Participatory Irrigation Management (PIM)
In Thailand

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1.Introduction

Water is limited natural resources. Many countries, including Thailand are facing water shortage. Water shortage problem is more severe than ever before, especially for agriculture sector, which is accused as the main water users with low production. The main objective of irrigation water management is effective use of irrigation water. The development strategy is now changed from quantitative oriented to qualitative oriented through sustainable development approach and appropriate technology for more effective use of irrigation water with high value of irrigation water realized.

Royal Irrigation Department(RID) as the main organization which is responsible in water management in Thailand, pay much attention in restructuring both the administration aspect and irrigation water management for situation appropriation and change in the future. In case of irrigation water management, RID intends to change the way of irrigation water management from the overall responsibilities of the government organizations to the joint responsibilities with some degree of farmers participation. RID made decision to emphasize new approach of irrigation water management, that is Participatory Irrigation Management (PIM).

2. Objective

The final objective of PIM implementation in RID is the farmers and local administrative organizations join RID in the management and implementation of irrigation activities, with other objectives as follows.

2.1 Harmony of construction or improvement of irrigation system to meet the farmers' need.

2.2 Farmers and local administrative organizations are conscious of the ownership of irrigation project. Therefore, the participation in construction, improvement of irrigation system as well as the maintenance activities are the keys of participatory irrigation management in sustainable and tangible irrigation system maintenance and water delivery.

2.3 Increasing the effectiveness of irrigation water management considering farmer's needs, overall distribution, equity and economy. Better irrigation

system improvement and maintenance could be achieved through the farmers' participation in irrigation water management and water delivery activities.

2.4 Encouraging and strengthening the roles of farmers and local administrative organizations.

3. Process of participatory irrigation management

The participatory irrigation management in irrigation water delivery and maintenance activities is the irrigation management of the irrigation project at any scale, having farmers or irrigation water users participating in making decision in irrigation management and implementation of irrigation activities after setting agreement between RID and farmers, or even defining together later.

The process of participatory irrigation management consists of 11 activities, as follows.

3.1 Public relation

The most important activity is to inform the two target groups clearly. One is RID officials, they have to have through understanding all of the 11 activities. Another is farmers, local administrative organizations and relative agencies, which have to understand the principles, reasons, advantages, and roles, and also the PIM process.

3.2 Setting participatory agreement

After the farmers realize the principles, they will set the participatory agreement showing the attention and willingness. This is the starting point of official participation.

3.3 Establishing water user's group (basic group)

After the participatory agreement is set, water users' group is established and formed having the farmers using water from the same ditch as the members. And after the election of water users' group leader, vice-leaders and committee, the group regulation and agreement for unanimous implementation would be defined.

3.4 Strengthening water user's organizations

There are many ways to encourage continuous understanding, e.g. meeting, study tour, seminar or workshop ideas and experience exchange, public hearing for more details of irrigation water management maintenance, agricultural and decision making for water management at every level. All of these activities are organized by RID officials.

3.5 Upgrading water user's organizations

After water users' group administration and irrigation water management are successful at water users' group level, the water users' group would be integrated and upgraded to be integrated water users' group, water users' association and water users' cooperatives, respectively.

3.6 establishing Joint Management Committee

As the water users' organization is strong, the Joint Management Committee (JMC) is established, so that there are representatives of 4 relating agencies participating in irrigation water management and maintenance at the project level, including the other activities. In this step, the related agencies will join the meeting to know the meaning and the role of JMC, and also elect the JMC members. After election, it would be proposed to the governor to nominate the JMC. The orientation would be held for the JMC to understand their roles and responsibilities in details.

3.7 Establishing Irrigation Repair and Improvement fund (IRI fund)

For smooth the irrigation water delivery and maintenance activities which are responsibilities of farmers, Irrigation Repair and Improvement fund should be established for some expenses of water users' group by collecting money from both the water users' group members who use irrigation water and also nonfarming persons such as industrial use.

3.8 Contracting out maintenance works

For irrigation system maintenance activity, some are the responsibilities of water users' group while the others are in the hands of RID. RID tries to contract out the latter to the potential water users' group or local administrative organizations. After maintenance activities finish, the draft water delivery plan will be defined by the irrigation project and then proposed to the JMC for discussion and approval. After approval, the approved plan would be informed to the water user's group and also all the members.

3.9 Water delivery and maintenance participation

Water delivery and maintenance participation would start right after the water user's group and its members, local administrative organizations and the related agencies have clear understanding. There are 14 subactivities for activity for water delivery and maintenance participation as follows.

1. Specify the irrigated area.
2. Survey crops cultivation of water user's group.

3. Adjust water delivery plan.
4. JMC meeting for agreement of water delivery plan.
5. Inform agreement on water delivery plan to water users' group and its members.
6. Irrigation system maintenance.
7. Deliver irrigation water, as defined in the plan.
8. Strengthen water users' organization.
9. Water measurement.
10. Water users' organization report the actual cultivated area.
11. Survey agricultural production and price.
12. Compile the results of implementation.
13. Evaluation by JMC.
14. Reporting water delivery and maintenance participation.

3.10 Evaluation the strength of water users' organizations.

The evaluation of strength of water users' organization should be continually implemented for potential verification that the water users' organizations could manage by themselves or not. The farmers have to fill out the questionnaire and submit by September each year.

3.11 Basic data collection.

Basic data should be collected at the same time with the other activities to show the level of achievement.

4. Advantage

The final objective of PIM implementation to be carried out by RID is partnership in water management and other activities implementation between farmers, local administrative organizations and RID at the project level, with the other advantages; as follows

- Both the construction and the improvement of the irrigation facilities have to meet the farmers' need and irrigation techniques.
- The farmers and local administrative organizations have the ownership consciousness that is the key to sustainability and tangibility of irrigation water management.
- Increase the efficiency and productivity of irrigation water management so that the farmers can obtain equitable and economical irrigation water.
- Irrigation facilities have long life and workability as they are well improved and maintained.
- Decrease the conflicts among the farmers.
- Decrease the conflicts between farmers and government agencies.

- Partnership between the farmers and local administrative organization and government in thinking, decision making and advantage getting are strengthened.
- The final goal is sustainable irrigation management.

5. Achievement

By participatory irrigation management approach mentioned above, there are many water users' organizations which achievement in participatory irrigation management, Pagahalung is one of integrated water users' group that is successful. Pagahalung Integrated Water Users' Group(PIWUG) is won the first prize in the national farmers' institute competition. The PIWUG was established by integrating 5 water users' group in 1974 with the irrigated area of about 1280 ha. PIWUG has the main objective in water management for the members, coordinating with the irrigation project officials for water delivery plan, improvement and maintenance of irrigation system in the irrigated area for all the 130 members. Most of the farmers earn by their livings in agriculture having rice as the main production.

The PIWUG committee would make annual work plan e.g. regulation improvement, committee selection, joining with the irrigation project officials for making water delivery plan, list of members, investigating quantity of irrigation water from members, making rotation irrigation plan, canal and ditch desilting, and the other activities for smoothly management of PIWUG.

In case of the role and participation of members, the members would be strictly hold on regulation that the members have agreement. The members would have 1 desiltation per year before poor-grade paddy field or before upland crop, including grass-cutting and weed eradication, and also maintenance and improvement of irrigation system. In term of water management fee and maintenance fee, every member has to pay unhusked rice as the rate 2.12 USD/ha./year.

For stable and economical situation of PIWUG, most of the members are farmers who use fertilizer from dung and organic matter, not the chemical fertilizer, so that capital of production is decreased, the members also cultivate the vetiver grass for soil conservation, they also arrange the study tour and youth training in irrigation water management of the irrigation system. The members can check the account of PIWUG, and nowadays, PIWUG has the capital of about 13,350 USD.

For public activities, natural and environment conservation, the members would maintain irrigation system after it is damaged, cleaning for the ditches, canals and other facilities, and controlling waste water flow in canal.

6. Conclusion

The participatory irrigation management is the tool to manage irrigation water or irrigation system to get more efficiency than before, including the strengthening the water users' organizations. The achievement of the participatory irrigation management would be quite obvious in PIWUG of which the implementation follows all the activities of participatory irrigation management. Actually, participation of farmers would consist of 3 phases(pre-construction, construction and post-construction) which RID has changed the administrative ways from top-down approach to the participatory irrigation management which allows the farmers to have deep understanding, so that, the farmers have the consciousness that they own irrigation system, so that, they will use all their efforts to maintain the irrigation facilities. The actual final goal of RID is the sustainable of irrigation water management in Thailand and the farmers could be in charge of managing irrigation water by themselves.