

A PATHWAY OUT OF POVERTY

GOOD NEWS FROM AFRICA

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All too often the news we hear from Africa is bad news; news about poverty, hunger, malnutrition, disease, deforestation, environmental degradation, violence and political unrest. When we hear this so often, it's tempting to think that there really isn't anything that can be done to turn this depressing situation around. But, that's wrong. I'm just back from three weeks in Cameroon where I was evaluating a development project and there is some good news! It's a community development project that has hit the right button, or perhaps more accurately the right set of buttons.

Cameroon is one of my favourite African countries, and I have worked there off and on for nearly 30 years. It's a country with a very diverse set of environments from wet tropical lowland rainforest in the south to very dry and dusty treeless areas in the north that are verging on being desert. In between there are upland areas with montane forests and grasslands, especially over in the west along the border with Nigeria. I was visiting the West and North West Provinces, around Bamenda and Bafoussam, where the World Agroforestry Centre is implementing a USDA-funded '*Food for Progress*' Programme together with a number of partners who provide other skills, particularly in community development, microfinance and the processing of agricultural crops. At first sight this sounds like a somewhat curious combination, but when they become integrated into a self-help package for poor smallholder farmers it becomes clear that in reality they are highly compatible. Before looking at what this project has achieved, let's try to put the current situation into context and reflect on how the doom and gloom scenario came about.

In Cameroon, as in most tropical countries, people used to be dependent on the forest for the wide range of products they use to meet their everyday needs; they were hunter-gatherers and subsistence farmers. The farmers used to practice shifting agriculture on small plots of cleared forest which were abandoned after 2-3 years and then allowed to revert to forest fallows that replenished soil fertility. With the advent of colonialism and then globalization, the forest was cleared for what was considered to be progress in many different guises, but especially for agriculture and for crops destined for export to industrialized countries. As populations grew and agriculture expanded, the deforestation spread and together with the disappearance of the trees there was a loss of an important resource of traditionally-important nutritious foods, medicines and other useful products, including the loss of the wild animals eaten as 'bush meat'. Modern agriculture ignored these local species and instead promoted cash crops from other parts of the world and intensively farmed staple food crops like maize, cassava and yams; and in some areas domesticated livestock. In addition to improved crop seeds, the Green Revolution package promoted artificial fertilizers and a range of pesticides. Typically, however, the farm size in Africa is less than 5 hectares, often less than two hectares, so farming was focussed on providing for the needs of the household and seldom on providing food for sale. So the farmers were

not generating income and remained very poor. They were thus unable to purchase fertilizers and other inputs that would maintain good crop yields, and consequently yields fell in response to declining soil fertility. Furthermore, as the forest receded and the land became more degraded the range of living organisms that keep essential life processes active, such as nutrient cycling, food chains and life cycles important for pest and disease control, pollination, etc. also go into decline and the agroecosystem starts to fail. All these things contribute to inadequate nutrition and to the consumption of a diet increasingly based on starch and lacking in protein and micro-nutrients, and with it increased susceptibility to disease. Furthermore, due to erosion, siltation and pollution, access to potable water also declined. In turn, as the livelihoods of the farmers fall the screw tightens one more notch and the well-being of the population reaches desperation point. Thus although globally modern agriculture has dramatically increased food production per person, developing country farmers have remained poor and have had to live on an unbalanced diet and inadequate water supplies. This is the source of the now familiar bad news stories. But sadly, that is not all and there were other negative impacts too, such as the decline in traditional social networks and culture which were not replaced by access to social services. Thus local people still need to be self-sufficient although they had lost the life-support system of the forest and the rural communities are becoming impoverished as the youths go to the towns in search of employment.

The above background is important to an understanding of how to reverse the negative impacts of modern agriculture and how to build on the positive. We are obviously facing a very complex set of interacting environmental, social and economic problems that need to be simultaneously addressed in an integrated way. This, interestingly, is exactly the conclusion reached earlier this year (2009) by the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) which reported on the state of global agriculture. Its essential thesis is that in order to address poverty, malnutrition, hunger and environmental degradation, agriculture has to be redirected from a focus solely on improved food production to one of multi-functional agriculture that focuses on the issues of social, economic and environmental sustainability, and especially on the needs of the smallholder farmer (McIntyre et al., 2009).

This now brings me back to the '*Food for Progress*' Programme in Cameroon, as this is the best example that I know about of a project trying to do what the IAASTD has recommended. The key to the success of this programme is that it aims to empower smallholder farmers to help themselves to get out of poverty, malnutrition and hunger, while at the same time creating more environmentally sustainable farming systems. Currently the project is working with 7095 farmers and about 50 entrepreneurs in 485 widely-dispersed communities across the North and North West Provinces of Cameroon. The empowerment stems from community level training and capacity building on topics such as: the restoration of soil fertility by the use of nitrogen-fixing trees and shrubs planted in close proximity with food crops; tree propagation and nursery management; tree domestication using simple low-technology horticultural techniques; group dynamics and community project management; marketing, business skills and management, and the use of microfinance. This capacity building is currently provided by 5 Rural Resource Centres (RRCs), set up under an earlier International Foundation for Agricultural Development (IFAD) Project, and about to rise to 10 under this new USDA project. The 5 RRC's are associated with 123 satellite

tree nurseries in surrounding communities which are supported by Relay Organizations (NGOs, CBOs, etc) that provide further training and mentoring at the village level, especially in the collection of tree germplasm and its growth in the village nurseries. In 2008, 175,000 plants were produced by these tree nurseries and about 80% of these were of species that can be used to establish soil fertility enhancement plots, while the other 20% were of species which will produce marketable indigenous fruits, nuts, medicines, etc. For the latter group farmers are specifically taught how to identify elite trees with superior characteristics which can then be propagated vegetatively as selected cultivars by marcotting, grafting or the rooting of cuttings, in ways that will ensure that the products of these plants are 'true-to-type' (ie. genetic copies of the original mother tree) as well as already having the capacity to flower and fruit without going through an unproductive juvenile period. In this way farmers are soon in a position to either plant, further multiply, or sell plants from their nurseries. Usually they opt for splitting their plants between the three options, so ensuring that they build up numbers for the future as well as starting to produce their own fruits and nuts for home consumption and perhaps for trade, as well as making money from the sale of plants to neighbours and other interested people. As these cultivars become recognized locally they will be given names that identify the farmer and the nursery, so building local ownership of this new resource. The volume and value of these sales is steadily climbing year by year, but the numbers sold vary between the different RRC's and nurseries. At Njinikejem, near Belo, the Twantoh Mixed Farming Common Initiative Group (MIFACIG), which joined up ten years ago, sold plants last year valued at US\$21,000, while it's 35 satellite nurseries have been selling about 20-50% that value. At Koung-Khi, the income from the Resource Centre nursery of PROAGRO, after 5 years experience, was around US\$1750 in and 2007, mainly from the sale of seedlings, but in 2008 the emphasis shifted to developing improved planting stock of fruit trees and an income of about US\$40,000 is anticipated in 2009. Already cultivars derived from superior trees are the biggest source of income in the satellite nurseries. Similarly, plant sales at RIBA, in Bui, which also has 5 years experience, were over US\$1250 last year. This capacity to generate income from nurseries can be developed quite rapidly. For example, at Batibo a nursery set up under the Promotion of Woman's Initiative in Self-Help Development, which has existed for only 8 months is already full of plants of 15 species, many at a marketable size.

One of the very encouraging outcomes of these nursery developments, attributed to the income-generating capacity of these nurseries, has been the retention of youths in the villages; at PROAGRO for example, about 10% of the 295 participating farmers in 16 nurseries were youths who had decided that they could now have better lives in the villages than in the towns. We even heard of one young man who had returned from the town to live in the village. Potentially, all of these communities will also be able to further increase their income by selling fruits from their named cultivars. However, to date this has not been the priority and most of the trees planted so far have been for domestic consumption and soil fertility management. However, with farmers planting up to 120 trees on their farms it is likely that production will very soon exceed domestic needs.

Improved fallows with nitrogen-fixing trees and shrubs for soil fertility enhancement are a well accepted technology in most of the communities engaged in this project and the farmers are reporting that their crop yields have doubled or trebled. This is a

significant increase in the productivity of the staple food crops and does much to increase food security. However, it is likely that this will also have the added benefit that the increased yield will allow the farmers to plant a smaller area of food crops and so increase the space for other types of crops, meeting other needs. Leguminous trees and shrubs are also popular with bees and so many communities have also become bee-keepers and we heard that in some communities everyone now has access to honey.

Other income generating activities supported under the '*Food for Progress*' Programme include several cassava processing mills, all women's groups. The largest of these groups was run by 10 women who employed 8 workers and it processed about 66 bags of dried cassava flour per day, each bag weighing 180kg. Gabonese traders were buying these bags at US\$40-54 per bag, depending on the season. Profits were said to be US\$2.7 per bag, so as this unit was working throughout the year it suggests that each of the 10 women were making profits of around US\$3000-\$4000 per year.

One of the constraints to better food processing being tackled by the project is the availability of local machinery. So through the involvement of WINROCK International several local metal workers have been helped to develop appropriate equipment for drying, chopping and grinding a range of foodstuffs, including spices and some new agroforestry products not previously processed. The metal workers have benefited from improved designs and from the sales of their machines in local towns (10-20% profits), while local entrepreneurs and producers are benefiting from the use of this equipment to extend the shelflife and quality of their produce. For example, one entrepreneur has set up a stall in Bamenda Market selling sealed packages of high quality dried herbs made from indigenous plants, mostly agroforestry trees (Njansang – *Ricinodendron heudelottii*, Bitter leaf – *Vernonia* spp, Eru - *Gnetum africanum*). For example he sells 150g bags of Eru for US\$1.35. Although this is a considerable 'mark-up' on fresh Eru, his trade has increased three-fold in four months, and the traditional traders in the market are becoming jealous. This small business has also created a few new jobs. Likewise, the fabrication workshops for the processing equipment have also created new employment opportunities, both for metal workers as well as for operators. However, as in the case of one entrepreneur, the processing of chilli peppers, garlic and ginger, creates the need for new market outlets. Without these the income generation opportunities are limited, so now the project is looking to get specialist help as supply chain development takes time and effort, as well as needing specialist skills.

The final approach being made to improve farmers' financial situation is the provision of short and small-scale loans for the purchase of inputs such as seeds, fertilizers and hired labour. In the first phase of loans, US\$78,000 was made available to over 900 farmers, 70% of whom were women, in 82 communities. While there were some issues about the mismatch between the terms and conditions of these loans, it was very evident that the farmers had benefited greatly from access to microfinance and were consequently increasing their crop production.

The project was also improving the livelihoods of community members by helping them to plan, finance and implement their own small infrastructure projects. For example, several communities had installed water standpipes in their communities.

Potable water was being piped from hillside springs 2-10 km away. This clean water has greatly improved the health of community members, as well as eliminating the need for women to carry water from contaminated streams and rivers. The water was also being used for livestock, village nurseries and for small-scale irrigation of off-season vegetable plots. Two communities had used profits from the nursery to help pay for the digging of wells.

The most important and exciting thing about this project was the wide range of positive livelihood impacts that are truly transforming peoples lives (photo). These require considerable further quantification and verification, but include:- substantially increased income, new employment opportunities, retention of youths in the villages due to career opportunities, improved nutrition, improved health from potable water and better diets, and the ability to spend money on children's schooling, home improvements, wells, etc. Additionally women indicated reduced drudgery in their lives from not having to collect water from rivers and farm produce from remote farms, as well as from mechanical processing of food crops. All these things meant that they had more time to look after their families and engage in farming or other income generating activities. These impacts strongly suggest that by promoting self-sufficiency through the empowerment of individuals and community groups through the provision of new skills in agroforestry, food production and processing, community development and microfinance it is possible for communities to climb the entrepreneurial ladder out of poverty. By so doing, they set themselves on a path towards improved livelihoods based on better nutrition and the recognition of the social and cultural value of 'life-support systems' of indigenous species formerly ignored by agricultural science. Thus it is possible to take the concepts of multi-functional agriculture forward in ways that break the cycles of land degradation and social deprivation that have kept nearly half the world's population in poverty and so to steer a path towards social, economic and environmental sustainability. What is needed now is disseminate these skills to millions of other poor people in Africa and other tropical countries. There are many ways of doing this, but one very interesting and hugely important one is already in progress in West Africa. It involves Unilever, a multi-national company that has recognized the need to use participatory domestication and community agroforestry for the development of a new oil crop.

1. POSITIVE IMPACTS
Increased number of farmers adopting agroforestry and the domestication of indigenous trees
Increased production of tree products
Increased income from tree sales by nurseries Some individual nurserymen have been reported to make an income of up to US\$7000/year. One entrepreneur is selling selected marcotts at about US\$10, and on rare occasions when he targets rich people visiting the market he has got US\$30 for a single plant of a selected cultivar. For this price he offers a service contract to plant the tree for the customer.
Increased income from sale of tree products.
Increased income from better farming practices
Increased income from eligibility for microfinance.

We heard that the combination of an agroforestry nursery with available credit had allowed one lady to connect her farm to the piped water network and so was able to water her tree nursery and vegetables, clean her pig troughs (so improving their health) and give potable water to her children before they went to school.
Increased income used for schooling and school uniforms
Increased income used for medicines and health care
Increased income used for home improvements – eg. installation of water and electricity in the home, new buildings, etc.
Increased income used for farm improvement – eg. livestock, wells, agricultural inputs, better nurseries etc.
New employment opportunities from nurseries. Currently there are 123 agroforestry nurseries.
New employment opportunities from processing both agricultural crops (such as cassava) and new markets for processed agroforestry products (fruits, spices, herbs and medicinal products).
New employment opportunities in the emerging workshops producing small tools and appropriate mechanised equipment to service the need for food processing equipment.
New employment opportunities from marketing as traders of processed products and the food processing equipment.
New employment opportunities in transport from producers to markets and to the processors of agricultural produce.
Retention of youths in the villages due to career opportunities by domesticating trees in their village nurseries. A few youths have returned from the town to their villages. Some are setting up commercial nurseries.
Tree domestication has led to better diets and improved nutrition. People used to eat corn fufu and some vegetables but now they are eating fruits and more vegetables. Livestock fed on tree fodder has also led to the consumption of more meat.
Luxury food items consumed. One lady described having honey and herb tea for breakfast as a luxury.
Improved health from potable water. In addition there were benefits for livestock health and production.
Piped water supplies for irrigation and use in nurseries
Increased livestock rearing due to tree fodder
Increased use of traditional medicines and better health
Increased honey production and processing.
Reduced drudgery in women's lives from not having to collect water from rivers and farm produce from remote farms, as well as from mechanical processing of food crops.
Reduced drudgery gives more time to look after their families and engage in farming or other income generating activities
Improved marketing for food and agroforestry products
Improved soil fertility from Improved fallows. Reports of crop yields having tripled in association with hedges of <i>Calliandra calothyrsus</i> . Improved tree fallows also reduced the need for bush burning as well as the burning of weeds. In addition weed control improved by shading eg. <i>Imperata indica</i> .
Improved tree fodder for goats and cattle
More time as a result of better farming methods farmers had more time for marketing

and new farming activities.
Community feeling empowered, stronger and optimistic for the future in ways that they could sustain. Villagers from other villages were turning to them for help and advice. One group of people said that if they continued down this path they felt sure they could aspire to catch up with people that previously they had felt to be of unattainably higher status than they were themselves.
Knowledge has empowered the Rural Resource Centres as an agent of change. Many people (100% of those interviewed) acknowledged that through the training provided by the project that they had gained knowledge and understanding of agroforestry, tree domestication, business practices and management, and in team work and that this knowledge was changing their lives.
2. NEGATIVE IMPACTS
Increased theft
Increased jealousy
New roads lead to deforestation and land degradation as a result of the expansion of farming activities to more remote areas.