

## 1 . Name of the Project

Country: Kingdom of Cambodia

Project: Southwest Phnom Penh Irrigation and Drainage Rehabilitation and Improvement Project)

Loan Agreement: July 10, 2014

Loan Amount: 5.606 million yen

Borrower: The Royal Government of Cambodia

## 2 . Background and Necessity of the Project

### (1) Current State and Issues of Irrigation Sector in Cambodia

Agriculture is the core of the economy and industry in Cambodia, accounting for more than 30 percent of gross domestic product and 70 percent of the employed population. In addition, 80 percent of the country's population and more than 90 percent of the poor live in rural areas, so agriculture is also an important field from a perspective of alleviating poverty.

In Southwest Phnom Penh, the region targeted for the project, four southwestern provinces account for approximately 30 percent of Cambodia's total rice production, demonstrating that the area rivals the Tonle Sap region as one of Cambodia's major grain-producing regions. However, many of the existing irrigation and drainage facilities were constructed under the Pol Pot regime (1975-1978), and do not function adequately due to degradation, design/construction problems, and insufficient maintenance. As a result, irrigation water is not provided in a stable manner, making rice growing dependent on rainwater. Thus, boosting productivity is an issue faced by agricultural development.

### (2) Development Policy on the Irrigation Sector in Cambodia and the Priority of the Project

In their key policy document, the Rectangular Strategy – Phase III, the Government of Cambodia gives the improvement of agricultural productivity and diversification as a priority issue toward the sustainable growth of their key industry of agriculture. Focus has thus been placed on the management of river basin water resources and irrigation systems that will provide for the effective use of water resources and sustained development. Additionally, in the National Strategic Development Plan (2014-2018), the improvement of agricultural productivity for poverty reduction and sustained growth is one of the primary objectives. Sector development policy also focuses on the improvement of agricultural productivity through the rehabilitation and construction of irrigation facilities, as well as on the expansion of irrigation land area. Furthermore, in the Ministry of Water Resources and Meteorology's Action Plan on Water Resources and Meteorology Management and Development, water resource management and the development of irrigation facilities is described. The Project is positioned as a part of its relevant policies.

### (3) Japan and JICA's Assistance Policy for and Experience in the Irrigation Sector

In Japan's Country Assistance Policy for Cambodia (2012), the development of agriculture and rural communities is prioritized as one of the development issues in strengthening economic infrastructure. The Country Assistance Policy also provides assistance for developing irrigation facilities, enhancing capacity in irrigation technology, and improving farming. This Project will be implemented as a part of this. In terms of past results, the West Tonle Sap Irrigation and Drainage Rehabilitation and Improvement Project began in fiscal 2011 as an ODA loan project positioned as a program for improving agricultural productivity. Additionally, technical cooperation projects have also been implemented; these include the Project for the Improvement of Agricultural River Basin Management and Development (2009-2014) (hereinafter called "TSC3") and the Agricultural Productivity Promotion Project in West Tonle Sap (2009-2014) (hereinafter called "APPP"). The Project is also planned for positioning in a similar manner as program for improving agricultural productivity.

### (4) Other Donors' Activity

In addition to JICA, cooperation projects are also being conducted by ADB and AFD, among others. There has also been a rapid increase in investments for the development of dam and irrigation facilities through ODA from China, South Korea, India, and the Middle East, as well as private sector investments. Some of the assistance provided by ADB and AFD are as follows.

- ADB: Tonle Sap Lowlands Rural Development Project (2008-2014)
- AFD: The Water Resources Management Sector Development Program (2010-2018) is currently being implemented in coordination with ADB.

(5) Necessity of the Project

The Project is consistent with Cambodia's developmental agenda, national policy, and Japan and JICA's assistance policy; therefore, the necessity and relevance for JICA to assist the Project is high.

### 3. Project Description

(1) Project Description

By rehabilitating and developing irrigation and drainage facilities in five regions of three provinces in southwest Phnom Penh, the Project will increase agricultural productivity in the target districts, and thus contribute to improving the livelihoods of farmers in the region.

(2) Project Site/Target Area

Kampong Speu province (Roleang Chrey, Main canal 35 area), Takeo province (Upper Slakou area)  
Kandal province (Kandal Stung-Bati area, Srass Prambai area)

(3) Project Components (including the method of procurement)

- 1) Rehabilitation and development of irrigation and drainage facilities (headworks, primary/secondary/tertiary canals, drainage canals, ancillary facilities, etc.)
- 2) Consulting services (detailed design, tender assistance, construction supervision); (Civil works will employ international public tendering and domestic public tendering; consulting services will use a shortlisting system.)

(4) Estimated Project Cost

6,772 million yen (including the yen loan of 5,606 million yen)

(5) Schedule

Scheduled from July 2014 to April 2022 (total of 94 months). Project completion is defined as the start of facility operation (April 2021).

(6) Project Implementation Structure

- 1) Borrower: The Royal Government of Cambodia
- 2) Guarantor: None
- 3) Executing agency: Ministry of Water Resources and Meteorology: MOWRAM
- 4) Operation/maintenance/management system: MOWRAM and Provincial Departments of MOWRAM will conduct operations and maintenance management for headworks and main canals. Provincial Departments of MOWRAM and irrigation associations will conduct operations and maintenance management for waterways other than main canals.

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

1) Environmental and Social Consideration

- ① Category: B
- ② Reason for categorization: The Project does not fall under the large-scale farming sector as specified in the Japan International Cooperation Agency Guidelines for Environmental and Social Considerations (issued in April 2010), and is deemed to have minimum adverse impacts on the environment. In addition, the Project does not include any characteristics likely to cause an impact or areas susceptible to impact as specified by these guidelines.
- ③ Environmental permission and authorization: Although an Initial Environmental Examination (IEE) is not required, an IEE report has been created. Cambodia's domestic laws do not require the preparation of an Environmental Impact Assessment (EIA) report concerning the Project.
- ④ Measures against pollution: Measures such as placing restrictions on construction times are expected to be taken to minimize impacts such as noise and vibration.
- ⑤ Natural environment: The target area for the Project is not in a sensitive area such as a national park, nor in the surrounding area of such; therefore, adverse impact on the natural environment is expected to be minimal.
- ⑥ Social environment: The Project will involve the acquisition of approximately 54 ha of land and the involuntary resettlement of five households. This acquisition and resettlement follows the basic plan for resettlement created in accordance with the Japan International Cooperation Agency Guidelines for Environment and Social Considerations (April 2010).
- ⑦ Monitoring: During the construction period of the Project, MOWRAM plans to monitor water

quality, etc.

- 2) Promotion of poverty reduction: The Project will contribute to poverty reduction through the generation of more income for farmers.
- 3) Promotion of development (e.g. gender perspective, measures for infectious disease including AIDS, participatory development, and considerations for persons with disabilities, etc.): The implementing agency plans to conduct HIV/AIDS awareness activities for workers.

(8) Collaboration with Other Schemes and Other Donors

In the target areas of Roleang Chrey and Upper Slakou, the Project for Improvement of Agricultural River Basin Management and Development (TSC3) has been implemented. As a result of the technical guidance on planning, surveying, and construction management provided to MOWRAM employees through the Project, they can be expected to manage Project construction independently. Additionally, MOWRAM employees who have received technical guidance on irrigation management and development can be expected to appropriately provide and manage water resources.

ADB, AFD, and other donors are expanding their cooperation activities in the country, focusing on its two major grain belts in the Phnom Penh and West Tonle Sap regions. Information regarding progress on these projects is continually shared with JICA.

(9) Other Important Issues: None

#### 4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators

Indicator	Reference value (value in 2011)	Target value (2024) [3 years after completion of the project]
Irrigation area (ha)	1,860	9,610
Rice cultivation area (ha)	9,140	12,835
Rice yield (tons/year)	20,569	49,171
Rice unit yield (tons/ha)	2.4	3.5-5.0

2) Internal Rate of Return

Based on the following preconditions, the Economic Internal Rate of Return (EIRR) will be 20.1%. Since the Project will only collect maintenance expenses, the Financial Internal Rate of Return (FIRR) has not been calculated.

[EIRR]

Cost: Project cost (excluding tax), operation and maintenance expenses

Benefits: Improvement of agricultural productivity due to irrigation

Project life: 30 years

(2) Qualitative Effects: Stabilization of irrigation water supply, improved livelihoods for farmers

#### 5. External Factors and Risk Control

N/A

#### 6. Evaluation of Similar Projects and Lessons Learned from Past Projects

(1) Evaluation of Similar Projects

It was learned from the ex-post evaluation of the Upper Indravati Irrigation Project that involvement of irrigation associations from an early stage is important in establishing operation and maintenance systems for waterways other than main canals. It was also shown in the ex-post evaluation of the South Nawin Irrigation Project that since farmers can sell rice at higher prices due to the opening of the market, they hope to grow rice crops in the dry season as well, which led to increased productivity.

(2) Lessons Learned from Past Projects

Similarly for this Project for developing irrigation facilities, irrigation associations will be formed and fostered from an early stage to establish operation and maintenance systems for waterways other than main canals, as based on the lessons-learned described above. Additionally, farming support through

existing technical cooperation projects and the benefits of river irrigation management and development will be used to improve the quality of rice, which will lead to an higher selling price for the farmer's rice.

#### 7. Plan for Future Evaluation

- (1) Indicators to be Used in Future Evaluations:
  - 1) Irrigation area (ha)
  - 2) Rice cultivation area (ha)
  - 3) Rice yield (tons/year)
  - 4) Rice unit yield (tons/ha)
  - 5) Economic internal rate of return (EIRR) (%)
- (2) Timing for Next Evaluation  
Three years after completion of the Project

End