with 0.25 million in 1962). They had a key position in the national food commodity markets that even extended to Maradi.

Off the farm, improved roads and cross-border movements permitted under the Economic Community of West African States regulations, allow short-term migrants access to urban employment, hired labour markets, and more trading opportunities than before. Diversifying income sources thus depends on markets, whether for agricultural commodities, land, labour, or knowledge, and on mobility of labour and capital. In the Kano-Maradi region, nowhere is too remote to have some significant market linkages. It is important to support dryland people in realising income diversification strategies, and to facilitate their full participation in the regional market economy. Thus far, this has been achieved almost entirely without state support, and the contribution they have made to national economic growth has been systematically ignored by policy makers. Earnings from diversification are critical for the successful transition to more sustainable agricultural systems as they may be invested in farming, livestock, or natural resource conservation.

Facilitating transition

The point to stress is that all resource users are not in the same position. In the past, interventions (such as fuel-efficient stoves) have often been promoted irrespective of the variation in individual or household circumstances, where the innovation may not be needed by some or cannot be adopted by others because of constraints imposed by poverty, labour supply, gender or other considerations.

An approach to development that is gaining acceptance is that it should be "demand-led". In the present context, this excludes promotional interventions based on new technologies prioritised by outsiders, in favour of placing the service provision sector at the disposal of local people who are facilitated to develop their own priorities. A framework such as that presented here, which puts people into context rather than the two simple categories, "adopter" and "non-adopter", and recognises individual differences rather than relying on "averages", can assist development field staff to organise the services they offer, in order to respond better to what people need. This will enhance the timeliness and relevance of the service provided to support agricultural transition in the longer term.

The available evidence suggests a sustained effort to increase the output of food in line with increasing consumption needs. This shows the ability of small scale African farmers in these regions to manage the transition to sustainable livelihoods under difficult circumstances, given certain conditions such as access to markets and integration of livestock. There is still anecdotal evidence of rural poverty and food insecurity in the Kano Close-Settled Zone, but these long term transitions suggest significant successes in ecosystem management, contributing to more sustainable livelihoods, and providing important learning experiences in the search for viable pathways to development. ■

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This article draws on work undertaken for the IUCN (World Conservation Union) Commission on Ecosystem Management's Drylands case study of the ecosystem approach.

The hard way to success

Josphat K. Wachira

In Nyandarua District, in the Central Province of Kenya, the main food crops are maize, beans, peas and potatoes, and dairy farming is practised by most farmers. After independence in the 1960s, the Kenyan government gave farms previously owned by colonial settlers to local people, through the Kenyan government settlement scheme.

The people of Subuku, an area of the district's Ndaragwa division, were settled through this process. Since they did not have machinery, they only cultivated small pieces of land rather than large fields, and yields were often unsatisfactory. Government policies did attempt to favour farming in these areas: a milk factory was built in nearby Nyahururu, for example, but this assistance was insufficient to support the area's needs as a whole.

After farming for several years, farmers began using fertilizers and pesticides in their farming, as the land was not providing enough food for consumption and sale, while the cost of living was increasing. At first, production rose. But after some time, it was noticed that these agrochemicals started affecting the soils, yields dropped and were of poorer quality. The agrochemicals also appeared to be a health hazard. High blood pressure, among other health problems, was increasingly experienced, and within ten years became common, especially in elderly people.

Livestock were also affected: milk production dropped so much that the milk factory closed down in the mid 1980s. The previously satisfactory road network was neglected and, resulting impassable during the rainy season, often the area became isolated. With the rising costs of farm inputs and reduced yields, many families could not pay school fees, or buy animal feeds. The government was not in a position to help the people.

In 1999, the Kenya Institute of Organic Farming, the Conflict, Development and Peace network, and other organizations, came to the area. They encouraged farmers to start kitchen gardens, growing fruit and vegetables for domestic consumption, to help with the families' health problems. They looked carefully at local conditions, and designed appropriate short trainings on organic mixed farming, the uses of manure and compost, as well as on crop production. They worked on this for about two years. They were focusing on domestic consumption, with a view to possibly selling excess produce in the future. The NGOs also gave grants in the form of small live animals to, among other reasons, help farmers produce more organic manure for the fields. Introducing farmers to zero grazing showed that manure could be collected efficiently: previously this had been a major difficulty. All of these techniques were eye-openers. The farmers saw organic farming could increase their yields and give them more hope for the future.

Initial progress was very encouraging. The farmers decided to start organic farming on a larger scale. Many farmers found, however, that the land preparation method that they had been instructed to use ("double-digging") was very hard work. With double-digging, the soil is dug deep, and then dug once again to

be aerated and mixed with added manure. The markets did not make it any easier: consumers, not understanding the importance of organic products, preferred buying cheaper, conventionally grown products. Most farmers, discouraged, dropped organic farming. Within four years, every farmer had gone back to using agrochemicals, although many still used manure.

Members of the Syker self-help group taking their produce to the Juja organic market.

Photo: Marlies Marbus

In 2004, one of the NGOs came back to revive organic farming. Realising that the farmers had gone back to using inorganic fertilizers and pesticides, they re-evaluated their long term plan. This time they encouraged the farmers to try again and grow crops for sale, in order to generate some income. This time the NGO set the condition that the farmers should form a community based group, as the NGO believed this to be necessary for marketing purposes. Farmers would agree among themselves who would grow what, so that the market may have a constant supply. Therefore, the Subuku Organic Farmers Association made up of 24 organic farmers groups from four Divisions in Nyandarua District, came into being in June 2005. After trainings on processing and packaging, and the promise of ready markets in Europe and some of the major towns of Kenya, organic farming picked up again in Nyandarua. Once the system of double-digging was abandoned, it was not difficult to convince the farmers to try again. Organic fertilizers were now available in most shops, and some of the local NGOs had begun holding farmers open days on organic farming. The re-birth of organic farming in Nyandarua has brought rising yields, with some produce now being sold in local supermarkets, which now believe that consumers are ready for it. Money has started to come back to the area.

Other support

The Kenya Organic Agriculture Network is a marketing group for organic products in Kenya. They trained the Subuku Organic Farmers Association on marketing their products first to local people and then to the nearest towns, and are coordinating meetings between Subuku Organic Farmers Association and other organic producers in Kenya, with the organic markets in Kenya and abroad. The media has publicised the importance of organic products to the point that now consumers demand to know if food products are chemical-free. To solve this issue, the Kenya Organic Agriculture Network, supported by the Tree Is Life project, invites consumers to visit farms to see for themselves, where they can be taught by farmers about organic food. Many people now realise the importance of organic products to their health. However, international certification remains expensive, only large scale producers can afford to export their foodstuffs to Europe with certified organic status. The farmers are still looking for a way to certify their products.

The marketing of organic products has born fruit. Many buyers and consumers are local people and a market has been set up at Juja, on the Nairobi Thika road. It was officially opened by the winner of the 2004 Nobel Peace Prize, Wangari Maathai, in February 2006. The Green Belt Movement which Prof. Wangari Maathai leads campaigns for the domestic use of organic produce. Now, the Subuku Organic Farmers Association will supply organic vegetables to this market, including spinach, kale, broccoli, amaranthus, peas, onions, lettuce, leeks, squash, cabbage, fennel, and cauliflower. Fruits will include passion fruit, oranges, and lemon among others. Herbs such as coriander, rosemary, sage, thyme, parsley, dill, mint, marjoram, and balm will be available, and root crops such as red radish, white radish, beetroot, and rutabaga will be on the stalls.

Lessons learnt

This experience shows that any transition to a more sustainable system of production, especially if commercial, is never straightforward. Through trainings and forming organisations, most farmers now prefer to use manure, having seen that increases in yields have contributed to improving their livelihoods. Many aspects need to be considered, but with belief and perseverance, the farmers and consumers of this region are now seeing and eating the benefits.

Important factors in achieving these successes include:

- training - on organic production techniques and marketing;
- market and marketing advice - essential for knowing which crops to grow, how and where to sell them;
- the provision of inputs (including small animals);
- forming an organisation - this amplified the benefits of better marketing, better planning and, not least, of working collectively to share knowledge and experiences; and
- awareness raising among farmers and consumers about the benefits and importance of organic production and products.

Farmers groups were able to access the Arid Lands Information Network (*http://www.alin.or*.ke) and use their Open Knowledge Network. In particular, they receive the Baobab journal (in which community development workers across the drylands of Africa exchange their experiences). Access to such information sources remains very important in continuing to develop organic production, marketing, and in promotion of health benefits. ■

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