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evaluation

profile
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Rooting for poor farmers

Ghana: Root and Tuber Improvement Programme

Roots and tubers – cassava, sweet potatoes, yams and cocoyam – are grown by the poorest Ghanaians and are crucial to their food security but had been neglected for many years. Ambitious and nationwide, the Root and Tuber Improvement Programme set out to raise the incomes of 720,000 resource-poor farmers by investing in research to increase production and improve the quality of these crops. It successfully developed new and better varieties of cassava and sweet potato and created an effective multiplication and distribution system thereby increasing the availability of plants and yields for smallholders. However, increased cassava yields have not yet led to higher incomes; farmers instead are facing higher production costs and lower output prices.

The key recommendation arising from the evaluation is that a second phase should adhere more closely to the project's original goals of increased food security and higher incomes for poor farmers, by taking a pro-poor approach directly aimed at poverty reduction.

- **Stronger support** for the entire production chain is needed at the marketing stages to help farmers sell their produce more effectively in order to make a profit.
- **Joint setting** of the research agenda by scientists and the poorest farmers would ensure that the root and tuber varieties chosen for on-farm trials are best suited to the poorest farmers' needs, demands and circumstances.
- **Given that** poverty reduction is the overall objective, scientists should work more closely with the poorest farmers and not just those who are better educated or who have access to working capital. The poorest farmers have different needs and constraints: they cannot afford the increased labour costs, for example, needed to obtain the highest yields, nor do they have access to the best quality land.

Programme data

Total project cost	USD 10.1 million
IFAD loan	USD 9.0 million
Co-financier	Government of Ghana
Cooperating agency	World Bank
Implementing agency	Ministry of Food and Agriculture, Ghana
Projects dates	January 1999 to December 2004

Making marketing work

In identifying roots and tubers as a 'poor man's' food and starting from the premise that development of these crops would benefit the poor people who grew them was innovative as an approach to poverty reduction. Grown by about 55 percent of all farming households in Ghana, roots and tubers can be grown all year round; they grow well in poor soils and thus are a good crop to help reduce the vulnerability of poor communities to seasonal food scarcity.

Main results

The Roots and Tubers Programme was innovative in concentrating on poor peoples' crops. Over 60 research projects resulted in five new cassava and two new sweet potato varieties, both with higher yields and better disease and pest resistance. It has also developed successful Integrated Pest Management techniques to combat Cassava Green Mite and grasshoppers. Over 120,000 farmers now have access to the improved varieties under an efficient, three tier multiplication and distribution system across 50 districts. The 60 research projects were undertaken by 12 different Ghanaian government and academic institutions and contributed significantly to knowledge amongst farmers and project staff in Ghana concerning root and tuber crops. The programme's multiplication and distribution system was particularly successful and merits consideration for replication in other crop improvement programmes. So too, the informal network developed by the programme, to exploit knowledge and resources on roots and tubers in institutes and amongst individuals throughout Ghana was equally effective and could also be replicated elsewhere.



This women's group is responsible for processing cassava, a staple food in West Africa, into gari. Gari is made from the root of fresh cassava which is peeled, grated into a mash, left to ferment for up to 24 hours, and then heated. It is easily stored and children take it to school soaked in water and sugar. The women try to sell Gari in local markets but the increased production of cassava has led to a drop in prices. This, coupled with the limited attention paid by the Root and Tuber Improvement Programme to marketing issues, means that incomes have not yet increased as envisaged.

Development of roots and tubers would also provide farmers with new opportunities to increase their incomes. Focusing on one commodity was useful but the programme had a limited impact on the poverty levels of farmers, concentrating as it did almost exclusively on production whilst not paying enough attention to the processing and marketing stages – a flaw in the programme design. Yields from the new varieties were estimated at between 30 and 60 percent higher than from traditional varieties but farmers have been unable to sell or obtain a profit from their outputs.

In addition, the President's Special Initiative, which led to the founding of an export-oriented starch production factory near Accra in mid-2003, substantially boosted farmers' demand even further for improved cassava varieties and for information on cassava production and processing techniques. The root and tuber programme benefited from the huge national interest in cassava, whilst the starch-production factory could not have functioned without the increased availability of cassava from the programme. As a result, demand for the new cassava plants developed by the programme exploded. Yet, apart from those who sold to the starch factory, few farmers were able to obtain attractive prices, nor did they have the marketing or processing skills needed to cope with the new output levels. Farmers now need more up-to-date knowledge of processing and marketing techniques; they need training, technical advice and information regarding storage, packaging and labelling. Regular transmission of price information by radio would be a huge boon as would support for networking between producers, processors and traders. In addition, assistance with the preparation of loan applications and enterprise models would help farmers determine their financing needs.

Research matters: whose agenda?

The new high-yielding, disease resistant varieties of cassava developed by the project were certainly worthy of widespread multiplication and distribution. Yet they were not ideal for improving household food security or increasing incomes. Higher yields and resistance to disease were cancelled out by cassava's seasonal requirements for water and labour that clashed with the requirements of other crops and cassava's shorter in-soil storage life. Moreover, although the cassava varieties had several non-food uses and generated income for increased household food security if sold at a good price, they did not fit with the producers' diets. The programme was not successful in helping producers connect with industries using cassava as a raw material, with the exception of the new starch production factory near Accra. The weak support given to processing and marketing coupled with the specific characteristics of the new cassava varieties thus limited the programme's intentions to raise farmers' incomes. To address these issues, poorer farmers' opinions, demands, circumstances and requirements need to be taken directly into account when deciding research priorities and drafting research proposals. Proposals should also explain in detail the rationale for the research, the issues and problems to be addressed, the concrete benefits envisaged, for whom and how. Criteria for selecting topics should be equally weighted in favour of research funding and the technologies being researched (cultivation techniques or pest management practices, for example).

Pro-poor research?

Poorer farmers have to cope with more than most and have different constraints and priorities: lesser quality household labour (in terms of health, skills and education); limited access to finance for capital (such as farming equipment and transport), operating expenses (production, crops and processing) or cash flow; and a lower capacity to withstand risk. Again, scientists and project staff need to consult and collaborate with the poorest producers (not just the better off farmers or the farmer field participants) and explore ways to respond specifically to their needs. The Ghanaian government is keen to increase root and tuber crop production whilst IFAD's main interest is rural poverty reduction: marrying the two would be possible if the research became more pro-poor.

There is also a need for root and tuber research to be more balanced. Rather than focusing almost entirely on production issues, research should also explore better processing technologies and marketing techniques with a view to helping farmers increase their incomes and standard of living. It is necessary to go beyond exploring higher yield and disease resistant varieties and examine socio-economic issues such as what kinds of root and tuber crops should be promoted and why, the best ways to store, process or market cassava and what role roots and tubers should play in the Ghanaian agriculture sector (should cassava be grown for consumption, for example, or for other uses such as glue, starch, or animal feed). Better information channels for knowledge-sharing between researchers, agronomists and farmers throughout Ghana would also help disseminate new ideas concerning a multitude of issues such as the costs and benefits of production choices faced by farmers, what varieties to plant, when to harvest, how long to store, where and how to market and so on so that all parties concerned can make better informed choices ■

Further information

Republic of Ghana, Root and Tuber Improvement Programme, Interim Evaluation, Report #1533-GH September 2004, Office of Evaluation, International Fund for Agricultural Development, Via del Serafico 107, 00142 Rome, Italy. See www.ifad.org/evaluation; email m.keating@ifad.org; telephone +39 06 5459 2048