



## **The Process of Establishing and Functioning of Farmer Water User Committee (FWUC) of SCIRIP**

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**Abstract** The Stung Chinit Irrigation and Rural Infrastructure Project (SCIRIP) aimed to improve living standard of the local farmers through increasing the size of farmlands and at least 2 times per year in rice farming. However, the total targeted area of 7,000 ha in the wet season and 30% in the dry season reached only 2,960ha and 20-30% respectively (mostly vegetation) and the yield was still low. The FWUC was established, but the project was still a problem for the farmers. The study aimed to: assess the process of the FWUC's formation and its roles and responsibilities in providing services to its members, assess the functioning of the FWUC and its performance compared with the defined roles and responsibilities, and analyse constraints and potentials of FWUC encouraged participation from its members. The researchers selected 10 different villages from 3 communes including 100 households of members and 50 households of non-members, 2 persons from FWUC, 10 village heads and 1WUG in each village, and 1 representative from each PDofA, CEDAC, AFD, GRET and PDOWRAM to be interviewed. The results showed that the project was designed with insufficient study of the location. There was too deep of a drain, too small of a watercourse of tertiary and quaternary canals, unequal land uniformity and poor quality of soil (basalt, young and old alluvium). The formation of the FWUC and its regulation did not involve participation from all its members. Moreover, only 50-60% of the regulations were implemented and these focused a lot on fishing activities, management of cattle and buffaloes, and the use of roads and ox-cart tracks, but less on management, water distribution, irrigation and canal protection. The participation from farmers was poor for the small plots of land they owned, traditional habit of rice field protection, multiple jobs, poor commitment and cooperation amongst farmers in system protection. In addition, pest booklets caused problems. The problem resulted from internal factors; poor project design, poor FWUC's implementation, poor participation from farmers and external factors; pest booklets and poor soil conditions.

**Keywords** farmer water user committee, participatory, cooperation

## **INTRODUCTION**

The irrigation scheme plays a very significant role in irrigating the fields. It has been a public policy issues and development discourses in Cambodia for long time. Many irrigation schemes in Cambodia were constructed during the Pol Pot regime. However, most of them were deteriorated after the regime was collapsed (Try, 2008). The importance of the scheme is to eliminate poverty through increasing production, the agricultural sector was targeted by the Royal Government of

Cambodia (RGC) to accelerate the development of the irrigation project: ‘Development of Water Resources Management and Irrigation Infrastructure are to Increase of Agricultural Productivity’. Moreover, MOWRAM remarkably focused on agricultural sector, one of the four priority sectors in term of assurance of food security and improving living standard (Philippe & Sebastien, 2009).

One of the most biggest irrigation schemes is the Stung Chinit, the fifth largest schemes in Cambodia, fell into a state of disrepair in the late eighties and it was not well operated (FACT, 2004). Up to 1997, the preliminary assessment was considered on the possibility of rehabilitation. In 1999, the RGC proposed to Asian Development Bank (ADB) and Agencies France Development (AFD) to support the existing infrastructure in order to provide supplementary irrigation and reach the target of 7,000 ha in the wet season and 30% in the dry season (Philippe & Sebastien, 2009).

The major difference in SCIRIP was that the output could not reach to 7,000 ha and most of the farmers practiced farming only one time a year during the wet season (ADB, 2009). Moreover, the theory was well applied in the wet season (May to December) varying between 3 to 6 months and less in the dry season mostly vegetation. The productivity was very low (ADB, 2006).

The study proposed to find out what was the issue taken place between the FWUC and the Farmers and explained the process of FWUC’s formation and its roles and responsibilities in providing services to its members, the functioning of FWUC and its performance compared with the defined R&R, and the constraints and potentials of FWUC to encourage participation from its members.

## METHODOLOGY

The study was conducted in 3 communes; Kampong Thar, Beong Lvea, and Prasat, Santuk District, Kampong Thom Province are the command areas of the SCIRIP and it covered 25 villages, including Banteay Yumreach village that participated after the project was completely finished in 2008.

The selection was including 100 households of members and 50 households of non-members, 2 persons from FWUC, 10 village heads and 1 Water User Groups (WUG) in each village, and 1 representative from each PDoA, CEDAC, AFD, GRET and PDOWRAM was interviewed.

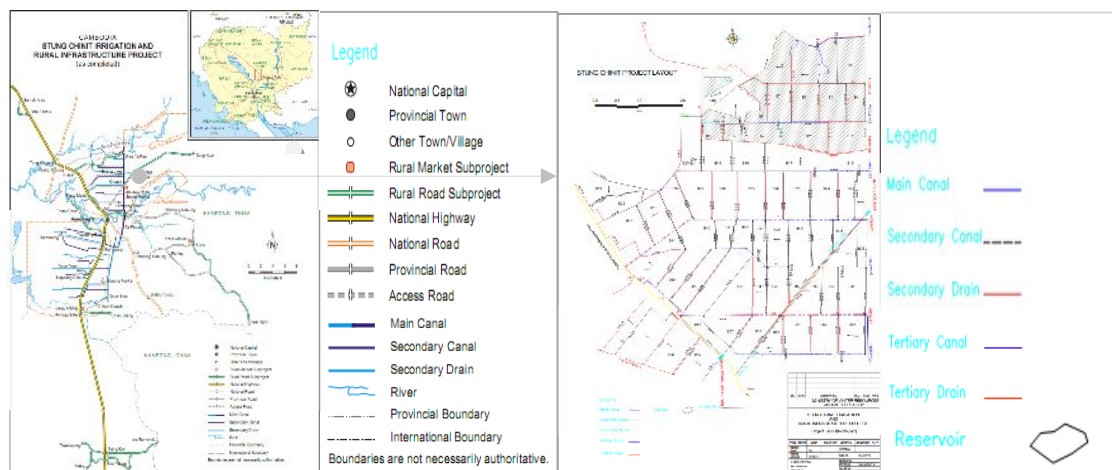


Fig. 1 Map of research zone (ADB, 2009)

## RESULT AND DISCUSSION

The project was implemented in 2001-2008. The target area decreased by over half (from 7,000 ha to 2,960 ha) due to the change of scope caused by insufficient study, over-lower estimation on the project cost from \$26 million to \$23.8 million, improper designing and constructing of

infrastructures (ADB, 2009). However, the project was still running in providing services to the farmers.

First, the meeting was held within stakeholders on the project objectives and benefits then the results were disseminated to the local farmers. Second, the training was held on the functions, roles and responsibilities, organization, rules and regulations of the FWUC as well as the work plan. After that, the election of the FWUC and WUGs was attended by the local farmers around 60-70% in each election. The last election was held on November 18, 2010. Then the FWUC planning was prepared and proceeded. The irrigation was planned to start in August 2004; however, due to the change of scope it was postponed until July 2006. To minimize the impact of delays, the block pilot of 50ha by pumping was implemented. Next, they proposed study tours to Siem Reap province led by GRET and CEDAC in 2002, then to Kamping Puoy, Prey Nub and O Treng to gain experiences as well as to learn the way to manage the scheme from those locations.

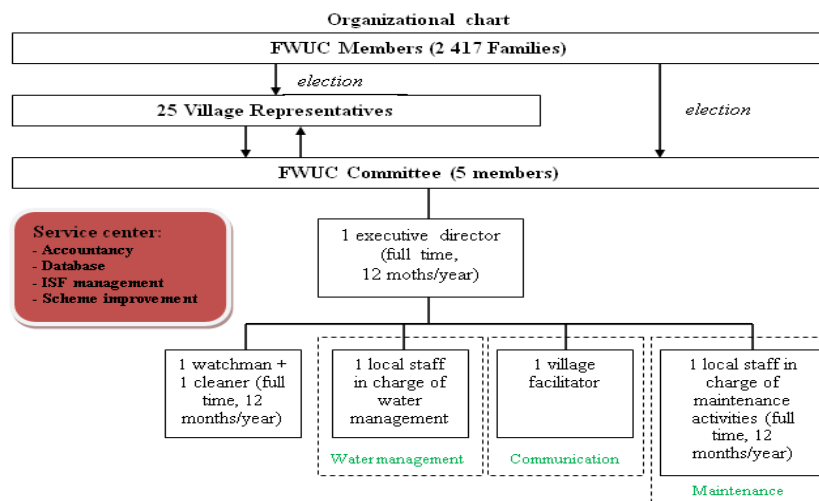
**Table 1 FWUC' formation and supervision milestones**

| Milestone no.   | 9                                    | 10            | 11            | 12              | 13              | 14                                  |
|-----------------|--------------------------------------|---------------|---------------|-----------------|-----------------|-------------------------------------|
| OUTPUT SCHEDULE | Project and FWUC concept Orientation | FWUC Election | FWUC Planning | FWUC Management | FWUC Study Tour | Supervision During Defect Liability |

The liability of the whole system was supervised by the FWUC in September 2008, but it still needed to be supported from CEDAC and GRET as well as to keep improving the work proceeding for the poor management of the FWUC to the whole system.

### FWUC roles, responsibilities and meetings

The FWUC had been led by the 5 committees. The chairman was in charge of general supervision, first vice-chairman was in charge of maintenance and repairing plan, second vice-chairman was in charge of water supply distribution, the treasurers were in charge of finance while all WUGs and members were in charge of report farmers' demand. The executive director was in charge of general management and administration affair.



**Fig. 2 FWUC's structure (Philippe & Sebastien, 2009)**

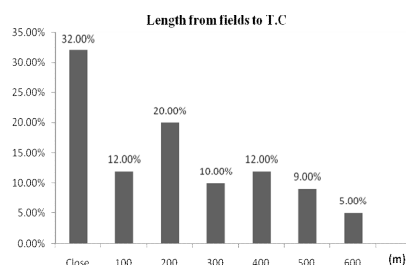
There were two kinds of meeting; the general assembly meeting held once a year between FWUC, WUGs and block rangers. General meeting is being held two times a year (in the early and the end of the wet season) including with the local farmers however only members could join to the meetings.

### System protection, irrigation service fee (ISF) and water supply

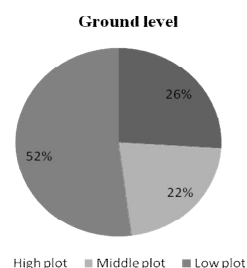
The FWUC took control of the whole system and met the needs of the farmers' demand. There was much control during the wet season when the cultivation season was, but less in the dry season for about 12% of the farmers practiced rice farming. The block rangers did not act in the dry season. In the wet season, the FWUC took actions such as reparation of dikes and canals, managing water flow and solving problems of water distribution, controlling fishing activities mainly during the wet season when the water gate was opened, and the FWUC needed to cooperate with the local polices to take control day and night of the violators, both members and non-members, controlling animal herding (mostly in the wet season due to the canals were wet which was easy to be damaged), managing ox-cart track by avoiding leading it along the Secondary Canal (S.C), Drain Canal (D.C), Farm Drain Canal (FD.C) and S.C bridges. In addition, due to the soil infiltration the FWUC blocked the head end of the farm-drain canals to keep water in the fields. The violators were fined for the system deterioration. The fining was 5,000 riel/time or 5,000 riel/animal. The animals or fishing tools were caught and kept until the owners came to negotiate.

The ISF was started collecting in 2007. The collectors were including village heads and WUGs. They normally blamed by the local farmers due to the insufficient water supply to the farmers' fields. It was shown that 21% of them complained on the high price of the ISF and they wanted the ISF to be lower of 23,889 riel/ha. The FWUC had no choice but to lower the ISF because it was set from the MOWRAM. However, the FWUC tried to supply much water to the farmers' fields. As a result, the ISF collection was achieved by about 70%-90% in 2010.

Water was not supplied well enough to all the fields due to the distant of the fields from the sources, unequal of ground level, too large and deep of the Main Canal (M.C), too small of the head of flume (about 10 cm), which could not be able to allow water flowing through the Tertiary Canal (T.C) and distributing to the Quaternary Canal (Q.C) then flowing into each field. The FWUC tried to provide supplementary water to reach the end of the fields, but the problem was still happened causing the flood of the low land plots.



**Fig. 3 Length from fields to T.C.**



**Fig. 4 Ground level**

**Table 2 Water distribution with land uniform**

| Water distribution | Low plot | Middle plot | High plot |
|--------------------|----------|-------------|-----------|
| Flood              | 18.18%   | 0.00%       | 0.00%     |
| Enough             | 34.85%   | 23.53%      | 5.88%     |
| Less shortage      | 25.76%   | 52.94%      | 58.82%    |
| Not enough         | 21.21%   | 23.53%      | 64.71%    |

### Regulation enforcement and participation of farmers

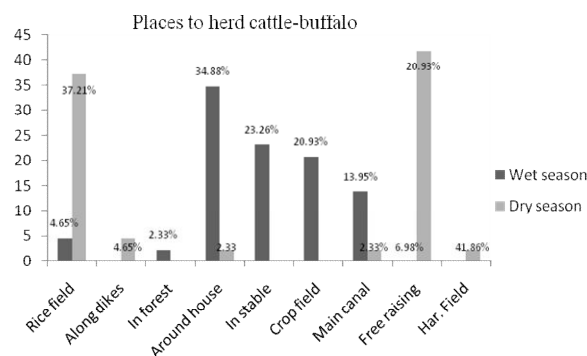
The regulation was well implemented only 50-60% on fishing activities, management of cattle and buffaloes, and the use of roads and ox-cart tracks, but less on management, water distribution, irrigation and canal protection. The problem was caused by poor scheme design and toleration with the farmers. The unqualified staffs within the FWUC established by the parcel election of 5

members a group as well as the short-term mandate (3 years/mandate) affected to the poor system and administration management. In addition, all the income from the ISF and expenditure were not indicated clearly to the farmers, especially expenditure on the canals reparation. The work of the block rangers was 2 times a week and 4 months a year in the wet season; however, in the dry season the block rangers had no tasks in the fields. The wage was very low, 80,000 riel/time which did not encourage the block rangers to well associate with their work.

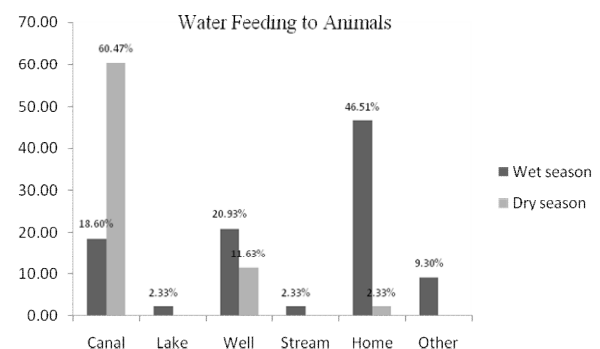
The participation by the farmers in the scheme was poor even in the meeting, system protection, and cooperation. Only about 30-60% of them participated in the meeting (58% of them came to join regularly and 42% of them came irregularly). The problem was caused by dissatisfaction to the FWUC and business with their jobs. The local farmers (both members and non-members) in the command area had multiple jobs which make them busy with their activities. As a result, they did not want to join the meetings. Moreover, they still adhered with traditional rice farming and other field operations. The farmers left their fields after sowing or broadcasting due to such problem. In addition, the farmers owned small plots of land in the blocks that did not convince them to care much the fields. The poor traditional habit of the farmers of herding and feeding animals in the blocks in the wet and the dry season caused the damages on the scheme. It mostly happened in the wet season.

**Table 3 Land area of the local farmers in the command area**

| Household by land size (%) |        |       | Farmland size in the block (Ha) |       |         |
|----------------------------|--------|-------|---------------------------------|-------|---------|
| <1 Ha                      | 1-2 Ha | >2 Ha | Max                             | Min   | Average |
| 62.79%                     | 30.32% | 6.98% | 3.00%                           | 0.01% | 0.93%   |



**Fig. 5 Places to herd animals**



**Fig. 6 Places to water feeding to animals**

### Other factors and potential

Unfertile and sandy soil (basalt, young and old alluvium) could store water in the fields of about 60-70% only compared to the water flow recently (Philippe & Sebastien, 2009). Outbreak of the insect, especially brown hopper come in February and March and destruction by crabs or snakes and so forth caused the defect of the farmers' effort in the dry season.

The FWUC tried to manage the system by cooperating with the farmers to control the whole scheme, particularly revising the Farm-drain Canals (FDC) to keep water in the fields. The farmers were willing to pay the ISF due to good elaboration and receiving water to grow rice earlier compared to other site (Baray district). The FWUC, stakeholders and farmers themselves tried to take action on the risk factors together to improve living standard of the local farmers.

### Suggestion to key informants and farmers, advantages and disadvantages of the system

To settle the stated problem, the local farmers should gradually change the season to avoid presenting of brown hopper including changing of rice seed. Also, they should change their

traditional habit of herding animals and fishing activities. Moreover, farmers should grow the same rice seed. The head plots/low plots owners should grow earlier to prevent from flooding. In addition, farmers should make well cooperation all together to build up the farm dikes to keep and share water to other fields; especially, they should actively participate in the system protection. The FWUC should follow much with the farmers' idea to make cooperation closer.

Before the project was started, the old system had benefits such as enough water to all fields, easy to flood and drain the fields, enough rice yields, no ISF, no brown hopper. However, it could not be practiced in the dry season for the lack of water supply, not clear structuring, easy to be damaged by free animal raising and fishing activities due to self management. Whereas, the new configuration scheme had benefits including good structuring, good management, earlier growing, reduction of violators and at least one time a year of rice growing. However, the yield was still low due to too small of T.C, Q.C and head of flumes, ISF collection, and not enough water supplies.

### **Recommendation**

The farmers should change their traditional habit of animals tending and fishing in the blocks as well as change rice farming season started from March avoiding from brown hopper. Moreover, they should join hand together in rice farmers; the same seeds, the low plots/closed plots to the T.C should be grown earlier, build up the dikes, and carry out the regulations. The FWUC and WUGs should actively protect and manage the system and follow the good expression of the local farmers.

### **CONCLUSION**

The quite difference change of the target project area of 7000 ha in the wet season and 30% in the dry season was due to the change of scope. The FWUC and WUGs were established and the roles and responsibilities of the FWUC and the internal regulation were created simultaneously. Actually, the roles-responsibilities and regulation were better in theory, but it could not be well in implementing due to the insufficient study of the real location, looseness of regulation enforcement of the FWUC for toleration to the farmers, and the traditional habit of the farmers in animals herding, fishing activities and careless of rice farming. It also caused by insect, unfertile/sandy soil and soil infiltration. However, the whole scheme had been better since then because the local farmers were getting leant of the regulations and implementation. In addition, the FWUC were willing to cooperate with the farmers in revising and practicing cultivation.

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