

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: Socialist Republic of Vietnam

Project: North Nghe An Irrigation System Upgrading Project

Loan Agreement: March 22, 2013

Loan Amount: 19,122 million Yen

Borrower: Government of Socialist Republic of Vietnam

2. Background and Necessity of the Project

(1) Current State and Issues of the Agriculture and Irrigation Sector in Vietnam

In Vietnam, 73 percent of its total population lives in the rural area, whereas agriculture accounts for 22.0 percent of GDP in 2011 and the ratio is on decline trend. The poverty rate in the rural area remains high at 20.4 percent where as that in the urban area is 3.9 percent. The income disparity between the two areas has been a large issue.

Agricultural productivity improvement is a major issue for poverty reduction and disparities correction. However, the increase rate of arable land and irrigation coverage has slowed down since 2000 due to conversion of farmland and decrease in water supply capacity due to ageing of irrigation facility in spite of government's efforts to increase it. Ageing of large irrigation facility with a total area of 15,000ha or more is particularly serious, adversely affecting agricultural productivity.

There is one of the biggest irrigation facilities in Vietnam with the designed irrigation coverage of 29,147ha in Nghe An Province. It was constructed 75 years ago and the water supply capacity has reduced significantly due to ageing. Although 19,636ha of the designed irrigation coverage can be irrigated throughout the year, a necessary volume of irrigation water is not supplied for 9,511ha. Water demand for the irrigation facility is increasing as the decision of water supply for the Dong Hoi industrial zone into which Japanese steel and other companies plan to invest was made, etc., in addition to agricultural use. There is urgent need to enhance the water supply capacity for agriculture, living, and industry. Lack of careful water distribution management based on accurate flow data of the irrigation facility is also a reason for insufficient water use. There is urgent need to enhance water maintenance and management capacity together with facility rehabilitation.

(2) Development Policies for the Agriculture and Irrigation Sector in Vietnam

The master plan of agricultural production development approved in 2012 promotes expansion of 1.1 million ha of agricultural land by 2020 with the aim of annual growth rate of agricultural production values at 3.5 percent. The master plan and the water resources development strategy approved in October 2009 aim at human resources development for water use. The Project contributes to the achievement of these national goals.

(3) Japan and JICA's Policy and Operations in the Agriculture and Irrigation

Sector

The assistance plan for Vietnam formulated by the Japanese government¹ (July 2009) regards livelihood and social improvement and correction of disparities as one of four major pillars of assistance, with the agricultural infrastructure development being the critical issue. Japan has carried out the Phan Ri-Phan Thiet irrigation project (approved loan amount in 2005: 4,874 million Yen) Other projects include the Project for Promotion of Participatory Irrigation Management for Sustainable Small-Scale Pro Poor Infrastructure Development (2010-2013: paid technical assistance) and advisor for agricultural and rural area development policies (2011-2013: individual expert) related to water maintenance and management capacity enhancement.

(4) Other Donors' Activity

- 1) World Bank: It has assisted irrigation rehabilitation and water management capacity enhancement. One of the projects is the irrigation rehabilitation project in central region.
- 2) Asian Development Bank: It has assisted irrigation rehabilitation and water management capacity enhancement. One of the projects is the Bac Hung Hai irrigation rehabilitation project.

(5) Necessity of the Project

The Project is consistent with the focal assistance sectors of the Japanese government and JICA and it contributes to the increase of agricultural production volume, expansion of agricultural land, and rural area infrastructure development that are some of Vietnamese development goals. Therefore, JICA's assistance for the Project is highly needed and reasonable.

3. Project Description

(1) Project Objective

The Project is to upgrade irrigation facility in Nghe An Province and to develop irrigation maintenance and management training center to increase irrigation coverage in the area and enhance the irrigation maintenance and management training scheme of the country, thereby contributing to the improvement of agricultural productivity and livelihood of residents in rural areas.

(2) Project Site/Target Area

Nghe An Province, Hanoi in Socialist Republic of Vietnam³

(3) Project Components

- 1) Civil engineering work and procured equipment, etc.: rehabilitation and expansion of irrigation system, development of training materials and equipment

¹ The assistance plan by country formulated in December 2012 also puts "assistance to solve fragility" as one of focal areas and rural area and local development is to be assisted.

(international and domestic competitive bidding)

- 2) Consulting service: detailed design, tender assistance and construction supervision (shortlist system)

(4) Estimated Project Cost (Loan Amount)

22,572 million Yen (Loan Amount: 19,122 million Yen)

(5) Schedule

March 2013 to December 2019 (total of 82 months) The Project shall be completed upon the beginning of facility provided for use (June 2019)

(6) Project Implementation Structure

- 1) Borrower: Government of Socialist Republic of Vietnam
- 2) Executing Agency: Central Project Office of Ministry of Agriculture and Rural Development, Nghe An Department of Agriculture and Rural Development, and Vietnam Academy of Water Resources
- 3) Operation and Maintenance System: Nghe An Irrigation Company is slated to be responsible for operation and maintenance.

(7) Environmental and Social Consideration/Poverty Reduction/Social Development

- 1) Environmental and Social Consideration
 - (1) Category: B
 - (2) Reason for Categorization: The Project is not the influential sector or does not have such characteristics or the site is not prone to be affected listed in the Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations (released in April 2002) and thus the Project does not have major impact on environment.
 - (3) Environmental Permit: Nghe An report on environmental impact assessment (EIA) is completed by the Nghe An Department of Agriculture and Rural Development. It was approved by the Ministry of Agriculture and Rural Development (MARD) in October 2012.
 - (4) Anti-Pollution Measures: Air quality during construction is estimated to meet the national environmental standard by taking such measures as water spraying.
 - (5) Natural Environment: Because the Project target area is not an area that is prone to be affected like a national park or its surrounding areas, unfavorable environmental impact on natural environment is estimated to be minimum.
 - (6) Social Environment: Because the Project includes land acquisition of approx. 21.7ha, it shall be acquired in accordance with the national procedures. The Project does not include resident relocation.

(7) Other / Monitoring: The consultant responsible for construction supervision and the consultant hired by the MARD/CPO shall monitor noise, vibration, air quality and water quality during construction, and the NADARD shall be responsible after the provision of service based on the environmental management plan. An external consultant shall be hired by the MARD/CPO for land acquisition to perform monitoring.

2) Promotion of Poverty Reduction: An increase in agricultural production after the Project implementation shall contribute to improvement of livelihood of the poor.

3) Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including HIV/AIDS, Participatory Development, Consideration for the Person with Disability etc.):

It is planned that the contractor will be required in the tender documents to conduct an HIV/AIDS prevention program for construction workers during construction

(8) Collaboration with Other Donors:

The outcomes of the Project for Promotion of Participatory Irrigation Management for Sustainable Small-Scale Pro Poor Infrastructure Development shall be utilized for irrigation facility operation and maintenance capacity enhancement to spread the effects of technical cooperation widely,

(9) Other Important Issues

No special note

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual Value in 2012)	Target (2021) 【Expected value 2 years after project completion】
Irrigation coverage (ha)	19,636	27,656
Agricultural production volume (rice (long grain)) (ton/year)	228,152.4	279,442.8
Agricultural production volume (peanut) (ton/year)	27,152.0	65,354.4
Agricultural production volume (sweet potato) (ton/year)	78,699.5	111,080.7
Irrigation facility maintenance and management training (session)	189	2,651

2) Internal Rates of Return

Based on the conditions indicated below, economic internal rate of return (EIRR):

21.2%

The financial internal rate of return (FIRR) is not calculated because it is difficult to convert the benefit into monetary value or quantify it.

Cost: Project cost (tax excluded), operation and maintenance cost (labor cost and management cost included), benefit: Agricultural production volume increase, project life: 50 years (after beginning of facility supplied for service)

(2) Qualitative Effects

Poverty reduction in accordance with agricultural production volume increase

5. External Factors and Risk Control

No special note

6. Lessons Learned from Past Projects

(1) The ex-post evaluation of the evaluation results of similar projects: Rural Development and Livelihood Improvement Project (III) points out that formulation of irrigation plans for irrigation efficiency improvement by local governments and irrigation management companies and irrigation facility maintenance technique enhancement are effective for securing effects of irrigation projects and its sustainability.

(2) Lessons for the Project: Based on the lesson described above, Vietnam Academy of Water Resources that is responsible for project operation and maintenance and also the counterpart of Participatory Irrigation Management for Sustainable Small-Scale Pro Poor Infrastructure Development plans to enhance capacity for formulation of irrigation plans by local governments and irrigation management companies and irrigation facility maintenance while utilizing the Project outcomes.

7. Plan for Future Evaluation

(1) Indicators to be Used

- 1) Irrigation coverage (ha)
- 2) Agricultural production volume (rice (long grain)) (ton/year)
- 3) Agricultural production volume (peanut) (ton/year)
- 4) Agricultural production volume (sweet potato) (ton/year)
- 5) Irrigation facility maintenance and management training (session)
- 6) Economic internal rate of return (EIRR) (%)

(2) Timing

Two years after Project completion