FARMER PARTICIPATORY RESEARCH (FPR) IN THE NIPPON FOUNDATION CASSAVA PROJECT IN GUANGXI AND YUNNAN PROVINCES OF CHINA

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ABSTRACT

The Nippon Foundation sponsored FPR project started in Guangxi in 1999. It focused mainly on the testing and dissemination of new cassava varieties with high yield and high starch content, and of improved management technologies. Presently, a total of 42 households in 22 villages, in eight counties are participating in this project. Through these farmer participatory trials on cassava varieties and management practices the areas using new promising varieties and improved management practices have increased, reaching about 600 and 1,000 hectares, respectively. In fact, the FPR methodology used in Guangxi for the development and extension of agricultural technologies at this moment is not only for cassava but is also used for other crops, such as rice, maize, beans, watermelon, etc. Although only some aspects of the FPR approach are being used, the results are very satisfactory.

The experience with FPR in this project in Guangxi revealed that the difficulty in using the FPR approach with poor farmers and relatively rich farmers is quite different. Comparatively speaking, the FPR approach is more successful with smaller farmers than with richer farmers that cultivate larger areas.

INTRODUCTION

Guangxi province is located in the southern part of the P. R. of China and the soil and climatic conditions are very suitable for growing cassava. Guangxi is the largest cassava producing province of the country; the annual harvested area is 260,000 ha, producing 3,900,000 tonnes of fresh roots, or approximately 62% of the national area and production. Moreover, Guangxi is also the most developed area in terms of cassava processing. There are more than 50 cassava starch factories in the province which produce a total of about 320,000 tonnes of cassava starch every year, comprising 75% of that produced in the country. As such, cassava is a very important crop in Guangxi province, both for farmers and the starch processing industry. Since demand for cassava starch is still increasing, the cassava processing industry developed fast, which in turn promoted the development of cassava cultivation. The price of cassava roots increased a lot compared with the past year, which together with the income from intercropping, resulted in a substantial increase in farmers' incomes from cassava cultivation. Thus, cassava varieties with high yield and high starch content are much appreciated by farmers and starch factories in the main cassava cultivation areas of Guangxi province.

Yunnan is located in the southwestern part of China. Because of a lack of agricultural land, cassava is mainly cultivated on very steep slopes in mountainous areas. The increase in cassava area is mainly because the local Animal Husbandry Institute has developed technologies for making silage from cassava roots and leaves for animal feed. This kind of silage can be used as a substitute for maize, which is the traditional feed in the mountainous areas of the province. Another reason is that there are many alcohol factories which previously used molasses as their raw material for alcohol making, but have now

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started to use dry cassava chips. It means that cassava has become a new source of income for farmers, not only to be used as animal feed but also for sale to factories.

Based on the above, the Nippon Foundation started to support an FPR project in these two provinces, with the objective to test, select and then disseminate promising cassava varieties as well as improved management practices using a farmer participatory approach. These varieties and improved management practices had previously been developed by CATAS and GSCRI where researchers had spent more than 15 years conducting research on these aspects.

The technology components that are being tested in the project are as follows:

1. Cassava varieties of high yield and high starch content
2. Cassava fertilization
3. Cassava intercropping
4. Erosion control
5. Silage making from cassava leaves and roots.

METHODOLOGY

The steps in the process that we adopted are as follows:

1. Contact the local government (Agricultural Technology Extension Station or Science and Technology Bureau)
2. Select a pilot site and discuss the objectives of the project with farmers
3. Indentify farmers' needs for particular technology components
4. Provide technological options for farmers to evaluate and select for testing
5. Set up demonstrations and help farmers conduct FPR trials
6. Provide technical support and training
7. Organize farmer field days to evaluate and select new technologies
8. Provide the materials that are necessary for farmers to adopt the new technologies (local government requirement).

RESULTS OBTAINED UP TO THE YEAR 2002

I. Guangxi Province

The project activities were conducted in nine counties: Fangcheng, Pingguo, Wuming, Liuzhou, Yongning, Qinzhou, Guilin, Binyang and Hengxian. In total, 46 farmers from 22 villages or production teams joined the project (Table 1). Through the project, farmers adopted new technologies of cassava cultivation, their cassava yields increased and their income from cassava cultivation increased. In the poorer mountainous areas, located far from roads or from the city, farmers' traditiional agricultural practices have been improved, creating new income channels for farmers. As a result of the project, new cassava varieties have extended to up to 1,900 ha, producing an additional 6,000 tonnes of roots and increasing farmers' gross income by 1,400,000 of RMB. About 3,000 farmers have benefited from the project in Guangxi.

Table 1. Location, number of farmers participating, and type of FPR trials conducted in Guangxi province.

District/city	County	Town	Village	No of farmers	Type of trials
Nanning city	Yongning	Suxu	Longed	3	intercropping
Fangcheng city	Fangcheng	Pingwang	Hengguo	4	variety
Nanning city	Wuming	Taiping	Xinlian	5	variety, erosion control
Base district	Pingguo	Bangxu	Zhouxu	7	variety, fertilizer
Nanning district	Hengxian	Maling	Lintou	4	variety
	Binyang	Gula	Dahe	4	variety
		Luxu	Luxu	12	intercropping
Guilin district	Lingchuan	Daxu	Wulin	2	variety
Qinzhou district	Qinzhou	Luwu	Pingtou	2	variety
Liuzhou city	Liuzhou	Luorong	Luorong	3	erosion control, variety

II. Yunnan Province

Farmers participating in the project were mainly from very poor villages located in mountainous areas in the southern part of the province. Before this project, the main crops there were maize, sweetpotato, taro, etc. produced on a small scale. The yields were very low and all products were mainly used as food for human consumption. Sometimes there was not even enough for food, so very little was left for selling to obtain money. In some areas, farmers grow cassava, or, if conditions are more suitable, they grow tea or sugarcane for sale in order to get money, but this is still at a very small scale. As part of the project, some new cassava varieties, improved management practices for cassava cultivation, and silage making from cassava leaves were introduced to the area. This has produced very good results, which have markedly changed the situation: 1. farmers now have enough feed to raise more pigs. In the past, one family could raise only 1-2 pigs, but now they can raise 5-7 pigs, sometimes even more than that; 2. the cassava yields have increased by about 50%, and cassava has become another important source of income. Our project, in collaboration with the local government, which has done much to extend these technologies, has shown and demonstrated how you can use the local natural conditions combined with suitable new agricultural technologies to develop and increase farm productivity and animal production together with the local people. Many farmers have benefited from this project. By 2002 59 farm families had joined the project (Table 2), and each family obtained on average 6,000 RMB more from pig feeding as compared with the past. Also, training courses have been organized. Farmers like to participate in the project as these new technologies have already made important contributions to the alleviation of poverty.

Table 2. Location, number of farmers participating, and type of FPR trials conducted in Yunnan province.

District	County	Town	Village	No. of farmers	Type of trials
Mengzhe	Pingbian	Beihe	Laha Beisizai	47	silage making
	Yuanyang	Xincheng	Dafengya	12	silage making, variety, erosion control

EXPERIENCES AND OBSERVATIONS

1. Problem diagnosis with farmers is a very important step to determine whether the recommended technologies are really satisfying the priority needs of the farmers. This diagnosis should be done together by researchers and farmers. The researchers' role is only to be a facilitator during the discussion, but not to take part in the decision making. If the problems diagnosed by the farmers are in line with the researchers' idea, and can be solved by the particular abilities of the researchers, it will be easy to do and be done well; otherwise, it is difficult to do.
2. The ability of the researchers is also a very important factor to be successful. It is difficult to explain the "ability of the researcher", but it basically includes his/her working methods and the skill to interview farmers. The results of farmer participatory diagnosis are very different (problems, demands, etc), so they require a combination of many types of work. To possess the necessary abilities requires a broad working experience and a very good understanding of the local conditions. It also requires a lot of skill to clear farmers' minds of doubts and misgivings.
3. Everything needs to be clear and open to the farmers; the more they participate in the activities and decision making, the more they enjoy it, and the easier the work can be done.
4. Comparatively speaking, the FPR approach is more successful with smaller farmers than with richer farmers. It seems easier to get close and to communicate with poor farmers in poor areas (they are not as conservative and stubborn as some people imagine); they are actually very anxious to get help from outside. In contrast, farmers from richer areas seem not to be very interested mainly because to them the economic value of cassava is too low, and the cassava area is very small. The income from cassava is not important compared with that from other crops or activities. Many farmers don't like to conduct FPR trials; they say it is a waste of time, and they sometimes need the researcher's guarantee that they will get a high yield with the new varieties. This has happened mostly in the relatively rich areas, making working there more difficult.
5. In China the farmer participatory research approach is now very popular in the agricultural extension service, especially the extension of new crop varieties, like rice, beans, maize, sweet potato, peanut, watermelon, and many kinds of fruits. Although only some aspects of the FPR approach are being used, the results are very satisfactory.

REFERENCE

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