North-Western)	31	5.1	24.5	4.0
Anuradhapura (North-Central)	20	7.6	17.2	3.3
Mannar (Northern)	-- *1	20.1	13.0 *2	2.9
Vavunia (Northern)	2.3 *1	3.4	13.0 *2	3.9
Kilinochchi (Northern)	-- *1	12.7	13.0 *2	7.6
Batticaloa (Eastern)	20.3 *1	19.4	15.9 *2	3.9
Ampara (Eastern)	11.8 *1	5.4	15.9 *2	6.0
Trincomalee (Eastern)	11.7 *1	9.0	15.9 *2	4.3
(Reference) Sri Lanka (national average)	22.7	6.7	8.8 *2	4.3

Source: Department of Census and Statistics of Sri Lanka

\*1: Data in 2009/2010 was substituted because it is the oldest public data in Northern and Eastern Provinces (Poverty Indicators 2009/2010). No data for Mannar and Kilinochchi Districts.

\*2: Average data of Provinces because there is no data at a District level.

Therefore, this project is deemed to have helped boost income and create job opportunities for farmers.

#### 3.4.1.2 Microcredit Program for Revitalizing the Rural Economy

The microcredit program, a small loan program for farmers, was implemented for both KA and NE Components from 2008, as part of this project. The purpose of this program was to boost and stabilize farmers' income by doing side businesses (those other than paddy cultivation). For this purpose, the borrowers of the loan were supposed to take training sessions of Income Generation Activities. This microcredit program was applicable only to farmers, not to other sectors.

Table 13: Microcredit Program Summary

	KA Component	NE Component
Loan Amount*	138 million Rupees (82 million Rupees from original fund + 56 million Rupees from revolving fund)	33 million Rupees (22 million Rupees from original fund+ 11 million Rupees from revolving fund)
Fund Management	Regional Development Bank (RDB)	Rural Development Officer (RDO)
Tenor and Interest Rate	3 years, 12%	3 years, 12%
Number of End-borrowers*	1,138 farmers	1,257 farmers
Purpose of Use	Farming and side business (e.g. food processing, animal husbandry (procurement of cows), apparel (bag making) etc.)	Farming (paddies and other crops), animal husbandry, inland fisheries trading, small/home businesses, agro-processing, etc.
Loan Recovery Rate*	95%	40%

Source: Information provided by JICA, interview in Sri Lanka

\* The Revolving Fund of the loan amount and the number of end-borrowers in the KA Component are as of 2013 and those in the NE Component are as of 2012. The loan collection rates for both KA and NE Components are as of 2012.

The key difference in achievement between the KA and NE Components was the loan collection rate. The successful loan collection rate of the KA Component is thought attributable to the followings: 1) The target end-borrowers were selected by FO recommendations supported by consultants and were those who took training sessions of Income Generation Activities (the loan was targeted only for “good customers”); 2) A bank (RDB) was involved in this program as a financial intermediary to handle loan funds from lending to monitoring after the lending (checking repayment status, collection etc.); and 3) Consultants assigned a full-time staff member to exclusively support RDB for its monitoring activities. A loan officer of RDB mentioned that many farmers who utilized this program increased their income and repaid smoothly. This program is still active and some farmers have utilized loans again to further expand their business following full repayment. The microcredit program in the KA Components was deemed to be successful and funds were utilized effectively.

In the case of the NE Component, the loan collection rate is lower than that of the KA Component. The background to lower repayment is thought to be as follows: 1) Farmers misunderstood that they did not have to pay back because most of the support from international donor agencies was grant aid during the civil war; 2) Since RDO, which was in charge of credit appraisal and disbursement, was not a financial institution and lacked any experience in handling loans, there was insufficient monitoring after the loan disbursement. For the above reasons, there remain some questions regarding the effectiveness of financial support to increase farmers' income in the NE Component. However, since the microcredit program constituted only a minor portion of the project,

this result does not affect the evaluation of overall effectiveness.

**[BOX: Case Study of Microcredit – Producing and Selling Yogurt (Kurunegala District, North-Western Province)]**

- Before the project, the farmer's income was only from paddy cultivation but he learned how to make yogurt in the Income Generation Activity of the project. After the training, he started his yogurt business with microcredit support. Now he focuses on his yogurt business because the sales revenue has improved and all paddy cultivation was handed over to his son.
- The farmer utilized microcredit in 2009. He borrowed 200,000 Rupees to build a yogurt stand and purchase equipment for making yogurt. (Loan maturity: 3 years, interest rate: 12%)
- His business thrived and the loan was repaid within the loan period. He borrowed again in 2015 to expand his business.



Yogurt Stand  
(built with a support of Microcredit)



Refrigerator for Yogurt-Making  
(purchased with a support of Microcredit)

### 3.4.1.3 Recovery from the Civil War (NE Component)

Recovery from the civil war in Northern and Eastern Provinces was one of the project purposes and this project was thought to have helped resettle farmers affected by the civil war very effectively. To summarize the comments from those in charge of the project, such as the Provincial ID of Northern and Eastern Provinces, FOs and consultants, irrigation systems were totally destroyed during the civil war, however, many farmers could return to their villages earlier than expected and re-started farming right after completion of rehabilitation work for irrigation under this project.

The worst effect of the civil war was the fatalities of many leaders and major FO members, which was very detrimental to the organizational operation of many FOs. Due to this many FOs restarted their activity by reconstructing their FO from scratch through this project. In fact, consultants and other relevant project players explained that they conducted training sessions of FO's organizational management and Income Generation Activities for farmers based on the recognition that the NE Component was to increase self-confidence of

farmers. Consequently, farmers who were passive at the beginning became so proactive to express their opinions to improve activities. Farmers who accepted the interviews and government officials who had experience as CAP Workshop trainers highly evaluated the Consultant Team, who had continually encouraged the farmers and instructed activities during the project.

Since the training sessions were conducted after the civil war, the manuals of the training sessions were not lost during the turmoil of war.

### 3.4.2 Other Impacts

#### 3.4.2.1 Impacts on the Natural Environment

This project was confirmed not to have conducted any construction or activities which adversely affected the environment, according to interviews and a Beneficiary Survey.

#### 3.4.2.2 Land Acquisition and Resettlement

There was no land acquisition or resettlement to conduct civil works or income-generation activities.

This project was confirmed as highly effective judging from interviews with the Executing Agency and FOs and the Beneficiary Survey. The satisfaction of people (farmers and government officers) involved in the project was very high and it is deemed that the project was highly evaluated by people. The data obtained through this evaluation study showed that the indicators set in the project had mostly been accomplished.

This project has largely achieved its objectives. Therefore, effectiveness and impact of the project are high.

### 3.5 Sustainability (Rating:②)

#### 3.5.1 Institutional Aspects of Operation and Maintenance

In both KA and NE Components, agencies concerned during the project period still have the organizational structures at present to undertake operation and maintenance (hereinafter referred to as “O&M”) activities as necessary. Therefore, there is no particular problem for O&M activities after the project. There is no project-specific organization in either of the Components but IMD, ID and Provincial ID actually keep monitoring and conducting follow-up works.

As for operational structure in the KA Component after the project completion, the former Executing Agency, Ministry of Irrigation, plays a main role continuously. Soft components such as technical training sessions are conducted by IMD (for Major and Medium Irrigation Schemes) and DAD (for Minor Irrigation Scheme). ID (for Major and Medium Irrigation

Schemes) and Provincial ID take the role of maintaining and repairing the irrigation systems as per mentioned in Table 14.

Table 14: O&M structure of Irrigation (KA Components)

Types of Irrigation Schemes	Main System	Sub System	
	Water tank – Main Canal - Branch Canals	Distribution Canals	Field Canals
Major	ID	ID	FO *2 & 3
Medium	ID		
Minor *1	Provincial ID (water tank – distribution canals)		

Source: Interviews with those involved in the project

\*1: The Minor Scheme does not distinguish main and sub systems because the distribution canals and field canals connect directly to a water tank.

\*2: FO conducts minor repairs to both main and sub systems. If there is a need for any major repair, even in field canal(s), the ID or Provincial ID does the repair work.

\*3: If the repair is beyond FO's rehabilitation capacity, the FO is supposed to contact Provincial ID for support.

In NE Component, a former Executing Agency, Ministry of Economic Development (hereinafter referred to as “MED”), was dismantled following regime change in 2015 and the Provincial ID in each of the Northern and Eastern Provinces took over the management of irrigation systems. No matter what type of irrigation scheme, FOs (including contractors hired by FOs) conduct minor repairs and Provincial IDs conduct major repairs to irrigation systems.

Therefore, in terms of institutional aspects for O&M in both KA and NE Components, there is no specific problem which prevents sustainability.

### 3.5.2 Technical Aspects of Operation and Maintenance

The technical capacity of O&M aspects in both governmental organizations and FOs had been improved. For the Ministry of Irrigation (Executing Agency) and PIAs such as IMD and ID, their capacity of instructing farmers and the management of rehabilitation works of irrigation systems were improved by taking trainer's training courses during the project. Conversely, one issue is no further opportunity for technical capacity enhancement provided at each organization after the project. Training on maintenance skills of irrigation facilities is included only partly in the internal training programs of each ministry and agency, and does not have contents useful for continuous rehabilitation of the irrigation systems after this project and maintaining the skills to train farmers. Therefore, concern remains over whether the O&M skill of these organizations will be retained even in the event of personnel changes.

For farmers, it is confirmed that they had developed a sense of ownership to run FO and rehabilitate irrigation systems through the project. After the project, they try to keep improving and enhancing their skills by sharing knowledge among members, meaning farmers have some chances to retain O&M skills. According to the Beneficiary Survey, more than half

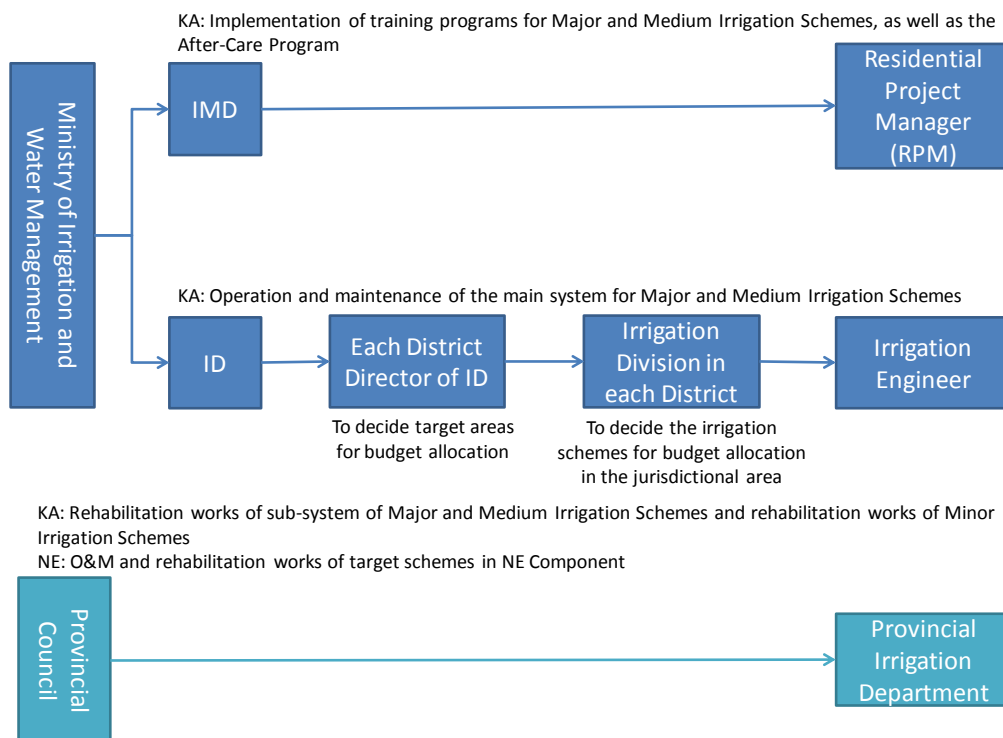
the total of 190 farmers answered that they were sharing knowledge with each other.

To summarize the above and from the perspective of sustainable O&M, this project can be highly evaluated on account of proactive self-improvement attitudes among farmers toward rehabilitation of irrigation systems and Income Generation Activities. Conversely, on the Government side, given the lack of training for upgrading and maintaining their skills, it is thought that further improvement of skill transfer system will be needed taking into account of personnel changes, in a mid- to long-term perspective.

### 3.5.3 Financial Aspects of Operation and Maintenance

#### 3.5.3.1 Government Budget

The O&M budget is allocated in two ways corresponding to the size and functions of targeted schemes: from the Ministry of Irrigation and from the Provincial Council. The Ministry of Irrigation and Provincial Council are both trying to allocate adequate budgets for O&M cost after the project, but the present situation shows that the budget has not been secured in a long-term perspective. In particular, the Provincial ID lacks sufficient funds for rehabilitation as one Provincial ID stated that it was difficult to cover repair cost for water tanks and canals.



Source: Interviews with those involved in the project

Figure 5: Budget Allocation

At the time of ex-post evaluation, the main funding source for O&M costs of targeted areas came from “After-Care Program” and “farmers’ own funding sources”.

### 3.5.3.2 After-Care Program (KA Component)

In the KA Component, IMD had no plans to secure funds for follow-up activities after the project due to the budget limitation. Accordingly, PMU generated a source of funding for follow-up activities after the project completion by saving balance of GOSL budget during the project. After the project, an “After-Care Program” was implemented with this funding source.

The total amount of funding source of After-Care Program was 250 million Rupees. IMD managed the fund and conducted follow-up activities. The target program users were 21 FOs in the Major and Medium irrigation schemes in the KA Component. The program supported the rehabilitation of irrigation systems, facility improvements related to farming skills and Income Generation Activities (e.g. rehabilitation of dairy plants etc.), building additional Farmer Centers with meeting rooms and administration office for FOs. The budget and actual expenditure from 2013 to 2015 is shown in Table 15. According to IMD, the actual expenditure in each year was lower than the budget because this program was conducted on a request basis and the number of requests from target FOs was less than IMD had expected.

Table 15: After-Care Program – Budget and Actual Expenditure

Year	2013	2014	2015
Budget (Million Rupees)	132	140*	80*
Actual Expenditure (Million Rupees)	23	18	27.46
Purpose of Use	Improvements of dairy plant and poultry processing plant in Nirawewa Farm (Government farm in Anuradhapura District)	Supplementary operation cost and rehabilitation of facilities for Nirawewa Farm (continued from 2013)	- Rehabilitation fee to FO for repairing main system - Building 16 Farmer Centers and procurement of equipment (PCs etc.) - Posting 6,500 boundary polls to mark the management area for canal distribution

Source: Interviews with people involved in the project

\* Budget including roll-over from the previous year

Funds for the After-Care Program were allocated from 2013 to 2015, but no further fund allocation was to be made after 2015 because the Auditor General of Sri Lanka pointed out that the project still seemed ongoing, despite already having been completed. IMD

explained that the remaining funds of the After-Care Program would be basically returned to the national account but that part of the funds would be allocated to the budget category “Land and Land Improvement” of the Ministry of Irrigation to be used to complete Farmer Centers and conduct training sessions for farmers. Although the After-Care Program itself is to be abolished, part of the fund seems to be utilized for the same purpose at least in 2016. However, it is uncertain whether such follow-up activities as After-Care Program will be conducted after that. There is a concern that there will be no improvement in rural areas which are unable to repair irrigation systems due to the shortage of budget.

#### 3.5.3.3 Farmers’ Own Funds for Activities

In terms of funds which are used for farmers’ own activities, FOs collect membership fees from farmers periodically and/or set up Maintenance Fund for rehabilitation works. Maintenance Fund is set up by FOs in Major and Medium Irrigation Schemes mainly but some FOs in Minor Irrigation Schemes collect money for FO activities including rehabilitating irrigation. According to the Beneficiary Survey, the frequency of collecting fees for Maintenance Fund is once a season (twice a year in total, during maha (rainy) and yala (dry) seasons). The size of the fee normally depends on the area of farmland concerned, about 300 – 550 Rupees/acre for Major and Medium Schemes and about 100 Rupees/acre for Minor Schemes in average. In 2011, 77% of FOs in Major and Medium Irrigation Schemes in the KA Component had Maintenance Fund which was used for maintenance and irrigation.

In the NE Component, some FOs in Eastern Province had Maintenance Fund before the project started and most FOs in Northern Province usually collect fees when they need to repair their irrigation, instead of periodic fee collection.

From the findings above, the financial aspects of O&M by farmers are seen to be secured but some concerns still remain over the Government budget.

#### 3.5.4 Current Operation and Maintenance Status

Judging from site visits, interviews with FOs, the Beneficiary Survey and other works, appropriate O&M works are conducted among farmers who are continually involved in the operation of FO and O&M works for irrigation systems proactively and properly even after the project completion. Also, facilities including Farmer Centers and poultry processing were built or renovated through utilizing After-Care Program even after the project completion.

Through the CAP Workshop and other training sessions, FO’s capacity to run their organization improved as well as individual skill of farmers. The roles of the Government (in charge of main system) and farmers (in charge of sub system) were maintained, even after project completion.



As mentioned above, some minor problems have been observed in terms of technical and financial aspects of O&M sustainability. Therefore, the sustainability of the project effects is fair.

## **4. Conclusion, Lessons Learned and Recommendations**

### 4.1 Conclusion

This project was implemented in the North-Western, North-Central, Central, Northern and Eastern Provinces of Sri Lanka to develop and reconstruct rural areas by rehabilitating irrigation systems and engaging in Income Generation Activities, thereby helping reduce poverty, improving agricultural productivity and achieving sustainable rural development. At the time of appraisal and ex-post evaluation, this project was highly relevant to the development policy, sector policies and development needs of Sri Lanka in terms of poverty reduction, rural development and rehabilitation of irrigation and development needs. This project was also relevant to Japan's ODA policy at the time of appraisal. Therefore, its relevance is high. Efficiency is fair because the total project period exceeded the plan following a three-year delay in commencement but the project cost was as planned. In terms of the project effectiveness and impact, positive qualitative effects and impacts were seen on the project sites. In terms of the project effectiveness, positive qualitative effect and impacts were confirmed and the obtained data also shows that most of the actual project outputs exceeded the target figures. Therefore, the effectiveness and impact of this project are high. As for the operation and maintenance for the project sustainability, organizational aspects and the current maintenance status does not seem to have any problems, although some technical and financial issues arose. Therefore, the sustainability was deemed fair.

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

### 4.2 Recommendations

#### 4.2.1 Recommendations to the Executing Agency

##### 4.2.1.1 Continuous information sharing and capacity enhancement activities

Although there were some changes to the policy of GOSL related to project implementation, the project brought a good effect thanks to the concerted efforts and proactive participation of parties concerned, namely PIAs (IMD, ID, DAD etc.) on the Government side, consultants and farmers, and PMU's effort on creating support structure after the project. For the future, it may be necessary to retain the follow-up program for farmers conducted by IMD and/or ID in order to keep the FOs' skills in proactive organization management, irrigation management, activities to increase their income (e.g. farming, animal husbandry, inland fisheries etc.), even if there are any generational changes and/or any opportunities for receiving new member(s).

#### 4.2.1.2 Continuous information management by the Ministry of Irrigation

After the dismantlement of Ministry of Economic Development, the Executing Agency of the NE Component, each provincial ID of Northern and Eastern Provinces is in charge of monitoring the irrigation schemes. Although there is no problem with the operation to date, it may be better for the Ministry of Irrigation (IMD), the central government ministry, to collectively capture information of these Provinces as well as of the KA Component. Also, for monitoring purposes, it may be important for the Ministry of Irrigation to keep collecting data from Provincial ID after the project completion to oversee the whole project.

#### 4.2.2 Recommendations to JICA

None

### 4.3 Lessons Learned

#### 4.3.1 Importance of awareness-raising activities for final beneficiaries during the project implementation

In this project, the consultants focused on awareness-raising for the first three years. They visited all FOs and explained importance of the project for the farmers. Also, government officers who took TOT courses and FOs collaborated closely in determining the present problems to be tackled through the CAP Workshops. These activities resulted in successful rehabilitation works and Income Generation Activities. Therefore, for similar project in future, it is important to secure adequate time for awareness-raising activities so as to meet the needs of each target FO.

#### 4.3.2 Sustainable supporting structure for microcredit program

The loan recovery rate of the microcredit program in NE Component was lower than that of the KA Component because there was no suitable intermediate financial institution, which caused insufficient credit appraisal and monitoring. In the NE Component at the time, there was no suitable financial institution like RDB in the area because of the civil war. For the purpose of securing project effectiveness, when implementing a microcredit program in future, it will be effective to involve intermediary financial institutions like RDB in the KA Component and utilize their capacity of credit appraisal and monitoring after disbursements.

#### 4.3.3 Planning and implementation of a follow-up program after project completion

After the completion of this project, a certain follow-up period was needed (1) to enable

smooth handover of tasks when the responsible government officers were changed, (2) to check the level of established skills of FOs and farmers and (3) to provide additional support as necessary, so that the project effects would be continuously sustained. In this project, PMU planned and prepared funds for the follow-up activities during the project implementation because there had been no specific plan for follow-up by the Executing Agency due to the budget limitation. For similar projects in future, it is important for the Executing Agency to keep in mind about the necessity of a follow-up program even before commencement of the project. After a certain period of time passed from project commencement and needs for follow-up activities are emerged, the Executing Agency is expected to design a follow-up program for a suitable period after the project completion and budgetary arrangement through consultation with concerned organizations. For the better and sustainable effect of the project, it may be preferable that some PMU members including project director will be continuously involved in the follow-up activities.

#### 4.3.4 Setting indicators in a timely manner

The operation and effect indicators of the project were set right before the project completion and the indicators were set without adequate verification, using unclear method of calculation, definition and incorrect values. Therefore, it was difficult to compare the figures before and after the project. Also, monitoring of project indicators during the implementation stage was not possible because the indicators had been set right before the project completion. In order to measure project effects accurately, it would be effective to keep monitoring during the project implementation with the indicators set and defined clearly before the project starts.

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1.Project Outputs	<ul style="list-style-type: none"> <li>- Rehabilitation of irrigation schemes (Major: 8, Medium: 12 and Minor: 80) and farm roads</li> <li>- Construction and upgrading supporting facilities (Construction of 27 Farmer Centers, Upgrading of Seed Farm, IFTC, Aqua-culture Extension Center and Renovation of 10 Agrarian Development Centers)</li> <li>- Procurement of equipment (vehicles, office equipment etc.)</li> <li>- Soft component (Income Generation Activities, awareness programs, capacity building for FOs)</li> <li>- Consulting services (designing detailed works, bidding support, supporting implementation of microcredit, supporting implementation of soft component, etc.)</li> <li>- Supporting North East area (rehabilitation of 10 pilot irrigation schemes in North East Province, procurement of equipment, soft component and consulting services)</li> <li>- NGO Fund</li> <li>- Design and implement microcredit program</li> </ul>	<ul style="list-style-type: none"> <li>- Rehabilitation of irrigation schemes (Major: 10, Medium: 9, Minor: 80) and farm roads</li> <li>- Construction and upgrading supporting facilities (Construction of 1 Farmer Center, water distribution facility in Seed Farm and 2 poultry sheds in livelihood development farms, rehabilitation of IFTC and 5 DAD training facilities etc.)</li> <li>- Same as planned</li> <li>- Soft component (Income Generation Activities, awareness-raising programs, capacity building for FOs, training sessions for enhancement of farming skills and capacity enhancement)</li> <li>- Consulting services (designing detailed works, bidding support of sub-system in Major and Medium Irrigation Schemes and all systems in Minor Irrigation schemes, supporting implementation of microcredit, supporting implementation of soft component, assisting the implementation of overseas training programs for government officers, etc.)</li> <li>- Supporting North East area (rehabilitation of 9 pilot irrigation schemes in Northern and Eastern Provinces, procurement of equipment, soft component and consulting services)</li> <li>- NGO Fund was not implemented</li> <li>- Design and implement microcredit program (including monitoring)</li> </ul>
2.Project Period	<p style="text-align: center;">March 2003 – March 2010 (85 months)</p>	<p style="text-align: center;">March 2003 – May 2013 (123 months)</p>

Item	Plan	Actual
3.Project Cost		
Amount Paid in Foreign Currency	3,628 million yen	5,545 million yen
Amount Paid in Local currency	4,385 million yen	1,596 million yen (1,892million Rupees)
Total	8,013 million yen	7,141million yen
Japanese ODA Loan Portion	6,010 million yen	5,978 million yen
Exchange Rate	1Rupee = 1.29 yen (As of November 2002)	1 Rupee= 0.85 yen (Average between 2006 and 2013)