

Srey Ampil Irrigation Scheme Rehabilitation Experience Kingdom of Cambodia

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INTRODUCTION

THE REHABILITATION OF the Srey Ampil Irrigation Scheme has been carried out by the Cambodian Ministry of Agriculture with the technical and economical support of the Italian Non-Government Organization (NGO), Mani Tese.

The rehabilitation has taken place over a nine-year period, which can be divided into two distinct periods. The first period, 1985 - 1986, was characterized by the donation and installation of equipments. During the second period 1992 to 1994 the main concern has been the establishment of a Public Irrigation Scheme.

The administration staff of this Irrigation Scheme are engaged in technical activities related to water distribution, system maintenance and administration, planning and monitoring, assistance and extension to farmers in managing water resources at the local level.

The staff are supplied with equipment and monetary assistance. They are responsible for all the work of rehabilitation and for maintaining close contact with the farmers.

Initially, the rehabilitation work was done on essential hydraulic structures. But with the continuation of the rehabilitation the farmers started to see other priorities and important areas needing work.

Besides the necessity for making the management of the irrigation scheme self-sufficient, the rehabilitation requires a growing presence of the farmers and their participation in the decision making.

LOCALIZATION

The Srey Ampil Irrigation Scheme is located 25 kilometers (km) south of Phnom Penh on Road Number 1 (Phnom Penh -Saigon) in an area of about 3,400 hectares (ha), between the Mekong and the Bassac rivers, district of Kien Svay, Kandal Province.

DESCRIPTION

Srey Ampil Irrigation Scheme was one of the many projects built during the Pol Pot regime with a loss of a great many lives.

The Irrigation Scheme is composed of two reservoirs, Boeng Thom and Boeng Tauch, which are filled by the flooding of the Bassac River, through the Bassac intake (four gates, five m high, 2.6 m wide) an 8.3 km dam and several lesser outtakes. The water is then distributed for irrigation to a network of primary canals of approximately 50 km.

When the level of the water at the reservoir is 6 to 7.5 m from sea level, the irrigated area can be fed by gravity.

With satisfactory operation of the hydraulic structures, this level of the water at the reservoir is reached between the months of September and April, in normal years.

The irrigation period goes from October until March.

During the first rehabilitation period four motor pumps were installed in order to take the water from the reservoir to the irrigated area and allow the farmers to cultivate a second crop of rice.

At that time there were not sufficient conditions to communicate directly with the farmers. They were considered as employees by the government, as they did not own the land. The government was charged with providing equipment for the production of rice, including fuel.

When the second rehabilitation period took place the political situation of the country had changed. From the rehabilitation point of view the following changes are important:

1. The change in government policies regarding agriculture, land tenure, and farm - products marketing. The return of private and family-based farm and landholding system.
2. The end of Cambodia's international isolation and the normalization of relations with foreign countries. Consequently, the international presence in the development process grew through bilateral, multilateral and nongovernmental cooperative projects.

3. The flood of 1991, which caused extensive damage to the supporting infrastructures, irrigation systems and trails. An enormous amount of maintenance and repair work was required to bring the system back to functioning.
4. The new political process first under the United Nations Transitional Authority in Cambodia (UNTAC) supervision and then with the election of a constituent assembly (now a parliamentary body), a new constitution for the kingdom and a new institutional framework.

The flood in September 1991 completely destroyed one of the four gates at the intake from the Bassac River, damaged an 8.3 km dam, (that separated the reservoir from the irrigated land), the gates along the dam and the irrigated area. It destroyed roads around the scheme and removed the earth from around the concrete hydraulic structures. The power of the water destroyed the embankments of the canals and small dams. The earth structures had not received ordinary maintenance prior to the flood. The canals at the irrigated area had considerable sedimentation with dense vegetation growing on its flow-bed. The canals inside the reservoir that linked the reservoir with the intakes of the irrigated area had enough sedimentation to prevent all water from being used for irrigation purposes.

The maps available reported only parts of the main roads or canals and were without reproductions of the administrative divisions, farm plots, and other structures in the irrigation scheme. There was not a single register of data describing the operation, maintenance, climatic records and level of the water at the reservoir.

The four motor pumps installed in 1985 were still working, even though they were not used for a second rice crop. They were just used to prevent any water shortage in an unique crop.

Once the most essential repairs and maintenance requirements for the flood-damaged system were identified and completed attention focused on gaining a better understanding of the project area and the target beneficiaries.

The farmers participated actively at this rehabilitation work not only in the area of the Irrigation Scheme but also along the 8.3 km dam and at the intake of the Bassac River. For their work the farmers were paid in rice.

A household survey was conducted to identify the owners of individual plots of land. The results of the survey (quantified information) regarding the ownership, their households, farm activities and exact location were transferred on to the maps and computers. A set of large-scale maps for the entire project area were prepared. The maps included minute details regarding the administrative territories; location, quantity and boundaries of the farmland plots; and the location of roads, dikes, canals and flood control structures.

On the whole, the major achievements of the Srey Ampil Rehabilitation Project have been:

- * An overall restructuring of the irrigation and flood control system in parts of the nine communes of the Kien Svay district.
- * The establishment of a solid village-based development center with essential structures and equipment.
- * The training of a capable and efficient administrative and technical staff, composed entirely of Cambodian nationals.
- * The establishment of strong links with the local and national authorities. The rehabilitation has also generated positive reactions from the farmers.

FARMERS' PARTICIPATION

The rehabilitation at the Srey Ampil Irrigation Scheme has tried to ensure the local people's participation in all decisions and work processes.

Farmers are already grouped in an administrative division. The 6,500 families with plots in the project are a grouped in 27 villages. A group of 2 to 4 villages forms a *khum*. The district of the projects known as Kien Svay has 9 khums. This is the only division recognized by law.

The representatives of the khums participate in the operation of the intake at the Bassac River and make proposals to the district authorities regarding major rehabilitation work to be carried out.

With the creation of the Srey Ampil Irrigation Centre, a team of persons was able to focus exclusively on water management. Most of the water management duties of the district were entrusted to the Centre and district staff persons started to work daily at the Centre.

The farmers' participation in rehabilitation work was always a priority. The administrative divisions of the farmers were respected, but for each part of the rehabilitation work the farmers needed to elect a group of people to serve as a link

between them and the Centre in the decision-making process. These groups would then be responsible for coordinating the farmers in the work to be done and for transferring the technical information from the Centre's personnel. After the infrastructure rehabilitation, the group will be responsible for the maintenance, protection and operation of the rehabilitated structure.

Almost all of the rehabilitation projects were a response to a specific request from the farmers, or were simply measures necessary for the operation of the Irrigation Scheme.

The establishment of a Public Irrigation Scheme at Srey Ampil also had some positive benefits.

1. It became possible to ensure water by gravity to all the farmers at the irrigation scheme by the rehabilitation of structures and better water management.
2. It became possible with the personnel at the Srey Ampil Centre to collect a considerable amount of technical data. This information is now being used for the operation and maintenance of the scheme.
3. The personnel of the Srey Ampil Centre are responsible for the use and maintenance of the mechanical equipment.
4. It became possible to coordinate the work of a complex operation and maintenance of large canals and dams.
5. The personnel at the Srey Ampil Scheme are supported by the Ministry of Agriculture, and some also have plots in the irrigation area.

At present the management of the Srey Ampil Irrigation Scheme can be considered of mixed control. As for the administrative division of villages and communes in the irrigated area of Srey Ampil, we can consider these already existing groups of farmers as farmers associations. These associations have the advantage of being already recognized by the local institutions and by the farmers. They preserve the traditional social habits of the rural communities.

The purpose for the establishment of these associations is to motivate farmers in full participation in the planning and execution of the improvements and to take subsequent responsibility for the operation and maintenance of the tertiary canals.

A farmer can devote his or her surplus labor time to the management of the tertiary canals provided that he or she is instructed how to do the work by the technician. The farmer is also more likely to be motivated if he or she sees the work as part of a common endeavor with all the farming community participating in similar activities.

Other associations were created in addition to the one described above. Important are the association for the use of motor pumps, for farmland in the area of the reservoir, and the association for the use of the storehouse.

The rest of the irrigation network, as mentioned before, at the Srey Ampil Irrigation Scheme is managed by government officials, making the management of mixed control.

FUNDING

At present the rehabilitation work is done with international funds with the local government contributing to the supply of local technicians and to a portion of the technicians' salaries.

The farmers are contributing their labor and for this effort they can receive "food for work." They are also paying for the use of the motor pumps, tractors, threshing machine, seeds, fertilizers and insecticide.

[In Srey Ampil 50 percent of the plots are in between 0,1 ha with no plots bigger than 1,5 ha.]

Almost all the rice produced is for consumption by the farmers and their families. Some farmers have other forms of income. Along the Mekong River the farmers created a large amusement picnic structures where tourists from Phnom Penh can come to eat. There are also several silk weaving shops.

Along the Bassac River there is extensive cultivation of flowers, tobacco, vegetables and fruit. Almost all the farmers own cattle. The farmers are very concerned that their efforts in cultivating rice during a four-month period will succeed, because it allows them the rest of the year for doing more lucrative activities. For that reason, once they feel confident that there is a reliable water source, their investment in fertilizer and men-labor increases, with subsequent increases in the productivity.

The monthly money provided for the Irrigation Scheme is about US\$3,000. This amount covers the expenses of management, operation and maintenance and some constructions. It does not cover the amortisation of the equipment (3 tractors 1 excavator). Considering that the surface cultivated is about 3,000 ha, the cost of water is about US\$1/ha month of cultivated rice. In a production of 60 sacks (of 50 kg) per ha the cost of the water is just one sack of rice /ha/year.

Water fees to farmers will be the last step towards making the management of the Srey Ampil Irrigation Scheme technically and economically self-sufficient. The water fee will be charged by the administration division and each village will have to pay their own quota to ensure the water for the entire dry season.

Since all the operation and maintenance are to be financed primarily by the beneficiaries, the farmers' association will be able to exert a strong influence on the institutional management.

CONCLUSION

Only as the rehabilitation proceeded at the Srey Ampil Irrigation Scheme did the transfer of management to the farmers become necessary. This was motivated not only by internal factors like the collection of data or the control of equipment, but by institutional factors such as the lack of a legal framework recognizing associations other than the administration division.

Throughout the rehabilitation process the farmers participation has been a crucial element. The management could only begin to be transferred to the farmers when it became clear what the results from the water control would be.

The success of the rehabilitation and the management is demonstrated by the water supplied by gravity, to the farmers, during the rice season. Only now the water-use fee can be charged. This will not only make the system self-sufficient but will also help in transferring the management to the farmers.