

# SPORE



Information for agricultural development in ACP countries

N° 76 AUGUST 1998

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## Women's advances in agriculture: the sky must not fall

Women hold up half the sky, according to the Chinese proverb. Women also sustain more than half of ACP agriculture. In recent decades, much has been achieved in empowering women within the agricultural sector. However, recent structural adjustments, and the associated drive towards increased cash crop productivity and exports, point to the need to address broader issues when considering matters affecting women farmers. Recent advances by women are threatened with erosion and need safeguarding, but beyond that, a new series of advances is needed for them to gain better access to male-dominated domains: credit, land and technology.

The expression 'The African farmer and her husband' has appeared in several publications recently, including *Spore* (see issue 67). It draws attention to the fact that two-thirds of the agricultural labour force in some African countries is made up of women.

Women typically work longer hours than men when producing food. On average, they work 13 hours more than men each week in Asia and Africa. In Uganda, they work more than twice as long: 50 hours a week, compared to 23 hours for men. While men tend to produce cash crops, or hire out their labour, women produce the bulk of the food for local and family consumption. In sub-Saharan Africa, they grow

and sell 80 to 90 % of this food, and in the Caribbean 45 %. In tropical Africa, Asia and the Pacific, up to 80 % of all fish and shellfish caught by local fisherfolk are cleaned, dried, smoked and marketed by women and children.

### Caretakers of the food supply

The key role played by women in agricultural production is not yet adequately reflected in national and international policies. Less than 1% of the projects of the Food and Agricultural Organization (FAO) actually include strategies for reaching women; in the United Nations system as a

whole, less than 4% of projects benefit women. The gap is clear. 'Men receive most of the agricultural extension services, new technologies and credit, and women are the caretakers of the food supply' stated the report 'Women: the Key to Food Security' by the International Food Policy Research Institute (IFPRI), based in Washington. 'If women were given the same resources as men, developing countries would see significant increases in agricultural productivity'.

Most investment in women's agriculture has focused on income-generation strategies, and labour-saving devices. Thus every self-respecting village association, women's group, and non-governmental organisation in every country have projects to increase the

productivity of home-plot gardening, using simple methods to increase soil fertility and to improve pest control and product storage. Within the limits of the local market, these approaches have doubtless generated income for women farmers, and have increased nutritional standards.

The last few decades have also seen an upsurge in appropriate village technologies for the cultivation and processing of small volumes of produce. From the hoe, the solar

fruit drier and the hand-held nut sheller, to the small bottling plant operated by a women's group, there are countless examples of low-cost technologies which have removed part of the drudgery experienced by women who farm and process food.

These techniques and technologies have been developed by women's groups and village craftspeople (notably blacksmiths); they have been financed both by the communities themselves and external sources (from small NGOs to international agencies). They have led to innovations in technology transfer, with experience and equipment being shared between villages, countries and even continents.

### WOMEN OWNING LAND

*The issue of land tenure – also addressed in Spore 75 – is crucial to agricultural productivity. In certain circumstances the issue becomes critical, as in the case of societies which have lost much of their male population through AIDS or internal conflict.*

Currently, about two-thirds of the adult population in Rwanda is female, and one-third of women are thought to be widowed. In the aftermath of the genocide, widows may be forced off the land or unable to return because of their limited property rights. Widows without sons are particularly vulnerable to losing their property to their deceased husband's relatives. Those widows who do retain access to land may face labour shortages in peak seasons. In pre-conflict Rwanda, women did not have rights to own or inherit land but gained use rights through their husbands. Moreover, widows' access to land depended on the willingness of their sons to protect those rights. Young widows were often driven from their deceased husband's land by his kin. Many marriages were unregistered, further weakening women's claim on land.

The Ministry for Rehabilitation, which is now headed by a woman, has plans to support advocates to uphold widows' land rights. For agricultural rehabilitation to succeed, the access of women farmers to land and other resources must be addressed.

*Based on a Rwanda case study, in: Gender, Conflict and Development, BRIDGE Report 35, IDS, University of Sussex, Brighton, UK.*

### Limits to growth?

These programs aimed at improving the way women farm, have clearly had their impact on the income and material quality of their lives, and on agricultural production. However, their contribution towards gender equality is less clear: many would argue that they have led to no significant changes. It is argued that because these programs concentrate on income-generation and the elimination of drudgery in the subsistence sector, instead of micro-enterprise development or cash crop production (projects which usually target men), these approaches tacitly accept the notion that women's productive work is less important than men's, and, hence, that lower standards for women are acceptable.

The growing commercialisation of agriculture has led to an increasing focus on the optimisation of production and on conquering markets – indeed these are two of CTA's priority information themes. These strategies are intended to provide and maintain food security, and thus meet part of the material needs of all people regardless of gender. However, there is a risk that given their initial male bias they will exclude women and thus slow down, hinder, or even halt, the long walk of women towards empowerment.

Traditionally, in most ACP States and elsewhere, it is men who have access to land, technology and credit at the levels required for profitable cash crop and livestock production. If no deliberate attempts are made to protect and promote women's rights in

agriculture, the danger of commercialisation strategies is that subsistence farming will suffer. Tracy Doig, of the University of Witwatersrand in South Africa, argues that women may still be expected to perform their traditional agricultural role, as well as take on the extra burden of looking after their husband's cash crops.

Dr Jessy Kwesiga, of Uganda's Development Network of Indigenous Voluntary Associations (DENIVA), emphasises the



Photo B. Locatelli

importance of strategies which improve property rights security for women. He explains that, in Uganda, laws about land ownership are gender blind, and that nowhere in the constitution does it say that women cannot own land. In practice, he points out, the majority of rural women have access to land but lack control or ownership of it – that remains in the hands of male kin. Unless property rights can

### HOUSEHOLD LEADERSHIP

Giving women a household leadership role often has dramatic effects. United Nations Fund for Population Activities (UNFPA) reports that recent research into households headed by women revealed that theirs had markedly better diets. In Rwanda, female-headed households consumed 377 more calories per day, as compared to male-headed households; in the Gambia, the difference was 322 additional calories per day. Pre-schoolers from female-dominated households in Kenya have significantly lower incidences of diarrhea than do children from male-dominated households.

change, 'we risk having a deliberate policy of intensifying the burden of women, in the name of ensuring increased agricultural production.'

### If it's not appropriate to women...

As well as a need for land, there is a need for technology. Access to technology, for both women and men, requires education, information and finance. 'Under-investment in women's education has high costs in terms of lost agricultural output and income', reports IFPRI.

Credit is crucial for land and equipment purchase. A recent report on food processing in Ghana welcomed the emergence of women's groups cooperating to acquire (or hire) equipment for postharvest processing and food production. Demand from the urban market for processed foods is growing fast (see article on pages 4 and 5). The local and regional demand for items such as canned and bottled traditional sauces is fuelling a small industrial revolution. Yet early attempts by women's cooperatives to build up businesses around this trend were thwarted by lack of access to credit. The reluctance of most banks to invest in women's enterprises, which have little or no collateral, reflects that seen in the field. In some African countries, according to the International Women's Network, women farmers receive less than 10 % of the total credit allocated to small farmers, and only 1% of the total credit allocated to agriculture.

### Beyond credit?

An alternative to credit that is now being developed in several women's agricultural and small enterprise programmes is 'income-smoothing'. Instead of taking out a loan, other financial services are exploited, such as savings and/or insurance. By paying small amounts beforehand, a borrower can have access later to lump sums at crucial moments – to bridge a crisis or purchase at the most opportune moment. This approach gives a greater number of women access to finance than a simple credit scheme because their ability to repay a loan on a go-with-the-cash-flow basis is replaced by their ability to save

### WOMEN RETAIL FARM INPUTS

In the Gambian Women in Development project, the Agricultural Inputs Office acts as a wholesaler of fertilisers, pesticides and seeds. In a precursor FAO project, nearly all the retailers were men (individuals, or groups of farmers usually involved in "mens' crops", i.e. cash crops). The WID project recruited individuals and groups of women as retailers. Three years later, virtually all the male retailers are in default as compared to only one female retailer. The beneficiaries receive the inputs on credit, and have the option of selling them on for cash or credit. This initiative is also a mechanism for increasing women's access to credit, because many female retailers sell to men for cash and to women for credit. The range of goods is being widened to include small tools and equipment, and spare parts.

*Source: World Bank Toolkit on Gender and Agriculture*

securely. Furthermore, it is probable that the solidarity of a women's group based on savings is greater than that based on debt.

In the short-term, making more material resources available to women for land, credit and technology, and ensuring their proper role in agricultural development, is mostly a question of putting existing policies into practice. There are sufficient budget lines and credit funds available for massive, if not radical, changes to take place in the rural economy and for women's farming to flourish, equitably. The relentless process of genderisation of development policies has made sure of that. The United Nations Agenda 21 packs the message into a few powerful words: 'facilitate better access to all forms of credit, particularly in the informal sector, taking measures towards ensuring women's access to property rights as well as agricultural implements'.

In the long-term, there is an essential change required in education and training, and in sustaining mechanisms to promote the advancement of women. At the micro-level, through access to credit and equipment, for example, change is possible and probable. At the macro-level, through changes in gender balance at all levels of power structures resulting in more women becoming presidents, agricultural researchers or bankers, change is coming slowly. After all, five African countries are among the top 15 in the world as regards the percentage of women in their national parliaments, ranking ahead of Canada and the United Kingdom. Eleven African countries surpass the 11.7% women mark of the United States House of Representatives.

If progress in the empowerment of rural women is to be sustained and advanced, then major changes in attitude must come from the people who hold up the other half of the sky: the men. It takes two to tango.

*For more information:*

*No longer "the farmer's wife!". By J Brew, The Courier, issue 170, July - August 1998, p. 69. Available from the European Commission, 200 rue de la loi, 1049 Brussels, Belgium.*

*African Centre for Women, Economic Commission for Africa, P O Box 3001, Addis Ababa, Ethiopia. Fax: +251 1 512785 Email: eca40th@un.org Website: www.un.org/depts/eca/divis/acw*

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*Women's World Banking, 8 West 40th St, New York, NY 10018, USA. Fax: +1 212 768 8519 Email: wwbb@swwb.org*

*See the Books section: 'Women and sustainability'.*

*The key role played by women in agricultural production is not yet adequately reflected in national and international policies.*



Photo B. Locatelli



Photo B. Locatelli



Photo A. Rivai



Photo B. Locatelli



Photo B. Locatelli



Photo B. Locatelli



Photo Periscope



Photo C. Devouard © Crad



Photo J.M. Bombard



# Selling to the cities

Thanks to rapid urban expansion in ACP States, farmers are shipping more and more food to capital cities, and towns. This could be a great stimulus to agricultural production – as long as the supply chain from harvest-time to meal-time (storage, packaging, transport and distribution) works well by keeping losses and expenses to a minimum. To succeed, farmers will have to adapt to the new demands of the urban middle classes, especially for a more varied diet. The needs of the poorest urban communities must also be recognised.

The introduction of the continuous working day (6.30 am - 1.30 pm) for civil servants in the early 1990s in the government area of Bangui, the capital of the Central African Republic, has brought a new breath of life into their ritual of the daily break. At the end of the morning, they head off to the nearby banks of the river Oubangui, where local delicacies can be had from cafés consisting of a grill and some planks, and roofed with sheets of corrugated iron. Street food is a booming business in the mega-cities of Africa. Workers who travel by bus everyday to their work in the centre of Abidjan or Dakar from the outlying suburbs of Yopougon or Guediawaye stay downtown for their lunch break. The result: prosperity for the street vendors and owners of small eating houses.

## Street food, new food

Changes in eating habits are going hand in hand with new dishes and new tastes. In many popular districts of towns in the Sahel, *yaos* (women cooks) from Benin are a great hit with their recipes from the coast. Many a customer no longer wants the single dish of a ball of tô made from sorghum or millet, or of cas-

*Intra- and peri-urban agriculture can rapidly adapt to new demands.*

sava meal (*attiéké, gar*). Such food is often called 'all-terrain food' or 'food aid' because it fills the stomach. In the Mahavoky neighbourhood of Antananarivo (Madagascar), eating establishments along a canal serve up soups, and dishes of nem (spring rolls). Some offer chunks of bread piled high with chopped vegetables and minced meat. The sandwich has become the meal.

All these modest dishes are signs of success. There are no serious food shortages in the towns and cities. Farmers are managing, in good years and bad, to feed city dwellers. It is a remarkable change from not so long ago. In sub-Saharan Africa alone, at the time of independence in the 1960s, nine-tenths of the population was rural. Now the total of people living in towns and cities is nudging 40%. If current estimates come true, it will reach 55% by the year 2025.

The situation is not, though, a cause for concern, according to the authors of the West African Long Term Perspective Study (1). The rural drift of people migrating from country to town, long seen as regrettable, has turned out to have some blessings in disguise. The town is no longer seen as a millstone around the neck of development strategies, but as a motor for change. The demand of urban consumers is a stimulus for those rural areas with the best links to the cities, as well as, obvious-

## PERI-URBAN AGRICULTURE TO THE FORE!

Spectacular changes are taking place in peri-urban agriculture. Market gardening takes pride of place, ranging from the success of producers who grow on sand and sell on the beaches near Lomé (Togo) to those who cultivate the sand in the city centre of Nouakchott (Mauritania). In Burkina Faso, there are many plots of tomatoes, potatoes and carrots near the city of Bobo Dioulasso or around Réo, capital of the province of Sanguié. The province of Bam, north of Ouagadougou, prides itself on its 'success story' with the French green bean. Plots are sited next to water storage areas, and are irrigated mechanically or by gravity. The province accounts 50% of national production (4650 tonnes in 1997), of which half is for domestic consumption. In neighbouring Niger, the chain of onion production is a striking example of how Hausa traders control speculation, from production in the Galmi/Madaoua region to the point of sale. It is they who have

70% of the share of the Abidjan onion market, 2,000 km away from the region of production.

Peri-urban agriculture embraces other activities too, such as small-scale livestock and fish farming. Creation of fish ponds is increasing in Malawi and the Daloa region of Côte d'Ivoire. Grilled tilapia from these ponds is on the menu of many a street restaurant.

It may be sited near the consumer market, and have lower marketing costs, but intra- or peri-urban agriculture is no substitute for rural production. It does, though, play a complementary role by increasing the diversity of agricultural produce. The development of intra- and peri-urban agriculture is an emerging trend that has caught the attention of international donor agencies. Since 1996, led by the United Nations Development programme (UNDP), they have increased their support to 'urban farming'.

## YAM IN THE HOME

Yam can be grown anywhere: even downtown, on paved roofs, terraces, balconies and – why not? – in the living room. In Cameroon, for example, a clever do-it-yourselfer senior citizen of some sixty odd years has developed an original method of growing a white yam variety. It has the decided advantage of being cheap and represents a good example of economic use of space in cities.

The yams are planted in plastic sacks or cases made from raffia bamboo. These are filled with a mixture of soil and compost, and a yam seedling is planted 10 cm deep.

The stalks are attached to stakes, and guided towards the roof, or to branches of nearby trees. They are protected from sun and rain by a straw sheet. When the yam tubercle starts to form, the downward head is removed, taking care not to damage the roots. This allows the tubercle to be sliced up into several new pieces. When ready to harvest, the yam is almost the same size as the sack or case (about 1 metre in length).

ly, for agriculture in the peri-urban areas that ring the city (see box). There is just one note of caution to be sounded, and no small one at that. These trends imply differing paces of development: isolated rural areas get forgotten, whereas most dynamic interactions take place between the city and 'useful' rural areas.

Another fundamental shift has been the privatisation of the food distribution chain. Private enterprise is taking over more and more from statal bodies, in particular the ineffective Cereals Marketing Boards. In Côte d'Ivoire, the chain is covered by the Ezzedine family, of Lebanese origin, who came to the country in the 1930s. In 1969, they set up the Centre-West Trading Company (SOCOCE), before extending their wholesale distribution network to other cities. More recently, they opened a number of supermarkets and, in November 1996, a hypermarket (Espace Latriille) in Abidjan.

Elsewhere, other businesses are trying to get a competitive foothold on each rung of the ladder, although they are less well 'integrated' than the Ezzedines in terms of their presence throughout the entire chain. At the production end, farmers face several problems, principally a lack of information. The agro-economist Abdoulaye Pape Seck of the Senegalese Agricultural Research Institute (ISRA) deplors this, and refers to the case of the Dakar peninsula: 'Farmers are not properly aware about the changing purchasing habits of consumers, and, more generally, they lack a reliable information system on all products. Consequently, they cannot adjust their approach to the realities of the market.'

At the level of village storage, much progress has been made, such as grain silos protected against rodents, and well-ventilated facilities for vegetable conservation. The stage

of moving goods depends on the quality of the road networks. This is not a major problem for the average farmer in Côte d'Ivoire, who has good access to tarred roads and well-maintained rural tracks. In Madagascar the situation is less secure. Take the case of Aubin Bako, president of the Circle of Malagasy Farmers (CAM), who grows a variety of crops (primarily rice, but also cassava, maize, taro, bananas and cloves) on a seven hectare farm, 160 km north of the port of Toamasina (formerly Tamatave). 'In our area, it is the collectors working for the large traders who still call the tune,' he rues. 'They have small boats to get around the problem of bad roads. The only alternative for a farmer who does not want to accept prices which are too low, nor see his crop perish on the spot, is to carry them by back or donkey, for 15 km to the nearest town'.

## Modern and informal sectors

The food transport sector in Africa is, generally speaking, rarely well-endowed. An expert in this field, Jérôme Lombard, describes the sector as 'very segmented'. He refers first to the market for commodities ('wealthy' freight) which in fact shapes the major arteries for transport between areas of production and processing plants or export outlets. Then there is the market for food products ('poor' freight), which has greater constraints, for example in the form of far-flung sources of supply, and run-down roads. Transport in the food sector is often run by small operators who have little capital and usually few special skills, and who cover the risks of the business by diversifying their activities (2).

At the consumption end of the chain, a major focus is on re-furbishing existing markets (covering market stalls, providing water and electricity), and on building large wholesale markets, as in Bouaké (Côte d'Ivoire). In future, both the central government and new local authorities will have to make sure that these essential facilities are featured in urban development plans.

The food distribution sector is organised in a way that allows the modern and the informal approaches to co-habit. In the modern sector, there are production contracts with guaranteed purchases, removing many of the risks for the parties involved. The informal sector bustles with imagination and job creation.



*Changes in eating habits are going hand in hand with new dishes and new tastes.*

Here, it is often women who take the lead. In Dakar, almost 50,000 women are active in small-scale food processing. In Cotonou (Benin), about 2,500 women are involved in the maize production chain alone. Sometimes, the two sectors clash, as in the case of the 'cube mania', where the faddish demand for Maggi sauce cubes has knocked the traditional *soumbala* condiment, based on fermented Nere (*Parkia biglobosa*) seeds, off its commercial pedestal (3). The poorest urban dwellers, however, living on the edges of the cities, are not touched by such struggles. Their problem is just to get food. Speaking to this issue at the most recent World Food Day (16 October 1997), Jacques Diouf, Director General of the UN Food and Agriculture Organization (FAO) said: 'We need to establish specific social programmes which will give more direct access to food'.

(1) The West African Long Term Perspective Study undertaken jointly by the African Development Bank, the Club du Sahel of the OECD and the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) based in Ouagadougou (1994).

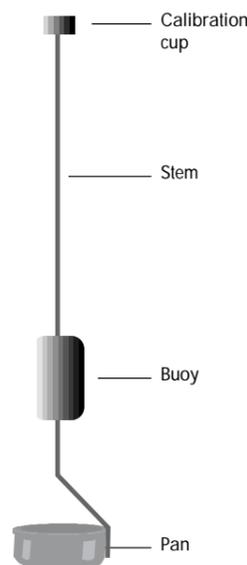
(2) Presentation made at a seminar on 'Food supply and distribution in the towns of French-speaking Africa' (Dakar, FAO-ISRA, April 1997, summarised by Laurence Wilhelm).

(3) See 'Bouillons-cubes importés contre condiment local' (Grain de sel, issue no. 8, l'Inter-Réseaux développement rural, Paris, December 1997).

*Street food is a booming business*



## There's oil in those kernels — but how much?



The sixth most important vegetable oil worldwide, in terms of metric tons produced, is the groundnut. In 1997, Africa alone produced 1,117,758 tons, representing about a quarter of the world's total production. Kernel oil content varies from 40 - 55 % and depends upon the plant variety and the conditions under which it was grown.

Small producers, mill owners, extension workers and others interested in learning crop oil content (and hence its market value), can now do so simply and with great accuracy. Researchers in India have come up with a way to rapidly determine the oil content of groundnuts.

The device, known as an arachilipometer, consists of an inverted polyethylene cap (the calibration cup) attached to a graduated 'stem' of copper tubing, itself attached to a 'buoy' made from a stainless steel container with a lid under which hangs a galvanized iron-wirehook that holds a perforated stainless steel cup called the 'pan'. In total, it measures about 40 cm, is easy to assemble and transport. For these reasons, the arachilipometer is ideal for use in small rural communities and local agricultural research stations.

Contact: J B Misra and S K Yadav, National Research Centre for Groundnut, PB No 5, Junagadh 362 001, Gujarat, India.

## Chuff cutter saves time and labour

In recent years an inexpensive Tanzania-made cutter has become popular among farmers in Uganda, especially among women. Known as the 'chuff cutter', it is a simple, easy-to-use tool for chopping chuff also known as chaff — a constant supply of which is needed for zero-grazed livestock.

Specific advantages of the new cutter are that: grass is chopped quickly and uniformly, thus, avoiding waste; there is no risk of cutting one's fingers; it considerably reduces the physical labour of the task; and it is portable and can be used to chop grass directly into the feeding trough.

The chuff cutter is available through various sales outlets in Uganda.

Contact: Environmental Alert, PO Box 11259, Kampala, Uganda.



Helen Jenkins

## Family farming schools

Seeing a son or daughter heading off to town to hunt for work has been a sadly familiar sight for farmers across the ages. It conjures up three fears: the end of the family farm, depopulation of the village and — too often — the return of the prodigal child later, with neither school nor professional qualifications.

For many farmers of modest means, their ardent wish is to provide their children with a trade and an education so that they may make a decent living from agriculture in today's modern world. It is this wish that lies at the root of family farming schools. The first such school was set up in a small French village in 1937. Established on the initiative of a group of farmers, the parish priest and a local agricultural adviser, the school used a

teaching system that combined theoretical knowledge with practical field sessions. Today there are more than 800 such schools in the world, of which 100 are in Africa.

The family farming school is like no other. The involvement of parents is fundamental, and their association runs the establishment. It is the parents who select training topics together with — when they are not providing training themselves — the trainers. The trainers are recruited from the agriculturalists, agricultural advisers, and teachers, whom governments make available to the school, as well as from young agricultural school graduates.

The three year training course does not lead to a diploma. The training is essentially practical and to-the-point. The beneficia-

ries are the 'graduates' — the rural entrepreneurs who will have received a foundation in agriculture and the economics of the agricultural marketplace. The goal of the school is quite clear: to keep young people on their home soil, literally, so that they can apply what they have learnt. The programme of family farming schools is a blend of general theoretical teaching on geography, accounting, agriculture, and — above all — practical sessions in the field. These sessions are held for two out of every three weeks, and they allow the young farmers to join in agricultural work and to learn about the environment, in addition to the many technical, economic and social aspects of agricultural activity.

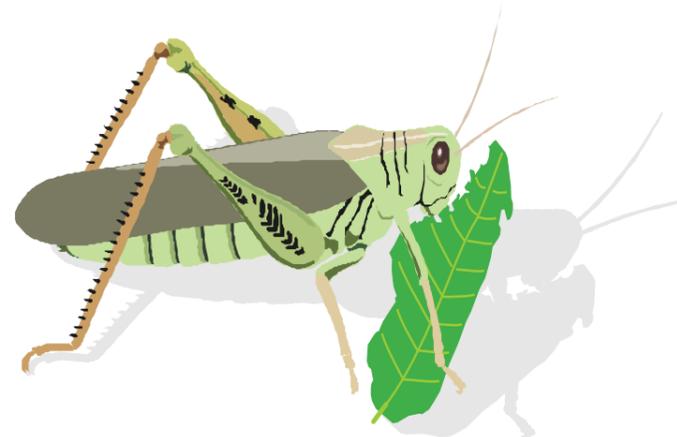
There are two family farming schools in Cameroon. The only

registration requirement is to own some land. The promising results of the first 'graduates' demonstrate their usefulness. Many of them have taken up market gardening and earn a decent living.

The family farming schools have other merits, such as their emphasis, in a modest but decided way, on formal education, something important to the development of African agriculture. They face difficulties in financing equipment purchases and paying their trainers, but they represent a constructive way forward. Their example is being followed by a growing number of agricultural colleges.

Contact: Family farming school, BP 49, Essé, Cameroon; Family farming school, BP 4, Monatélé, Cameroon.

## Getting ready for L-day



By the time the government of Madagascar put out an appeal for international assistance in July 1997, the most recent invasion of locusts had already wreaked havoc. In the southern half of the country, in the Central Highlands and part of the Eastern and Western Regions, entire crops had been devastated.

It was a catastrophe waiting to happen. A 1993 report of an evaluation mission on the impact and prevention of locust plagues, financed by the United States Agency for International Development (USAID), had left no doubt about the urgency of the situation and the shortcomings of anti-locust measures at the national level. However, at the time, the succession of governments had other priorities. With too little action being taken too late, and despite an emergency credit obtained in September 1997 mainly from the World Bank, the UN Food and Agriculture Organization and the European Union, the plague has not been tamed.

The list of shortcomings is long, it includes: the institutional mist around the establishment of the national committee for the anti-locust campaign, run by the armed forces; a centralised management structure; policy divergence among funding agencies; irregular supplies of pesticides; and crop-duster airplane breakdowns. The litany of complaints must be music to the ears of the well-fed locusts and grasshoppers.

Lessons of past mistakes have been forgotten, but not the memories. In 1958, it is recalled, more than ten specialists and 1,000 technical staff were mobilised in the anti-locust campaign. Today,

there is one lone specialist and an ageing staff, tossed from pillar to post by a multitude of instructions and consultants; they struggle valiantly against the locusts, which have now reached the international airport of Ivato.

In the marketplace, food prices have risen; food shortages are accompanied by a growing black market. The need for funding is growing in line with the phenomenon: the initial estimate of US\$ 12 million made in December 1997 has now reached US\$ 20 million. The European Union has already provided ECU 5 million from the community budget for 'aid and food security'. In an analysis of the Food Risk Early Warning System carried out in April 1998, eleven communes were classified as suffering food stress, with an estimated 105,234 people affected.

Recent infestations in the south-east region of the country give rise to more concern. Some harvests were gathered early and saved, but others were annihilated or severely damaged: sugar cane 100%, maize 35% and rice 75% (1998 production is estimated at 39,000 tonnes). Nurtured on the grass seeds of cattle pastures, the locusts are now threatening the coffee crop. In the south-east, people struggled for two weeks to beat off the invasion, armed only with the ability to make loud noise and to light bush fires to scare off the locusts. Having been saved, surprisingly, by El Niño from the ravages of a cyclone, the region was hit by the disaster that was greedy insects.

Some call for the fast and absolute elimination of the plague, whilst others insist on environmental protection; all are

## Help update 'Natural Crop Protection'

The much-used book 'Natural Crop Protection' is being updated. The revised edition will present case-studies on participatory research approaches in natural crop protection methods, and seek to stimulate more adaptive and farmer-oriented research. The chapter on best practices will be expanded, using new information from readers. Everything from botanicals to mineral- or animal-derived substances as well as many

kinds of fermented substances and local practices for natural enemy management, including mixed cropping, will be featured. Anyone having a particularly effective method is encouraged to send their contribution(s) to the editor/author.

Contact: Dr Gaby Stoll, Maria-Theresia Allee 265, 52074 Aachen, Germany. Fax: +49 241 707841; Email: ruraldev@misereor.de

## Ambitious databases on the Americas and Caribbean

AgroInfo Americas is a set of free agricultural and livestock databases accessible by the Internet, which is also of interest to other regions. The databases are designed to provide users in the Americas and Caribbean with access to timely, relevant and practical trade and market information, so that they may better compete in the rapidly changing world market. The databases are arranged under seven general headings. Links to related agricultural Websites are also provided.

This ambitious Website is being developed by the Inter-American Institute for Cooperation in Agriculture (IICA), Caribbean/Latin American Action (C/LAA) and Texas A&M University. Planned features include an agricultural supply, demand, trade and price database; Online Analytical Processing (OLAP), which

will be supported by SAS Decision Support Software; environmental impact, Geographical Information System (GIS); and a trade and tariff database.

Another useful planned feature is the automated web page maker, which will allow creation of web pages without the need for programming skills. Perhaps the most user-friendly aspect is that information from AgroInfo Americas' databases will also be available by radio or fax for people without Internet access.

Website: <http://www.agroinfo.org>  
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PO Box 1318, Port of Spain, Trinidad and Tobago.  
Fax: +1 809 628 4562  
Email: iicatt@opus.co.tt



united in procrastinating about the right solution. Maybe the fable of La Fontaine could be an inspiration here, where the wise ant, the guardian of plenty, tells the hungry grasshopper, having sung all summer long, to 'go away

and dance for your winter food!' The issue now is to avert the threat of food insecurity which hangs over Madagascar. This must be a more successful operation than that intended to prevent the locust plague.

## Y is for Yam

Africa is responsible for 96% of the world's production of food yams; producing almost 30 million tons a year. Most of the remainder is produced in the Caribbean and Pacific. For 150 million people, yam is, together with cassava and potato, a food staple. In the last thirteen years, production has risen by 17% – to the considerable surprise of those involved in yam research. It had appeared that yam cultivation could not be increased, because the traditional methods employed were believed to be resistant to change, and because it requires much water. The increased production is a response to growing demands from

urban consumers. The farmers of the main producer countries (Benin, Côte d'Ivoire, Gabon, Ghana, Nigeria and Togo) have changed their cultivation techniques, and switched their selection of varieties to meet demand for a specific yam product, often known as the 'podlet'. This is made by smashing a small yam into pieces. The pieces are dried in the sun and become powdery. The 'podlet' is light and easy to transport, and sells for less than fresh yam. It takes just a small blow to break it up and obtain flour, from which a couscous and biscuits, or, better still, *amala* may be prepared. Noticeably different from traditional household *foufou*, *amala* is leading to the emergence of a much appreciat-

ed form of street food in Togo, Nigeria and Benin.

Despite its known nutritional value and pharmaceutical properties, yam has not yet been adopted for large-scale treatment in the food processing and agro-pharmaceutical industry. For the last fifteen years, some industrial companies have started to produce a yam conserve and some processed items (crisps, chips, flour and flakes). Many such initiatives have become entangled in the classical problems of transportation and conservation of fresh tubers, and have not gone beyond the experimental phase or pilot processing plant. The export share of yam has fallen to 0.2% of its production.

Nevertheless, yam has a good future. Important pharmaceuti-

cal properties based on diosgenin and related molecules have been long recognised in wild yam. In its cultivated form, it is particularly rich in starch, mineral salts, proteins and vitamins, giving it a nutritional value comparable to cereals. Notwithstanding its usefulness, there are still many technological barriers to be overcome before the full potential of this tuber can be exploited.

Further reading:  
*The Yam. A tropical root crop.*  
By L Degras,  
CTA/MacMillan 1993,  
CTA number 524,  
ISBN 0-333-57456-7,  
40 credit points.

## Farmers and fish love cocoa

In the tropics, the tilapia is considered one of the most promising fish for village pisciculture. However, feeding *Oreochromis niloticus* can be expensive — especially for small-scale producers only hoping to make a little extra cash. A solution to this dilemma may have been found by the piscicultural research unit of IRAD in Cameroon. Researchers working in a rural setting, developed a fish food partially made from powdered cocoa fruit husks. It was found that 'baby' tilapias fed for three weeks on mixtures of differing concentration of cocoa, grew normally.

This 'diet' is particularly pleasing to the pocketbook of the producer. A kilo of 'classic' tilapia food (a blend of cornmeal, wheat bran and rice) normally costs about 190 F CFA (about 35 cents US), but this drops to 13 F CFA (2 cents US) if 200 g is replaced by powdered cocoa husk. Cocoa husks are plentiful in cocoa growing regions and are usually discarded at the foot of the tree during harvesting. To obtain a protein-rich, inexpensive feed supplement, all that need be done is to collect the husks, sun-dry, and grind to a powder.

Contact:  
IRAD,  
BP 2123,  
Yaoundé - Cameroon.

Source: *La Voix du paysan*,  
no. 71, published by SAAILD,  
BP 11955, Yaoundé, Cameroon.



Farmers have adapted their cultivation techniques in response to new consumer demands for more and different yams.



## Fishing within limits

The fishermen of Tikéré, a small village 70 kilometres from Pala, in Chad, have taken steps to protect the natural wealth of lake Trene, by setting up a system to restrict fishing catches, or to forbid them in some areas, or at particular times. At the same time as starting this 'fallow lake' system, they set up a group called Kpingdebbe, a *moudang* expression for 'Let Us Awaken'. They were supported in this by APRODEPIT, the association for the promotion and development of integrated fisheries in Chad.

The use of fishing nets, both small and large meshes, was banned for a long time. Small mesh nets had caught too many young fish; the large mesh nets

had cleaned out reproduction nests, algae and residues, thus endangering the renewal of various species. Night-time fishing was banned too, to discourage those wanting to catch caimans and turtles in the dark. Anyone who breaks these conservation measures is liable to pay a fine to the village.

After three years of vigilance, not without some violations, people are satisfied with the effects of these measures. Caimans, giant turtles and other aquatic animals have returned, marking a victory for the villagers of Tikéré. Fishing is now allowed two days a week. Catches are handed, in their entirety, to the Kpingdebbe group, which sells the fish to village

women, who are also organised into a group. They smoke the fish, and sell it in nearby Léré market. The women were given training in drying and smoking by APRODEPIT, and have a storage facility in the village. Income from sales is used to finance loans to members of Kpingdebbe, and to buy fishing equipment. It is now five years since Kpingdebbe was established and in that time a professional approach to fishing has taken root in village practices, in the same way that the need to protect natural resources – if fishing is to be rational and sustainable – has taken root in peoples' thinking.

## COURSES AND CONFERENCES

### ■ CASSAVA BIOTECHNOLOGY NETWORK

3 - 7 November 1998, Brazil

The Fourth International Scientific Meeting of the Cassava Biotechnology Network will be held in Bahia, Brazil.

Contact: Dr A Villarinhos, CNPMP/EMBRAPA, CP 07, Cruz das Almas, Bahia, Brazil.

### ■ PROTECTED CULTIVATION: GLASSHOUSE AND POLYHOUSE CROP PRODUCTION

11 October - 6 November 1998, The Netherlands

The international course on protected cultivation is designed for professionals who want to learn from the Dutch expertise in the field of glasshouse and polyhouse crop production. In the Netherlands, this crop production method has undergone revolutionary developments in technology, management, volume, and quality control. In recent years, these developments have been extended to subtropical and tropical countries. The 4-week programme is offered in Wageningen, the Netherlands by the International Agricultural Centre (IAC), the Innovation and Practical Training Centre (IPC) and Larenstein International Agricultural College (LIAC).

Contact: The Director, International Agricultural Centre,  
P O Box 88, 6700 AB, Wageningen, The Netherlands.  
Fax: + 31 317 418552; Email: iac@iac.agro.nl

### ■ WORKSHOP ON PARTICIPATORY MONITORING

2 - 6 November 1998, Zimbabwe

The need for effective monitoring tools when working with community groups is evident but these tools are often not available to turn awareness into practice. Participants at this workshop will share monitoring experiences, existing methods, learn about monitoring at different levels and be exposed to participatory impact monitoring in theory and practise. The PELUM (Participatory Ecological Land Use Management) workshop is open to community development workers and is aimed at strengthening the monitoring capacity of organisations involved in development.

Contact: PELUM address given in next item.

### ■ BE A BETTER TRAINER IN SUSTAINABLE AGRICULTURE

2 - 20 November 1998, South Africa

This workshop for trainers in sustainable agriculture is organised by PELUM and will be hosted by the Valley Trust, KwaZulu/Natal, South Africa.

Contact: PELUM Association,  
P O Box MP 1059, Mount Pleasant, Harare, Zimbabwe.  
Fax: +263 4 744470; Email: pelum@mail.pci.co.zw

### ■ FARMING SYSTEMS RESEARCH

29 November - 3 December, South Africa

The Association for Farming Systems Research Extension (ASFRE) will hold its 15th symposium in Pretoria, South Africa.

Contact: ASFRE. Fax: + 27 11 4425927; Email: cpjh@jhb.lia.net

### ■ PARTICIPATION IN LOCAL DEVELOPMENT

26 - 30 October 1998, The Netherlands

Development workers with little or no experience in the use of participatory methods will be interested in this five-day course which provides insight into the theoretical background and practice of the most widely used participatory techniques. It is organised by Agromisa and the Institute for Applied Communication and Innovation (ITV).

Contact: Agromisa, P O Box 41,  
6700 AA Wageningen, The Netherlands.  
Fax: +31 317 419178; Email: agromisa@worldaccess.nl

### ■ POSTHARVEST TECHNOLOGY BY DISTANCE LEARNING

January 1999 onwards

In order to provide access to its training courses for people in ACP Countries and elsewhere who cannot attend courses in person in the UK, the Natural Resources Institute is introducing two new and innovative computer-mediated distance learning programmes. Participants with access to a computer (486 DX and above), modem and telephone can continue their professional development from their own home or work place, at times convenient to them, by simply connecting to a local provider. The programmes cover —

**Grain storage management:** the principles and practices of managing cereal grains, pulses, oilseeds and other durable commodities in farmer, trader and large-scale postharvest systems.

**PostHarvest Horticulture:** the principles and practices fundamental to good postharvest management and marketing of tropical, sub-tropical and temperate perishable horticultural crops.

Successful completion of the programmes will lead to a post-graduate diploma or MSC.

Details are available on the programme home page of the NRI Website:  
[www.nri.org/Training/gsm/gsm.htm](http://www.nri.org/Training/gsm/gsm.htm)

or  
Contact: The Training Officer, Natural Resources Institute, University of Greenwich, Chatham ME4 4TB, UK. Email: J.Pilcher@gre.ac.uk

### ■ PLANT VIRUS EPIDEMIOLOGY: CURRENT STATUS AND FUTURE PROSPECTS

11 - 16 April 1999, Spain

This conference will be held at Aguadulce, near Almeria, Spain, and is being organised on behalf of the Plant Virus Epidemiology Committee of the International Society for Plant Pathology. There will be formal and poster sessions and a field excursion to see virus disease problems of vegetable crops grown under plastic.

Contact: Dr Alberto Ferreres, CCMA-CSIC, C/Serrano 115 dpdo,  
28006 Madrid, Spain.  
Fax: +34 1 5640800; Email: ebvaf22@fresno.csic.es

### ■ HONEYBEE HUSBANDRY

May 1999, The Netherlands

A four-week course on honeybee husbandry, microscopic honey analysis and bee product manufacturing will be held in a rural setting in the north-east of the Netherlands. The course comprises theoretical and practical training and is meant for beekeepers and would-be beekeepers from developing countries.

Contact: Marieke Mutsaers, Course Coordinator, Trichilia ABC,  
Noordermeerweg 65cd, 8313 PX Rutten, The Netherlands.  
Tel/Fax: +31 527 262598; Email: trichilla@tip.nl

### ■ MASTERS DEGREES IN 15 DIFFERENT DISCIPLINES

September 1998 - January 2000, The Netherlands

Wageningen University and Research Centre's International Post-graduate Programme offers fifteen MSc programmes: Agricultural Engineering, Animal Science, Aquaculture, Biotechnology, Crop Science, Ecological Agriculture, Economics and Management, Environmental Sciences, Gender and Agriculture and Rural Development, Geographic Information Systems, Leisure and Environment, Management of Agricultural Knowledge Systems, Soil and Water, Tropical Forestry, Urban Environmental Management, plus an MBA Food Industry and Agribusiness Programme.

Contact: Wageningen Agricultural University, Dean's Office for International Students, P O Box 453, 6700 AL Wageningen, The Netherlands.  
Fax: +31 317 484464; Email: office@dois.sz.wau.nl  
Website: <http://www.wau.nl/>

Please write to the addresses given above, and not to CTA, if you are interested in participating in these events.

On our 'Mailbox' page we publish extracts from letters sent to the editorial team at CTA. These letters have been selected for their potential interest to other readers of *Spore*. Readers are therefore invited to send us further information on subjects covered in *Spore*.

*Spore* would also be pleased to receive short articles and news items on agriculture and rural development in ACP countries; these will be considered for publication in our 'In Brief' pages. Finally, under the heading 'Viewpoint', we will continue to publish personal opinions on the subject of agricultural development in general.

Please send your correspondence to *Spore* at CTA in the Netherlands (see back page for our address) and please note that we are unable to return manuscripts.



Photo G. Trebull - Cirad

#### THE PROBLEM IS THE MESSAGE

**René Rabezandrina, of the Department of Agriculture at the University of Antananarivo, Madagascar**, comments on the 'Viewpoint' about extension work which appeared in *Spore* 72, p. 11. "A lot of participatory methods such as wide extension or mass extension, pilot farmer-centred approaches or contact groups (training and visits), have been designed by very skilled leaders (experts in large international organisations) for passing on to extension staff who, in turn, put them into practice in their work. It cannot be said that African farmers are any less aware than other farmers, or unable to know where their own interests lie. Further, if we judge that extension workers – the 'transmitters' – are intelligent people, and that the methods adopted and supported by the specialists cannot all be bad, and that the farmers – the 'receivers' – are not particularly obtuse, then we have to ask ourselves where the problem lies. For the last thirty years we have worked away looking for the way to pass on the message, whilst the real problem lies precisely there: the message is not interesting enough for the farmer to take it on board definitively. It follows that the answer is not to be found in yet another new training programme for extension staff, without any guarantee that it will work, but in finding messages which will satisfy the heart-felt wish of the farmer: to work less physically, whilst earning more. Look at subjects like agroforestry using profitable fruit trees, or planting sugar cane, which can have a

very high added value. These have never been promoted by official extension agents, but the Malagasy farmer has taken them up spontaneously. You cannot say the same about techniques for planting out rice in lines or manual weeding with a hoe, work that would have the rice farmer hoeing for hundreds of kilometres just to weed one hectare – if he were to follow the advice of the extension agent."

#### DID SOMEONE SAY "GREEN REVOLUTION" ?

**Dr H. Breman, Director of the International Centre for Soil Fertility Management in Togo**, has a response to the opening article in *Spore* 73, about the Green Revolution. "The core of my criticism is that you identify the lack of natural resources in Africa as a constraint, but you do not appreciate the gravity of the problem. The analysis of the success of the Green Revolution is simplified, as you recognise yourself. You only talk about climate factors, and the availability and management of water with regard to agro-ecology. A more important aspect is the quality of the soil. A special feature of Africa is that natural resources (combinations of soil and climate) are so poor that we have already reached over-exploitation of the soil, at a level of population density far below that reached elsewhere. What we need now is more external inputs, but this is happening at a time when the state of infrastructure is not helpful to develop an effective market for inputs and outputs, when job creation outside agriculture is problematical, and when the domestic market is underdeveloped. In addition, the quality of natural resources is so poor that inputs such as fertiliser are much less efficient than elsewhere. An alternative for the small farmer and marginal zones is in soil improvement, using non-organic enriching agents and fertilisers. Combining these fertilisers with some elements of ecological agriculture can be effective and profitable. The efficiency of external inputs has to be improved with ecological agriculture, rather than limiting their use as much as possible. I agree with you that we have to change socio-economic conditions as well as the natural environment if the Green Revolution is to become a reality in Africa."

Dr Breman goes on to mention one possible approach described in the document "Strategic framework for national action plans to improve soil fertility" and which specifies the rôles of all stakeholders, from farmer to national decision-makers. (*in*: Proceedings of the 'International Workshop on Elaborating Strategies for Restoring Soil Fertility in sub-Saharan Africa', Lomé, 22-25 April 1997. World Bank, Washington; IFDC, Mussel Shoals).

#### ANIMAL WELFARE

**Chabi-Gani Sare, of Parakou in Benin**, writes indignantly about the way livestock are badly treated, and the subsequent effects of this. "In most African countries, livestock, including chickens and guinea-fowl, are often mishandled during transport. Fowl are hung upside down by their feet, and carried over large distances at high speed on two-wheelers or other vehicles. The same goes for goats and sheep. Cattle are often herded over 20 km the day before slaughter, and they stay hungry and thirsty. This causes stress, wounds, loss of weight and up to 10% mortality, with a commensurate loss of meat quality. At a time when the livestock sector is trying to develop, measures should be taken to cut down losses like this. I would like to develop an exchange with any person or institution with experience in the field of protection and defence of domestic animals. Contact : B.P. 919, Parakou, Bénin.

## The future of plant virology in Africa

**Dr Michael Thresh** is Honorary Professor of Plant Virus Ecology at the Natural Resources Institute, University of Greenwich, UK. He first worked in Ghana (1953-1960) and then returned to the UK. From 1970 onward, he undertook numerous assignments in Africa and elsewhere on behalf of the UK Overseas Development Administration.



African crops are affected by many viral diseases, some of which cause serious losses and undermine food security. Given this it is reasonable to ask: Are there sufficient virologists in Africa? Are the facilities and resources available to them adequate? Does African plant virology receive sufficient support from the wider scientific community? The answer to these questions is a resounding 'no'; so what can be done to improve the situation?

The number of plant virologists in Africa is low in relation to the wide range of crops grown there, the huge areas of land under cultivation and the magnitude of other problems encountered. Plant virology in Africa has not always been in such a parlous state. In the early decades of this century, when the discipline was still at an early stage of development, the virology being done in various parts of Africa was comparable to that being done in Europe and North America. Maize streak, groundnut rosette, tobacco and cotton leaf curl and several other important virus diseases were described during this period and considerable progress was made in transmission studies and in developing resistant varieties.

The disparity began to emerge after the Second World War when the electron microscope, ultracentrifuge and serological techniques became generally available in developed countries. This, and the big expansion in agricultural research, led to rapid progress in purification, characterisation and identification of viruses and facilitated the development of control measures. Progress has continued, although there has been a trend towards a more fundamental approach associated with the spectacular developments in nucleic acid chemistry and molecular biology.

In recent decades, some progress has been made in Africa but the overall effort has been limited and has lacked resources and continuity. Institutes in Europe and North America have made substantial contributions in the study of African viruses and providing of training and consultants. The UK-funded virology project in Kenya, and the French ORSTOM project in Côte

d'Ivoire, have been particularly influential and successful in exploiting such linkages. Both began in the 1970s by identifying the main viruses present in the two countries and went on to conduct detailed studies of cassava mosaic disease. Important work has also been done at the Virology Unit of the International Institute of Tropical Agriculture, Ibadan, Nigeria.

Further progress is possible. One possibility is through increased contact with South Africa, where there are well-equipped laboratories and there is a long history of research in virology. Much could be achieved using modern methods of virus detection that use extracts or dried specimens, thus presenting no quarantine risk. However, the problems do not end with detection and identification. There is a need to use the results obtained in epidemiological studies and to develop resistant varieties or other control measures. Such studies present difficulties because of seasonal variation and other vagaries of field experimentation. Moreover, there is a need for specialist expertise and for support from plant breeders and those concerned with transmission vectors. This provides scope for a multi-disciplinary approach as in the 1970s UK-funded project in Ghana on breeding for resistance to cocoa swollen shoot disease. More recently there have been epidemiological studies mounted by staff of the UK's Natural Resources Institute on cassava mosaic, maize streak and other diseases.

Different approaches have been adopted by donors and international agencies in supporting plant virology in Africa, and there is a sound foundation on which to build. However, there is a need for policy-makers, administrators and donors to

appreciate the particular needs of plant virology. These are arguably greater than those of other crop science disciplines because of the relatively low number of trained and available personnel, and the need for sophisticated equipment and facilities. It is also necessary to recognise the need to establish facilities and training courses in Africa, rather than to maintain the current heavy dependence on resources in developed countries. Indeed, it is becoming increasingly difficult to arrange suitable training courses overseas as the research programmes and priorities in developed countries differ so greatly from those in Africa, where there is a continuing need for 'biological' studies of the type done elsewhere after World War II.

More opportunities for the exchange of knowledge are essential. For example, there is a need for a conference to follow up the CTA seminar on cassava mosaic disease which was held in Côte d'Ivoire in 1987. Above all, there is a need to bring together plant virologists from developed and developing countries, together with representatives of donors and funding agencies, for discussions on the future of plant virology in Africa and in order to develop an action plan to address present weaknesses.

*Dr Michael Thresh, Natural Resources Institute, University of Greenwich, Central Avenue, Chatham Maritime, Kent ME4 4TB, UK  
fax: + 44 1634 883379  
email: c/o B.Waite@greenwich.ac.uk*

*The opinions expressed in this Viewpoint are those of the author, and do not necessarily reflect the views of the CTA.*

## GOAALLL!!!!

## African publishers and international organisations form partnerships

Partners in African publishing came together at two very fruitful meetings recently, one held in Nairobi in February, the other, in Dakar in March. They conducted lively, sometimes passionate, debates in a spirit of seeking cooperation. The two 'teams' in this friendly match were made up of representatives of African publishing: publishers, distributors and NGOs, on the one hand, and representatives of international organisations, including several United Nations agencies and research institutions such as CABI and CIRAD, on the other. The Nairobi meeting was for English-speaking regions and the Dakar meeting for French-speaking. The organiser, CODE-Europe, with substantial support from the World Bank and CTA, brought in other backers of African publishing such as the British Council and the United Nations University. On the agenda, inside and outside the meeting

room, was the issue of further developing cooperation between international organisations and the African publishing sector, both to improve information dissemination, and to strengthen the capacity of African players to meet information needs at the national and regional level.

No red or yellow cards were to be seen on the playing fields of Nairobi or Dakar, just lots of books, brochures, electronic media and documents. Instead of scoring points, participants set out to negotiate joint programmes. How to lower book prices and improve distribution in rural areas, develop new promotion strategies, translate material into African languages, use the Internet and network communication: these were among the topics debated during the time spent in working groups and plenary sessions, and sometimes way past the final whistle... off the field.

The meetings helped participants to better know each other, but above all to build the foundations for better cooperation, and even to launch joint projects, especially in the areas of co-publications, adaptation into local languages and distribution. The Nairobi meeting had immediate follow-up in the form of a discussion platform on the Internet, set up with the assistance of the World Bank. A summary report of both meetings will be published shortly by CTA together with CODE-Europe, ENDA Dakar and the African Publishers Network (APNET).

Further reading:

*Technical Publishing in Africa, Report of the Arnhem seminar. CTA, 1994. ISBN 92 9081 103 X, CTA number 638, 10 credit points.*

## Seminar in Madrid : distribution and marketing of perishable agricultural products

As the domains touched by economic liberalisation and competitiveness grow, the marketing and distribution of agro-food products is becoming a sizeable issue for certain ACP countries. These countries need to become full players in global commercial networks, and to have access to international markets. Spain is one of the leading countries in the marketing of perishable agro-food products. In April 1998, CTA joined forces with the Spanish Ministry of Agriculture, Fisheries and Food, to organise a seminar with the primary goal of analysing this sector in the European context, and as it applies to the various situations in the represented ACP States.

The seminar brought together professionals from the fish, fruit and vegetable sectors of Spanish-speaking countries (Equatorial Guinea and the Dominican Republic), Portuguese-speaking countries (Angola, Guinea Bissau and Mozambique) and French-speaking countries (Burkina Faso, Cameroon, Côte d'Ivoire, Mauritania and Senegal). Trade in these products between the European Union (EU) and the aforementioned countries is of considerable importance. Each country sent two representatives, one from the public sector and another from the independent sector; thus, there were present private operators and members of Chambers of Commerce, public bodies and producer associations.

The programme was divided into plenary sessions, field visits and working groups, and covered all phases of the perishability cycle from production to the end of the distribution chain. The field visits served to illustrate points raised in plenary sessions : production centres, wholesale markets (the wholesale market of Madrid, *Mercamadrid*, is the leading world market in fish, at least in terms of variety), large shopping malls and hypermarkets, and street sale points. Other aspects covered included: norms and classification (of the EU), quality control and inspection, transport problems and promotion campaigns. The working groups analysed the situation in their countries in terms of production, transport and marketing for each sector.

The principal recommendations by participants pointed to the need to achieve better control of production and marketing by means of improved technical and commercial training, access to finance and credit, seeking out non-traditional markets and joint ventures, diversification of outlets and distribution circuits, the development of transport infrastructures at the national and regional levels, and the development of storage and handling facilities and equipment. A major constraint was seen in the lack of information and statistical data.

Further reading:

*The promotion of fruit and vegetable production in the ACP countries for export to the EEC countries. Seminar synopsis, Arnhem, December 1991. CTA, 1992. ISBN 92 9081 0947, CTA number 463, 5 credit points.*

*Production of ACP fresh fruits and vegetables for export to the EEC. Seminar proceedings, Arnhem, December 1991. CTA, 1993. ISBN 92 9081 0955, CTA number 558, 20 credit points.*

## Contributions of biotechnology to African grown Cassava

Proceedings of the third scientific meeting of the Cassava Biotechnology Network, 21-31 August 1996, Kampala, Uganda. Edited by A-M Thro and M O Akoroda, published with the support of CTA as a special issue of the *African Journal of Root and Tuber Crops*, vol. 2, No. 1-2. Articles in English with summaries in French.

Available from IITA, PMB 5320, Ibadan, Nigeria. Fax: +234 2 241 2221; Email: [iita@cignet.com](mailto:iita@cignet.com)

## Strengthening biometry and statistics in agricultural research: study report

The final conclusions and recommendations of the CTA project 'Strengthening Biometry and Statistics in Agricultural Research for the ACP Countries' are summarised in a new report from CTA. The study drew information from donors, national institutes and universities in developed and developing nations, professional societies, research managers, biometricians and scientists in order to obtain an appreciation of the use of biometrics in ACP countries and their influence on the quality of agricultural research.

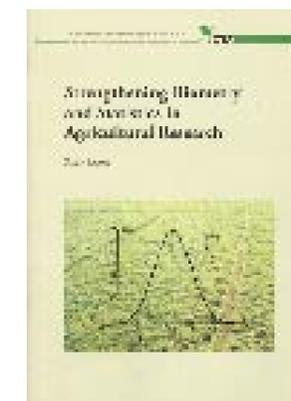
The first part of the report describes the status of biometrics in ACP countries, the limited and declining availability of professional biometricians, the outdated abilities of available biometricians and scientific researchers, the inappropriate levels of statistical computing and Internet facilities, and the shortage of biometry books. The lack of relevant national and international biometric training courses is discussed together with the way this is reflected in the low biometric standards seen in ACP scientific research publications.

The second part presents requirements and recommendations aimed at reversing this perceived decline and builds upon the necessity for a focused, concerted effort by the many players involved. Governments and national institutions are urged to appreciate the need for long-term policies incorporating research quality, underpinned by

professional biometric input—this is essential to precise recommendations for sustainable multidisciplinary agricultural development. Donors are encouraged to modify their activities in such a way as to incorporate professional, modern, computer-based biometric data into all their projects and training activities.

The report concludes with an outline of possible further action to be considered by CTA, donors and national institutions.

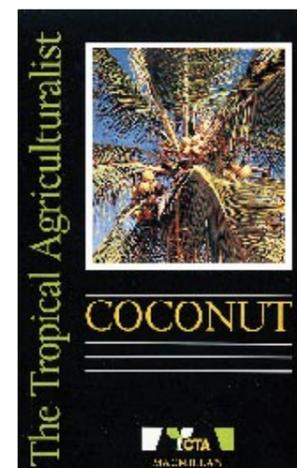
*This publication will primarily interest research managers and decision makers.*



CTA, 1998. ISBN 929081 1846, CTA number 856, 5 credit points.

## New publications

The coconut palm has been called 'the tree of a hundred uses'. Although most of the crop is sold in the form of oil and cake, coconuts can also be processed into a whole range of products, including



ropes and matting from the husk, charcoal from the shell, milk from the endosperm, vinegar from the inflorescence and basketry from the leaves. The many products and processing methods are described in *Coconut*, the latest addition to *The Tropical Agriculturalist* series co-published by Macmillan and CTA. Following the normal format of the series, this volume places emphasis on practical information for producers, agricultural extension and field workers, students and trainers. It covers the main types of coconut palm, their origin, world distribution and characteristics. It also examines production factors such as climate and soils, selection, breeding and propagation, and establishing and managing a plantation. A section on pest and disease control is included, accompanied by colour photographs.

Co-publication Macmillan/CTA, 1998. ISBN 0333 57466 4, CTA number 858, 10 credit points.

Newly available in the Agrodok series, *Water harvesting and soil moisture reten-*

## Obtaining CTA publications

Publications on CTA's list are available free-of-charge to subscribers to the Publications Distribution Service. Readers who have applied to become subscribers will, in due course, receive a response to their application and, if admitted, will be sent two publications order forms, one of which will indicate the number of CTA credit points available to them.

Credit values have been assigned to all the publications on CTA's list. Subscribers can order these publications up to the value of the credit points available to them. Publications can only be requested on the order forms provided.

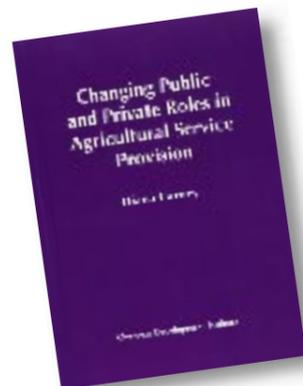
Non-subscribers who apply by letter, fax or email will be sent an application form. Applications will be considered from agricultural and rural development organisations in the ACP (Africa, Caribbean and Pacific) Group of States; individuals resident in ACP countries may also apply.

Organisations which work for agricultural and rural development in the ACP States, but are **not based in an ACP country**, should write to CTA giving details of the publications they wish to acquire and the reasons why they are needed.

*tion* describes simple ways to collect and use surface runoff water, and to encourage infiltration and storage of rainwater. This practical booklet is mainly intended for extension workers who work with farmers faced with water shortages, eroded soils and low yields in (semi)-arid areas. The first part reviews the basic principles of water harvesting, designing and selection of water harvesting techniques, and provides details on contour systems (e.g. bunds and ridges) and freestanding systems (such as planting pits and micro-catchments). The second part deals with methods to improve water infiltration and storage, including contour ploughing, mulching and cover crops. It also describes how to reduce evaporation and optimise the use of soil moisture. Appendices include a list of technical terms and methods for measuring height differences.

Co-publication Agromisa/CTA, 1997. ISBN 90 72746 75 9, CTA number 840, 5 credit points.

## Guide to agricultural changes



The complex set of changes in agricultural services are well-described in this book, which is an updated version of a 1995 working paper by the Overseas Development Institute. Published with support from the UK Department for International Development, it is an expanded review of literature, which considers the changing rôles of the public and private sectors in agricultural service provision. It addresses agricultural research, extension

work, rural credit, agricultural marketing, veterinary services, fertiliser and seed supply. It focuses on the changes in effectiveness, efficiency and accountability, which have been achieved in recent programmes of reform and public sector retrenchment. It pays special attention to the effect of reform and adjustment on the poorest sections of rural communities, and on the interactions that characterise rural livelihoods.

As such, it provides a compact but rich overview of current trends in rural development services. The discussion of rural credit, for example, follows the new trend of providing financial service packages such as insurance and savings, in addition to credit.

*Changing Public and Private Roles in Agricultural Service Provision.*

By D Carney. 1998. 90 pp.  
ISBN 0 85003 347 8  
Overseas Development Institute,  
Portland House, Stag Place,  
London, SW1E 5DP,  
UK.

## How sweet it is: Honey is in!

The recent surge of interest and investment by small farmers in beekeeping and honey production reflects growing understanding of the various uses of honey, and increased demand from local and international markets. This set of papers from a 1995 conference, organised by the Netherlands Expertise Centre for Tropical Apicultural Resources (NECTAR), provides a timely overview of various harvesting techniques, quality control methods, medicinal properties and traditions, and marketing aspects for tropical honeys. Case studies come from four continents and include the African countries of Ghana, Nigeria and Tanzania. Included, too, are resource guides to (fair) trade in honey products. This is a valuable working reference book for those interested in honey as a food product, and those working in bee development programmes where honey marketing is a vital

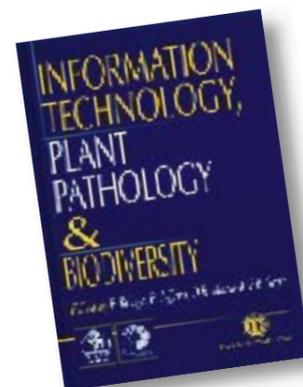


element. Production of the book was supported by the University of Utrecht, the Netherlands and the Netherlands Ministry of Foreign Affairs.

*Perspectives for honey production in the tropics.*

Edited by M J Sommeijer, J Beetsma, W J Boot, E J Robberts and R de Vries.  
1997. 214 pp.  
ISBN 90 801204 3 X  
NECTAR, PO Box 141, 6720 AC  
Bennekom, The Netherlands.  
Fax: +31 842 103374  
Email: nectar@wxs.nl

## Computers serving plant pathology



The way that biological information is handled has been revolutionised by the computer and

## Research funding

The funding base for agricultural research needs to be reconstructed to enable it to face some sobering challenges in the next century. In spite of high potential payoffs in terms of food security, agricultural research in many developing countries faces severe financial difficulties. Research leaders need to improve policies, to mobilise more resources, and to upgrade the management of what are scarce finances.

This Sourcebook makes a detailed assessment of current financing research, and reviews available policy options as well as strategies for better mobilisation of sectors and financial management. It is targeted towards leaders of national agricultural research systems, the directors of research centres, heads of research coordinating bodies and policy makers, who define the flow of finance to agricultural research. Given the scope of its coverage, it could be a source of inspiration, comfort or guidance to leaders of research in other sectors, who are faced with similar financial stringencies.

other electronic tools, collectively known as 'information technology'.

This set of papers from a 1996 conference organised by the British Society for Plant Pathology and the Systematics Association, describes how computers are being used in plant pathology. Use ranges from species identification and diagnosis to management of diseases, computer-based teaching and information sharing. The book is of special interest to workers in plant pathology, biosystematics and taxonomy.

*Information Technology, Plant Pathology and Biodiversity.*  
Edited by P Bridge, P Jeffries,  
D R Morse and P R Scott.  
1998. 496 pp.  
ISBN 0 85199 217 X  
British pounds 49.95  
CAB International  
Wallingford, Oxon OX10 8DE, UK.  
Fax: +44 1491 833508  
Email: cabi@cabi.org



The book has four sections, that examine key policy options in today's competitive financing environment, review strategies for raising resources, look at financial management practices in public research institutions, and review public agricultural research finance in the developing world.

*Financing Agricultural Research: A Sourcebook.*

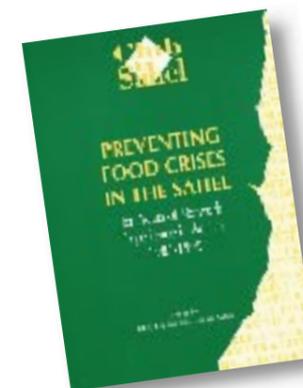
Edited by S R Tabor, W Janssen and H Bruneau.  
1998. 362 pp.  
ISBN 92 9118 035 1  
ISNAR, PO Box 93375, 2509 AJ  
The Hague, The Netherlands.  
Fax: +31 70 381 9677  
Email: isnar@cnet.com

## Food crises in the Sahel

The Network for Food Crisis Prevention was set up by the Club du Sahel after the serious 1984 drought in the Sahel region. The initiative aimed at creating an informal discussion arena for improving their ability to intervene in crisis situations. *Preventing food crises in the Sahel* brings together the evolution since 1985 of the various systems of crisis prevention and managements and covers the contribution of the Network to the improvement of these mechanisms.

The experience is generally considered to be positive, but much remains to be done to achieve and ensure optimal food security, and to improve intervention coordination. One priority is to rationalise the various information systems in order to ensure ownership by individuals and organisations at the national level. Information systems need to be reviewed and adjusted to the countries' economic and financial circumstances.

According to the authors, the Sahel is better equipped to deal with a severe crisis today than it was in 1984. The prevention

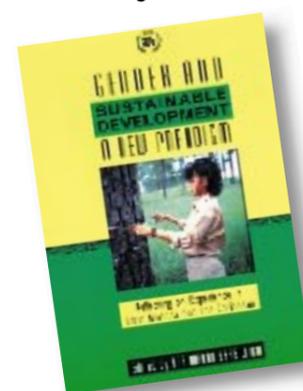


mechanisms set up over the past ten years are such that any response is now guaranteed to be more suitable, swifter and better coordinated. They recommend that, as regards food security and other development subjects, it is time for the donors to change their ways and design their aid instruments to suit the problems to be solved rather than *vice versa*.

*Preventing food crises in the Sahel: Ten years of network experience in action. 1985 - 1995.* Edited by J Egg and J Gabas. 1997.  
200 pp. ISBN 92 64 15406 X  
OECD Publications,  
2 rue André-Pascal, 75775 Paris  
Cedex 16, France.  
Website: www.oecd.org

## Women and sustainability

There is increasing awareness that sustainable development is not independent of gender issues, and that the long-term success of projects depends in large part on the ability to accommodate the active participation of women. The book gives a brief introduction to the history of sustainable development, takes a look at modern concepts of sustainable development and then presents a woman's eye view of what lies ahead. This is followed by reflections on the experiences of women working in the Caribbean and in Brazil, Guatemala and Ecuador. Particular emphasis is placed on the role of women in the protection of their environment. Published by the United Nations Development Fund (UNIFEM), the book is available exclusively from Women, Ink, as are all UNIFEM publications.



*Gender and sustainable development: a new paradigm.*  
Edited by A M Brasileiro. 1997.  
79 pp.  
ISBN 0 912917 45 8  
Women, Ink.  
777 United Nations Plaza  
New York, NY 10017, USA  
Fax: +1 212 661 2704  
Email: wink@womenink.org  
Website: www.womenink.org

## Electronic village trails

Much has been written and said in recent years about the use of Internet technology in rural development (see *Spore 73*, and *Spore 75's* article on CTA's Website). One extreme view dismisses it as irrelevant in a context where electricity and telephone networks are unreliable. Some take the other extreme and worship the fantasy world of post-industrial society, believing that technology can make possible a decentralised world of rural bliss.

The truth is probably somewhere in between, as this Food and Agriculture Organization (FAO) publication suggests.

It is a sober but optimistic review of Internet use in rural development (principally in Africa and Latin America), as a way to share information on needs and local knowledge. It argues that the Internet offers a means for agricultural producers, rural people and development professionals to communicate, leading to dialogue. The author recognises the potent value of the Internet as a decentralised tool for communication and assessment of critical information.

Various applications in the field of sustainable rural and ag-



ricultural development are described, including economic applications for agricultural producers and small rural enterprise development. 'Best practices', or those that allow the Internet to be more rurally accessible, are examined, from infrastructure to community-based management of information services. At one point the author addresses the publisher (FAO), and says that is important to link up 'electronic village trails' with the world of the global 'information superhighway'.

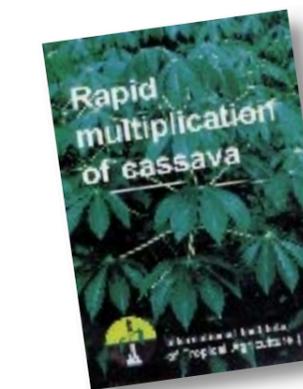
*The Internet and rural and agricultural development: an integrated approach.*  
By D Richardson. 1997. 77 pp.  
Available from the Communication for Development Group, SDRE, FAO,  
via delle Terme di Caracalla,  
00100 Rome, Italy.

## Multiplication tips

This handy colour booklet describes how to increase cassava multiplication ratios, *i.e.* the increase in propagatable material over that planted, notoriously low in vegetatively propagated plants.

In this manner, germplasm may be quickly produced for evaluation and/or distribution. The booklet is illustrated with instructive photographs, slides of which are available from the International Institute of Tropical Agriculture. (IITA).

*Rapid multiplication of Cassava.*  
A color pocketbook. 1998. 61 pp.  
ISBN 978 131 133 9  
Training Program, IITA, PMB 5320,



Ibadan, Nigeria. (Text from: *Rapid multiplication of cassava.*  
By J A Oloo. 1996.  
IITA Research Guide 51).

Unless otherwise stated, the books on these two pages are not available from CTA. Readers are advised to write to the publishers for further information.

## APICA: 18 years of robust service



The Association for the Promotion of African Community Initiatives (APICA) is an international association recognised under Swiss law.

It was established in 1980 with the objective of supporting development initiatives in rural and urban areas in six countries of central Africa: Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea, and Gabon. Its activities are aimed at promoting new technologies, training development workers in community development and management, and supporting the implementation of mini-projects. These activities form part of a programme which emphasises:

- community development in urban and sanitation issues
- support for farmers' activities
- job creation and microenterprise development

- promotion of the interests of women and craftspeople
- information exchange and communication.

APICA operates from two offices. The Douala (Cameroon) office covers the countries of west central Africa; the other office, in Sarh (Chad) covers the most westerly countries. Each office provides two support services, one for development another for technology. In addition, there is a documentation centre focusing on development, and a centre for research, extension and technology training. Staff total forty, including one French and one Swiss national.

In its eighteen years of operation, APICA has implemented a great many projects, through its 'all-terrain' approach. These include: the design and implementation of

a complete line of technology, sold throughout the coastal belt of western and central Africa, for the extraction of palm oil; production of donkey and cattle carts, ploughs and other agricultural implements; and research and development on the processing of agricultural products.

The magazine "*Communautés Africaines*" is produced by APICA's communication service, based in Douala. It is a medium for the exchange of information, experiences and contacts on development, and has a print-run of up to 4,000 copies. The communication service also produces video materials, and has so far published ten practical manuals as well as other publications. Finally, the service organises various meetings on general development issues. ●

Contact: APICA  
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Fax: + 237 37 04 05; Email: [apica@camnet.cm](mailto:apica@camnet.cm)

## ISAAA: Appropriate biotechnology

With the growing need for increased agricultural productivity in ACP States, many believe that biotechnology has a key role to play in improving the quantity and quality of crop yields. Provided they are properly integrated into production systems, biotechnological innovations offer new opportunities to increase productivity. Often, too, they allow users to switch to more sustainable and ecologically friendly production systems, for example, by reducing dependence on chemicals to control pests and diseases.

Yet biotechnology applications are owned primarily by private corporations, and the benefits of these technologies are generally not accessible to most developing countries. To overcome this, a new institutional mechanism, the International Service for the Acquisition of Agri-biotech Applications (ISAAA), was created in 1991. It is sponsored by public and private sector institutions, including many donor agencies, and aims to transfer agri-biotech applications from the North, particularly proprietary technology from the private sector, to developing countries.

In its 'altruistic dissemination of biotechnology', ISAAA has a five-pronged approach. It assists countries in identifying biotechnological needs and priorities, and in assessing potential socio-economic impacts. It monitors available applications, and provides honest broker services, matching needs and appropriate proprietary technologies. It mobilises funds from donor agencies. Finally, it provides advice on the safe and responsible testing of biotech products, on biosafety and food safety regulatory procedures, and socio-economic analysis.

So far, ISAAA has developed programmes with institutions in Africa, Asia, the Americas and Caribbean: in total twelve countries, including Kenya and Zimbabwe. Among the projects it is involved with in private-public partnerships are: transfer of a selectable gene marker in cassava (Novartis Seeds/Africa & Latin America); South-South transfer of virus resistant potatoes (Mexico and Kenya); tissue culture to revive banana production in Kenya (South Africa/Kenya); virus resistance in maize (John Innes Centre, UK/Kenya/PanAfrican); micropropagation

and distribution of multipurpose trees (South Africa/Kenya); and virus resistance in sweet potatoes (Monsanto/Kenya/East Africa).

In addition to a scholarship programme, ISAAA publishes a series of 'briefs' on such topics as biotechnology transfer and partnerships in international agricultural research. It works with other organisations in disseminating biosafety information and publishes biosafety documents for wide distribution. For example, they were involved in the production of two special volumes of the African Crop Sciences Journal devoted to biosafety. A scholarship programme helps to develop the body of biotechnology researchers in developing countries. ●

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**SPORE is a bi-monthly publication providing information on agricultural development for ACP countries**

**Publisher:** Technical Centre for Agricultural and Rural Cooperation (CTA) – ACP-EU Lomé Convention.

**CTA:** Postbus 380, 6700 AJ Wageningen, The Netherlands. Tel +31 317 467100. Fax +31 317 460067. E-mail: [cta@cta.nl](mailto:cta@cta.nl) Website: [www.cta.nl](http://www.cta.nl)

**Compiler:** Spore is compiled by a consortium formed by Louma productions and Médiateurs.

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**Layout:** Louma productions **Printer:** Imprimerie Publiparc, France

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