

Water Hyacinth Control Program through Community Development Approach: A Case Study in a Bangladesh Village

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Abstract

A Village Committee was established for the organization of the rural development activities in a village, Dakshin Chamuria, in Bangladesh under the JICA (Japan International Cooperation Agency) Project of JSRDE (Joint Study on Rural Development Experiment). The committee consists of so-called traditional village leaders 'matabbors', who are mostly active in enhancing the villagers' unity and devoted to the village public affairs. The authors outline the Community Development Approach to establish the Village Committee and its performance to control an aquatic weed (water hyacinth) in order to protect deep water rice in study village. The paper describes the procedure adopted to establish the Village Committee representing all the villagers, as a key part in the Community Development Approach of JSRDE. Secondly, the water hyacinth control program as a study case under the Community Development Approach was also evaluated. Overall, the results of this study indicate that the Community Development Approach may contribute significantly to the solution of the rural development problems in Bangladesh.

Discipline: Irrigation. Drainage and reclamation/Agricultural environment

Additional key words: rural development, village community, village committee, matabbor

Background

The target group approach is presently the main approach for the rural development programs in Bangladesh. Although the target group approach organizes landless farmers, women, the poor, etc., they are supervised and controlled by non-villagers who provide the services of loan, job training, etc. Although the supplied goods and services reach target groups, most of the time, this approach enhances the dependency of the groups in the program. Consequently, the villagers become passive and dependent, which is not favorable for sustainable rural development¹⁾.

We consider that it is difficult to achieve sus-

tainable rural development without the Community Development Approach. Thus, we introduced rural development programs in a village, 'Dakshin Chamuria' (D village) in Bangladesh, to involve the whole village community and include indigenous technologies under the Joint Study on Rural Development Experiment (JSRDE) from 1992 to 1995. The project was funded by the Japan International Cooperation Agency (JICA) and jointly implemented by JICA and the Ministry of Local Government and Rural Development & Cooperative, Bangladesh. This paper describes the establishment of the Village Committee which played a key role in the community development approach of the JSRDE, including the water hyacinth control program proposed by the Village Committee. The paper also briefly indicates why

This paper is based primarily on our previous study entitled "Rural Development Program by Community Approach in a Bangladesh Village" (in Japanese) submitted to the Journal of Agricultural Development Studies. However, a large part of the paper has been revised and newly added.

such an approach may contribute significantly to sustainable rural development in Bangladesh.

'Matabbors' and the Village Committee

Matabbors are the traditional village leaders, some of whom are active and devoted to the village public affairs, village court for example. These leaders are not necessarily rich or educated. Some of them have a small land holding even less than 1 acre and are illiterate. However, the villagers recognize them as leaders because of their eloquence and ability to collect information.

In addition to acting as mediators in the village court, matabbors also contact organizations outside the village such as the government agencies and NGOs interested in implementing new programs in the village. According to the survey conducted in 1988, more than 70% of the matabbors indicated that they usually go to the 'Thana' office (local administrative office) more than once a month⁴⁾. Thus matabbors are active persons of a village who usually gather useful information from the government agencies, NGOs, etc. On the other hand, when outside organizations attempt to initiate some programs in the village, matabbors are also a good source of information about the village. By such connection, matabbors always receive various types of and new information earlier than the other villagers. This situation is sometimes misused by the matabbors for monopolizing profitable information. It has been often observed in villages that the tricky matabbors are selfish and may not serve the interests of the village people. Such characteristics of matabbors

have been often criticized and matabbors are considered as 'touts' by the officials concerned with the rural development programs. Therefore, it is important that the matabbors' activities/performance related to the village public affairs including building of a village school and development of 'hat' (regular market in the village) be evaluated²⁾.

Usually, the matabbor acts as a leader when villagers face problems and unite the villagers for possible solutions. On such occasions, matabbors become significant for the community interest of the villagers. Against this background, the JSRDE project adopted the Community Development Approach aiming at utilizing the leadership qualities of matabbors but, at the same time, at supplying everybody with useful information that tended to be monopolized by the matabbors. For this purpose, the Village Committee was established in D village.

A village in Bangladesh usually consists of several small communities called 'para'. The village under the study, D village, has 4 paras and each of these paras has several matabbors. To set up a Village Committee, a general meeting was held in the classroom of the primary school in D village on January 2, 1993. The selection of the matabbors was carried out during this meeting by about 200 people from all paras. Matabbors from each para were selected according to the number of households in each para. The committee had 18 members including 4 female, 1 from each para. Other procedures included the selection of the executing body, a chairman and secretaries on the basis of the villagers' recommendation (Fig. 1).

The Village Committee is assumed to fulfill the



Fig. 1. Village Committee Meeting

following 3 main functions: (1) To hold a monthly meeting for discussing the common problems. (2) To prepare programs for possible solutions. (3) To hold a coordination meeting with the field workers of the rural development agencies, the government and NGOs.

It is important to mention that 6 months after the start of the Village Committee, there was a distinct gap in information flow between the Village Committee and the common villagers. To fill this gap, the Para Meeting was started within each para between the project staff and the common villagers including the Village Committee members of the para. As expected, the Para Meeting also played an important role in encouraging the villagers' participation in the project. Therefore, the Para Meeting was deemed indispensable for the Community Development Approach in D village.

In the following part of the paper, the aquatic weed (water hyacinth) control program designed and implemented by JSRDE and the Village Committee is outlined.

Action program for water hyacinth control

1) Background

During the rainy season, all of the land except homesteads and roads in D village were usually inundated to a large extent. The water flowing from the neighboring village carried water hyacinth and deep water rice growing in the flooded fields was damaged. In September 1993, a Village Committee member, Mr. Rahman who is a primary school teacher introduced this problem for discussion during the Village Committee Meeting. He suggested that laborers should be hired by the local government aid program, namely Test Relief, to control the water hyacinth problem. However the Village Committee could not obtain this assistance, because the program had a shortage of wheat as wages for laborers. However, the committee discussed some of the measures that should be adopted to address this problem as the damage caused by water hyacinth occurs frequently and is severe.

In order to solve this problem, JSRDE suggested the introduction of 'African Doncha' (*Sesbania rostrata*) which is a plant used to stop the invasion of water hyacinth into rice fields.

African Doncha was cultivated during the late dry season to obtain the seedlings (stem cuttings). Firstly, at the beginning of the rainy season, the seedlings were planted in the field, which remained

fallow during the rainy season and was located just in front of 'Chinamura Doch' (water depression in the neighboring village) from where water hyacinth flows out. Secondly, the seedlings were also planted on the drainage sides of water hyacinth in the deep water rice growing area in order to guide water hyacinth to 'Ronger Doch' (water depression in D village) directly. Thirdly, at the same time, African Doncha was cultivated on the levees around the rice fields to prevent the invasion of water hyacinth to the deep water rice growing fields (Fig. 2).

In addition to the water hyacinth control program, African Doncha, as described later, was newly introduced to Bangladesh for use as green manure, forage, fuel, fence and article for sale. Before 1993, the seeds of African Doncha had not been readily available to common villagers even though, as told by the counterparts of JSRDE from the Bangladesh Agriculture University (BAU), a large quantity of seeds was produced in their experimental farm. Therefore, suggestions were made to the Village Committee that this plant should be introduced to D village in cooperation with the BAU counterparts. The cultivation of African Doncha was successfully promoted by the effective coordination of the Village Committee and motivation at the Para Meeting in D village.

2) African Doncha

Professor Altaf Hossain, one of the BAU counterparts, introduced for the first time African Doncha, an annual legume, to Bangladesh in 1986 from the International Rice Research Institute. The plant grows up to a few meters. 'Desi Doncha' (*Sesbania aculeata*), a local variety of Doncha (*Sesbania* spp.), had grown traditionally in Bangladesh for the same use as that of African Doncha. However, nowadays, dry season's modern rice varieties (high-yielding varieties) are cultivated to a large extent in the fields where Desi Doncha used to be broadcasted at the end of the dry season, March to April. Unfortunately, these rice varieties are usually harvested in May. Thus, Desi Doncha had disappeared gradually along with the introduction of these rice varieties. On the other hand, African Doncha can be cultivated using seedlings (young plants and stem cuttings) under waterlogged conditions. Therefore, it can be cultivated at any time even during the rainy season if the seedlings are available. There is no competition for land between the modern rice varieties and African Doncha, unlike in the case of Desi Doncha. Research has revealed that African Doncha

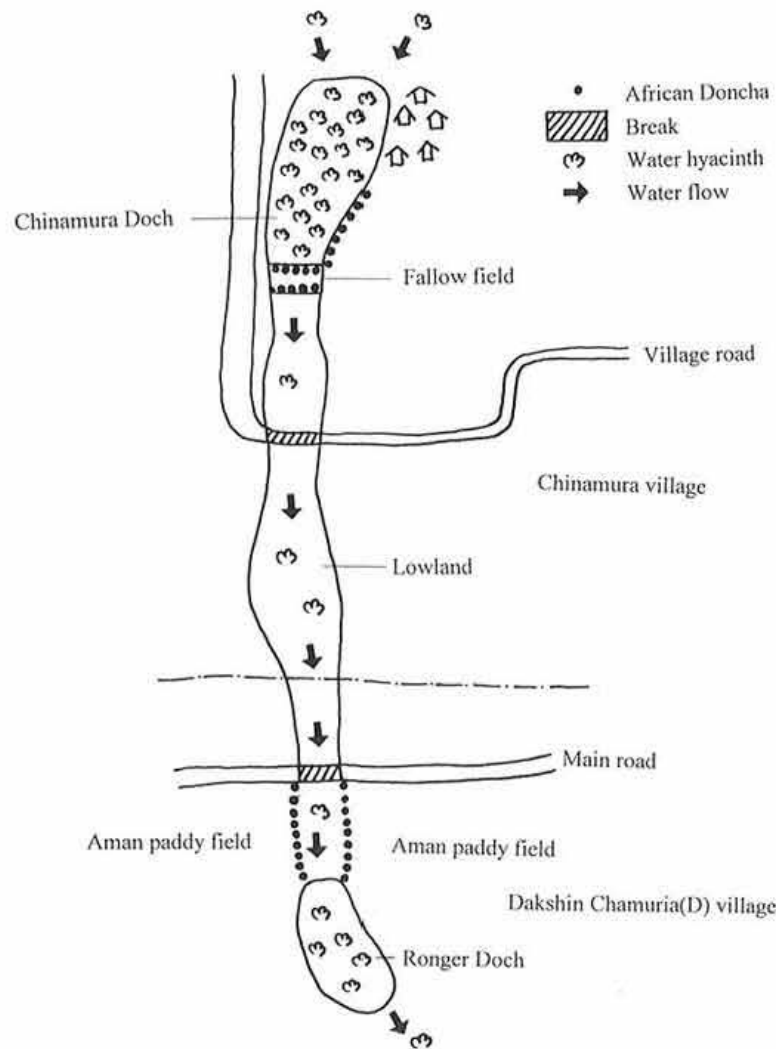


Fig. 2. Water hyacinth control program

is more effective than Deshi Doncha as green manure and that rooting occurs 2–3 days and leafing 5–6 days after planting of a stem cutting 50 cm high for normal cultivation and 1 m for deep water-logged conditions, respectively³⁾. For use as a green manure, the appropriate timing of incorporation of African Doncha in soil is 40–60 days after planting (Fig. 3).

Since 1989, after the initiation of the field experiment, BAU has started to distribute the seeds to the research organizations and the Agricultural Extension Department. Based on the activities of BAU, JSRDE decided to introduce this plant for one of the development programs as mentioned earlier.

3) Performance of the program

It was eventually decided to implement the water

hyacinth control program during the meeting of the Village Committee held in November 1993, in agreement with the suggestion made by Mr. Rahman in September. During the same meeting, it was also decided to rent a piece of land, 31 decimals in size (1 decimal is about 40 m²) to cultivate African Doncha in the village. At the end of February 1994, the seeds of African Doncha were broadcasted on the rented land and cuttings were planted tentatively in the rented rice field in April, at the end of the dry season. On June 1, the stem cuttings were planted in the field located in front of Chinamura Doch as mentioned before. During the meeting of the Village Committee held on June 6, the villagers were informed that the stem cuttings would be supplied to them upon request. The villagers who thought that African Doncha was the same as native Doncha (*Sesbania aculeata*) were skeptical and reluctant to



Fig. 3. African Doncha

plant the stem cuttings. They pretended that the stem cuttings and also the young plants of Doncha would not take root. They did not agree with the program. On the other hand, many villagers took the stem cuttings and realized that African Doncha was different from Deshi Doncha. Moreover, some villagers stole the stem cuttings from the rented rice field without permission and all the stem cuttings disappeared. During the meeting of the Village Committee held on June 24, 1994, it was decided that the program would be discontinued.

Although the program was discontinued, the villagers continued to grow African Doncha and harvested it at the end of the rainy season for home consumption or to sell seeds and stems. Three, 9, 6 and 11 villagers cultivated African Doncha in the fallow fields, on levees of the aman rice growing fields, around the homesteads and the ponds, respectively. Sixty-four villagers cultivated African Doncha in total and 35 of them used the plant to control water hyacinth in their deep water rice fields. Eighty villagers could not obtain the stem cuttings although they wanted to get them.

Fortunately, in 1994, the water hyacinth did not overflow from Chinamura Doch as in a normal flooding year. On the contrary, the unexpected large flood washed away the planted stem cuttings of African

Doncha in the following year. Therefore, the efficiency of the water hyacinth control program could not be substantiated. The program was successful, nevertheless, from the viewpoint of introduction of a new plant as well as the spontaneous response of the villagers. African Doncha was cultivated in the next year.

4) Role of the Village Committee

The water hyacinth control program was initiated after the proposal of a member of the Village Committee. This type of problem, damage by water hyacinth, was considered to be an individual problem formerly. However, when the problem was raised at the Village Committee Meeting, it became a common issue to the villagers. In this sense, the committee considered that the problem could be solved and asked the villagers to implement the program.

The main function of the Village Committee is to control the matabbors who exclusively keep the information by holding discussions with the villagers and invite them to make decisions about matters relating to the village public affairs. Moreover, the Village Committee played the role of contact outside of the village. The chairman and the chief secretary, after the decision of the Village Committee, went to Chinamura and other villages as the representatives of the village to negotiate some issues. And, in some cases, they took formal letters to the matabbors of other villages upon the request of their Village Committee. Such negotiations had been traditionally conducted after consultation among matabbors, but the common villagers were seldom involved in the process until a decision was made. However, the villagers were informed of all the actions taken such as negotiations during the Village Committee Meeting. The Village Committee can be expected to benefit from the services from organizations outside the village.

JSRDE and the committee members explained frequently the purpose and use of African Doncha to the villagers in order to obtain their agreement on the program in the Village Committee. Especially during the Para Meeting, ease of cultivation of African Doncha in the fallow fields by planting the stem cuttings and use as green manure and fuel were emphasized in order to disseminate it even to villagers whose fields had not been damaged by water hyacinth. It is considered that, without the Para Meeting, African Doncha would not have been introduced to the village so actively and widely.

Discussion

The ecological characteristics of African Doncha as well as the Village Committee and the Para Meeting contributed significantly to the promotion of the program. The matabbors became active in the program when they were formally recognized as the authority of the village. Information was given to all the villagers through the Village Committee and the Para Meeting. The matabbors did not act as touts and their original function in the community was fulfilled by the villagers. Thus, they could not monopolize the benefit from new information as previously. The power of the community increased by the introduction of the new Community Development Approach. The Village Committee and the Para Meeting paved the way for the awareness of the villagers of common problems and the villagers' unity increased during the programs.

Results of the JSRDE programs are highly significant for people's participation in FAP (Flood Action Plan), National Development Program and some rural development programs in Bangladesh. It is essential to evaluate and utilize the local village system and indigenous knowledge of villagers to promote people's participation.

The authors are grateful to colleagues of the JSRDE Tangail project site and the villagers of Dakshin Chamuria for their cooperation. They especially thank Dr. Niaz Ahmad, JSPS Research Fellow at the Center for Southeast Asian Studies, Kyoto University for his valuable comments and cooperation in this report.

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(Received for publication, November 5, 1997)