

One-stop shop

Coordinating agricultural services, technical information, input supplies, credit and marketing



Would better coordination of agricultural service provision – technical information, input supplies, credit and marketing services – help to improve the livelihoods of poor, semi-literate farmers? Researchers in the highlands of western Kenya are evaluating ways to provide such a coordinated service – a one-stop shop – to help farmers make better use of their resources and build their livelihoods.

The highlands cover some 85,000 km² and support 12 million people, almost half of the country's population. The climate is ideal for agriculture with plentiful and reliable rains (1200-1800 mm), spread across two cropping seasons. So in theory the region should have a food surplus. Yet the rural population is among the poorest in the country and is heavily dependent on food imports. While high population densities and small land holdings (0.5-2 ha per household) are the root of this problem, lack of investment in soil management also is a significant factor because it limits people's potential to make best use of the natural resources of their farmlands.

The maize trap

Farming for home consumption is a priority for most poor farmers. Over 90 percent of the available land is committed to the continuous cropping of basic food crops centred on maize but yields are low and declining. The acid soils of the region generally have good physical structure but lack important plant nutrients. Phosphorus (P) availability in particular is limited and low levels of nitrogen (N) and potassium (K) add to the problem. Chemical fertilisers can correct this situation but their cost puts them beyond the reach of most farmers. The

parasitic plant, *Striga hermonthica* also is endemic and this further depresses cereal crop yields. The result is that most households are unable to feed themselves for several months of the year.

Research has demonstrated the benefits of using improved mixed species fallows to improve soil fertility. This involves leaving the land without a crop for 9 to 15 months under a cover of beneficial plants (e.g., certain legumes) so that it can 'recover'. Such a practice helps to restore nitrogen in the soil but unfortunately has little effect on phosphorus and potassium levels. Without these valuable nutrients the benefits of improved nitrogen cannot be fully realised and so adding chemical fertilisers is currently the only viable option. The present recommendation for a maize crop is 20 kgP/ha and 60 kgN/ha.

To improve their farm production and income generation, farmers need to invest in soil management and also diversify into crops with a higher value than maize. However, the combination of small land holdings and existing food deficits mean that they will only do this if they can simultaneously raise their maize yields. Several factors need to be in place for this to happen. Firstly, farmers need to understand how the market works so they can identify higher value cropping opportunities. Most producers are only familiar with local markets where opportunities are limited. They can only supply small quantities of produce and this reduces their attractiveness to potential buyers.

Secondly, they need technical knowledge on the best crop choices, cultural practices and ways of managing their natural resources so as to increase their yields of both maize and the new crops. Thirdly, they need good quality seeds and finally most will need credit to buy other agricultural inputs.

Critically, all these need to be in place before poor households can hope to shift from growing only maize to a farming system that delivers more food and cash, whilst simultaneously maintaining soil fertility on which future sustained higher production depends.

In such circumstances how can poor farmers take the necessary steps to expand their options for resource and crop management and enhance their capacity to make the relevant management decisions for their farming activities?





Coordinating services

Critical to success is the ability to access a range of coordinated services that link improved cropping strategies and soil fertility management with opportunities to obtain the required inputs and capitalise on market opportunities – a one-stop shop for the needed rural services.

As a central service of the shop, researchers have introduced a community-based credit scheme. This enables poor farmers to buy inputs that could raise farm productivity. At the same time services are provided that make them aware of the options available for crop choice, soil management and plant nutrient supply, and assist them to access markets for their produce.

Prior to this project farmer credit was only available from a committee-based structure set up originally by International Centre for Agroforestry (ICRAF) to promote agro-forestry technologies. But the committees did not undertake credit screening and loan recovery functions well. The approach now being pursued is group-based, similar to that initiated by the Grameen Bank (in Bangladesh), This will be adapted to allow for seasonality and the risks of rainfed smallholder farming. WEDCO (western Kenya's biggest micro-finance organisation) is monitoring progress and has expressed interest in taking the scheme over as its own pilot for agricultural lending, provided its size and the repayment rate can be brought up to satisfactory levels.

WEDCO has provided financial training for farmers as project staff realised the importance of building the capacity of poor, semi-literate borrowers to manage financial resources.

Advice on credit is combined with biophysical technical advice. This stresses the importance of using

a combination of organic and inorganic fertilisers to enhance soil fertility rather than just advocating the use of imported chemicals. This not only reduces the cost of production but it also reduces the debt risk for farmers.

To encourage better understanding of the market farmers were taken to see the Kisumu markets and this opened their eyes to the possibilities beyond their usual local marketing activities. It emphasised the need for greater organisation in produce marketing. Workshops were held to teach basic crop budgeting so that producers could begin to assess the viability of producing different crops.

"I have been planting maize as a tradition since I was young because I found my parents doing so, but after filling this crop budget form, I realised I was making losses since the price of maize in the market is very low and its expenses are high. I have to think about other high valued crops that will pay for their expenses and make a profit."

Jerim Otieno, a farmer from Nyamnia

A survey of traders in the main Kisumu markets is in progress and there are plans to contact larger buyers of specific commodities such as soyabean and sunflower to explore the potential for using local smallholders as suppliers.

"By visiting the market, I have learnt how I can avoid low prices due to poor market timing. In future I will grow a wide variety of crops so that in case of emergencies, I will only sell the crop that will be selling at a higher price at that time since I will have several high value crops to choose from instead of relying on maize which you have to sell whether prices are poor or not."

Mr Nicodemus Onyino, a farmer from Ebukhaya

Having identified promising crops and varieties that preferably contribute to both soil fertility and income-generating objectives, the challenge now is to make quality seeds available to producers in adequate quantities.

Decision support

The project has built on previous research on improved mixed species fallows and the findings of socio-economic studies. It also has linked with the community-based organisations established as part of the research and extension work undertaken in recent years by the KEFRI-ICRAF Maseno Regional Research Centre. Participatory research was undertaken to test existing research findings in five communities and sensitise them to the technologies and crop varieties available. Based on this, the researchers have developed a range of decision support tools that present knowledge in farmer-friendly ways. Farmers helped to refine materials on nutrient deficiency diagnosis and corrective measures, *Striga hermonthica* infestation and control, and better land management for improved returns. These were translated into three local languages – Kiswahili, Luhya and Luo. Certain farmers and extension workers are being trained as resource persons to guide others in their use. Similar support tools on credit and produce marketing are planned.

Encouraging signs

The project still has some way to go but already farmer-managed maize trials surprised researchers with yields of 4.5-6.2 t/ha on plots previously under improved fallows. This compares with 1.5-2.8 t/ha with recommended chemical fertiliser or a more usual 1 t/ha with no inputs. The farmer-managed trial results indicate that a 0.25 ha plot could feed a family of seven for the year and provide even those with the smallest farms with spare land and an opportunity to benefit from planting higher value crops.

Diversifying beyond maize

The coming year will show whether the group-based approach to borrowing will generate adequate incentives for loan repayment. Research on market opportunities will turn from providing information to action research designed to see what happens when producers actually respond to the opportunities available. There will also be attempts to establish linkages between producers and specific produce buyers.

Seed supply will become even more critical as producers respond to market opportunities. Several of the seed varieties identified as promising from the point of view of production, soil fertility and marketability are not yet registered for commercial distribution in Kenya. Seed multiplication by communities is a possibility but it will take time to generate the desired quantities.

The outcome

This research project has found that enabling poor farmers to move off their subsistence base and improve their livelihoods through their farming activities requires diverse and coordinated support services. These include not only improving access to a wide range of information, but also exposure to opportunities and training (capacity building) in a range of areas (e.g., financial, economic, technical). Whilst this finding is not new, the important contribution is that a service provision model is being developed and tested.

The project works in close collaboration with a local NGO consortium (COSOFAP) devoted to exchanging information on development activities in the region and encouraging collaboration to assist poor households to tackle their development challenges. Plans are in hand to work with them to develop and implement a scaling-up strategy once a working model for coordinated service provision is confidently established.



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