

# **Institutionalizing Farmer-centered Research Approach**

## **The Case of Farmer-centered Research Network, China**

*Gubo Qi, Xiaoyun Li, Xiuli Xu, Dindo Campilan, Ronnie Vernooy*

### **Abstract**

Among many efforts on participatory research and development in China, Farmer-centered Research Network, China (FCRNC) endeavors on getting together the research institutes for practicing farmer-centered approach in research works, aiming to incorporate the farmer-centered research (FCR) approach into present research system. After seven years, FCRNC grows up gradually and the FCR capacities of its partners, both individually and organizationally, increased. FCR approach is used in their research projects and induced performances to their affiliated organizations and the communities they served. It shows that networking is one effective way for sharing the innovations and the joint learning process can enhance the strength of institutionalizing FCR, though there are still many obstacles from networking itself and the environment to be overcome.

### **The theory of action of Farmer-centered Research Network, China**

Participatory research approaches have been introduced and disseminated in China since the end of 1980s', mainly through the ways of international cooperation development projects, which helped accelerate the shift from paradigm to the actions of participatory research. After several decades' efforts, a broader application of participatory research is appearing induced by those actions<sup>1</sup>. The main characters of institutionalizing PR are showing in the survey before decision making at macro-level, which integrated the opinions of the farmers and the thinking on local conditions; and it also showed in the various roles of officials, researchers and farmers in the implementation of various projects. This paper will discuss those characters presented in an informal academic group that is called farmer-centered research network, China (Qi, 2005).

For long time, the researchers are confusing on the lower application rate of applied research results which should lead to higher and higher production and efficiency from the researchers' perspectives. There are many reasons behind this confusion, but one of them is realized as the separated research work from the needs of rural realities. The focus and institutions on guiding researches in the research organizations are taken up by the science superior cognition and sole technology development. Initiated by the College of Rural Development, an informal academic research group consisting of around 12 research organizations built up and aimed to bridge the gap between the capacities of the researchers and research organizations and the actual needs of the farmers in those particular poor areas. At the beginning, the researchers just found the gap between the research and the application of the research results, but there were not concrete ideas on how to fill in the gap even with several discussions on involving the farmers into the whole research process. The worries were presented as: how can the farmers' involvement make better use of the research result? We have done so much work

on the analysis of the efficiency of using those new varieties and composed fertilization technologies and we have also done the cost-benefit analysis, and the results showed our technologies can reach the best results in terms of their contribution to income generation. We can not believe that farmers can do better. Then the researchers realized that if the technologies could not be used by the farmers, there should be reasons behind it, at the same time, if the technologies could not be applied in the practice, they are just on paper and you can not tell how much is their contribution to the reality. So the consensus arrived after many time's discussion: we have not other ways but to try to use so-called farmer-centered research approach into our daily work, which might not have a fixed model but need our mutual efforts on shaping it. Based on the reflections on previous work, the partners started to ask for the guidance from each other and some institutes who had the experiences or understanding of FCR. So the logic of the roles of FCRNC was generated as that if we wan to achieve the final objective of improving the farmers' livelihoods and the communities development, we need to improve the research performance of participants and institutionalizing farmer-centered research approaches in research organizations and policy making process, which had been accepted by the partners as the main obstacles for improving the research performance. And then we have to look at the capacities of the researchers and the organizations about their capacities on applying FCR approach. We came to the consensus that the network could provide the support for FCR capacities development at both individual and organizational levels. Main activities consisting of small grants research, exchange visits, workshops, trainings and daily communication came out and the research component was put as center that was accompanied with other activities. With research components, it is easy for the participants to put the new ideas and skills into use directly after their learning from each other. Although there were some concepts and cases on FCR approach, it was still unknown due to the complicated and changeable environment. The only confirmation is that it could be one alternative for our research work. The logic is as figure 1.

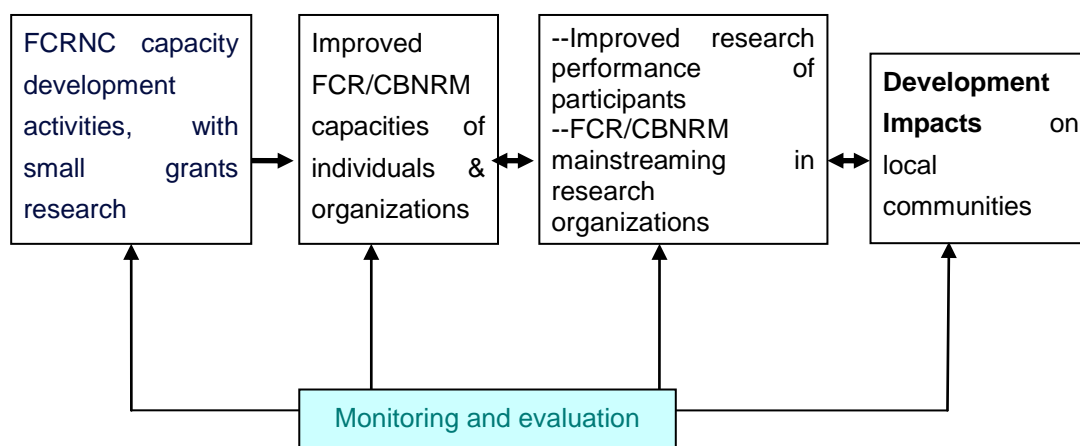


Figure 1 Theory of action of FCRNC<sup>ii</sup>

### The change of the partners and research areas of FCRNC

Starting from around 12 institutes, there are now 20 partners who have contributed to the network

consistently for several years. They are: Shannxi Institute for Losses Plateau Control; The Center for Poverty Alleviation and Environment, Ningxia; Institute of Plant Nutrition and Analysis, Inner-Mongolia Academy of Agricultural Sciences; Institute of Agricultural Resources Comprehensive Survey, Shanxi Academy of Agricultural Science; Tropical Crops Genetic Resources Research Institute, Chinese Academy of Tropical Agricultural Sciences; The Integrated Rural Development Center, Guizhou Academy of Agricultural Sciences; Guangxi Subtropical Crops Research Institute; Key Laboratory of Sustainable Development, South-west Agricultural University; Guangxi Maize Research Institute; College of Agronomy, Jilin Agricultural University; Center for Chinese Agricultural Policy, China Academy of Agricultural Sciences; Institute of Agricultural Economy Research, Xinjiang Academy of Agricultural Sciences; Institute of Energy, Environment and Economy, Tsinghua University; Center for Bio-diversity and Indigenous Knowledge, Kunming; Anhui College of Science and Technology; Hebei Agricultural University; the Centre for Environment, Development and Poverty Alleviation, Huoshan County, Anhui Province; Regional Development Research Center of Yunnan University; Yangliu Township Technology and Community Development Promotion Association; and the College of Humanities and Development, China Agricultural University. The research teams are gradually becoming more and more diversified, involving multi-disciplinary team consisting of sociologist, entomologist, regional planner, development sociologist, agronomist, economist, engineer, breeder, and local farmer scientist.

The research areas they integrated participatory approach in are also diversified, for example, experiments of technology transferring from sheep grazing to shed-raising in cross-area of grazing and cropping in Ningxia, sweet potato planting package technology experiment in flat and drought area in Shannxi, study on the linkage between scientific fertilization and local fertilization technologies in Inner Mongolia, participatory cassava varieties breeding and participatory maize varieties breeding and selection in Guangxi, participatory rice saving water technology experiment in Jilin, integrated livelihood improvement project in Yunnan, participatory cropping planning in Guizhou, participatory integrated cropping and animal husbandry system development in Hainan, and the roles of participatory technology development in initiating farmers' associations in Shanxi.

During these 7 years' practices, we have reviewed for several times on the results of institutionalizing FCR in the network partner organizations, which were attributed by FCRNC supports. In this paper, we would like to share our primary findings from those reviews.

### **Researchers' capacities of participatory research is the base for institutionalizing FCR**

Previous studies suggested that there were two forces that can promote farmer-centered research approach in practice. One is from the farmers' own initiatives and another is from the relatively powerful stakeholders who pursue a more sustained and more equal results for development. For the later one, the basic requirement is the positive attitude to farmer-centered research approach. The attitude will lead to the whole process of innovation, which includes the basic PRA tools' application in problem diagnosis, the implementation on involving people, stakeholders' analysis and interaction in decision-making, participatory monitoring and evaluation, research results dissemination, and integrating FCR into other projects. Without the recognition of the farmers' contribution and the facilitation role of the researchers, it is very difficult to spend time and efforts on at least living with the

farmers and taking consideration of the farmers' views, which are the start point of doing further research. It could not be taken as granted and we could not assume that we can think from the farmers' perspectives, particularly when the researchers are not free and they have to follow their institutional objectives and corresponding tasks. Knowledge of FCR is helpful for raise the awareness of FCR and changing the attitude on practicing FCR and learning more about FCR from others, and only with practices, the change of the skills of FCR could induce to better performance or better understanding and also get more support in terms of research resources' allocation, although those changes of knowledge, attitude and practices are intercrossed to each other and could be iterative.

The PRA tools application is still an entry point for the researchers to understand the empowerment and mutual-learning process. However, if the researchers from scientific institute or government side went to the field to introduce the information and ideas about new research areas they were granted from upper levels, they only used PRA tools to involve the farmers to express their understanding of those introduced ideas and their own judgments accordingly. With the support of small grants from FCRNC that did not require the specific topics from the researchers before involving the farmers, the researchers just went to the community to do the observation firstly, then getting along with the farmers better and better, and then they used PRA tools to explore the farmers' interests and difficulties on technologies and other resources mobilization for their livelihood development.

According to the survey on 215 researchers who have contributed to the FCRNC function, we found that there are some significant changes of individual researcher's FCR capacities induced by FCRNC activities. The knowledge on decision-making during the research problems diagnosis and solutions selection had the most significant change, and the proportion of the researchers who agree with the expression of "leaders at different levels can decide what research activities the researchers and the farmers can do" and disagree with the expression of "FCR approach requires the joint decision making by both the researchers and the farmers" are changed from 60%, 80% to 5%, 16% respectively. In our another review on the contribution of the farmers and scientists in the decision-making in the innovation process, it shows that Innovation decision is no longer controlled by the governments and scientists and farmers have already participated largely in the process (Li, 2006). According to the researchers' own experiences and the obstacles they faced on practice FCR in their daily work, they realized the collective strength, so around 97% of researchers agree with "we should extend FCR approach into more researchers working on applied agricultural researches". Followed by those changes, the skills of applying FCR were strengthened accordingly particularly after the practices in the rural realities. There are 95% who can involve the farmers into research planning through various methods, which was only 22% before. The PRA tools used could be modified along with the progress of the research or developmental work. It is common that the further the farmers and the scientists/development workers communicated and the projects implemented, the higher the efficiency of PRA tools showed. The institutes considered the adaptation of PRA tools according to local situation, such as the education qualification of the farmers, previous connections between the farmers and the scientists, farmers' access to livelihood resources, etc.

However, without the persevered attitude, it is a real tough and not sustained work for the researchers who are required by very fixed criteria such as the papers published on SCI<sup>iii</sup> from their institutions. As Chambers (1989) discussed that for guarantee good results from farmer-first methods and manners,

after institutions, incentives and interactions, there remains personality. It is also showed in the process of making the impacts on the decision-making system in the institutions. If the leader of the institute is with more open and more believing in learning process rather than the fixed results from a liner technology transferring, he or she could make more favorable environment for the researchers who have contributed to the learning process but without short-term significant performances from conventional perspectives.

### **Performance of research organizations induced by FCR approach is the agency for institutionalizing FCR**

On the one hand, more and more people realized the weakness of current research system in China, but more confusion came out when the researchers use FCR but can not show its performance of the communities and research organizations in the way that the research group is very familiar with. On the other hand, the complexity of the community and the farmers is the key of understanding rural reality. In China, it is even more complicated while the change of macro-economic and social environment and more marketing influential in those remote areas. So it is not realistic to standardize the criteria to evaluate the performance of the communities and the research organizations, at the same time, those performances should have the implication to persuade the decision-makers within the institutions or at higher levels to understand and accept FCR.

If those performances could be shared and presented in some exchange activities, the institutions as a whole could be aware of FCR's roles in research projects development and learned some concrete measures on FCR implementation. From the feedback of 6 institutes where we have done the capacity evaluation at institutional level, it was found that the most important activities for improving the institutional FCR capacity are exchange visits and trainings. The experiments involving the researchers directly did not show such significant roles. Since there are only a few researchers in the institutes who implemented the experiments with FCR approach, so other researchers can not get the chance to know the process during experiments if without exchange visits or the introduction from both the farmers and the researchers involved. During the exchange visits, the participants among the network or within the institutes could share also the experiences they got from other resources.

After getting familiar and understanding more of FCR through different activities, the institutions' FCR capacity could be enhanced in different aspects, including human resources, physical resources, financial resources, research design, institutional culture, and the priority of FCR in the institutes research plan. Ningxia team gradually increases a function of training on FCR methods for other development agencies, including those outside their region. Hainan team, Guangxi team, Shannxi team and Jilin team edited a series training manual with more farmer-friendly pictures and with the language of the farmers according to the farmers' suggestions. And the research designs in the institutes also extended their scopes, considering that the topics the farmer concerned are all valuable to be researched and there are compatible physical and financial supports on particularly the collaboration with other institutes and negotiation with the funding sources, which were not included in the budget before. However, designing more diversified project is to be enhanced, because they have to follow the relatively fixed requirements from the funding sources, particularly the current research system. Anyway, the performance change contributed to the institutions' getting support from national

agricultural research system, for example, more than five institutes already got successful support from the Ministry of Science and Technology (MoST), Provincial Department of Sciences and Technology, and the Provincial Government for participatory research, which was rare and even impossible appearing in the list of the callings for application. And another joint-effort by the whole network is direct to a new topic from the MoST, which is “science and technologies based on farmers’ livelihood”.

The unbalanced strength in terms of institutional and individual capacities of FCR among the partners can play the important role in inspiring the debates for better capturing the key issues in FCR. For example, the Guizhou Academy of Agricultural Sciences had longer time experiences and realization on community-based and farmer-centered approach and have made great contribution to local people, and the Guangxi Maize Institute practiced PVB also for long time and local farmers’ being as researcher have contributed a lot to bio-diversity protection, and Inner Mongolia Academy of Agricultural Science has integrated FCR approach into their big projects supported by national agricultural research system, and China Academy of Tropical Crop had practiced participatory cassava extension for 10 years and got the MoST’s support all the time. From their experiences, they answered the questions such as: how can the researchers play the role of catalyst and facilitator? what are the incentives for the farmers to participate in the research process? what benefits the institutions can get from applying FCR approach? During the exchange visits, their presentations also set a kind of prospects for institutionalizing FCR in terms of getting funding support from the national agricultural research system, which is considered as one important indicator to evaluate the institutional performance.

### **Performance of the communities induced by FCR approach is another agency for institutionalizing FCR**

The farmers involved think that the most significant change induced by FCR approach is presented in their individual capacities. During the participatory evaluation process, the increased individual capacities were defined as: enhanced technologies, increased new technologies of cropping and animal husbandry, improved organizing capacity, enhanced recognition on external information, improved capacity on dealing with human relationship, starting of self-experiments, increased consciousness on innovation, increased linkage with outside by themselves. They also appreciate their livelihood improvement, more access to information, social linkages increasing and even the environmental change. The farmers compare the contributions from different support and owe more than 80% contribution to FCR practices<sup>iv</sup>.

Furthermore, FCR approach could lead to a more sustained production system or to environmental protection behavior, which could not be led by conventional research approaches. There is an example from one research site of Guangxi Maize Institute. Nowadays, it is more and more difficult to build up a seed bank to protect local varieties of maize. Along with the marketing involvement in the villages and the diversified farmers’ livelihoods, the farmers’ own selections are more and more widened into those profitable production activities with more market-oriented. At the same time, the products from local varieties could not have the supportive system for making sure of its higher value in the market. Therefore the farmers normally selected the most benefited crops rather those that will get potential benefits in future<sup>v</sup>. Under such situation, FCR approach explored the informal incentive factors on the farmers who are interested in local varieties protection. The farmers in this sub-village who are insisting

on PVB say that they do not care about the lower income from producing maize, because they can get income from other resources, and they can get respect from doing PVB and they can share their research results with others not only in their village but also far away from Guangxi, such as in Beijing.

As to make those performances showing to policy makers and other researchers to facilitate the process of institutionalizing FCR, there are still some aspects that could be taken into consideration. The farmers' own performance can go to the upper level of national agricultural research system to influence the policy directly. The reform of extension system being implemented in 24 counties in 2007 is following this way to some extent. The action research results from local already showed that empowering more to the extensionists at township levels could increase the effectiveness and efficient of extension and benefit more to the poor households, and more benefit to poor women. If without the policy of decentralizing the power in extension area, the extensionists could not get the support and would not be able to serve the farmers in a more comprehensive area, particularly with the consideration on overcome the fragile of their livelihood.

And the farmers' own innovations induced by indigenous knowledge are also very helpful for complementing FCR approach itself. It shows how the farmers go through the innovation process with following their own guidance, or starting from their own decisions and then consulting from outsiders. This also brings more value to persuade the institutions or policy-makers at different levels to focus more on farmers' own perspectives. During previous research work, FCRNC partners already got many cases of farmers' own innovations and they are to be presented. The primary findings show that the farmers' own researches contributed a lot to their livelihood development and rely on their limited resources but normally ignored by the outsiders, particularly the researchers.

Furthermore, the FCRNC partners' contribution to a participatory curriculum development on CBNRM in China Agricultural University and Jilin Agricultural University also provide other possibilities to institutionalizing FCR, through the education on next generations for rural development. (Li, 2007)

## **Conclusions**

The partners of FCRNC have found the roles of FCR approach on increasing the real and visible efficiency of research work and extension work, including enlarge the coverage of existing research work, putting research resources into full use and increasing the farmers livelihoods. The networking provides a platform on mobilizing those ideas, actions and resources for promoting and extending FCR approach in their organizations and formal research system. The diversified activities for improving the researchers' and their organizational capacities of FCR are helpful. The pluralist strategy (Chambers, 1989) was showed in FCRNC practices, the basic ideas and methods learned from the International Agricultural Research Centers, particularly at the beginning from CIAT and later on from IDRC, together with the catalyst role of China Agricultural University, who had been as pioneer to experience the participatory research and development from its Sino-German project of Integrated Agricultural Development since late 1980s', and the experiments of research organizations all over China started from the thinking on the gap between the researchers and the farmers who are the clients but were considered as the passive receivers for long time.

However, more practices, more collaboration and exchange in larger areas are needed for institutionalizing FCR to a more deepening and extending extent. Further collaboration between FCRNC and other network in China or outside of China will increase the joint-strength to persuade the policy makers to consider the guidance for research topics and the criteria for the evaluation or assessment of research performance, which could create a space for the research organizations to consider FCR integration. The farmers' own innovations and their initiatives might play more important role on showing performances of the community development to policy makers at different levels. So FCRNC intended to explore more appropriate methods to lead to organizational change and policy change on FCR, and at the same time, to explore more of the farmers' initiatives on innovation and to try the corresponding experiments on two networks' collaboration for institutionalizing FCR in another way. We tried to present its logic in Figure 2.

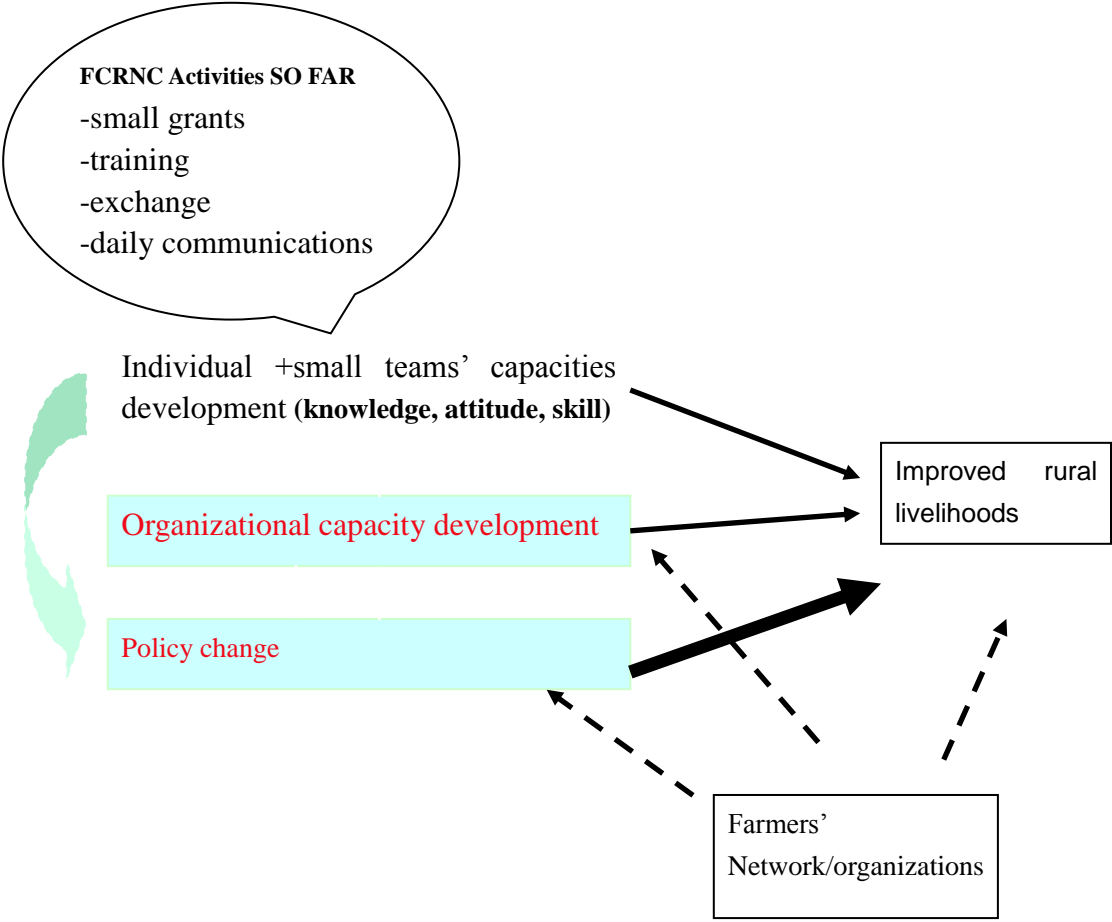


Figure 2 Theory of action of FCRNC next steps

**References:**

Chambers, Robert. (1989) Reversals, Institutions and Change. Farmer First: Farmer Innovation and Agricultural Research. Edited by Robert Chambers, Arnold Pacey and Lori Ann Thrupp. London: IT Publications. 181-195

Li Xiaoyun, Zuo Ting, Qi Gubo. (2006) Partial Assessment of Application of Participatory Research Approaches in China. Beijing. paper for Workshop on Mainstreaming and Institutionalizing Participatory Research Approaches in China. March 7-8

Li Xiaoyun, etc. (2007) China's higher education policy reform in practice: rejuvenating rural development studies. Paper for Farmers First Revisited. December 12-14

Qi Gubo, Li Xiaoyun, Zuo Ting and Ronnie Vernooy. (2005) Networking for Community-Based Natural Resource Management and Farmer-Centered Research: A Case from China. Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Edited by Julian Gonsalves, Thomas Becker, etc. 104-110

### Endnotes:

---

<sup>i</sup> An assessment focusing on the decision-making in the application of participatory research approaches in the areas of rural development, natural resource management and cropping varieties development had been done in 2005. Some data and cases in this paper are from the evaluation study being taken in July 2006.

<sup>ii</sup> This logic was summarized after the discussion with Dindo Campilan and Ronnie Vernooy. There was no time yet to discuss with them about this draft paper. We will finalize it later.

<sup>iii</sup> There are some changes now in this evaluation system. For example, in China Agricultural University, there is a title called Agricultural Extension Professor, which is for those researchers who have contributed to the change of local communities. However, it is just a title but not integrated into the formal system as a position. The reason from the university is that it is very difficult to quantify the criteria for evaluating the Agricultural Extension Professor. Although somebody raised the criteria as staying in the rural sites, the exactly area of innovations applied, etc., it is queried as the length of staying in the rural sites and the area extended does not mean the real gains of the community and the farmers. It is true. But the most appropriate criteria for many persons are not taken into the consideration yet, because the implementation cost will be much more than before if standardizing it, for example, the satisfaction extent of the farmers.

<sup>iv</sup> This is the analyzed data from the evaluation study in 6 research sites in July 2006.

<sup>v</sup> In Guangxi Zhuang Autonomous Region, more and more farmers are selecting cassava as their main crop rather than maize as before. Since they can connect with the starch factory directly and get good price on selling cassava. In a sub-village, there are already 68% of cropping land that are planting cassava but there were the same percentage for planting rice and maize several years ago.