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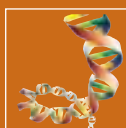
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Website: www.cta.nl



Photo B. Fovier, Photo FAO



In this issue

The new Partnership Agreement between the ACP Group of

States and the European Community and its Member States, signed on 23 June 2000, will expire in 2020. By then, these countries' cooperation agreements will have lived longer than most people in ACP countries could have expected to live if born in 1975, the year when the first Lomé Convention was signed.

By 2020, our lifespans will probably have been lengthened, our lifestyles modified and our landscapes changed. This issue of Spore looks at some key aspects of those changes.

How shall we use energy in agriculture? How shall we best learn to read and write, faced with a future that demands greater literacy? What crops shall we grow, how shall we improve them and how shall we do so safely?

Packed to the brim as always with facts, ideas, practical tips, opinions and news from across the breadth of the ACP world and beyond, this Spore also looks at events, research results and new publications and, through a reader's eyes, at marketing veterinary services.

Energy and agriculture

No energy, no harvest

The world's energy policies – due for a major review by April 2001 – have been very, very wrong. Food barely features in them. What shall we eat if we have nothing to harvest?

There is a scientific law, the Law of Conservation of Energy, that says that the total amount of energy in the Universe is fixed – energy can neither be created or destroyed, it can only change from one form to another. As far as ACP agriculture is concerned, whatever way you look at it – energy inputs, energy stay-puts or energy outputs – the amount of energy involved is not enough. Not enough is being used to grow crops or raise livestock, and not enough is being eaten or sold to be eaten.

No country, no field, no farmer is the same but, in general, the small-scale practices which dominate ACP agriculture have long followed another law, this time the economic Law of Diminishing Returns. So much effort is made through

muscle power, both human and animal, that there is little more to be given; only minor design changes in handheld or animal-drawn equipment are going to squeeze any small gains in productivity. And the levels of soil replenishment, by whatever means, are too low to stop the process of 'soil mining', whereby a soil's fertility is not replaced by new inputs. The demand for increased food supply leads us inexorably to more intensive forms of agriculture, but not necessarily in more intensive inputs alone; we can also have more intensive care of soils and plants, and more intensive harvesting, storage and transport. They will all cost more energy.

Energy is an expensive commodity, as anyone familiar with the price of oil in the second half of 2000 will testify. Yet in a

Agriculture is not part of the mindset of most energy planners. In most ACP countries, it accounts for less than 4.5% of energy consumption

context where many ACP countries must almost double their recent rises in production to above 4%, there is no real alternative to making greater and more efficient energy inputs. Each

input of energy, whether fossil fuel or human muscle power, can result in wildly different outputs in different farming systems. In the heavily mechanised and fertilised fields of California, the yield of energy in the rice harvest is 1.6 times the energy input, while in the Iban region of Borneo it is 7.0 – there the only input is people's labour. Does this mean victory for the low-energy input school of thought? Not necessarily, since the resulting yields per hectare are three times lower than in California: put starkly, if you can put more energy into cultivation, you can probably harvest more.

Where can the additional energy come from? For much of sub-Saharan Africa, the classical answer, consistently promoted by the FAO, is to increase the use of manufactured fertiliser, and of irrigation (each of these inputs is energy dependent: inorganic fertilisers require energy to synthesise them, and energy is required to lift irrigation water. Africa's average annual fertiliser use is only 20 kg per hectare against a world average of 96 kg, and only 6% of its arable land is irrigated against a world average of 17%. To make any significant increase upon such levels of input – with associated increases in mechanisation – will have a tremendous impact on the energy bill, on farming practices and potentially on social structures, most notably on gender equity.

Energy conservation – the stayput part of the equation – is a key factor. Great improvements can be made by better recycling of soil nutrients, through better tillage, inter-cropping and the use of green manures and organic fertilisers. Similarly, low-cost water inputs such as drip irrigation, and the use of direct solar and wind power for water lifting, can have great effect.

Diversifying energy sources

With the market ever more urban, the energy demands of harvesting, processing and transport are also set to rise sharply. It is on the way from the farm gate to market that an 'energy transition' starts to take real shape. Such a transition to sustainable energy systems, according to FAO, would be characterised by a move from the present levels of subsistence use of energy, based on human labour, animal power and fuelwood, to situations where household, services and farming activities use diversified energy sources. A contributing



Illustration H. Larkins

Biogas plants fed with waste cannot meet growing rural energy needs. More research is needed on gasification and fuels from energy sources planted for the purpose.

factor here is the yet-to-be-calculated 'energy impact' of the way HIV/AIDS has decimated working populations.

As the mechanisation of production and processing continues, there will be a need for more small-scale equipment, and energy to power it. Similar needs are growing for water pumping and processing and storage of foods, alongside other uses in communal, educational and health facilities, not to mention the fast-spreading networks of telecentres in virtually all ACP countries. How will this be fuelled? Increasingly, the focus is on electrification – powered by fossil fuels, and gas from biomass and gasification.

The use of so-called renewable energies is finally becoming financially viable, after decades of research, and extensive outreach programmes in, for example, the Sahel, Zimbabwe and the Pacific. Another source of energy for agriculture can be agriculture itself, in the form of biomass from agricultural and forest waste, and energy crops. Bioenergy comes in many forms: biogas digesters using animal waste, gas from gasified wastes or liquid fuels, such as ethanol, distilled from sugar cane and other crops.

The next step could be biomass plantations of wood for local gasification and production of commercial fuels, largely for transportation. Under the 'Renewables-Intensive Global Energy Scenario' project of the UN Development Programme, one third of Africa's fuel needs in 2025 could be met by locally produced biofuels, using largely marginal land and with a minimal 'food or fuel' conflict about land. Here lies an area for ecological debate and, perhaps, a business opportunity for rural entrepreneurs.

Change needed in macro-policy

The energy requirements of sub-Saharan agriculture could triple by 2020. That is indeed a tall order, and requires macro-policy initiatives at national and regional levels. Yet agriculture is not part of the

mindset of most energy planners. In most ACP countries, it accounts for less than 4.5% of energy consumption. It is barely visible on the 'energy balance sheet'. Clearly ACP agriculture should become part of national energy policy initiatives. Undoubtedly its potential as a supplier of bioenergy will earn more attention. A policy text on renewable energy, adopted in March 2000 by the Joint Assembly of the ACP and the European Union in Abuja, Nigeria, emphasised the key role of energy in rural development strategies.

Talk of energy to a scientist, and you see the ideas spark: there are plans, well advanced, by some Western energy companies to beam concentrated solar power from space to collector panels, often in ACP countries, for transmission to the world's cities. Could part of that power stay in the locality? There are ideas, some say more than that, of producing energy through fusion techniques which extract power from controlled explosions of atoms, even in a glass of water. Fantastic? Maybe. Totally separated from ACP agriculture if not? Maybe not. Although the fruits of his fantasy are still only available to a small minority of rural populations today (8%), the scientist Michael Faraday 'discovered' electricity over 100 years ago. He wrote then: 'Nothing is too wonderful to be true'. So let's get agriculture onto the energy agenda.

See page 10 for Links on Energy Information

Linking food security and energy

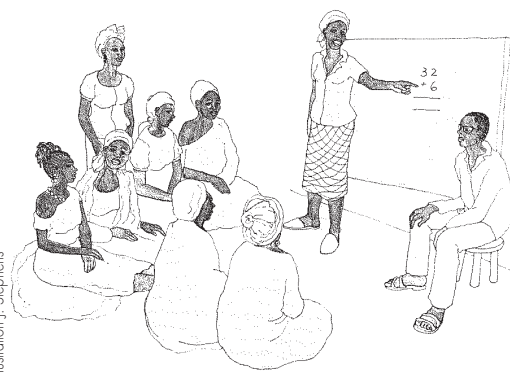
In April 2001, the UN Commission on Sustainable Development will draw up new global guidelines for sustainable energy policies. These points of key interest to ACP agriculture (see article) are already on the agenda:

- diversification of energy sources
- security of supply
- rural electrification
- solar, wind and biomass-based technologies

Functional literacy

Learning from your surroundings

Illustration J. Stepiens



In the struggle to raise literacy rates in ACP countries 'Education for all' has long been a priority for ministries, international agencies and local NGOs. One approach is functional literacy, which has to be an integral part of the development process, whose many goals include poverty reduction. It is not a question of bringing literacy to people through the route of classical education, but rather of empowering the most marginalised to improve their own living conditions through the right to knowledge.

For decades it has been clear that education, in the widest sense of the term, is the backbone for the multitude of approaches, whether they be cultural, social, economic or political, which determine how a country can develop. This is the case for all developing countries, including the ACP States. A study by the International Institute for Applied System Analysis of literacy among women in Cape Verde demonstrates this vividly: the higher the level of literacy the lower the birth rate, with all the implications this has for women in using their energies and, for a country, in changing its population growth rates.

While literacy rates in some ACP countries are crippling lower than anywhere else, efforts are being made to improve them through developing policies of universal education, often under the exhortations of international agencies. Such approaches are well intended, but they are not rooted in everyday realities. For generations, in rural areas where access to education has been limited or even non-existent, the benefits of literacy are not part of the fabric of development. This explains why illiteracy is so high in largely agricultural societies: according to the Canadian International Development Research Centre, in 1999 70% of people in Burkina Faso were illiterate, 60% in Mali and 57% in Senegal.

Functionality, proximity and flexibility

Functional literacy should not be seen as a replacement for formal education. It is simply an extension of the formal approach, in a more focused way, both in terms of the audience it is aimed at (more often than not rural adults) and of its methods. The three key elements are functionality, proximity and flexibility, as exemplified by campaigns in Zimbabwe, where functional literacy workers are selected from the 'target community' itself, in order to best respond to the expressed needs of the 'students'.

Given the variety of situations and target groups, there is also a great variety of educational methods and subjects. Nonetheless, they nearly always follow the same blueprint. They start with a series of steps to win the confidence of the students and to persuade them of the value of a better life through being able to read, write and count. They build on that by enabling the beneficiaries themselves to develop their own learning programme, by making it functional and letting it evolve gradually, linking it continually to the realities of their daily lives.

The success of functional literacy approaches depends a great deal on the extent to which an individual can identify with it. Increasingly, local languages are taken as the basis for branching out into



Illustration M. Roesch

learning the national language. The underlying method here is, to use the jargon, that of 'intercultural complementarities', linking one reality to another.

Whether applied in Papua New Guinea, Burkina Faso or Côte d'Ivoire, the method consists of becoming literate in a person's mother tongue, through mastering its spelling, reading and use, before moving on to the official national language and learning its basic vocabulary and syntax.

The successes of functional literacy can only be sustained and developed if a

favourable literate environment is established. It is with a firm eye on the 'after-literacy' phase that the International Reading Association (IRA) provide technical assistance in teaching methods to organisations in, for example, Nigeria, Tanzania, South Africa and Zimbabwe. The IRA ([see page 10](mailto:conukaog@oauife.edu.ng)) is organising a Pan-African conference (conukaog@oauife.edu.ng) in Nigeria in October 2001 on the topic of "Building Communities Where Literacy Thrives".

In the Dominican Republic, the government's RADECO programme of radio assisted community basic education, which is backed by USAID, uses interactive radio to build upon functional literacy work by broadcasting special programmes in non-formal education for isolated communities. Another approach lies in producing bilingual publications to consolidate the benefits of functional literacy. Indeed, many functional literacy workers would like to pursue the approach even further and insist on using bilingualism in official forms and traffic signs. That, though, may be seen as making functional literacy a goal in itself, which is not a sound attitude. As a report of the Department of Education, Training, Community and Cultural Development of Tasmania in Australia puts it: "Literacy means learning to read, and to write your name. Functional literacy means learning to read and write enough to do everyday things. But we want more than that for our children of the next millennium".

Sooner or later, we shall have to build schools and technical training centres for the beneficiaries of functional literacy campaigns to be able to become the true developers of the rural world.

To know more:

Reading, writing and cultivating
J Millican, Wageningen Agricultural University,
CESO, CTA, 1992. 92 pp. ISBN 90 6443 010 1
CTA number 531. 10 credit points

See page 10 for Links on Functional literacy

Genetic modification

Grains of truth

The world has listened to several years of acrimonious and zealous debate about genetically modified organisms (GMOs) in which some politicians, scientists, consumers and corporations have done little justice to truth or to themselves. It is time for them to stop. Let us move on, indeed back, to the core business of making science work safely and effectively for us – for the ACP producer and the consumer.

Welcome to the point of no return. This is the point where, as one Zimbabwean agriculturist put it, the fear of the unknown ends and the big bold leap forward begins. This is the point where we agree that, impotent as we are to redistribute overnight the world's food supply, we must now grow more food, sustainably, in ACP countries. And that GMOs will become part of the scenery.

The most recent surge in world food production came with the Green Revolution of the 1960s. It never took hold in Africa, principally, it is argued, for institutional reasons. Now its gains elsewhere are running out, as world demand for food continues to grow. It is time for higher yields per unit of land, water, energy and time, according to M S Swaminathan, one of the architects of the 1960s breakthrough (see *Spore* 84 Millennium issue). For most agricultural scientists, genetic modification (see box) is the way forward. It was once just an evolutionary process before mankind – a species in nature, remember – created agriculture. Why is it now unleashing such controversy?

The stakes are high: economics, emotions, ethics and survival itself are all involved. The real culprit is not progress itself, but the alarmingly rapid increase in the pace of progress – a common enough complaint these days. Traditional plant breeding techniques to produce new varieties are slow and continuous affairs, involving mass gene transfers between plants. Since the 1970s scientists have been able to engineer the genetic composition of plants by inserting a specific gene from another organism. The feasibility of producing 'transgenic' plants was illustrated in May 1998, when China announced the development of a frost-resistant tomato plant which had been produced by

Capacity building

UNESCO's Biotechnology Action Council reported in 1998 that agricultural biotechnology research was underway in 19 countries in sub-Saharan Africa. Whilst a few laboratories in South Africa, Nigeria, and perhaps Kenya, have the capacity to produce transgenic plants, they lack the ability to «commercialise» the product, or to ensure that these plants reach the end user, i.e. the African farmer. To bridge this gap, it is necessary to form partnerships with seed companies, producer organisations or government institutions which can ensure that the sophisticated technology can be delivered in the form of the most well-known and accepted technology known to farmers – the seed.

splicing genetic material from a coldwater fish into tomato pollen. It withstood temperatures below -4°C for six hours, allowing it to survive late frosts. Its seeds were cold-resistant and could be planted out earlier. Potential benefits, to be sure. But fish and tomatoes don't interbreed in nature, and many people started to worry, despite the acceptance in their daily lives of a great many unnatural processes.

Among other potential benefits of genetic engineering (GE) are increased resistance to drought and to disease and pests, which, together with storage problems, cause losses of up to 40% of some harvests in ACP countries. The very idea of decreasing reliance on pesticides not only promises less pollution of soils and groundwater: it also opens the way to enhancing biodiversity. There are also possibilities for enhancing other physiological characteristics of plants. In March 2000, scientists from the USA and Japan announced how they had increased yields by inserting genetic material from maize: "We took maize photosynthesis genes and introduced them into the rice plant from Japan. That increased their photosynthetic capacity [the process plants use to make their life-giving sugars] and grain yield."

At the consumer end of the chain, as well as possibilities of adding dietary supplements to certain plants, crop quality improvements will have the potential to reduce losses in transport and to prolong shelf-life.

Five steps of genetic modification

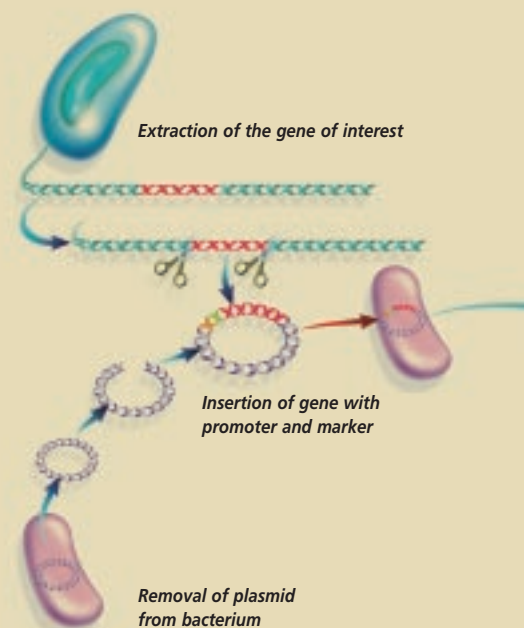


Illustration: S. Dessert/Science & Vie

Africa's opportunity

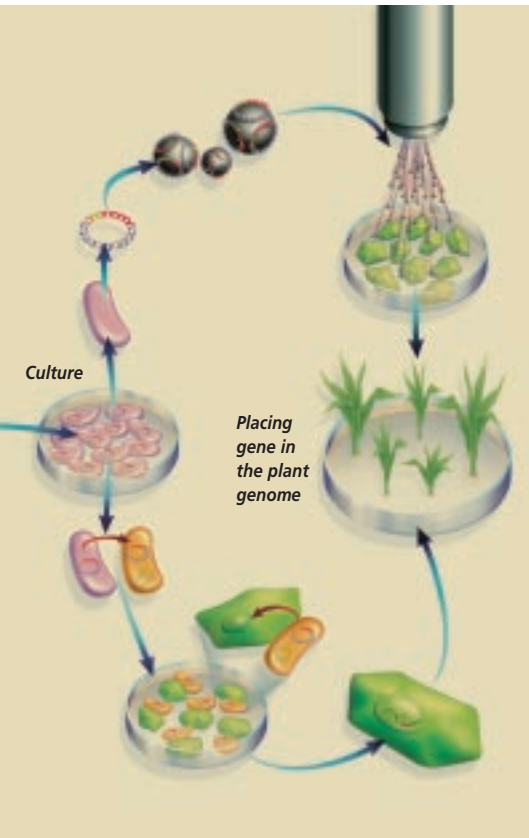
"The African continent, more than any other, urgently needs agricultural biotechnology, including transgenic crops, to improve food production. African countries need to think and operate as stakeholders, rather than accepting the 'victim mentality' created in Europe. Africa has the local germplasm, the indigenous knowledge, local field ecosystems for product development, capacities and infrastructure required by foreign multinational companies.

Africa's crop production per unit area of land is the lowest in the world. The production of sweet potato, a staple crop, is 6 tonnes per hectare. There is the potential to double African production if viral diseases are controlled using transgenic technology."

- Florence Wambugu, Director, ISAAA

Not all risks are equal

These persuasive benefits are weighed down by potential risks – often presented to the public as fact, despite the very



Mother Nature knew best?

True, Mother Nature has indeed always looked after the genetic development of organisms: and has produced some pretty nasty ones along the way, which we tend to forget. Farmers, plant and animal scientists have produced crop plants and farm animals using genetic modification of a kind: but the important factor in modern genetic engineering is that organisms can be created that would never occur in nature or as a result of using 'traditional' methodologies.

The current phase of modification is based on our knowledge about DNA, the genetic material of all cells, which has increased phenomenally since the 1960s. Modern genetic modification refers to the insertion of an alien gene into a commercially valuable plant to give it useful new traits such as a tolerance of herbicides or the ability to kill insects that feed on it. The gene in question may come from another plant, an animal, a virus or a bacterium; it is this 'unnatural' aspect that worries many people.



Photo: FAO

We are centres of excellence too

tion, if not engineering. Traditional breeding simply will not keep up with market requirements.

Regulation, not avoidance

We are well into the engineering chapter of genetic modification and it is difficult to see what purpose would be saved by turning back the pages and trying to introduce bans or suspensions. Extensive research is underway (see box) and the Consultative Group on International Agricultural Research recently made a bold call for increased public and private biotechnology research. The importance of African involvement in GMO research has been widely stated (see box) – Jamaica recently expressed similar concerns – and will require investment in research infrastructures.

An even greater challenge for Third World countries will be to set up and run

regulatory mechanisms for GMO research and applications, a hard task even in the West. Exacting standards are required for laboratory testing and releases, assessing environmental impact and evaluating food safety. As well as raising complex issues of institutional development, finance and control, the operation of regulatory bodies in ACP countries will require, according to the Overseas Development Institute of London, access to regulatory and market information from all over the world. A recent seminar of the South Pacific Commission stressed the need for inter-country cooperation.

Information sharing is also key to the Biosafety Convention signed early in 2000 by 150 signatory states of the World Convention on Biodiversity. It allows a country to dictate how it adopts GMOs (if at all) by denying entry to any product labelled as "may contain GMOs" under the protectionist 'precautionary principle'. However, the Convention still needs to be fully harmonised with the rules of the World Trade Organisation.

In this era of globalisation, it is not only governments and their alter egos in civil society who make the running. Virtually all commercial GM research is in the hands of six multinational corporations: Astra-Zeneca, Aventis, Dow, Dupont, Monsanto and Novartis. Whilst this worries some people, there is a growing opinion that such giants can in reality be more accountable – to the market and to shareholders – than many a government or NGO.

There must be dialogues and partnerships on GMOs between public and private research and between government and civil society, in ACP countries as elsewhere. There is no evil intent on the part of any stakeholder, but there is much at stake. As one GMO campaigner, Jeanot Minla Mfou'ou of the Cameroonian group 'Agriculture – Farmers – Modernisation' put it, it is a question of "Food for all". And "the means of production" for all too, Jeanot?

To know more:

△ Biotechnology Advisory Center
Stockholm Environment Institute (SEI)
Box 2142, S-103 14 Stockholm
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△ International Service for the Acquisition of Agri-Biotech Applications (ISAAA AfriCenter),
Regional African Office, c/o CIP
PO Box 25171
Nairobi
Kenya
Fax: +254 2 631 599
Email: f.wambugu@cgjar.org

Websites:

There are many Websites on GMOs. Surprisingly perhaps, this is one of the most helpful, with clear links to all aspects, opinions and overviews:
www.potatocongress.org/newsletters/laug99_1.htm#Biotechnology

considerable lack of experimental evidence. There is an risk of genetic pollution where GE crops contaminate neighbouring non-GE crops. Here the fear of small farmers is that GE crops will destroy their own traditional seed supply systems, a concern that must be addressed. Behind the debate on seed supply is the issue of ownership, of indigenous intellectual property rights. This goes beyond current GMO concerns, and is being resolved at global governance level, through multi-party stakeholder dialogues under United Nations auspices.

The difficulty in assessing these and other risks is that there is very little sound experimental work on which to base conclusions. Uncertainty pervades the food industry: food giants like McDonald's fry GM-free potatoes in vegetable oil made from GM crops. Similar ambiguities abound amongst consumers who see organic products as alternatives to GMOs, unaware that the next generation of higher-yielding organic crops will need to undergo intensive modification and selec-

Livestock without frontiers

■ The need to encourage more professional exchanges on a regional basis was one of the key recommendations arising from a study visit on livestock and the meat trade in West and Central Africa, organised by CTA in Burkina Faso and Côte d'Ivoire at the end of March 2000. The 19 participants, who were from the livestock sector and governmental bodies in six countries, visited various markets and studied issues of market modernisation, the excesses of middlemen (see also *Viewpoint*, page 16), marketing, finance, transborder payments and transport, and taxation. The livestock trade is the best-established sector with regard to regional trade. As a model for other sectors, many participants thought it deserved encouragement, through more training and a reduction in customs duties.

What future for perennial crops?

■ The decisive factors for investing in perennial crops such as coffee, rubber, oil palm or fruit trees will be the central topic of an international conference being organised by the Government of Côte d'Ivoire, CIRAD and the Free University of Amsterdam. The meeting will be held in October 2001 in Yamoussoukro, Côte d'Ivoire.

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Wilt wipes out coffee

■ Ten thousand hectares of robusta coffee in Uganda are infested with the coffee wilt disease known as tracheomyces. It starts by affecting the roots and leaves until the whole plant wilts. It is spread by wind and human activity. The disease was first reported in 1993 and has now spread to 70% of the Ugandan coffee growing areas. In the absence of a remedy to curb the disease, the only recommended control is to uproot and burn all affected plants. Although the disease is still confined to Uganda (Africa's leading coffee producer) and the Democratic Republic of Congo, it could easily spread to other countries.

Milking an opportunity in Mali



Photo FAO

Less cholesterol and sugar, more minerals, Vitamin C and protein than cow's milk

■ Locally produced fresh camel milk and sweetened yoghurt are now on sale in Timbuctu, Mali. A group of Touareg families have formed the *Salamett Albadan* association and run a herd of camels exclusively dedicated to milk production. The project started in 1998 with an investment of FCFA 2 million (€ 3048), ten milking camels and ten calves.

Every morning the animals are led to their pasture several kilometers outside the town, and

they are milked when they are brought back in. Daily herd yields average 15 litres. There are two distributors who deliver 14 litres of fresh milk (at FCFA 500 - € 0.76- a litre) and 15 litres of yoghurt to customers' homes. They have recently started to sell cow's milk from a neighbouring cooperative, which is pasteurised in the *Salamett Albadan* plant. The enterprise is performing well, and is expanding: it employs four people and generates a net monthly profit of

FCFA 165,000 (€ 252). It has invested in a second herd and has plans to start a second pasteurising unit. More improvements will be necessary though, in particular in raising milk yields (one herd of ten animals should be able to produce 50 litres per day), and monitoring microbiological quality.

✉ Timbuctu project
Clo Vétérinaires Sans Frontières
BP 3066, Bamako, Mali
Fax: +223 22 84 55
Website: www.vsf-france.org

A glut of coconut?

■ How about producing high quality coconut oil at home in 1½ hours? Dan Etherington, an Australian agricultural economist, has developed Direct Micro Expelling (DME), a process using a cold pressing unit for making virgin coconut oil. More than 70 units are now operational in ACP States.

Whilst working in Mozambique in 1992, Etherington was asked by a village soap maker to come up with a method of producing oil directly from his community's coconuts. Etherington later discovered that the people of a Tuvalu island had long ago developed a way of cold pressing from sun dried coconuts. He refined the technology to make it suitable for all weather conditions and units are now marketed

through the Kokonut Pacific company.

One unit is in Samoa, where the Women in Business Foundation has supported and monitored a DME programme for some years. Nine families have been given a DME unit and family members have been trained to operate it. The two best sites currently produce 200 litres of coconut oil a week. Value-added products include soap, insect repellent and cooking oils. The residue goes for baking and livestock feed.

Experience shows that operating a DME unit requires 3 to 5 persons and functions best if vested in a family rather than a communal setting.

Each DME kit costs US\$3,100 (€ 3,260) and consists of a press, electric graters, various acces-

sories and a detailed trainer's manual. Building material for a shed and a solar drier for the copra is also available for about US\$ 1,200 (€ 1,260). Shipping of the equipment, which weighs around 60 kg, is not included.

✉ Kokonut Pacific Pty Ltd
PO Box 88, Hawker, ACT 2614, Australia
Fax: +61 2 6255 2651
Email: dan@kokonutpacific.com.au
Website: www.kokonutpacific.com.au

✉ Women in Business Foundation
WIBF
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Samoa
Fax: +685 219 59
Email: adi@samoa.ws

Oil processing
B Axtell, E Kocken & R Sandhu,
IT Publications. 1993. 48 pp.
ISBN 1 85339 134 4
CTA number 537. 10 credit points

Town and country associations

■ Those old 'enemies' Town and Country, whose relationships are often tinged with rivalry and scorn, actually have very dynamic links affecting each other, as much in the North as in the South. It was in order to study their mutual linkages that a seminar was held in Senegal from 26 to 28 January 2000 on "Rural-urban interactions: the flows and organisation of resources". It was organised by the Euro-African Association for the Anthropology of Development and Social Change (APAD), IRD (the former ORSTOM) and CTA. One hundred sociologists, economists, agronomists and geographers from twelve West African and European countries came together in the northern city of Saint-Louis, a town with a key role in the country's policy of decentralisation, itself a major topic at the meeting. The seminar aimed at strengthening exchanges between Southern and Northern researchers on the theme of rural-

urban interaction in Africa, forming working groups and identifying lines of research and methodologies for their joint studies. Among the topics singled out for special attention was the 'return' to the countryside of prodigal sons and daughters, sometimes from the diaspora, and the impact of their new ideas and unused capital funds. These non-farming rural dwellers, who are often viewed with suspicion, are keen to inject new life into rural areas. Migrants returning to their home country often have an important role to play as hubs in the agri-food chain, a factor, which is stimulating the growth of secondary towns.

The expanding process of 'ruralising' the town, where agriculture and small-scale livestock development is taking hold merited special interest, as did issues of land tenure, in which increased urbanisation is pitting the State against traditional land authorities, migrants against

native, farmers against herders, and young against old.

In examining governance and local development, the process of decentralisation, which is intended to improve town-country links, may also rekindle the old fire between local urban and rural bodies, since authority has sometimes been transferred to them without the concomitant means to exercise it.

These dynamic relationships between town and country, expressed in the mobility of goods, people and resources, have considerable implications in terms of behaviour, profound change and improvements, and will feed more study.

The main contributions and case studies of the seminar will be published in the APAD bulletin.

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Website: www.Uni-Mainz.DE/~ifeas/lapad-fra.html#outils

The colour betrays the poison



Photo: Orstom/L. Empeiraire

■ Over 2500 plants punish their predators by producing poison when they are eaten by catalysing cyanogenic glycosides. The best known is cassava. Analysing and determining the levels of toxicity in plants is often constrained by a lack of required chemicals, equipment, money or expertise. Together with colleagues, Howard Bradbury from the Australian National University has developed a range of practical kits that can be used by an unskilled person for looking at cyanide levels in cassava roots and products, as well as other cyanogenic plant parts such as sorghum leaves, bamboo shoots and flax seed meal.

The general principle is that a small sample of the plant or product is placed in a container

with filter paper containing the required catalyst and a piece of picrate paper that reveals the amount of poison produced. The bottle is left overnight at room temperature. Next morning, when the breakdown to poisonous gas is completed, the colour of the picrate paper indicates the level of toxicity.

The researchers have also developed a similar kit for determining the amount of cyanide ingested after consuming cassava or other cyanogenic plants. Ingested cyanide is converted in the body to thiocyanate, which is excreted in the urine.

The kits are available free of charge to health workers and agriculturalists in developing countries, through funding from the Australian Centre for International Agricultural Research (ACIAR).

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Greenhouses in the tropics

■ An international symposium on design and environmental control of tropical and subtropical greenhouses will take place from April 15 to 18, 2001, in Taichung, Taiwan. Reduced registration fees apply to members of the Horticultural Society for Horticultural Science (ISHS).

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Email: weifang@ccms.ntu.edu.tw
Website: www.ISHS-GH2001.tari.gov.tw

Down at the waterfront

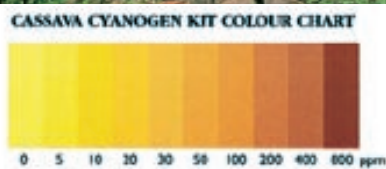
■ Remote sensing by satellite can be a useful tool for bodies involved in mapping and surveying water. While executing soil surveys, researchers of the Kenya-based International Centre for Research in Agroforestry (ICRAF) accidentally discovered a coloured plume of nutrient rich sediments in Lake Victoria. The satellite image showed that the nutrients were not coming solely from agricultural runoff, but largely from low-lying, deforested "riparian" zones (meaning the banks of rivers and lakes) and at river mouths. One coping strategy focuses on reintroducing trees in these areas.

Women and land

■ More ACP women have won the right to own land – one of the breakthroughs needed for women to reap the fruits of their work in agriculture. The United Nations conference 'Women 2000', held in New York in early June 2000, reviewed progress by member states on achieving gender equality. The governments of Dominican Republic, Eritrea, Tanzania, Uganda and Zimbabwe all reported on new legislation recognising this right.

Tsetse sits down and dies

■ Until recently, trypanosomiasis transmitted by the tsetse fly was the most widespread animal disease on the island of Zanzibar. Pesticides had had little effect. Then it was decided to release 8 million sterile male flies over a period of four years, and this stopped the insects' reproduction. Now, thanks to the Sterile Insect Technique (SIT), not a single tsetse fly is reported on the island. - FAO



Valued nuts inventory

■ From times immemorial *Canarium spp.* nuts ("Nangai" in Vanuatu) have been selected, tended and cultivated in Melanesia for their abundant and tasty nuts, which are also sold as confectionary and as source of oil. However, their genetic and cultivated diversity is under threat due to logging, changing food production systems, lack of replanting and loss of ethnobotanical knowledge. The South Pacific Regional Initiative on Forest Genetic Resources (SPRIG) has just ended a targeted survey and collection of nut morphotypes of *Canarium indicum* and *C. harveyi* on Vanuatu in order to conserve germplasm *in- and ex-situ*. Seedlings of selected trees are now being propagated at a field station of the Ministry of Forestry. (See also related news item in *Spore* 85, p. 7)

Source: Pacific Islands Forests & Trees, March 2000

Green fingers get professional

■ As part of a programme to improve horticultural production in Marsabit in northern Kenya, the Ministry of Agriculture and GTZ have organised training for "horticulture service providers". So far, eight people have been trained and are working, on a cash payment basis, with neighbouring producers. Their training covered diagnosing and treating diseases on flowers, fruit and vegetables, and handling plants with organic or no-risk chemical substances. They are provided with basic equipment of clothing, tools and plant health products. A similar programme has been started with beekeeping.

▲ Kioko Mutuku
Ministry of Agriculture
PO Box 54
Marsabit, Kenya

Let's get together and feel all right

■ A computer-mediated information system was launched in May 2000 for the benefit of some 50,000 small farmers in Jamaica. It will provide them with better access to useful, timely and accurate agricultural market information. The emphasis is on domestic food crops. Operated by the Rural Agricultural Development Authority, the project plans to share information with the Jamaican Export Association, Agri-Business Counsel and the Jamaica Agriculture Society (a new CTA partner, see *Between Us*, p. 14).

Farmers go surfing in Mauritius



■ A loan programme of the Development Bank of Mauritius has been in operation since 1999 to help modernise the agricultural sector through ICTs. Loans of MUR 30,000 are provided to farmers at 3% for buying computers, thus enabling producers of modest means to access the World Wide Web. Several thousand farmers have already made use of the programme, but the numbers would have been even higher if incomes in the sector had not tumbled by 40% following several years of drought.

The favourite Websites of the surfing farmers are the Mauritius Sugar Industry Research Institute (MSIRI) and the Public Relations

Office of the Sugar Industry. There they find recommendations about sugar varieties and information about soil, fertilisers, weather data, marketing, market prices and links all over the world.

For those farmers who cannot obtain the computers, a network of fifty cooperatives with Web access will do searches on request, for a small fee. They put together a technical dossier for the interested farmer. There is no stopping progress!

from: *Syfia* 133, February 2000

▲ MSIRI
Réduit,
Mauritius
Fax: + 230 454 19 71
Email: MSIRI@msiri.intnet.mu
Website: msiri.intnet.mu

Interactive radio for development

■ On the African Learning Channel, genuine listener interaction is key to bringing the message home. The ALC, a project of the World Space Foundation, makes collective use of one of the digital broadcast channels of the World Space satellite networks (see *Spore* 76, page 16). The channel combines radio material from NGOs and other bodies such as Panos, Radio Bridges of Zimbabwe and ALIN, on such issues as health, microenterprise and agricultural production. CTA provides programme material from its Rural Radio packs.

At present, ALC has an audience of almost one million, through digital radio receivers located in 17 African countries. At a meeting of ALC partners in Addis Ababa in April 2000, plans were made for expanding the network of receivers which, in addition to audio broadcasts, can be used for delivering multimedia information to users in remote areas or with poor communications. Among the agricultural services already available is the Climate Information Channel, with up-to-date meteorological data.

▲ WorldSpace Foundation
2400 N St, NW, 5th floor,
Washington, DC 20037, USA
Website: www.worldspace.org
Email: gmhillman@worldspace.org

Clean shrimps after all

■ After a boom decade in the 1980s, world production of cultivated shrimp has fallen sharply due to intensive and polluting methods of cultivation, which encourage diseases (see *Spore* 82, page 4 & 5). Some say it would be best to stop such methods. But the question arises, what would happen to the shrimp farmers who have invested in the sector? In the Philippines, three new simpler methods are being tested which are less polluting. One method is to raise fish, preferably tilapia, in the shrimp ponds, in a netted-off

area comprising ten per cent of the total area. This increases the amount of nitrogen in the water, which encourages the growth of less toxic micro-organisms than normal. Then air is pumped into the water through a series of pipes; this helps plankton to grow, and improves the shrimps' diet; it also helps the water flow around, bringing in less polluted effluents from the edge towards the centre of the pond. There a central collector removes them

regularly. The result: shrimps grow almost as fast as in the traditional intensive system, but their survival rate has risen from 70% to 85%, and the mangrove ponds are no longer asphyxiated.

▲ Southeast Asian Fisheries Development Center
Aquaculture Department
Tigbauan 5021
Iloilo,
Philippines
Fax: +63 33 335 10 08
Website: www.seafdec.org
Email: devcom@aqd.seafdec.org.ph



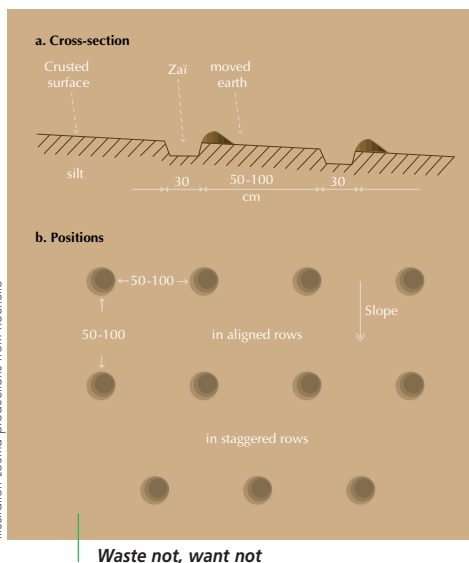
Illustration: H. Larkins

Zai and the half-moon

Two techniques – *zai* (an ancestral method of the Mossi in Burkina Faso, mentioned in *Spore* 87, page 15) and ‘half-moon’ (which is very current in Cape Verde) – are well-known measures against soil degradation in arid and semi-arid zones. The *zai* method is used on crusted soils and consists of digging small hollows at regular intervals, filling them with manure and covering them with a thin layer of earth. They are sown at the time of the first rains. The half-moon method is used on sloping land where the soil dug out from the hollows is built up around them to form small dikes.

The Burkinabé researcher Robert Zougmore had the idea of combining the two methods and

replacing the scarce manure, or even scarcer chemical fertilisers, with other organic matter such as harvest wastes and compost. According to farmers who had tried out this approach, it required more work, but yields rose. Surface water was retained better, and soil quality improved. Termites, normally such awesome enemies, lent a helping hand, by excavating their subterranean galleries, which allowed water to penetrate the soils more deeply.



▲ R Zougmore
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Ouagadougou 03
Burkina Faso
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Email: robert.zougmore
@messrs.gov.bf

Raised beds, raised profits

For farmers in dry areas, it is sometimes hard to keep solvent. George Kasimo, from Kitui district, Eastern Kenya, took his spade and developed his own way of intensive vegetable farming, growing onions, cabbages and tomatoes and selling them on the local market. Kasimo started his garden because the local community faces food shortages during the dry season, when prices of vegetables from the nearby town are high.

Choosing a plot close to a riverbed, Kasimo subdivided his garden into many smaller raised beds about 15 cms high, 1½ m wide and 6 m long. Raised beds, shaped by digging deep to raise the soil, have good soil texture and drainage properties, temperature regulation is optimal and weeding requirements are limited. The raised soil is then slightly compacted and sprinkled with water to make the soil firm. Before the soil dries, square holes measuring about 10–15cm wide and 20 cm deep are carefully made, using a plastic container. Compost is then added in each hole and the bed is left to dry completely for one day. Before transplanting vegetable seedlings into the holes, some water is put in to them. This gives enough moisture for the new seedlings to

start growing. After planting, each hole is mulched using grass. The holes are watered once a week, thus conserving water. The plant canopy limits the undergrowth of weeds and also reduces evaporation from the soil. Finally, manure is applied very efficiently, since it is put directly where the crops’ roots are. In a

good season Kasimo is able to sell US\$295 (€ 310) worth of vegetables from a plot of less than 1/8 acre (500 m²).

▲ Arid Lands Information Network,
(ALIN) East Africa
PO Box 39493,
Nairobi, Kenya
Email: baobab@iconnect.co.ke
Fax: +254 2 71 00 83

Research helps a tree of gold

Prunus africana (or *Pygeum africanum*) grows in a wild state in the mountains of Kenya, Cameroon and Madagascar. Its bark provides a powder, which has been used over the centuries in traditional medicine for treating male prostate problems. The powder is sold in the West under the name ‘pygeum’. Currently, 3,500 t of bark are collected each year, with a market value of € 238 million. The average annual yield of one tree is 55 kg, with a farm gate value varying between € 12 and 20.

The tree could be a nice little earner, but it is often stripped too frequently, or even cut down, and it is in the process of disappearing. Now, researchers have stepped in to try to rescue this revenue tree, given that demand is bound to

grow in years to come. Work is underway at the International Centre for Research in Agroforestry (ICRAF), the Kenya Forestry Research Institute (KEFRI) and IRAD, the Cameroonian Institute for Agricultural and Development Research, to collect the trees’ seeds, replant them in protected areas and to propagate young plants by keeping a branch from an existing tree in the ground until it puts out roots. When current trials in pilot villages in Kenya have shown the best method of acclimatisation, the researchers plan to select the strongest saplings and give them to farmers.

▲ ICRAF
PO Box 30677, Nairobi, Kenya
Fax: +254 2 521001
Email: icraf@cgiar.org

Permaculture design

A three-week course will be held in March/April 2001 on the shores of Lake Victoria for English-speaking participants from ACP States. Organised by Michael Odula, one of the Global 500 award winners of the UN Environment Programme for pioneering work in sustainability, the course will review the principles, ethics and practice of permaculture.

▲ Lake Victoria Permaculture
PO Box 132, Homa Bay, Kenya
Fax: +254 385 22598
Email:
odula@estmalco.africaonline.com

Piracy still pays

The on-going ‘pillage’ of African flora was denounced at the international Florissimo trade fair for tropical plants, flowers and fishes held in Dijon, France, in March 2000. Many Southern producers are forced to pay licence fees to Northern companies for cultivars developed from local Southern species. Since these species have not been recognised as ‘property’, this form of genetic piracy cannot be stopped by law. Perhaps by persuasion?

Karité gets organised in Burkina

The growing karité sector in Burkina Faso is shaping itself up to maximise returns for producers, processors and traders. Among the steps underway are the provision of manual presses to groups of women producers (since the return on karité butter is better than on the bean), setting up a sales office with a presence on the Web, and trade missions to Europe.

▲ Alexandre Kabre
01 BP 3440,
Ouagadougou 01, Burkina Faso
Fax: +226 36 07 52
Email: packarite@fasonet.bf
Website: www.fasonet.bf/karite

Zambian roses bloom

In a mere five years, Zambia has become the third largest African producer and exporter of cut flowers, catching up with the leaders Kenya and Zimbabwe. Currently 135 hectares are used for floriculture, principally occupied by more than 40 kinds of roses. Zambia exports more than 90% of its flowers to the Netherlands.

▲ Zambia Export Growers
Association
Airfreight Village, International
Airport, PO Box 310245, Lusaka,
Zambia
Fax: +260 1 271167
Email: zega@zamnet.zm

Functional literacy

At the April 2000 meeting of the World Education Forum (WEF) in Dakar, Senegal, the delegates of 181 countries adopted a framework of action for governments to provide basic education for all. It emphasises the need to reach all those who continue to be excluded from education opportunities. *Press service of the WEF: Email: a.muller@unesco.org – Website: www.education.unesco.org/efa* The World Bank and Unesco (*Website: www.unesco.org*) are among the international organisations most active in supporting functional literacy programmes in ACP countries. *World Bank, 1818 H Street NW, Washington DC 10433, USA – Fax: +1 202 522 1500 Website: www.worldbank.org* The Association for the Development of Education in Africa, for example, was set up on the initiative

of the World Bank in 1988. *ADEA, 7-9, rue Eugène-Delacroix, 75116 Paris, France – Fax: +33 1 45 03 39 65.* Unesco is also one of the founders of an innovative adult education programme in Tanzania known as Integrated Community Based Adult Education. ICBAE was launched in 1997/1998 with projects in four provinces, and seeks to respond to the literacy needs of adults, basing itself on the successful concept of co-driven development. *ICBAE, Anthony Ntilema, Ministry of Education and Culture, Dar es Salaam, Tanzania.*

Among other local initiatives, some NGOs merit special attention. ALOZ, the Adult Literacy Organisation of Zimbabwe, develops functional literacy tools in Shona, Ndebele and English. *ALOZ, Box 4480, Harare, Zimbabwe.* In Burkina



Faso, the ALFAA method is used to teach French on the basis of functional literacy work, and is aimed at adults and young people beyond school age. They are taught writing, reading and the use of local languages – Mooré and Dioula – and then a 'basic' French. The method is provided by the organisation Elan-développement, which provides bilingual publications and advisory services, and is supported by the Swiss adult education NGO *Œuvre suisse d'entraide ou-*

vière. Elan-développement, 01 BP 12 86 Ouagadougou 01, Burkina Faso, and AEPJLN, Association des éditeurs et publicateurs de journaux en langues nationales, 01 BP 1197, Ouagadougou, Burkina Faso. In Senegal the CPE centre for herder education is a public sector body, with customised functional literacy services for farmers and herdsmen. *CPE – BP 10, Linguère, Senegal.* Finally, the International Council for Adult Education (*Website: www.web.net/-icae*) brings together NGOs working on proximity education with adults, while the International Reading Association has a multi-faceted pan-African programme under its strategy of Reading for all, a Pan African voice for literacy. (*IRA, PO Box 8139 Newark, DE 19714-8139, USA, fax: +1 302 731 1057 – Website: www.reading.org.*)

Plugging into the energy grid

You will often get the best information on the use and conservation of energy from people and organisations working in your specific field of interest, such as in the manufacture of organic fertiliser, vegetable canning or refrigerated transport.

More general information on the generation of power for agricultural and rural applications is available from two superbly located organisations, which are highly active in global networks of rural power practitioners. **DESI Power** is an Indian organisation which sets up joint ventures with villages and local entrepreneurs as **independent rural power producers** to operate small power-plants of 100 to 500 Kw capacity using local renewable resources. The plants generate electricity by gasification of non-forestry biomass; the producer gas is fed into normal diesel generators. DESI Power also has experience in the use of solar, wind, minihydro,

steam and other technologies for **decentralised power production**, and in their use in rural processing activities. *DESI Power clo Development Alternatives, B-32 Tara Crescent, Qutab Institutional Area, New Delhi, India – 110016. –*



Fax: +91 11 686 6031 – Email: tara@sdalt.ernet.in

IT Power, drawn from the intermediate technology philosophy, has worked in 90 countries on 500 renewable energy projects over two decades. It has extensive experience in solar photovoltaics,

microhydro power and wind turbines. *IT Power, The Warren, Bramshill Road, Eversley, Hampshire RG27 0PR, England. – Fax: +44 118 973 0820 – Email: website@itpower.co.uk*

A broader network of **practitioners** is **INFORSE**, the Information Network for Sustainable Energy. It has skills in rural applications, with a special emphasis on renewable energy in small islands. Its secretariat is hosted by the Danish Forum for Energy and Development.

INFORSE, Blegdamsvej 4 B 1, DK- 2200 Copenhagen N, Denmark. Fax: +45 35247717 – Email: info@inforse.org – Website: www.inforse.dk

AFREPREN, the African Energy Policy Research Network, has a wide network of energy researchers and policy

makers. As well as working on energy for the urban poor, energy sector reform and climate change, it is specialised in renewables, focussing on innovative mechanisms and best practices (economic, infrastructural and social) for the delivery of rural energy services. *AFREPREN, PO Box 30979, Nairobi, Kenya. – Fax: +254 2 561 464 – Email: stephenk@africaonline.co.ke – Website: www.afrepren.org*

The emerging community of **biomass and bioenergy** projects is best served by the **Biomass Taskforce**, 7 Grassmere Road, Killara, NSW 2071, Australia. *– Fax: +61 2 9416 9246 – Email: steve.schuck@bigpond.com.* This is a well energised network with worldwide links to project developers, resource managers, energy projects and sources of finance. Its detailed website and newsletter (also on paper) are jewels in the biomass crown: *www.users.bigpond.com/Steve.Schuck/ABT/Newsletters*

Publications

Be prepared for livestock diseases

■ A vet can cure a single cow and also an entire herd, but nationwide control and eradication of livestock diseases are the responsibility of national veterinary services. Whether it concerns a sudden local outbreak of an

insect-borne disease or a slumbering killer from a neighbouring country, it is important to be prepared. FAO recently published two manuals that can be of help. One manual (number 6) provides valuable information on the prin-



inciples and coordination of preparedness planning for animal diseases. It explains how to organise veterinary services during emergencies and how to set up early warning and early reaction systems. It deals with the prob-

lems of remote and marginalised areas, explains the use of radio stations and other media, and shows how to set up specific disease contingency plans.

Special attention is warranted in case rinderpest emerges in a

country that had been previously declared free of the disease and infection. For this disease in particular, FAO has published another manual (number 7) that provides information on the nature of rinderpest and on the principles and strategic options relating to the control and elimination of the disease. It provides guidelines for individual countries to formulate their national policy on rinderpest control and eradication.

Manual on the Preparation of National Animal Disease Emergency Preparedness Plans. *FAO Animal Health Manuals, number 6.* 1999. 96 pp. ISBN 925104290x
US\$ 22 • € 23.15

Manual on the Preparation of Rinderpest Contingency Plans. *FAO Animal Health Manuals, number 7.* 1999. 46 pp. ISBN 9251043140
US\$ 14 • € 14.75

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Email: publications-sales@fao.org

Water, water, everywhere?

■ In most ACP countries, large-scale expansion of irrigation is not a significant option: water is not available, and diverting rivers or pumping groundwater is expensive and impractical. Furthermore, whilst more than 80% of the world's agriculture is rain-fed, in Africa the average is 95%. Hence the importance of making better use of surface and sub-surface runoff water.

In *Alternative Irrigation*, Christopher Barrow describes runoff agriculture as the practice of concentrating runoff for crop cultivation, pastures and trees. He covers practically all tillage methods, planting patterns, and

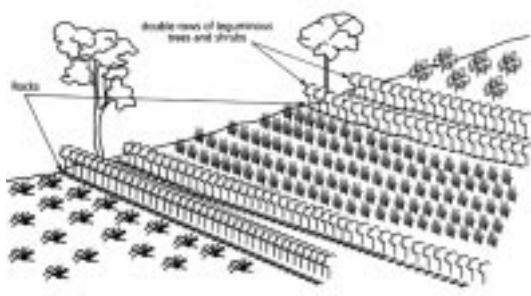
techniques that delay and retain runoff, increase infiltration and counter erosion. He adds other techniques such as constructing ridges, small dams, hedges and terraces, fog harvesting and flood and swamp agriculture. It is a persuasive package that shows that, by being rooted in soil and water conservation principles, runoff agriculture is a sustainable and low-cost alternative for improving subsistence and small-holder farms.

Barrow introduces not only the techniques and strategies, but also the challenges of this approach. The effects of runoff measures are often only tangible

in the long run, and although the costs of the techniques are low, so are the profits. For commercial producers, returns on investments in irrigation are more profitable,

but that is not always available. More support is needed for runoff agriculture, but with its low returns, such support will have to come from the public sector, governments and NGOs. They now have an interesting and important book to read first.

Alternative Irrigation. The Promise of Runoff Agriculture
CJ Barrow, *Earthscan*, 1999. 240 pp.
ISBN 1 85383 496 3
GBP 15.95 • € 25.40
Earthscan Publications Ltd
120 Pentonville Road
London, N1 9JN, UK
Fax: +44 20 7278 1142
Email: earthinfo@earthscan.co.uk



Read your favourites online

■ Established in 1998, the *ingentaJournals* Internet service offers access to over a million full-text articles from over 2,500 academic journals. Around 80 journals are specifically dedicated to agricultural issues. The journals come from European and North American publishers, such as Blackwell, CABI Publishing, Elsevier and Oxford University Press. With *ingentaJournals* you can browse and search the database of articles free of charge, and see tables of contents, bibliographic information and abstracts. Half of the articles are also on-line. These can also be viewed free of charge if you have a subscription to the journal concerned, otherwise you have to pay per view.

▲ *ingenta Ltd*, 73 Banbury Road, Oxford, OX2 6PE, UK
Fax: +44 1865 314 807
Email: help@ingenta.com
Website: www.ingenta.com

Know your neighbour

■ Success stories in local development initiatives are being added each month to a fascinating collection known, perhaps unkindly, as the 'Encyclopedia of Sustainability'. Case studies from Africa, Asia and the Americas cover sustainable land use and water management, and map conditions for success, point to obstacles and solutions, and promote the exchange of experiences. Topics include biotechnology, water basin management, non-timber forest products and land rights.


Online at www.bothends.org, and in newspaper form, free, from Both ENDS, Damrak 28 - 30, 1012 LJ Amsterdam, The Netherlands
Fax: +31 20 6208049
Email: info@bothends.org

Property Rights, Risk, & Livestock Development in Africa

■ Proceedings of an international symposium, held in Germany, in September 1998.

Edited by N McCarthy, B Swallow et al. *ILRI & IFPRI*. 2000. 433pp.
ISBN 0 89629 339 6
IFPRI
2033 K Street NW,
Washington, DC 20006-1002, USA
Fax: +1 202 467 44 39
Email: ifpri@cgiar.org
Website: www.ifpri.org

Peppers: Vegetable and Spice Capsicums

 *Crop Production Science in Horticulture Series, No. 12. P Bosland and E Votava, New Mexico State University, USA. 1999. CABI Publishing. 216 pp. ISBN 0 85199 335 4 CTA number 976. 40 credit points*
Now available from CTA
 (see Spore 85 for a short description of this book)

Sampling pests and taking action

■ For maths-minded readers familiar with pests and their interaction with crops, this book covers the statistical concepts of sampling in agricultural pest management. It focuses on how to obtain sample data from the field and how to use them in decision-making, where options include introducing natural enemies, spraying with pesticide, or adopting a wait-and-see approach.

Sampling and Monitoring in Crop Protection. The theoretical basis for developing practical decision guides.

M R Binns, J P Nyrop & W van der Werf, CABI Publishing. 2000. 304 pp. ISBN 0 85199 347 8 GBP 49.95 • € 79.55 CABI, Wallingford, Oxfordshire, OX10 8DE, UK. Fax: +44 1491 833508 Email: cabi@cabi.org

And now the video:

■ The video to accompany the book of the participatory Promoting Farmer Innovation programme (see Spore 86) is now available for US\$ 15 or € 15.80

RELMA, PO Box 63403, Nairobi, Kenya. Fax: +254 2 52 07 62 Email: relma@cgiar.org

Growing in Malawi?

■ A new quarterly magazine on horticulture has earned a spot on the reading table. In one year, *Horticulture in Malawi* has developed into a full colour, informative and practical magazine, with information on spices, herbs, vegetables and fruits: how to grow them, sell them, process or prepare them. (see also Spore 82, p 11)

50MWK • € 1.10 (in Malawi) *Horticulture in Malawi* PO Box 31131, Lilongwe 3, Malawi Fax: +265 780 413 Email: guenterbaumanngtz@malawi.net

Cutting back mosaic virus

■ Recent years have seen a dramatic increase in the incidence of cassava mosaic virus disease (CMD) in Uganda and, more lately, in Kenya and Tanzania. Whereas it has always been prevalent in some areas and its characteristic leaf symptoms are regarded as a normal feature of cassava plants, it has now become a pandemic and requires more thorough control measures.

This detailed overview of *The Current Pandemic of Cassava Mosaic Virus Disease in East Africa and its Control* is written in a lengthy, but accessible and conversational style. It reviews in documentary style the spread of the disease, and early efforts to develop CMD-resistant varieties and the rehabilitation of plots. One such measure is to reduce inoculum pressure in the area by



removing severely diseased plantings before introducing “clean” planting material.

Overall, the clarity of the book will help the extension worker and scientist (who should, it urges, be involved through CMD control measures) to pursue their long task of controlling this scourge. They will need patience too: the book warns that “there are likely to be acute problems and severe hardship over the next few years as the pandemic continues to spread and before adequate supplies of resistant material become available”.

Africa’s parklands

■ Although, the term ‘parklands’ is widely used, it is somewhat confusing to find that it refers to a common African land-use system, whereby trees are deliberately retained on cultivated or recently fallowed land. Trees are part and parcel of the parklands farmingsystem, which is the most widespread agroforestry system in sub-Saharan Africa. It incorporates crop cultivation and animal production, and provides fuel, fodder, fruits and medicine from the trees.


Agroforestry parklands in sub-Saharan Africa reviews the status of our knowledge of these systems and the experiences relating to the biophysical, socio-economic and policy aspects of their management. It identifies research needs and possibilities for improving their management,

conservation and development. The main emphasis is on West African parklands, with occasional references to other regions.

Agroforestry parklands in sub-Saharan Africa FAO Conservation Guides 34, 1999. 250 pp. ISBN 9251043760 US\$ 24 • € 25.30 (See other FAO reference for address)



Subsisting in the mountains

 Around 2.4 million people in the mountain areas of Papua New Guinea depend on subsistence farming. For a long time this way of farming has been avoided, and sometimes derided, by many authorities and ‘developers’ worldwide. Shifting cultivation and slash and burn techniques, in combination with population pressure, was leading to deforestation and soil degradation. The general belief was that investing in such a farming system wouldn’t get us anywhere. Not so, say the authors of *Subsistence agriculture improvement*, whose practical manual has won many admirers since it was published 10 years ago. Now available to CTA’s

subscribers, it offers a worthy collection of ways to improve subsistence farming. It explains how to build an A-frame for making terraces and contour-ridges and how to recognise zinc deficiency in cit-



rus, beans and potatoes. In between it provides information about composting, crafting, drying, cooking, planting and protecting. In addition it contains a section on commonly known plants for the mid-mountain subsistence garden. All in all, a manual useful for other tropical mountainous areas as well. Finally, Sally Shaw did a great job with the many attractive, clear and clarifying illustrations.

Subsistence Agriculture Improvement. Manual for the Humid Tropics Edited by F Goeltenboth, *Brot für die Welt*, Verlag Josef Margraf, Germany and the WAU Ecology Institute, Papua New Guinea. 1990. 230 pp. ISBN 9980 73 001 3 CTA number 973. 20 Credit points.

Overwhelmed by all that info?

■ Know that feeling? All that faraway talk, even in your trusted *Spore*, about the new "Information Age" and how it is going to liberate everybody. It might still seem a long way away from the perspective of an ACP agriculturist.

And yet, at each stage of our waking, working day, we find ourselves having to deal with information. Sometimes we do not have enough to take a wise decision, in which case the experts call us 'informationally deprived'. At other times we have too much information and



are unable to pick out the right bits, in which case we are 'informationally overloaded'.

It is a problem faced by any manager in a development organisation, and it is especially for these managers that Mike Powell, himself such a person, put together this dense work on *Information Management for Development Organisations*.

For a reader who is professionally aware of information systems, the logic of libraries, computers and personnel policy as well as what really happens in the village, this is a comforting and informative guide through a sometimes bewildering area. Terms like 'information architecture', 'mapping and monitoring' and 'learning organisations' rain down on you, but if you can handle that, you will find this book a sound professional companion as you draw up and implement your detailed information policy.

There are lighter sections of the book, where Powell shines in communicating common sense. If you want to understand the needs of your user, he says, don't just study them, socialise with them, go to social events, chat don't talk, listen don't gawk. It is a shame that he made some of his messages so hard to get at; they deserve to be shared among more people than the community of "information professionals".

Mainstreaming gender: what it means

■ It may come as a surprise to some, but mentioning the word gender in every fifth line of a



the *Guide to Gender-Analysis Frameworks* in Oxfam's Skills and Practice series. It brings together the best-known analytical frameworks for gender-sensitive research and planning and offers bibliographic references in case you want to know more. The guide is aimed at non-specialists who seek to incorporate gender analysis into their work. It is clear and well structured, with instructions for using the frameworks and summaries of their advantages and disadvantages in particular situations.

A Guide to Gender-Analysis Frameworks. C March, I Smyth and M Mukhopadhyay. Oxfam. 1999. 96 pp. ISBN 0 85598 403 1 GBP 6.95 • € 11.10 Oxfam GB 274 Banbury Road Oxford OX2 7DZ, UK Fax: +44 1865 313 925 Email: publish@oxfam.org.uk

speech or report is not enough to mainstream gender issues. To move beyond paying lip service and take gender issues into account by integrating them in development work is not easy. One tool that can be of help is

Information Management for Development Organisations. M Powell. Oxfam GB. 1999. 160 pp. ISBN 0 85598 410 4 US\$ 14.95 • GBP 8.95 • € 15.75 Oxfam GB 274 Banbury Road Oxford OX2 7DZ, UK Fax: +44 1865 313 925 Email: publish@oxfam.org.uk

Working procedures for cocoa germplasm evaluation and selection

■ Proceedings of a workshop, held 1 – 6 February 1998 in Montpellier, France and organised by the Common Fund for Commodities (CFC), International Cocoa Organisation (ICCO) and the International Plant Genetic Resources Institute (IPGRI).

Edited by A B Eskes, J M M Engels & R A Lass, CFC/ICCO/IPGRI project, IPGRI, Rome, Italy. 2000. 176 pp. ISBN 92 9043 434 1 Available free of charge IPGRI, 142, via delle Sette Chiese 00145 Rome, Italy Fax: +39 06 575 0309 Email: ipgri@cgiar.org

NRM policies for rural livelihoods

■ The UK's Natural Resources Institute (NRI) recently launched its Policy Series booklets on issues which affect the management of natural resources in support of rural livelihoods. The first four issues, averaging a readable 30 to 60 pages each, cover rural finance (1), institutional development and poverty reduction (2), agricultural sector investment programmes (3) and non-farm rural livelihoods (4).

When ordering please quote 'EP' followed by the number of the issue. Each issue costs GBP 5 • € 7.95 NRI Catalogue Services c/o CAB International, Wallingford, Oxfordshire, OX10 8DE, UK Fax: +44 1491 829 292 Email: cabi@cabi.org

Structural adjustment or a sustainable future?

■ More than one-third of Tanzanian rice (total production yearly 700,000 tonnes) comes from Sukumaland in north-west Tanzania. Farmers have developed highly productive rain-fed lowland rice systems but yields started to decline when the structural adjustment programme was introduced. Read this book to find out why.

Rice Cultivation in the Farming Systems of Sukumaland, Tanzania. A Quest for Sustainable Production under Structural Adjustment Programmes. H C C Meertens. KIT. 1999. 192 pp. ISBN 90 6832 130 7 NLG 49 • € 22.25 KIT Press, PO Box 95001, 1090 HA Amsterdam, Netherlands Fax: +31 20 568 8286 Email: kitpress@kit.nl

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subscribers. Subscribers can order publications on CTA's list up to the value of the credit points available to them. Subscribers can only request publications on the order forms provided.

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uals resident in ACP countries may also apply.

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The next steps

The CTA seminar 2000, held in Paris from 29 May to 2 June 2000, was the fifth milestone event in the history of CTA to involve all key stakeholders in shaping its major policy directions. Following on from the Montpellier I and II and Wageningen I and II seminars held in 1984, 1995, 1984 and 1996 respectively, the Paris seminar had as its theme “information for agricultural and rural development in ACP countries: new stakeholders, new media and priority themes”.

Globalisation and the rapid growth and adoption of ICTs (information and communication technologies) were seen as the principal factors driving the need for CTA to modify its future role, programmes and priorities. The raft of stakeholders is widening: it includes producers, service-providers and processors, decision-makers and consumers. Collective organisations in the private sector (rural producers’ associations and NGOs) have partly replaced the role formerly played by governments in the management of rural development and are now “co-decision makers”. This has implications for their ICM (IC management) skills and resource needs and for their relationships with other stakeholders.

Broader policies, stronger grassroots

In future, participants felt, the thematic content of CTA’s work should include enhanced emphasis on strategic information for policy makers in the context of a broader and more cross-sectoral interpretation of agriculture and rural development. There are new needs for timely

information regarding marketing and meteorological data and the mitigation and management of natural disasters. Whilst the concepts of “mobilising civil society” and “strengthening national agricultural systems” may require less emphasis, the promotion of mechanisms to support small farmers and grassroots organisations have become a priority. Other existing priorities should be retained. Finally, a new priority area covered ICTs themselves, a topic on which the seminar received significant input from the third consultative expert meeting of CTA’s Observatory on ICTs, held the previous week in Wageningen. ICT applications should be enabled and encouraged, in part through greater accessibility, with appropriate combinations of new and conventional media. CTA should encourage ACP organisations to adopt a ‘Web-readiness’ strategy, and should encourage coordination of ICM policies among international development organisations.

Information management programmes need to strengthen the capacity of ACP partners to produce more food and develop more appropriate policies for food security and poverty reduction. More support for partner networks will be needed from CTA, so that they can play a more significant role in global networking.

The seminar was attended by more than 70 participants from almost 30 ACP countries and from other resource bodies. The availability of the full report will be announced in a later *Spore*. The seminar’s recommendations will be taken into account in the formulation of CTA’s new Strategic Plan (2001–2005).

After Lomé: the next 20 years

On June 23 2000, a new Partnership Agreement was signed in Cotonou, Benin, between the ACP States and the European Community and its Member States. The agreement succeeds the Lomé Convention, within whose framework CTA operates. By linking the Agreement to international and UN pledges on such areas as social and sustainable development, its authors have steered ACP-EU relationships into a new age of maturity – declaring it to be for a twenty-year period. The future role of CTA will be shaped by the Agreement; it will be described in more detail in *Spore* 89.

Recent advances

In 1996 CTA drew up a five-year Mid-Term Plan (MTP) to help the Centre reorient its activities to reflect the changing needs of its ACP partners. By the end of 1999, CTA’s programme had expanded considerably, comprising 228 separate projects, implemented through four technical departments. During the MTP implementation period, a clear trend has been an expansion of the range of projects and partners, in particular in ‘non-State’ sectors. The notion of partnership as a process which embraces the sharing of both risk and success has taken root, through approaches ranging from decentralisation of services to co-publishing with ACP publishers.

A recent external evaluation of the MTP draws attention to the “problem of dealing with a large number of stakeholders with different agendas and objectives”. Pointing out that the Centre’s activities have been implemented with only limited increases in financial resources and no change in the overall staffing level of 40, the evaluation urges greater empowerment of staff.

Question 1: Are they doing well? – the *Spore* reader may ask. The evaluation thinks so, referring to a high level of appreciation among partners, in particular for their improved technical capacity, although goals such as reduced dependency on external support and financial autonomy have not been widely attained. Question 2: Could they do better? Yes! More focus is needed in targeting the poor (stated as the key beneficiaries of CTA’s programmes), in measuring impact and in the sincere inclusion of gender issues.

Looking forward, the evaluators say CTA needs to make choices: breadth *vs.* focus; innovation *vs.* implementation; and proactive agenda-setting *vs.* reacting to demand. Perfectly timed for the current debates about policy development described on this page.

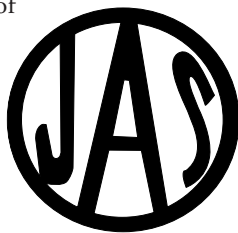
More partnership agreements

With three new agreements signed in Southern Africa and the Caribbean,

CTA’s programme of pilot projects in partnership building with independent sector organisations continues to grow. In South Africa, the Land Development Unit at the University of the Western Cape will expand its services to farmers through publishing, developing methodologies in farmer-

farmer contacts, and radio. The African Co-operative Action Trust (Eastern Cape) will consolidate its wide spread of rural strategies, including appropriate technology and credit approaches, through publishing, networking and marketing strategies.

The sixty-year young Jamaica Agricultural Society will enter a new phase of service to selected members in its 80,000-strong constituency, through a newsletter, a weekly radio programme and strengthening branches in two of the country’s 12 parishes.



LDU

Mailbox

Many sharp-eyed readers have pointed out to us that in the photo next to the article about yams in Ghana (*Spore* 87, June 2000, page 8), the woman had put all her cassava in one basket, and not the yams she planned to use. Point taken. Whatever you want to point out, point to or point at, your letters, faxes and emails are always welcome at the *Spore* address in the box on the right. Write now.



Phosphates galore: handle with care

■ **Eduardo Miller Mendez**, Director of the 'Société sénégalaise des phosphates' in Thiès, Senegal, has pointed out that we illustrated the article about phosphates on page 7 of *Spore* 86 with a photo of his company while "the offending products mentioned in the article are from the company 'Industries chimiques du Sénégal'. Our company has been involved in the addition of phosphates to the soil with a(nother) product known as 'Phosphal', which is a calcium aluminium fertiliser".

Pushing away threat to sweet potato

■ **Joseph Ndunguru** of the Plant Protection Division in Mwanza, Tanzania, urges more action in dealing with sweet potato virus disease (SPVD). "Farmers attempt to control SPVD by selecting disease-free planting material. However, selection is difficult, because most farmers (90%) lack superior, resistant cultivars. The Uganda National Programme is breeding high-yield SPVD-resistant varieties." Work is also in progress, he adds "to exploit local phy-

tosanitation and cultural practices. Those international, regional and national bodies who do not believe in a miracle that SPVD will just disappear by itself should pool their resources to support the effort to tame the disease in East Africa."

Health is the first wealth

■ The article on organic agriculture in *Spore* 85 drew a lot of comments, including one from **Dr Gezahegu Shirmako** in Hagere-Selam, Ethiopia. He is dismayed that 'nowadays, teratological disorders [deformations] among domestic animals are mushrooming and the numbers of bees roaming around and fish in the water are gradually declining. The environment and the agro-ecosystem are in the process of spoilage, and human health is deteriorating. Inorganic agriculture is one of the causes of all this, and a safe future has to be built through organic agriculture. Let us fertilise the land organically, to harvest healthy and sound produce.'

Keep on planting!

■ **Joseph Feulefack**, coordinator of the Forest Tree and Environment Club in Kumba, south-west Cameroon tells us of FOTEC's work in creating an 'arboretum' of trees as a teaching aid for schools. Since 1994 "more than 3000 trees were planted, from 33 different local tropical forest species, over 26 plots covering 2 hectares. The success rate is about 78%. This has reduced the budget needed for study visits to the Forestry Department. Students now have next to their classrooms tree species that used to be studied hundreds of kilometres away."



Spore reader **Joseph Feulefack**, coordinator of FOTEC, welcomes a new student with a two-year old sapling of the *Ceiba pentandra* tree, also known as *Fromager*.

Spreading the words of *Spore*

■ **Mehari Abay** of Mekele, Ethiopia writes: "I have been translating at least the first article of *Spore* into the local language Tigrigna and sending it to the local radio broadcasting service, sharing the idea with others". *Spore* really welcomes this kind of initiative! Congratulations, Mehari.

Greening in the Caribbean?

■ **T Goguey**, Head of the Fruit Trees Programme of CIRAD, France, is keen to correct our news item on citrus greening or *Huanglongbing* in *Spore* 82: "Regarding your information about the arrival of greening in the Caribbean, I would like to point out that it is the vector of this disease which has arrived, and not the disease itself. Greening is one of the most serious citrus diseases, and is caused by the bacterium *Liberobacter*. The bacteria are transmitted by psyllid insects or biting suckers (*Trioza erytreae* and *Diaphorina citri*), which feed on citrus tree sap. Greening causes costly damage [...] It is not present in the Caribbean but the *D. citri* psyllid has been indentified in Guadeloupe. Its arrival in a zone free of greening means that there is a potential risk of the disease spreading if it is released by accident..."





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Veterinary services privatisation

We need better values

In many developing countries there has been, and still is, a strong move for the government to give up or reduce its involvement in ventures that the market can take care of. The ideological basis for this hinges on the belief that the government should not provide goods and services that the private sector is willing and able to provide. Rather, the government should be concerned with providing goods and services that are public in nature but have the potential for market failure. This has been behind the moves for privatisation of veterinary services all over the world.

In Ghana, the government has been responsible for the provision of veterinary services to animal owners freely or at subsidised levels since independence. However, there have been arguments against continued free provision or subsidy because the government is facing budgetary and financial difficulties. Another argument is that over-employment is over-extending the ability of government to provide quality services, and that some of those employed by the government have to go into the private sector to ease the burden. A project to help private veterinary services was launched in 1993, encouraging veterinarians to go into private practice. However, one factor critical to the success of the privatisation effort is the willingness of livestock farmers or animal owners to pay the full cost for animal health services. Their willingness to pay is to a large extent influenced by the livestock market structure, since services have to be paid for with cash in most cases.

There is, though, no well-defined livestock marketing structure in Ghana. Livestock producers and consumers are therefore at the mercy of middlemen whose

“livestock farmers should form livestock producer cooperatives”

aim is to maximise profits by buying animals cheaply and selling meat at high prices to consumers. No formal market structures exist at present. Sometime back, the government set up a Meat Marketing Board that was charged with buying livestock from farmers and processing the meat to sell at reasonably competitive prices. However, the Board is now defunct partly because of low farmer patronage.

One reason was that farmers were not paid on time and payments were on a carcass weight basis, which was not attractive. The alternative was for livestock owners to sell on the hoof to middlemen for ready cash.

Middlemen too dominant

The middlemen – they are mainly butchers and influential people from livestock producing communities – have a monopoly and therefore dictate what to pay for animals and what the price of meat is. Livestock farmers are not well organised, and therefore lack strong bargaining power to deal with the hegemony of the middlemen. If the prevailing market structure is left to stand, livestock farmers will continue to receive low prices for their animals and will therefore not have the financial power to pay for services rendered by private veterinarians. The effect is that private practice will not be profitable and will thus discourage other veterinarians from going in.

Another factor in the market structure with implications for privatisation of services is the value system of livestock owners. Farmers are more concerned about numbers than quality. They are reluctant to sell animals. Animals are therefore sold only when the farmers are in dire need of money or when there is drought or disease. This has serious implications. When animals are sold to get cash for a pressing need, farmers are willing to accept any price, sometimes well below the market value; they therefore lose substantially. Since they do not receive a fair price for their efforts, they tend to be unwilling to invest in their animals. The other implication is that when animals are sold during drought, or when they are in poor shape as a result of poor nutrition or disease, farmers are unable to demand good prices. There is therefore the need to put in place facilities to help farmers know

when to cull animals and how to market their animals.

Bring in premium prices

To help solve the problems of the market structure, livestock farmers should be encouraged to form livestock producer cooperatives, without political prodding or control. These cooperatives can provide inputs more cheaply (on the basis of economies of scale) and also help in marketing. They could also retain veterinarians on a part-time or full-time basis, which could encourage the privatisation efforts. Such an association could also lobby for fair marketing legislation, especially where monopolies abound.

Another recommendation for market restructuring is to introduce payment of premium prices for quality. At the moment there is no price differentiation to encourage production of quality goods that will fetch higher prices. There is an urgent need to restructure the market so that farmers will be paid for quality products and will be more willing to invest in their animals knowing that they will be rewarded with higher prices. Once they receive premium prices, they may be more willing to pay for services like health, knowing that they stand to benefit in the end.

The last recommendation is to educate farmers on the need to keep quality animals instead of keeping large numbers for social prestige. This can be done through livestock producer associations and through premium pricing. It may be helpful to work with rural anthropologists/sociologists to help redirect societal values from quantity to quality. These, it is believed, will help in privatisation of veterinary services in the long term.

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