

# Impact Evaluation of Pasak Irrigation Project (1)

Study period from October 2008 to January 2010

## Summary of the Evaluation

The primary objective of this evaluation is: to consider more effective approaches of irrigation projects, through detailed measurements of the effects on productivity of constructing tertiary canals; and to acquire knowhow on impact evaluation method. To complement the impact evaluation, the second objective is to analyze the process of forming water user groups (WUGs) and sustainable management of WUGs which

are critical to ensuring the sustainability of irrigation projects, and derive recommendations on participatory irrigation management. Furthermore, the evaluation will analyze factors that will encourage farmers to adopt new knowledge and techniques to diversify the cropping pattern, which the project aimed, and disseminate them, as well as examine the approaches of assistance for disseminating these techniques.

### Background and Policies of the Evaluation

In the project site, the construction of tertiary canals by the executing agency is on a phased basis, and construction has not been completed in some areas. For evaluations of large-scale infrastructure projects, it is generally difficult to establish an appropriate comparison group\*1 that has not benefited from the project. In this evaluation, taking advantage of the phased construction of tertiary canals, areas in which tertiary canals are expected to be constructed but still have not been built were chosen as the comparison group. Two years panel data including wet and dry seasons will be collected, and

analyses will be carried out using the difference-in-differences method\*2.

Regarding the organization and management of WUGs and technique dissemination, the focus will be on social relationships, of which a quantitative understanding has been lacking to date. Social network analyses used in sociology will be applied. This will allow the visualization of social relationships. Analyses that complement the qualitative analyses will be conducted.

### Evaluation Results and Lessons Learned / Recommendations

Based on a carefully designed sampling strategy, data was collected from approximately 1,000 households. This data will serve as the baseline for observing the effects of the construction of tertiary canals. The study will proceed to the second round of data collection and present the final results of the analysis (impact evaluation).

The analysis of the organization and sustainable management of WUGs revealed that social relationships affect WUGs' performance to a certain extent. It was confirmed that when farmers cooperate with each other for water intake and drainage, negotiation and communication skills underpinned by social relationships are effective. They also support the management of WUGs. These analyses quantitatively showed that it is important to take into account existing social relationships in designing irrigation projects.

Similarly, with regards to technique dissemination, the study uncovered that information acquisition through existing social relationships has a large impact on decision-making about new technique adoption. On the other hand, it was shown that the impact of governmental channels. e.g., a technical trainer, is limited. The study quantitatively indicated that, when providing

assistance to promote the new techniques, in addition to calling on the government, it is important to select key persons who will have an active role in exchanging information among farmers.



Scene from training of household surveyors

\*1. In general, to estimate the project's impact, a sample (e.g., individuals, companies) that has benefited from the project should be compared against an identical sample that has not benefited from the project. However, it is physically impossible to observe both the actual situation and a variant situation. Therefore, a sample that has not benefited from a policy is used as the comparison group and compared against a sample that has benefited from the policy.

\*2. A method for estimating impact. It takes the differences between before and after project implementation, as well as between project beneficiaries and non-beneficiaries.