

Saebah Communal System

This case was part of the original CPR database developed in the 1980s by Edella Schlager and Shui Yan Tang at Indiana University. The resource appropriated from Saebah Communal System is water for irrigation. It is a system of canals that deliver water from a river. The study examines the impact of national subsidies on the rehabilitation of two small-scale river-diversion irrigation systems in Indonesia. Subsidies were substantial incentives to mobilize local resources with high rates of return on the rehabilitation projects.

1.1 The Commons Dilemma

The supply of water, more than any other resource, controls the production of field crops in the tropics. There is more than a single water user that uses the Saebah Communal System. The limited financial resource through national subsidies to create incentives for the rehabilitation of two river-diversion irrigation systems is perhaps a secondary commons to that of water.

1.2 Biophysical Context

The Saebah Communal Irrigation in, and the Takkapala Communal Irrigation System in *Desa Malino*, South Sulawesi are a part of a larger ecosystem within the natural environment with numerous program ranging from village to national human-made infrastructure. The Saebah system rehabilitated under the *Subsidi Desa* program with \$250 (U.S. dollars) subsidies in both 1971 and 1972. During 1971, its rock-and-gravel diversion dam was renovated and heightened. In 1972, the lining of critical canal reaches with concrete improved the water distribution system. The rehabilitation was undertaken during the slack agricultural season (June to August) by mobilizing 30 villagers each for 45 effective working days in the first year, and each for 30 effective working days in the second year.

1.2.1 *The Natural infrastructure*

The social-ecological system (SES) of the *Desa Cemplang*, West Java is primarily towering forests, deep valleys and high waterfalls and numerous lake surrounded by forest.

Cemplang is on a highway about 30 km west of Bogor, the center of agricultural education and research in Indonesia. The village is made up of 53 neighborhood organizations *rukun tetangga* and 8 unions of *rukun tetangga* called *rukun kampung*. At the time of the survey in 1975, the village had 750 households with 5,048 inhabitants, many of whom were employed in construction and other trades in Bogor and Jakarta. The total agricultural land area at the time was 415 ha, of which 360 ha are lowland rice fields. Rainfall is high and relatively evenly distributed throughout the year.

Malino is 64 km south of Ujung Pandang, the provincial capital of South Sulawesi. At the time of the study in 1975, Malino was relatively isolated with no improved roads connecting it to any urban center, and consists of 71 *rukun tetangga* and 11 *rukun kampung* with 1,781 households and 9,828 inhabitants. Of the total 10,000 ha area, 610 ha are lowland rice fields, 2,645 ha are upland rice fields, and 6,845 ha are forest lands. Rainfall in Malino is also high and relatively evenly distributed

1.2.2 Human-Made Infrastructure

The creation of an economic evaluation of the projects was devised to determine communal labor, locally mobilized resources, for the irrigation projects. For example, Communal labor contributions were imputed using the local farm wage rates of \$0.62/man per day for Saebah and \$0.56/man per day for Takkapala.

The estimated capital costs required for the rehabilitation was computed from material contribution valued at market price such as government subsidy, administrative cost, construction materials, and hired labor or communal labor.

1.3 Attributes of the community

The village leadership and community organization is one of the primary determinants of success in mobilizing communal labor. Under the *Subsidi Desa* program, requests for proposal was initiated with the village heads in both Cemplang and Malino. The village heads first consulted with the heads of their *rukun kampung* and *rukun tetangga* and then assembled larger village meetings. The proper project proposals that was developed from such meetings were then submitted to and approved by their respective *kecamatan*, *kabupaten*, and late to the provincial offices. Upon approval, executing the projects it was again the village heads, in consultation with heads of *rukun kampung* and *rukun tetangga*, who prepared schedules to mobilize villagers for the work.

The major difference between Cemplang and Malino was the relationship between the official village administration and the unofficial community organizations such as the *rukun kampung* and *rukun tetangga*. For example, in Cemplang, the village head was the main person taking the initiative in planning and organizing the projects. On the other hand, the head of Malino left the main decisions to the heads of the *rukun kampung* and *rukun tetangga*. The leaders of the smaller community units were able to take greater responsibilities for scheduling and supervising work.

1.4 Rules in Use

- Position rules: At Cemplang the village heads originated request to confer with *kecamatan* (provincial offices). At Malino, major decisions were left to leaders of smaller communities.
- Boundary rules: Locally elected village tenders (*ulu-ulu*) desa manage the systems for operations and maintenance. The appropriation resource present in this location consists of canals that deliver water from a river.
- Choice rules: Relationship between the official village administration and the unofficial community organizations, i.e. *rukun kampung* and *rukun tetangga*.
- Aggregation rules: Cemplang village (*rukun kampung*) set the rules while at Malino strong neighborhood community ties set planning and labor rules.
- Information rules: Education level, proximity and exposure to infrastructure and economic opportunities of nearby urban areas, and land-ownership.

- Payoff rules: Primarily mobilized labor in proportion to family members of working age (Saebah 1.2 of 4.1 while in Takkapala 2.3 of 3.8). Specifically, rates: \$0.62/man-day for Saebah and \$0.56/man-day for Takkapala.
- Scope rules: localized communal labor and carabaos (water buffalo)

1.5 Summary

The profitability and economic efficiencies of the Saebah and Takkapala rehabilitation projects was analyzed through benefit-cost ratio and internal rates of return analyses. Benefits from the projects consist of increases in irrigated areas and in yields per hectare. This analysis is however conservative, because it includes only those benefits stemming from increased area of irrigation. From the standpoint of village societies, perhaps the most relevant standard for evaluating the value of work programs is the return to village labor contributed to the rehabilitation. A shadow price of communal labor was computed in this study to reflect the value of labor. For example, the shadow price was estimated as an average return per man/per day of labor for initial capital construction, and for initial construction combined with operation and management. The average return was calculated to measure the success of the national subsidies to create incentives for the rehabilitation of two river-diversion irrigation systems.

Citation:

International Rice Research Institute. 1978. Irrigation policy and management in Southwest Asia. Los Baños, Philippines.