

INDONESIA

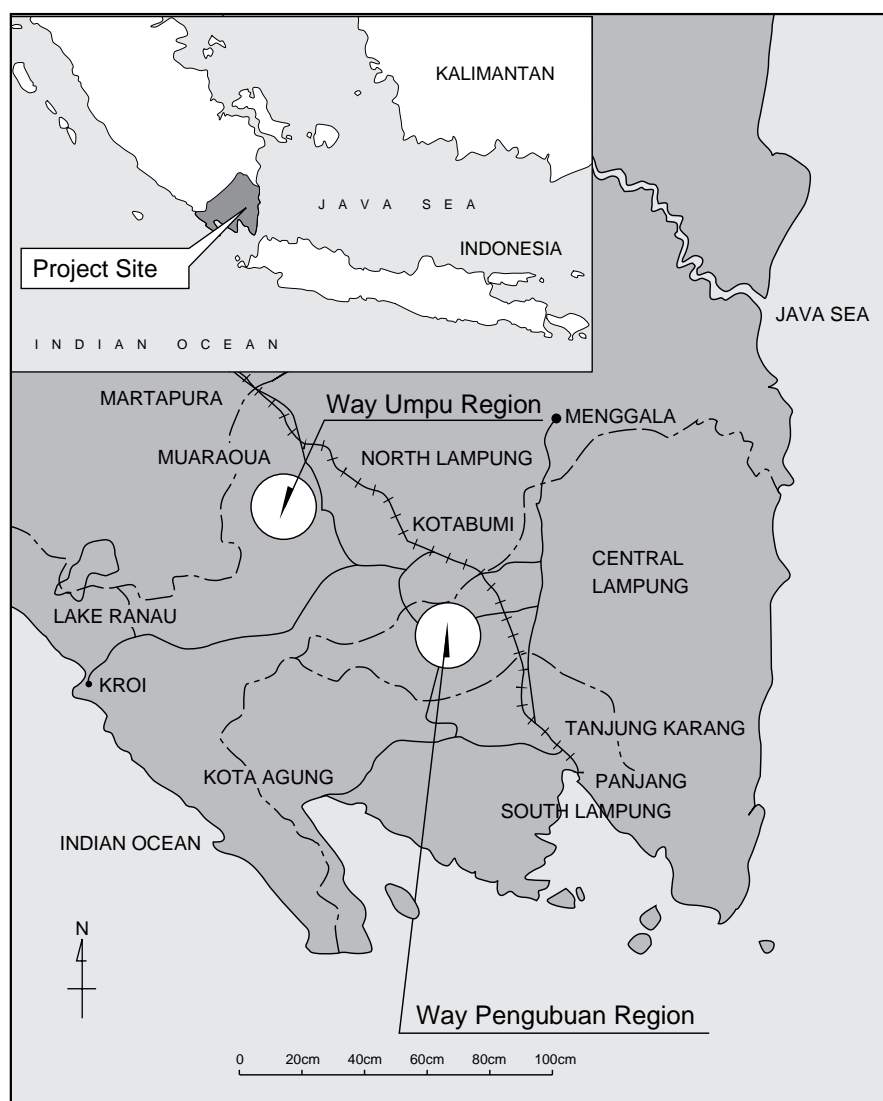
Way Umpu and Way Pengubuan Rehabilitation Irrigation Projects

Report Date: January 1999

Field Survey: July 1998

1 Project Summary and JBIC's Cooperation

This project is designed to rehabilitate the irrigation facilities in the Way Umpu and Way Pengubuan region of Lampung Province, Sumatra Island, Indonesia, in order to expand agricultural production. The irrigation facilities subject to rehabilitation are the ones constructed under the Way Umpu and Way Pengubuan Irrigation Project implemented with ODA loans (hereinafter referred as the original projects). The results of a post-evaluation by JBIC (1986) after the original projects were completed recognized that the facilities were succumbing to severe damage and that swift rehabilitation was needed urgently. The rehabilitation project was initiated in accordance with it. The ODA loan covers the foreign currency portion and a part of the local currency portion required for the civil works needed on the irrigation facilities, the procurement of maintenance equipment and materials and the consulting services.



Borrower / Executing Agency	The Republic of Indonesia, Ministry of Public Works / Directorate General of Water Resources Development
Exchange of Notes / Loan Agreement	September 1986 / January 1987
Loan Amount / Loan Disbursed Amount	· 1,392 million / · 1,226 million
Loan Conditions	Interest: 3.5%, Repayment period: 30 years (10 years for grace period), General untied (partial untied for consultants)
Final Disbursement Date	January 1992

2 Evaluation Results

(1) Project Implementation

(i) Project Scope

As a result of an appropriate review during the design and implementation stages, the project scope increased vastly. The initial plan scope for this project called for the minimum amount of work necessary to maintain the facility's irrigation functions, and it was assumed that a review was needed to a certain extent. The adjustments and increases to the project scope proved that the project was implemented with a clear view of the local needs, and there was no particular problem with this. The maintenance equipment including bulldozers, agricultural meteorological measuring instruments etc. were additionally procured just before the expiration date of the loan agreement, but as these additional procurements were covered within the project scope and that it was possible to transfer the bulldozers and other maintenance equipment across to paddy field development if necessary, the required effect of the entire project was attained and there were no particular problems.

(ii) Implementation Schedule

A delay of approximately one year arose with the overall project, but as all the necessary works were completed within the L/A period (January '92), it was considered that the project was moving on schedule. Analyzing the cause of the overall delay on a time scale, it is shown as follows: (1) a four-month delay in signing the L/A, (2) an eight-month delay in the scheduled employment of consultants (four months of this can be put down to the delay in signing the L/A) and an extended delay in the detailed design procedures and for selecting the contractors, and (3) as a result of an increase to the project scope, the implementation schedule itself was extended.

(iii) Project Cost

The ODA loan was kept to within the scheduled amount at ¥1.226 billion, as opposed to the ¥1.392 billion estimated during the appraisal. Examining this by component shows that an increase in the cost of additionally-procured maintenance equipment not covered by the plan (a total of ¥40 million both foreign and local currency covered by the ODA loan ¥130 million), and a reduction in consultants cost brought about by a reduction in labor cost (¥316 million ¥190 million) were a vast change. For the cost of the civil works, despite the increase to the project scope, an appreciating yen and depreciating rupiah in yen denominations allowed the project to be completed within budget.

Comparison of Original Plan and Actual

(1) Project Scope	Plan		Actual	
	Way Umpu region	Way Pengubuan region	Way Umpu region	Way Pengubuan region
[1] Civil works				
(i) Urgent civil works	70m	—	70m	160m
(ii) Normal civil works				
(a) Rehabilitation of waterway	28km	18km	59.8km	47.3km
(b) Rehabilitation of elevation gap engineering	165 points	—	198 points	14 points
(c) Remodeling of gate	569 points	—	10 points	18 points
(d) Managerial road	25km	2km	53.3km	27km
(e) Other buildings	127 points	18 points	218 points	76 points
(for collect and delivery water channel)	28km	8km	24.5km	25.3km
[2] Maintenance equipment	13 items including motor grader, automobiles for pick-ups etc.		11 items of motor graders, 36 items of additional procurement such as bulldozers etc.	
[3] Consulting service	Detailed design, construction management, preparation of maintenance scheme, OJT for executing agency		TOR is the same as planned	
	¥Foreign	45 M/M	¥Foreign	40 M/M
	¥Local	84 M/M	¥Local	126 M/M
(2) Implementation Schedule				
(Contract for consultant ~ completion of equipment procurement)	August 1986 ~ December 1990 (53 months)		September 1986 ~ August 1991 (61 months)	
(3) Project Cost				
Foreign currency (portion covered by ODA loan)	· 975 million	(· 975 million)	· 838 million	(· 838 million)
Local currency (portion covered by ODA loan)	· 480 million	(· 417 million)	N.A.	(· 388 million)
Total	· 1,455 million	(· 1,392 million)	N.A.	(· 1,226 million)
Exchange rate	Rp.1 = · 0.18		Rp.1 = · 0.18 (Weighted average value of rate at the time of disbursement)	

(2) Organization of the Executing Agency (implementation and operation/maintenance after completion)

(i) Implementation Scheme

The problems that existed in the inappropriate execution of work (run directly) and construction management (local consultants) prevalent in the original projects led to the ODA loan being used to select contractors through competitive bidding and to establish a system where overseas consultants were in charge of construction management, and this enabled work quality to be maintained. It has been reported that the performance of the executing agency, the consultants and the contractors is favorable, and the project has been evaluated for eradicating a system in which the mistakes that occurred during the original projects were able to be overlooked.

(ii) Operations and Maintenance

The organizational framework of the project consists of construction coming under the jurisdiction of the central government, the maintenance of the major facilities coming under the jurisdiction of the state government, and the maintenance of the small facilities related to tertiary and lower-scale waterways coming under the jurisdiction of a water supply union run by farmers. The irrigation facilities rehabilitated by this project have been transferred to the state government, and they are being used without any particular problems (as of 1998). On the other hand, a deficiency in maintenance funds indicates the necessity for reinforcing the budget base.

(iii) Paddy field development

Approximately 70% of the plan for developing paddy fields being implemented in parallel with the rehabilitation of the irrigation facilities had been completed as of 1998. The overall area of paddy fields was increased dramatically during the project implementation period between '86 and '91, and the paddy field development project run by the Ministry of Agriculture that was implemented together with this project and an evaluation of the original JBIC project (1986) applied backing to the government, resulting in the continuation of this project providing a firm contribution to paddy field development.

(3) Project Effects and Impacts

(i) Increased unit yield

The rice harvest in the Way Umpu region was increased to approximately 3.5t/ha in comparison with the 3.0t/ha before project implementation, and increased to approximately 5.0t/ha in the Way Pengubuan region over the 3.2t/ha prior to project implementation.

(ii) Expanded rice paddy field

Recorded figures as of 1998 put the area of newly-developed rice paddy in the Way Umpu region at 5,485ha (73% of the planned development area), and 3,598ha in the Way Pengubuan region (71%). The rate of increase in rice paddy region was particularly rapid between 1989 and 1991, when the full-scale implementation of this project's water channel improvement works coincided synergistically with the Ministry of Agriculture's rice paddy development projects.

(iii) Increased number of households

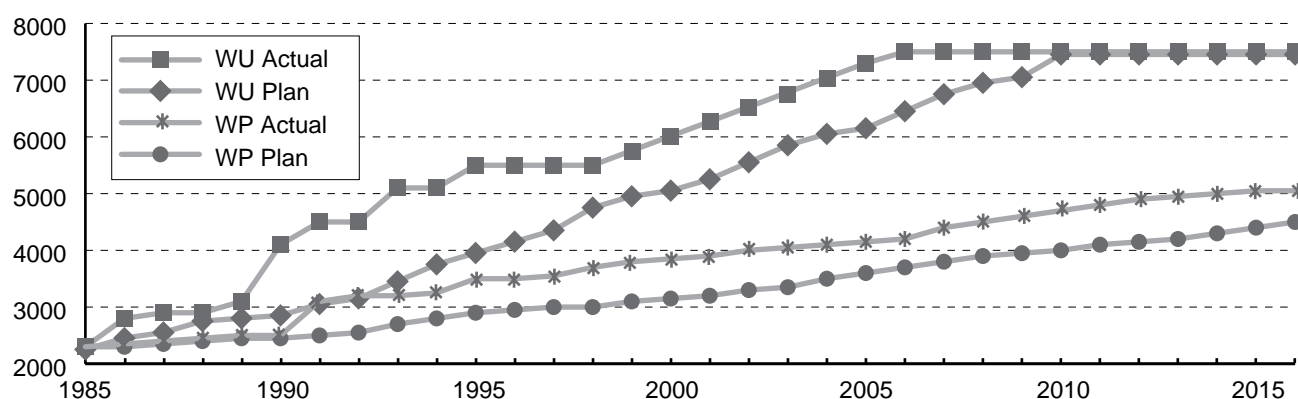
As part of the resettlement policy, a large number of migrants moved from Java and Bali to the Way Umpu and Way Pengubuan regions from the time the original project started.

(iv) Internal revenue rates

In addition to this, the internal revenue rates of the Way Umpu region stood at 11.8% after project implementation (11.5% at the time of planning) and 22.5% in the Way Pengubuan region (15.3% at the time of planning,) indicating certain rises in comparison with the period at the time of appraisal. The reasons for this rise in internal revenue rates can be put down to (1) the rate of developing paddy fields between '86 and '91 was greater than forecast at the time of appraisal, and (2) the rice harvest was higher than planned in the Way Pengubuan region. Another effect of this project was to bring about an increase in the number of settler households.

Expansion Prediction of Rice Paddy Field

(Unit: ha)



(Source) Documents prepared at the time of the appraisal, PCR, responses to questionnaires.

(Notes) WU = Way Umpu, WP = Way Pengubuan.

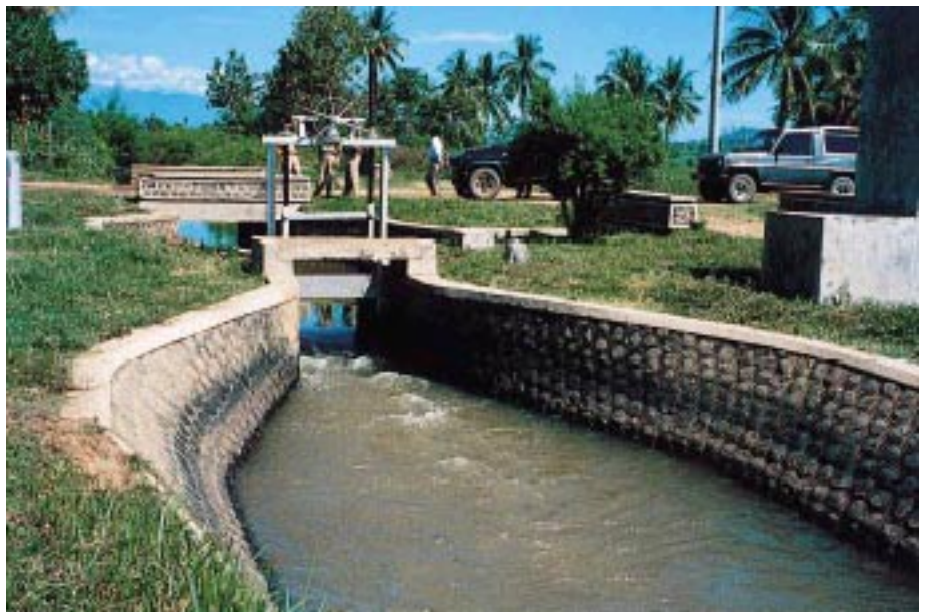
Rice paddy areas after 1991 are based on predictions made at the time of the appraisal, calculating growth rates of 230ha/year in Way Umpu and 80ha/year in Way Pengubuan.

3 Lessons Learned

Nothing in particular.



(i) Paddy cultivation in the Way Umpu region



(ii) Sluice gate in secondary channel



(iii) Irrigation facilities management office for the Way Umpu region