

# LOW EXTERNAL INPUT AGRICULTURAL EXTENSION IN IRINGA REGION - A CASE STUDY

J.A. Thomas

CONCERN, PO Box 701, Iringa, Tanzania

## ABSTRACT

*This paper is a brief summary of the activities of CONCERN in Iringa Region. It focuses particularly on CONCERN's experiences with the transfer of technology to smallholder farmers on two extension projects in Ismani Division, Iringa Rural District and Malangali Division, Mufindi District. Recommendations are made for future improvements.*

## CONCERN WORLDWIDE

CONCERN is an Irish-British based non-governmental organization devoted to the relief, assistance and advancement of people in need in the less developed areas of the world. The organization's dual overseas priorities are: long term operations for the benefit of the needy in developing countries; and responses to emergencies in developing countries. Currently CONCERN is conducting long term operations in Sudan, Ethiopia, Uganda, Tanzania, Mozambique, Bangladesh, Thailand, Laos and Cambodia. It is also responding to the emergency situations in Somalia and Mozambique.

## CONCERN TANZANIA

CONCERN began operations in Tanzania in 1978, initially in several parts of the country. Since 1983 the organization has been involved in Iringa Region and all its activities are now concentrated there with the head office in Iringa town.

At present there are three main areas of operation: Ismani Division in Iringa Rural District; Malangali Division in Mufindi District and Imalinyi Division in Njombe District. Current activities include: village afforestation, agroforestry and land use planning; low external input agricultural production; rehabilitation of water supply; and community development. These activities are being integrated to address the major problems of the poorer groups within the community.

CONCERN has in addition been involved in recent years in the distribution of food to areas where there are food deficits, both in Ludewa District (where the cassava crop has been destroyed by mealy bug) and this year in drought-affected areas of Iringa Rural District.

## SOURCES OF FUNDING

CONCERN Tanzania is currently receiving funding under the Joint Funding Scheme (JFS) from the European Community (EC) and the Overseas Development Administration (ODA). In addition, it currently receives smaller amounts of funding from the British charity Comic Relief and the Irish company Golden Vale. Outstanding expenses are met by CONCERN directly, through money it has received from a number of sources, including the Irish public.

## TARGET GROUP

Each of CONCERN's projects is aimed at the most-needy within the community. This group is identified, with the co-operation of community development staff, using a number of parameters. These include: the area of cultivation; ownership of livestock; average yields over previous years; standard of housing; and adequacy of nutrition. Participants should be willing volunteers and permanent residents of the community. An aim is that 50% of the participants should be women.

## DEVELOPMENT ACTIVITIES

The agricultural extension projects of CONCERN have a number of broader objectives. Foremost among these is to improve the food security of the area and especially of the target group. A further objective is to increase income generation from crop production in order to improve access to basic living requirements. A third is to stabilize and improve the environment. These broad objectives are to be met through a number of immediate targets which should be attained during the lifetime of the project, including: improvement in the government extension system within each division of operation; increased crop yields among contact farmers; reduced vulnerability to drought conditions; promotion of a more diverse cropping pattern including the introduction of appropriate cash crops; encouraging land use practices which are environmentally sustainable, for example agroforestry, soil and moisture conservation; encouraging farmers to conduct operational research on their own posts; and promotion of increased use of oxen for cultivation (CONCERN, 1991a, 1991b).

## TECHNOLOGY TRANSFER

The projects are implemented through a team of village based extension workers, each of whom is responsible for two villages. Fifteen contact farmers per village are chosen by the extension worker in collaboration with village leaders and community development assistants. A form of the train and visit (T&V) system is followed to ensure that each farmer and village school is visited on a regular basis. This is broadly in line with the recently published guidelines on agriculture extension polity (Ministry of Agriculture, 1992).

Advice is offered on a range of interventions from which the farmer is encouraged to choose the most appropriate to his or her circumstances. Given the nature of the target group it is important to concentrate on low cash input practices which seek to optimize the use and management of local resources. Thus, the preparation and use of compost and farmyard manure are encouraged; advice is given on optimal spacing and timeliness of cultivation and weeding; simple soil and moisture conservation measures such as bunding and planting of grass strips are promoted; and research has been conducted into the use of locally available pesticides such as lidupa and neem. A recent study has shown an encouraging degree of adaptation by farmers of the advice given and dissemination of information to non-contact farmer neighbours.

The extension system used by CONCERN is very intensive and cannot realistically be expected to be sustained by the Government of Tanzania after CONCERN withdraws from the area. The aim of the projects is that training should be concentrated at the farmers' level to help ensure sustainability of ideas, if not of the system.

It has been necessary to supplement the existing district extension staff with a number of CONCERN employed extension staff. These have been recruited from the local villages and given basic agricultural training at MATI Ilonga or Uyole as appropriate. This is supplemented by on-the-job training conducted by CONCERN in conjunction with the District Agriculture and Livestock Development Officer.

The locally recruited extension workers have the advantage of having been farmers themselves in the area of operation and are thus familiar with the farming system. This is in contrast to certificate

or diploma trained Government extension workers who are often out of touch with technologies relevant to the smallholder.

This can be overcome to a large extent by the promotion of participatory extension approaches which involve the farmer and extension worker jointly in decision making. A part of this is encouraging farmers to implement simply designed on-farm trials.

Currently approximately half of the agricultural extension team is employed directly by CONCERN and all have less education than the minimum certificate level required by the Government. In recognition of this it is planned to train CONCERN - employed extension workers to certificate level in the hope that they might later be employed to strengthen the Government system.

### SOURCES OF TECHNOLOGY USED

The low external input sustainable agriculture (LEISA) techniques followed by CONCERN require only a low level of technological input. Many of the ideas promoted come from the farmers themselves and are merely made more widely known by CONCERN, for example the use of local pesticides. However, Government research institutes such as Uyole Agricultural Centre are able to play an important role in providing agronomic recommendations and information on improved techniques.

Other innovations that have been introduced have come from such sources as the Institute of Low External Input Agriculture, through their publications, and Peramiho Mission, where valuable work is being done on the use of marejea as a green manure.

Networking with non-governmental organizations (NGOs) and other projects has also proved to be a valuable source of information. Such links should be encouraged.

The high level of financial commitment required for improved seeds and equipment is not appropriate to the vast majority of Tanzania farmers who have little or no income and no access to credit. There is a need for greater access to information on technologies or traditional indigenous knowledge appropriate to these farmers. Such information would include details of local plants used for the control of plant pests, tree species used in agroforestry systems, traditional methods of cultivation for conserving soil moisture, and local adaptations to simple agricultural machinery.

### ACHIEVEMENTS AND CONSTRAINTS

A recent evaluation of the Ismani Agricultural Extension Project (CONCERN, 1991c) showed that participating farmers had increased their yields of maize by an average of 99% in 1989/90 and by 107% in 1990/91, on a 0.4 ha plot. Yield increases of up to 400% were recorded. It is not easy to identify which specific interventions are mainly responsible for these major yield increases. This has led to the implementation of single factor on-farm trials. It is hoped that this will lead to a more focused extension package.

It should be borne in mind that the farmers were chosen for their particularly poor food security situation and low income. Such yield increases, involving little or no cost other than labour to the farmer, improve both food and income security while emphasizing sustainable systems.

The second stage of CONCERN's programme must be to advise farmers on expenditure of the increased income generated in stage one. This should include advice on purchase of inputs such as improved seed, fertilizer and oxen as the smallholder moves away from subsistence farming.

It has been calculated that the participating farmers in 1990/91 had a return of 1,276 TSh per person day for a 0.4 ha plot of maize (300-400 TSh = US\$ 1, very approximately, 1991/92). This compares with 464 TSh per person day for non-project farmers (CONCERN, 1991c).

It is clear that such low level input technical assistance is able to raise the yields and incomes of the poorest, least educated farmers. Equally it must be realized that such techniques are applicable

only on a small scale and would face major labour constraints on larger farms. The majority of farmers in Tanzania exist at a subsistence level and have poor access to improved technologies and to the credit to purchase them. There is then a role for promoting the best utilization of locally available resources, if only as a stepping stone to improved income and security.

### RECOMMENDATIONS

1. Two way linkages between research and technology transfer agents should be strengthened particularly in relation to adaptive on-farm research.
2. Linkage between government and NGOs should be strengthened to co-ordinate research and technology transfer activities.
3. Practical training in participatory approaches should be included in diploma and certificate level training in agriculture.
4. There should be wider recognition of the validity and value of indigenous technologies. Research institutes should document all such technologies.

### REFERENCES

- CONCERN (1991a). Agriculture Project Proposal, Ismani, Tanzania.
- CONCERN (1991b). Proposal for Agriculture Project, Malangali Division, Mufindi District, Iringa Region, Tanzania.
- CONCERN (1991c). An Evaluation of Ismani Agriculture Extension Project 1989-1991.
- Ministry of Agriculture (1992). *National Agriculture and Livestock Extension Policy and Implementation Guidelines*. Dar es Salaam, Tanzania: Ministry of Agriculture.