

## **Federations in Northern Thailand**

The authors of this report had the opportunity to conduct a visit to Chiang Mai province in June 1988, under the IIMI-UNDP program of professional development interchange. The purposes of the visit were (1) to study the inter-system federations linking systems within a single river basin, and (2) to study the interaction between the government and farmers belonging to People's Irrigation Systems (PISs) in the area.

The characteristics of PISs in the Chiang Mai area are the following: Each PIS has its own weir to divert water from a river or stream, and then to a canal network and farmers' fields. A PIS is not necessarily located in one village, but may include several villages, or only part of a village. Each PIS is managed by the farmers themselves, who establish an organization of water users.

The PIS is headed by an elected leader (huana) who is assisted by the puchuay huana, and (in the case of a large system) village-based leaders (kau muang). Each village leader is assisted by a messenger whose task is to notify farmers of meetings or emergencies. The payment given to the huana took the form of extra water in one system; during the wet season the huana received twice the normal allocation, and during the dry season he received US\$ 2.40 per hectare from the member farmers. The area covered by a PIS varies considerably; those visited ranged from 65 to 720 hectares.

Weirs are generally made of non-permanent materials (bamboo, rocks, and wood) aimed at bending, rather than directly resisting, the flow of the water. There are no measuring devices in these systems. An increasing number of weirs have been rebuilt by the government in concrete, with gated intakes at the mouth of the canal. Even in these cases, however, the canals and division structures employ simple technologies well suited to farmer management.

## OPERATION AND MAINTENANCE

The amount of water allocated to different sections of a given PIS is determined by the PIS organization itself, and depends mainly on the area to be irrigated. Division structures divide the canal flow proportionally to the size of the area to be irrigated. Continuous flows are standard during the wet season, when rice is grown. Dry season crops include some rice, and varying amounts of garlic, soyabean, and other crops.

Maintenance of the weir is carried out by farmers either through direct labor, or through payments to special functionaries. In one system we visited, two weir keepers are paid US\$ 180 per year for maintenance. In another system whose weir is currently

being rebuilt by the government, farmers used to contribute either bamboo stems or cash for the annual maintenance. The PIS huana stated that he was very glad to receive the government assistance because his members would no longer need to maintain the weir.

Canal maintenance is done twice a year by the farmers, just prior to the planting seasons, usually in June and December. Farmers who fail to participate are fined the equivalent of one day's normal wage for each day missed. Sub-units of the PIS are responsible for cleaning their portions of the canal network. We found no evidence of the PIS maintaining cash on hand; it appears that money is mobilized for particular tasks only. A number of conflicts among farmers were reported, but these were handled at the PIS level without resorting to outside authority. In general, government assistance is sought only for upgrading the system (e.g., concrete weirs) or to help repair unusual damage to the weir or canal.

## INTER-SYSTEM FEDERATIONS

Federations of PISs within a watershed can help in the equitable distribution of water during the dry season, when river flows diminish. In Mae Klang basin there is a federation comprising 5 PISs. Prior to its establishment there were many conflicts between the PISs, especially during the dry season.

The idea of federation originated from the farmers themselves, who had a clear need to resolve their conflicts. If a problem arises the head of the federation invites leaders of the member PISs to attend a meeting, during which the problem is discussed. Only if they are not able to find a solution do they bring it to the attention of the local government.

A second federation we observed was in the Mae On basin. The federation was established through the government's initiative, following construction of an up-stream reservoir which augments and regulates dry season supply. The government also refurbished a number of weirs to increase water use efficiency. Since the operation of the reservoir is controlled by the government, and the PISs control their own systems using reservoir water, the two sides cannot be separated. The establishment of the inter-system federation in this basin not only stimulates cooperation among the PISs, but also strengthens their bargaining position in the interaction process with the government to attain a common goal.

The role of the head of the Mae On federation is still evolving. At the moment most problems between PISs are solved bilaterally through the two PIS heads, rather than through the federation head. So far this procedure seems to work satisfactorily. Heads of inter-system federations are elected periodically. In Mae Klang basin the federation holds elections every 4 years. The head is selected by the leaders of the member PISs and not from the membership at large. The federation head receives no special remuneration, other than what he is entitled to as the huana of his PIS.

#### GOVERNMENT-FARMER INTERACTION

The government's role is to provide technical and financial assistance to the PISs. In the system of Nong Saleek (Lamphun province) the government advised the PIS in constructing a weir, and provided financial subsidies to complement farmers' own financial contributions. The Nong Saleek case is remarkable for its innovative, simple weir design. Hollow concrete blocks were constructed on the spot, using a mold. The blocks were bolted together

through holes in the block walls, and then filled with rocks. Because of the simple technology, farmers were able to participate in all phases of construction, thus cutting costs and providing local employment. This case demonstrates a good mix of "hardware" and "software" plus effective interaction between farmers and the government.

A project is currently being undertaken by researchers from the Faculty of Social Sciences at Chiang Mai University in cooperation with officials of the Royal Irrigation Department (RID) to develop and strengthen water users' organizations in the Mae On and Mae Kuang watersheds. This is an example of the involvement of another type of government institution, in this case a university.

The normal procedure followed in the case of small-scale projects (irrigated area less than 60 hectares, or budget less than US\$ 400,000, or construction period less than one year) is as follows:

- 1) A project proposal from the PIS is delivered to the local (sub-district and district) government; initial screening of proposals is done at these levels.
- 2) Selected proposals are forwarded to the provincial government.
- 3) Proposals are forwarded to a national board which determines priority projects and forwards them to RID for implementation.
- 4) A team from the regional (several districts in one region) RID office and related departments negotiates the project with the concerned PIS. Topics discussed include O&M obligations for the PIS, land requirements, and any continuing responsibilities of the RID.
- 5) Once an agreement is reached, work can begin; otherwise the

project will be postponed for further discussion.

The farmers' involvement in their own O&M is emphasized in this process. Northern Thailand is rich in farmer-managed irrigation systems, and it would be an impossible burden for the government to take over O&M responsibilities of every system improved. It is also important to note that the initial proposal should come from the PIS itself, and not from the government.

## CONCLUSIONS

Farmer-managed irrigation systems (or PISs) are very much alive in northern Thailand and make a significant contribution to agricultural production. Adoption of appropriate technology to improve production further is within the capacity of farmers to initiate and manage, with support from the government.

A complementary mix between the strengths of farmers and the government can yield the best results. Promising efforts are being made to establish better communication between farmers belonging to PISs and the government. The development of federations at the level of the watershed can improve cooperation at the inter-PIS level, and at the level of the PIS, interactions with government. The emphasis on farmers' own initiative (through the PIS) is an important feature of the process for improving the physical facilities of individual systems.

The important role of farmer-managed irrigation systems in irrigated agricultural development in Southeast Asia needs to be clearly recognized. Outside support from government agencies is often required, and the strategy taken by the agencies in responding to these needs is critical. Government programs should support,

but not replace, the responsibility of the farmer organization in managing its irrigation system. Technological inputs to improve the performance of farmer-managed irrigation systems need to be thoroughly understood and accepted by farmers.

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## ✓ Weir Systems in Northeast Thailand: A PHILIPPINE PERSPECTIVE

During our trip to the Khon Kaen region in northeast Thailand, we visited 8 irrigation systems: 3 concrete weirs, 4 wooden weirs, and one small reservoir. All three concrete weirs were constructed by the Royal Irrigation Department (RID), with the help of paid labor by the beneficiary farmers. Farmers are then expected to construct the canal network themselves, with no financial assistance from the RID. This division of labor is the basic reason for the low rate of system utilization: farmers have constructed canal networks for only 10% of the 2,000 concrete weirs.

Water users' groups are generally formed after the RID has constructed the weir. In some cases groups were formed without assistance from the government. Under a project known as the Small-Scale Irrigation System (SSIS) project, researchers from University of Khon Kaen are helping the RID develop a new cadre of community organizers (COs) to work with