



Spore

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In this issue

'An old man does not run, unless a goat eats his cassava.' This Mongo saying is matched by the Kongos' observation that 'the dance of an old man doesn't last long' and the Yorubas' about how 'an old woman crushed a ripe banana and was proud of it.'

Respect and deference are always due to the elderly, for what they have learned and what they have done. And for what they shall yet do in the twilight of their lives, that too demands more attention, we argue in our main article.

Alongside ageing, we look at dawns and births: at an exciting and excited new network of rural women, at milk – for all of us, our first drink – and at new food products. And at what keeps us busy in the in-between years: trading, inventing, writing, innovating, reading, avoiding disasters and sharing. Even Sporeing.

Remember these Kongo words, as you go about your Sporeing today: 'A man reaches old age if he has respected the groundnuts of his neighbour.'



Illustration: Marine Boyy

Ageing and agriculture

A hard rock of age

In most ACP countries the proportion of old people will grow for decades yet, despite HIV/AIDS and other ills. The average age of a cocoa farmer in Ghana is 56. Is agriculture going grey?

What were those seven ages of man again, those passages from the incredulity of birth to the inevitability of death? Something like infancy, youth, and marriage? Then worker and doer, parenthood and purveyor of wisdom. Then what? Just old age, with the threshold being set, usually, at 65 years? In most ACP societies, even where that 65 years seems unattainably high, old age has long been seen as a period of rest, respect and deference; now it is a more active period.

Few subjects preoccupy people more than age, whether in its absence or in its unceasing advance. Indeed, one aspect of the circles of life to which *Spore* regularly refers is time, and its passing. With the speed at which time flies, the pattern of life changes fast. Just imagine, more than half the people in ACP countries were born after the ACP Group was conceived in the early 1970s.

The image, a very real one, of urban street corners and markets brimming with ambitious youth, of villages where groups of young people huddle and debate endlessly whether to stay or go, hides another. An image of grey, of lined faces and worn-out hands that, without full and urgent attention, will come to haunt us, as both observer and victim – if we are blessed to live that long. For while our societies are bulging with youth at one end of the demographic scale, the number of elderly people is growing fast too.

In the Caribbean, above all, and in much of the Pacific, a relatively large part (12%) of the population is elderly; this will increase substantially over the next three decades. The Caribbean is often referred to as the oldest of all developing countries, according to a study for the US National Academy of Science. The nation of Barbados, for example, already has a European-style proportion (11%) of its population

over the age of 65. In Jamaica, famous for the longevity of some of its citizens, the proportion is more modest, 7%. Official UN forecasts predict that this will double in the next 30 years. Or even sooner: in Jamaica, as with other countries of the region and beyond which saw massive flows of migrants to Europe and North America from the 1950s onwards, the phenomenon of inward return migration is taking hold as migrants return home to retire where the heart has, after all, always belonged.

Migration, from young states

Is it a twist of fate that today's flows of migrants to the North are from the late starters in the migration game, mainly Africa and east and central Asia? They too are being encouraged, in a tortuous and often demagogic 'yes but, no but' dance by European politicians to travel to the North because of this same phenomenon of 'greying'; in countries such as Italy and Sweden, almost one in five (18%) people is over 65 and unwilling or unable to work.

The high level of migration from Africa, and of internal rural-urban flows of people, reflect the continent's relatively high fertility rates where population has grown at an annual average of 2.4% since the 1950s. At current rates, Africa's population (760 million in 2002) will double by the year 2035. This surge in the number of young people hides the growth in the number of elderly people. Their share of overall population has scarcely grown, but their actual numbers have: the UN Economic Commission for Africa predicts that "the size of the elderly population is expected to jump more than 70%, from 16.6 million to 28.6 million persons over the period 1995-2015". Among the countries expected to join the ranks of Nigeria, where there will be more than 2 million elderly people by 2030, are the Democratic Republic of Congo, Ethiopia, South Africa and Sudan.

Has AIDS changed all this?

But, many ask, hasn't HIV/AIDS changed this landscape? Yes, it has cut its murderous path through whole age groups, but these days the impact of HIV/AIDS in Africa is usually taken into account in demographic analyses, unlike even 5 years ago. The message is chilling: Botswana has seen its average life expectancy rise from the mid-30s in 1955 to 59 years old by 1998, only to be literally cut back to a predicted 44 years old by 2015.

The population growth rates of many a sub-Saharan African country have, thus, been severely dented for a few years. With the rate of HIV/AIDS infection in Africa apparently decreasing and under some sort of control, the effect on the elderly section of society has two distinct characteristics. First of all, over the next generation or two, there will be the despair-inducing loss of



Experience, patience and wisdom – three key assets in our social capital

Illustration: Marthe Boy

sometimes half a country's productive labour – not only in terms of deaths, but also of the losses of other people's time and resources which are occasioned by these deaths: a social tragedy compounded by an economic catastrophe.

There are more than 10 million AIDS orphans in sub-Saharan Africa, many in rural areas. Their relationships with adults are with overwhelmed second aunts and uncles who find themselves having to care for their deceased siblings' offspring (and which *Spore* reader does not recognise this?), and with the elderly, who have been less exposed to the virus.

In the longer term, over five or more decades, callous though it may sound, that HIV/AIDS dent in population growth will probably be made up. One-fifth of sub-Saharan Africa's population is between 15 and 24 years old, and fertile. Unless another, even more horrific scourge or implosion takes place, many of these young people will make it through to old age. And when they get there, they will find the sad scenario which is being rehearsed today.

Helping hands no more

Today's elderly find themselves caught between several rocks and hard places: their naturally waning health; increased responsibilities of caring for and educating grandchildren; more agricultural tasks; a breakdown of the normal social support systems from their families; and reduced support from a State apparatus which has been decimated by both structural adjustment programmes and HIV/AIDS.

Many smallholdings now depend largely on the young and the elderly for labour and energy. In such circumstances, there is little hope of building up reserves, whether financial or food. Farm production is mainly for survival consumption and less for the market. The reduced mobility of the young and the elderly makes that market ever more distant. That famous utterance by the delegate from Benin at a preparatory meeting of the World Summit on Sustainable

Development – "instead of giving a man a fish, we now have not only to teach him how to fish, but also how to market it" – is even further away from reality. This is no foundation for a surging agricultural sector.

Time to redesign

Even in less dramatic circumstances, the phenomenon of ageing in agriculture throws up three key issues. The first, a recurrent plea in *Spore*, relates to changes in farming methods, logistics and equipment and the need to adapt processes and tools to the mechanics of elderly – and youthful – bodies. These so-called 'ergonomic options' of redesign must become an essential response to the unrecognised greying of many rural ACP communities. They should include technological developments with tools and instruments, tillage practices and harvesting techniques; and research on less intensive cultivation processes with fewer and lighter operations. As yet, this area has not been addressed in detail by such welcome new 'age-focus' programmes as the HelpAge International network, which embraces 49 developing countries. Second, measures are needed to help the elderly to encourage the young to farm. And third, the respect factor, where strategies about deference and dignity need to actually lighten the load on the elderly. Here, it is a question of adding in 'aged' components in local health care, micro-insurance and even micro-pension schemes run by micro-finance agencies. Such initiatives, few in number, are coming from those concerned with labour and working conditions, such as the International Labour Organization in eastern Africa. Look to them.

Look elsewhere too, for the most interesting can sometimes come from the most unexpected. The process of greying has already visited thousands of farms in the North. There, surely, lies a wealth of sad experiences to be shared in solidarity, between farmers' organisations amongst others. Ageing is one of life's little basics, one thing that unites us.

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Policy highlights

- * Ensure ageing farmers have continued access to educational, financial and infrastructural services;
- * Encourage small-scale enterprises and local financial services;
- * Connect rural people to the information society;
- * Ensure the rights of older women;
- * Implement social security measures.

From recommendations concerning the rural elderly: UN Second World Assembly on Ageing, Madrid, Spain, April 2002

Disaster management

It wouldn't be a disaster, if...

Disasters hit home hard, even when expected. The distinction between man-made or natural is often neither here nor there, when man provokes so much elsewhere in nature. But some are far too overwhelming to be controlled by man: then we can only fear, predict and get ready. Better be prepared.



Photo Olive Shirley - Panos Pictures

The end of the world is not yet nigh, but it regularly seems to come pretty close. Storms, floods, droughts, plagues, fires, earthquakes or volcanic eruptions. Whatever has been and can be said about the nature of various disasters, they all have some things in common. They are unusual and life-threatening events; although no two disasters are the same, their effects often are. People lose goods and chattels, and in worst-case scenarios their lives.

According to the World Food Programme, 5.5 million people are killed, injured or made homeless annually due to natural disasters; 95% of these casualties occur in developing countries. The economic costs are enormous too. Disasters in about 30 industrialised countries cost more than US\$ 535 million a year, almost the same amount as the disastrous floods in Mozambique in 2001 cost that country alone! Barely a day goes by without news, usually left to simmer at national level and rarely awakening world media, of nature's slaps at humanity's presence and humanity's agriculture: Belize's hurricanes and endangered fisheries, the lava flows over Goma and the Great Lakes region of central Africa, or cyclones washing away more of Madagascar's eroded and fragile hills and destroying cultivation, 100%, on two of the Solomon Islands are recent cases.

Finance is part of the problem, but a penny spent wisely on prevention, or 'mitigation' (the lessening of the impact), is well spent, if it is there to spend. Many governments in ACP countries have long been reluctant to invest in disaster-coping mechanisms and cannot always heed, or act

upon, warnings. Early warning systems (EWS) can monitor and predict a variety of disasters, but are expensive. They can work, though – the prompt warnings of EWS in the Caribbean and the Sahel, for example, have increased their credibility, and thus their financial support. Of course, development is the best strategy to mitigate disasters, but in many ACP countries most rural people still live below the poverty line and are particularly vulnerable to disasters. And, let us face it, some of the most fertile lands are the most disaster-prone, delta areas in particular.

Resilient and well-prepared

In agricultural societies people can usually cope with recurring events. People in the Pacific and Caribbean anticipate the annual stormy season, when sometimes one hurricane or typhoon after another hits their islands' shores. Trees can be trimmed, windows boarded up and every farmer knows that root and tuber crops are more likely to resist a storm than a field of grain would. In Africa, drought can be dealt with too. Farmers store grains to ensure their food and seed requirements for a few years to come. In the Horn of Africa, four consecutive dry seasons can be bridged with these stocks. Farmers also tend to keep numerous varieties of crops and seeds in stock to make an educated choice each season as to which varieties to plant, knowing the characteristics of each variety, including pest and drought resistance. Once these security patterns are broken – when their storage systems are destroyed, confiscated in civil strife, when people become displaced or move to the slum areas of big cities – people are more vulnerable to new disasters. Resilience has its limits.

A local knowledge base is essential in disaster mitigation. Not only about crops and seed, but also river levels, climate, past disasters and the social structure of the community. Such information is central to the emerging practice of Community-Based Disaster Management (CBDM), where communities organise themselves against



Photo Y. Müller - PAC

When the cause is upstream, surely we can prevent this?

the effects of disasters. A committee is created, close to municipal authorities, linking the community to government agencies and aid organisations. Outside aid usually takes time to get into its stride. Such a committee maps out various risks and responses to diverse scenarios. The community's EWS will define who will warn whom in emergencies, where the assembly point is, who the most vulnerable families are, and who will contact the responsible government or non-government agencies and pave the way for when aid and media arrive. These committees could even secure funds or emergency goods.

Together we stand

Governments are taking up their responsibilities too. Jamaica's Office of Disaster Preparedness and Emergency Management is a sound example of a pro-active State body. It has detailed scenarios for disasters and regular training for all sections of the society, including children. In Africa, various governments are establishing policies to mitigate disasters: Uganda and South Africa have developed such strategies already and others are starting to make provisions for emergencies in national budgets. Regional efforts are taking place too. In the southern African region, for example, SADC operates a regional EWS. Disasters are not usually restricted to a single country but affect entire regions. Both cause and effect are regional in nature, as shown by the floods in Mozambique.

Hopeful signs there are, but let us face the fact that, as Nobel Prize winner Amartya Sen points out, no democratic country suffers from famine. Despite poverty and recurring droughts, he argues that responsible and accountable governments reallocate resources in times of crisis to prevent famine. Perhaps development and democracy are the best ways to withstand the effects of disasters.

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Dairy development

Beyond the pail

Worldwide, more people are drinking more milk and consuming more dairy products. Yet milk production is still too low in ACP countries, and hampered by cheap imports. It's a bucketful of paradoxes and problems, hopes and heartbreaks.



Photo B. Faye - Cléid

Have you ever had the chance to lift a bowl of really fresh milk to your lips, still warm and frothy, drawn straight from the udder of a cow, sheep, goat or camel? Did it bring back an old, deep, primitive feeling in you? Most of us were raised on our mother's milk, which makes milk our first food.

The Malian author Amadou Hampaté Bâ sums it up: "The baby at the mother's breast drinks more than milk, but mercy too, and love."

Milk may have its mythical dimension, but it is nevertheless the traditional food for many herder communities in Africa and for village communities across the Pacific and the Caribbean. Not that it has ever really been plentiful there, due to such practices as letting the calf suckle before drawing any milk for the herder's family, and the fact that there is much less milk available during dry seasons. In herding families, only the children, pregnant women and the elderly drink it regularly. Other types of farmers can get milk only on rare occasions because it is difficult to transport; it will

not keep for more than a few hours if it has not been processed.

Milk has also become an icon of urban consumption, a symbol of modernity. Generations of urban consumers have acquired a taste for it through distribution schemes at schools and through advertisements praising its beneficial effects. You will find it in all shapes and sizes on market stalls and shop shelves: packs of UHT (ultra high temperature) treated milk, cans of evaporated or condensed sweetened milk, full, skimmed or formula baby powder, butter milk or yoghurt, cream, butter and *ghee* (clarified butter) – not to mention all sorts of cheeses.

Too costly to buy

Everyone knows and covets these products, but only a minority of consumers can afford to buy them regularly. For most town dwellers, especially in West Africa, the only kind of milk they can buy for their families is the powdered variety, sold in small portions or reconstituted to liquid milk in small workshops. In general, milk consumption is very low in most ACP countries.

In those countries where there is a tradition of milk consumption (such as eastern Africa, the Caribbean and the Pacific), people consume an average of 50 litres a person each year. Across the whole of Africa, the annual average hovers around 20 litres. This is four times below the minimum consumption recommended by the World

Health Organization (WHO), and between 20 and 25 times less than the European average.

The minimum level of consumption of milk and milk products in Africa is thus far from being met. The authors of an FAO book on the supply of milk and milk products in African cities noted, in 1995, that "after all sorts of ethnical, religious or sociological considerations about the consumption of milk and milk products in Africa, one basic truth stands out above all others: the low purchasing power of consumers or, put differently, the excessive price of milk and milk products."

Too cheap to sell

Even with the growth of urban populations, demand for milk products has been met essentially with imported products: in the towns of West Africa, they often represent more than 90% of the supply. This figure rarely drops below 75% across the totality of ACP countries.

Hard to digest?

People talk of having an allergy to cow's milk, but such allergies are in fact quite rare. People are normally referring to an intolerance of cow's milk, through the body's reaction to lactose, the natural sugar of milk. It is a double sugar that has to be divided into two separate sugars for the body to be able to use them. This division usually takes place in the small intestine, mediated by an enzyme known as lactase.

After birth and during infancy, most people produce enough lactase to digest the milk's lactose. It is at a later age that some adults do not secrete enough lactase, particularly when they have stopped drinking milk regularly. In such cases, the undigested lactose passes into the large intestine, where it is fermented by bacteria. This intolerance is quite frequent in adults in Asia, the Middle East, Africa and South America; it is rarer in Europe and North America. People suffering from this ailment can nonetheless consume milk in small amounts, as well as unlimited amounts of butter, cheese and yoghurt as these products contain very little lactose.

An alternative to cow's milk is soya milk, which is also a complementary foodstuff. The revised and expanded edition of the Agrodok 10 on *Growing soya* co-published by Agromisa and CTA will be featured in Spore 103.

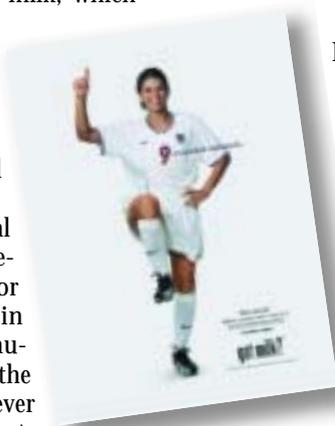


Photo R. Falduiti - FAO

Farm gate prices, 2001

| | |
|----------------|---------------|
| Uganda | € 0.15–0.30/l |
| New Zealand | € 0.16/l |
| Senegal | € 0.23–0.30/l |
| USA | € 0.30/l |
| Jamaica | € 0.33–0.45/l |
| Fiji | € 0.35/l |
| European Union | € 0.39/l |

Sources: Uganda Investment Authority, TPA food processing network, FAO, Eurostep

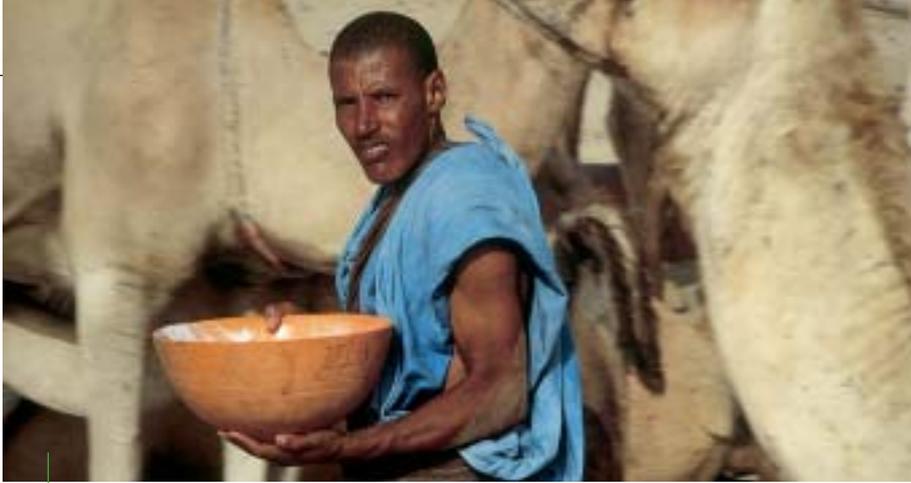


Photo I. Baldieri - FAO

(Clockwise) Camel's milk in Mauritania; in-pouch pasteurisation in Guyana; publicity in Togo; a milk churn rides a bike to market in Kenya; and the centre-forward of the USA women's soccer team scores a point.

This imported milk is subsidised in a number of ways. First, there is support given to farmers in countries where production costs are high, in particular in Europe (see the table of farm gate prices in selected countries). Then there are the subsidies on the export of powdered milk itself. No wonder that these products are available at low prices on ACP markets. Local production is finding it hard to get

off the ground. As well as competing with imports, producers face a whole set of barriers: low productivity, milking herds dispersed over large areas, the high costs of inputs (fodder, medicines) in intensified methods and the problems of organising collections. The resulting shortage of fresh milk pushes up the price. Faced with the competition of imported milk, local production cannot generate enough income with which to increase the supply on the market; this in turn feeds the growing trend of using milk from elsewhere.



Photo G.P. Hebbelink

New Hope road in Jamaica?

In August 1999, Phyllis March, a Jamaican dairy farmer, reached the point where she could no longer sell her herd's milk. Her cold store was full to overflowing and she had to pour more than 1,000 litres of milk into a nearby stream. It was no isolated incident.

Jamaica's dairy sector, once highly profitable, is going through a crisis. National consumption is 155 million litres a year, but national production fell at an increasing rate all through the 1990s, from 39 million litres in 1992 to 22 million litres in 2001. The paradox is that Jamaican producers have been forced to destroy part of their production, and in some cases to destroy their herds and even take up a new occupation.

What came to beat these farmers on their own ground was subsidised European milk. For the dairy processors in the country it was more convenient and cheaper to buy imported milk powder than to collect local fresh milk.

Local industrial processors took the opportunity provided by trade liberalisation to reduce their farm gate prices for local production and to restrict the volume of purchases. As a result, in 2001 dairy farmers had to destroy 250,000 litres of milk.

A different scenario is imaginable: with good and plentiful pastures, adequate water supply and the sturdy Jamaican Hope breed, the conditions are in place for a sound development of the sector on which almost 3,000 farmers depend. That, at least, is the opinion of a good number of them who recently established the Jamaica Dairy Farmers Federation as their professional body. It has made some good progress to date: the price of inputs has been negotiated downwards, production methods are being modernised, and the government has agreed to buy local producers' milk for schools programmes.

The bigger picture

Macro-economic factors have played their role in recent years. The devaluation of the CFA franc in 1994 doubled the cost of imported milk in West Africa overnight, without any lasting benefit for locally produced milk. The supply of local milk did not improve, and consumers soon became resigned to spending the same amount of money as they had previously for half the amount of powdered milk.

Another, hopeful, element to take into account is the prospect of changes to the Common Agricultural Policy of the European Union. It is most unlikely that European tax payers will continue, indefinitely, to pay the farmers in the four or five major milk-producing countries to live off a permanent level of over-production. Then milk prices will tend to rise above their existing very low levels.

Finally, the trend to liberalise markets is leading to lower customs tariffs. Local producers and processors now find themselves exposed to a mean white wave of imports, and have become unprotected and impoverished to varying degrees, even in such countries as Jamaica which has a long-established dairy sector (see box).

A vicious circle

Using imported milk has become a classical vicious circle, and getting out of it has become urgent. Truth be told, only a dras-

tic increase in local production will provide a satisfactory supply of milk and milk products and help to generate more income for local farmers and thus trigger development in the sector.

What form, though, should this model of development take? In those countries with a well-established dairy sector, the tradition has long been to operate with large-scale dairies based on a widespread network of cooperative members. They bring economies of scale and a strong capacity to invest, with all the fragile risks that these involve. That is the position, for example, of Rewa Co-Operative Dairy Company in Suva which has a quasi-monopoly of the Fiji market, of Dairy Corporation Ltd of Kampala which processes two-thirds of Uganda's milk and the Kenya Cooperative Creameries group which, not to put too fine a point on it, imploded in a maelstrom of bad management and corruption.

To impose this model on countries without an established dairy sector would be bound to fail. Public development agencies and private investment bodies rarely show much interest in this option. More modest and pragmatic options stand a better chance; they include setting up a belt of dairy farms around towns and helping urban mini-dairies to better target their market. The local dairy chain has become the focus of several worthy experiments, such as those coordinated by the International Livestock Research Institute (ILRI) (see Links) and the West African networks promoted by GRET, the French technology research group. Technology development can also boost new supply chains: the cooling system of lactoperoxidase (see *Spore 80*), for example, has opened up opportunities for distant producers to sell to urban markets. It will be a question of seizing every opportunity, however small. The stakes are high. As the English statesman Winston Churchill once growled "there is no better investment for a country than to feed milk to its children."



Photo S. Assous - Clifad

A litre of fresh milk consists of 35 g fat, 35 g protein, 50 g carbohydrate (sugars), 10 g sodium and vitamins A, D, E, B1, B2 and C. For the vitamins to stay intact, they should be kept away from light, air and heat.

Buzz off, elephants!

■ Researchers at the Mpala Research Centre and the Save the Elephants NGO, both in Kenya, have found that elephants can be kept away from agricultural fields by placing beehives in them, even empty ones. Crop damage caused by the animals is extensive, especially where farmland borders nature reserves, as in Kenya and Zimbabwe.

☞ *Naturwissenschaften online*, November 2002

Overruling rats

■ The international collaborative research project STAPLERAT (Protecting staple crops in eastern Africa: integrated approaches for ecologically-based field rodent pest management), is organising the International African Small Mammal Symposium in Morogoro, Tanzania, from 14 to 18 July 2003.

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Botswana branding

■ It was two years of hard work, but in the third quarter of 2002, Botswana's Ministry of Agriculture confirmed that 600,000 cattle in the country had been branded under the Livestock Identification and Trace-Back System (LITS). LITS branding facilitates the so-called trace-back of cut beef from sale houses and slaughter facilities to where the individual animal originated. It is now required by the European Union for all meat imports: not something for a country to sniff at when the EU takes 90% of its meat exports.

Back on track

■ The island of Dominica in the Caribbean is constructing a new irrigation infrastructure for its banana sector. The € 16 million programme, like other EU-backed initiatives on the banana-producing Windward Islands, aims to reduce the impact of drought and to raise production. The Dominica Banana Marketing Corporation is also administering a € 800,000 credit programme for farmers to buy inputs. The sector has suffered much from consecutive droughts and hurricane Lenny in 1999.

The birth of a network



She's got the whole world in her hands. Graça Machel, wife of Nelson Mandela, welcomes the rural women's wish to next confer in South Africa.

■ "If we aim for the moon, we might end up on one of those stars" is a heady enough slogan, but quaintly matter-of-fact at the same time. It was often used during a momentous week of networking by a couple of dozen rural women in Madrid, Spain, early in October 2002.

They had been brought together, some said later, by their own momentum, with a steer from the hand of destiny. Undoubtedly so, but the praise should be shared, to be fair, with the organisers of the 3rd World Congress of Rural Women, with their own funders and with CTA who, along with the International Service for National Agricultural Research (ISNAR), arranged for a strong and unprecedented presence from Africa, the Caribbean and the Pacific.

The congress, bringing together 1,500 rural women from 84 countries, followed on from earlier events in Australia in 1994 and in the United States in 1998. It is an event, not an organisation, and it is a stronger phenomenon for that, being carried by the energy of its participants and the generosity of its self-proposing host nation.

Rarely has a phenomenon run so fast ahead of the times: from being a sedate gathering of rural women principally from commercial agriculture in North America, the Antipodes and Western Europe, it is opening up to embrace the very different needs and anxieties of rural women in Africa, Asia and Latin America.

At times, the growing strains were audible, and no wonder. Having started with measured sedate, welfare-focused drum-beating discussions in 1992, the 2002 congress found in its midst rural women from around the world who wanted to talk about land rights, war, AIDS, the bankruptcy of modern extension methods, and micro-finance management – and all in a far more participatory mode than the organisers were familiar with.

Such growing pains are characteristic of any healthy networking body, but it was the ACP network itself which was the most fascinating process to witness. Every congress spawns bushels of networks, many of which die an early death. Not this network – it was, it is, one of those captivating fusions of the goodwill and experience of scholars, farmers, planners, bankers, extension workers and

policy-makers that very occasionally happen, not only across professions but also boundaries, regions, and language zones.

Within one day, they had acquired new recruits by the hour, fed each other, exchanged experiences and presented full-scale academic background papers. Within two, they had drawn up strategies on how to cajole the congress to be more open to grassroots women and the poorest of the poor in future sessions.

On the third day they drafted their collective mission statement. And by the end of the fourth day, which they extended by 3 hours to put off the moment of parting, they had sketched out a multi-year action plan of networking, exchange visits, publishing and regional encounters to prepare future world congresses. And they had pledged their help in promoting the "greater and more interactive participation of rural women" and laid the way for the announcement of the next congress in South Africa in 2006.

Whichever brave soul writes the, say, 2010 edition of *The History of Networking*, this network will deserve a good few chapters. It is thankfully not yet at the formalising stage. When the time comes, how about calling it the 'Constellation of ACP Rural Women'?

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Let's get better vets

■ An October 2002 seminar on Primary Animal Health Care in the 21st Century in Mombasa, Kenya, focused the minds of 120 veterinary specialists from 20 African states, South- and South-East Asia, Latin America and Europe. In debating how to shape the rules, policies and institutions, they urged more networking among the traditional veterinary and livestock agencies, closer links with civil society, updated vet training curricula and improved market access.

With rising meat consumption being widely forecast as the next food revolution, opportunities for herders are soaring. Helping the resource-poor African producer, in particular, to seize them is what led the African Unity animal resources bureau to organise – and the UK's DFID and CTA to co-fund – this milestone meeting.

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The scientist and the scribe

■ Misunderstandings sometimes fly about between scientists and journalists: the former provide indigestible information, it is said, and the latter misrepresent. Yet, like mealie porridge and a sauce, they need each other, and so, in mid-October 2002, scientists and journalists, mainly from countries in eastern and southern Africa, convened in the Zambian capital, Lusaka, for a workshop on agro-biotechnology and food security in the region.

The workshop created close working ties between them, and opened the journalists' eyes to the positive and negative contribution of biotechnology, in its broad scope, to food security. Visits to laboratories to learn how disease-free planting materials for cassava, sweet potatoes and bananas are being produced using tissue culture techniques demonstrated a positive tool.

The introduction of genetically modified crops (GMC), whose effects have not been fully researched in African countries, nor elsewhere, presented a darker side. Scientists from Africa and beyond pushed for more research before their introduction, fearing negative repercussions on biodiversity and human health because of possible mutation of the genes in the imported GMC.

The workshop indeed sensitised the scribes to the contribution that biotechnology, if well-managed, can make to food security by helping farmers grow productive pest- and disease-free crops. If it is not well researched or fails to use indigenous knowledge, however, it can pose threats to both health and environment.

The whole endeavour was co-led by the Participatory Ecological Land Use Management (PELUM) association, CTA, KEPA Zambia, the Biomedical Research and Training Institute in Zambia and the *Biotechnology and Development Monitor* of The Netherlands, with extra funding from Novib. These agencies, plus the regional association of agricultural and scientific media professionals which was launched at the workshop, laid out extensive plans for follow-up.

Hot chocolate

■ Cocoa prices increased sharply to a 17-year record of more than € 2,000/t in October 2002. Rotting harvests due to too much rainfall in Ghana and the outburst of civil unrest following the September coup attempt in Côte d'Ivoire, where 40% of the world's supply is grown, caused cocoa shortages that sent cocoa prices soaring.

Another important reason behind the price increase is the cocoa merchant Anthony Ward. He heads a company called Armajaro that has bought large quantities of cocoa in recent years. In mid-2002, Ward's company cornered more than two-thirds of the cocoa 'futures', the expected cocoa harvest from October until December 2002. By gaining

control over the supply of cocoa, Ward gained control over the cocoa market and hence the price-making forces.

The chocolate processing industries are starting to moan. They had anticipated a further decrease or at least a continuation of the low prices and had not build up any cocoa stocks. They now will have to buy their cocoa at higher prices.

For the cocoa growers, the high prices might seem good news, but this does not mean much if plantations are not accessible due to war or if the profits are skimmed off by the merchants and traders along the road to London's forward market Liffe, where a substantial amount of the world's cocoa is traded.

Rollin', rollin', rollin'...



Illustration: Tert Andon

Where there is no pipeline or water lorry, roll your own



■ Rolling something heavy is usually easier than carrying it. So why not make water 'rollable' is what the inventors of the Hippo Water Roller probably thought when they launched it a decade ago, proving that reinventing the wheel can be handy sometimes!

The Hippo Roller is a plastic 90-litre drum with a long clip-on handle which enables the user to push or pull the rolling drum. The lid of the drum can also be used to scoop water. Rolling the drum home means that more water can be fetched in one go than carrying a large container on your head five times.

The roller is not a long-term solution to water access problems, and it lasts for only a few years, but still many rollers are finding their way into communities in South Africa and Angola facing water access difficulties. Many rollers are supplied by donors identified by the Africa Foundation, a driving force behind the Hippo Roller. Imvubu, the company that produces the rollers, can provide a complete manufacturing plant and training (at €98,000) for entrepreneurs who wish to produce the Hippo Water Roller under license in other countries.

Imvubu Projects
PO Box 170
Fourways, 2055
South Africa
Fax: +27 11 465 5131
Email: hippo1@iafrica.com

Making sorghum 'pop'ular

■ Almost all sorghum varieties 'pop' when heated briefly in cooking oil, and can be eaten as a salty snack. "Sorghum is readily available and healthier than the popcorn we buy at silly prices," says Professor Babatunde Obilana, a sorghum breeder in Nairobi with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). He advocates other uses too, including sorghum-based malt for breweries and sorghum-wheat composite flour for bakeries.

Email: a.obilana@cgiar.org

Greening the fringes

■ The United Nations Environment Programme (UNEP) is spending US\$ 50 million on a new phase of the Desert Margins Programme. The programme will marry indigenous knowledge with modern land management techniques to find new ways of protecting the environment in areas such as Matabeleland in Zimbabwe and the Sudano-Sahelian zone of Senegal. Seven other countries are covered in the programme: Botswana, Burkina Faso, Kenya, Mali, Namibia, Niger and South Africa.

UNEP, November 2002

Development Studies

■ The Centre for Development Research (ZEF) in Bonn, Germany is offering an international doctoral programme for young scientists engaged in political and social science, economics, agriculture, geography, ecology and management of natural resources. ZEF can support a limited number of individual students with funds for field research. The programme starts in October 2003.

Centre for Development Research (ZEF)
Walter-Flex-Str. 3, 53113 Bonn
Germany
Fax: +49 228 731889
Email: docp.zef@uni-bonn.de
Website: www.zef.de

Trouble on the way

■ Samoa's orchid industry – seen as a promising entrant in the Pacific's flower markets – is under threat from the orchid weevil (*Orchidophilus atterimus*). It has not yet reached Samoa but frequent smuggling of plants and plant material from American Samoa, where the bug has arrived, has put customs officers and orchid growers on top alert.

IRETA, 2002

Stop the cassava rot

■ A cassava parasite (*Lasiodiplodia theobromae*) found in the 1990s in the mountainous region of Togo – the Danyi Plateau and the Adélé region – causes far more damage in this region than in other regions. Researchers discovered that this is due mainly to the susceptibility of local cassava varieties. Much of the national cassava collection tested resistant to this rot, putting rapid reduction within reach. Mind you, farmers need to be able to recognise the disease and avoid using contaminated plant material or planting cassava in the same field the following year.

📍 Béré Tchabana
ITRA
BP 129 Kara
Togo
Fax: +229 60 60 13
Email: crass-kara@yahoo.com

Refresh your livestock know-how

■ New and updated courses and workshops, in English, for mid-career professionals in livestock management and policy setting are on offer at the International Agricultural Centre (IAC) in The Netherlands: 'Pig production, the environment and the future' (19–21 May 2003), and 'Organic farming, analysis, design and management' (Wageningen, 23 June to 4 July 2003). A limited number of fellowships is available for the latter.

📍 IAC
PO Box 88
6700 AB Wageningen
The Netherlands
Fax: +31 317 495395
Email: training@iac.dlo.nl
Website:
www.iac.wageningen-ur.nl

More on livelihoods

■ Two new courses on sustainable livelihood approaches are on offer at the University of East Anglia in the UK. The course on 'Land Degradation and Sustainable Rural Livelihoods: Field Assessment' runs from 28 April to 12 May 2003 and continues at the Centre for Soils and Applied Biology in the partly degraded drylands of Murcia in southern Spain. The second course on 'Livelihoods Analysis for Poverty Reduction', is from 30 June to 18 July 2003.

📍 Training Office, Overseas Development Group,
University of East Anglia,
Norwich, NR4 7TJ, UK
Fax: +44 1603 591170
Email: odg.train@uea.ac.uk
Website: www.odg.uea.ac.uk

Kelp helps

Photo: C. Lissade - IIRD



Why call it a seaweed when it improves soil, enhances fish dishes and, dried, is a tasty snack?

■ Is the sea near your farm? Why not embark on sea farming or – as the cultivation of seaweeds is called – mariculture. The virtues of seaweeds have been known for ages but only in the past few decades have both production and consumption started to soar. The various edible brown, green and red seaweeds – they are grouped according to colour, which is determined by light availability – are not only gaining in popularity as a vegetable, they are increasingly being used industri-

ally to give a smoother texture to such products such as ice-cream, beer, jam, paper, rubber, toothpaste, ointments and lipstick. Some, particularly the well-known *Spirulina* species, are also used for their medicinal properties. Of the three groups, brown seaweeds are most common and most widely produced. According to the FAO, world production rose in the 1990s by almost 100% to almost 7,000,000 million t (fresh weight) today annually. China, with an annual 4,000,000 mil-

lion t, is by far the largest producer, followed at a distance by other Asian countries such as Japan, S. Korea and the Philippines. In the Pacific seaweed production is a well-established business too.

Africa is a relative newcomer, although Tanzania and Madagascar have been exporting red seaweeds (*Eucheuma* species) for years for carrageenans (the source of an infinite variety of gels). On the island of Zanzibar sea

farming was established a decade ago. Here it has become primarily a woman's task. The weeds are usually grown on strings between poles just beneath the water surface. It takes some weeks before it can be harvested, after which it is dried and sold. The prices for industrial seaweeds in Zanzibar are currently low, but they nevertheless enable the women to earn more money than their husbands do from fishing and growing crops.

Africa could make much more use of the resource. Keto Mshigeni of the University of Namibia argues in *Discovery and Innovation* (the African Academy of Sciences journal) that seaweeds could be used to extract iodine. An estimated 150 million Africans suffer from iodine deficiencies and currently all the iodide for adding iodine to salt has to be imported, and yet on the shores of southern Africa are seaweeds such as *Laminaria* and *Ecklonia* species which contain about 6,000 mg of iodine per kilo weed.

Another added-value possibility was discovered by the Taurus Products company in Namibia, which developed Agrikelp, a seaweed-based soil improver. A substance in the weeds absorbs and stores water, releasing it very slowly. When added to the soil, it improves the soil's water-holding capacity and retards wilting. What's new, people on the Celtic fringes of Europe, in Brittany and Wales, may ask? There kelp has been added to soil for thousands of years, as well as being used in the baking of bread.

Doing the deals

■ More than 100 deals were signed between companies attending the Agro-Ind trade meeting in Dakar, Senegal, in early November 2002. They covered agreements between West African agro-business companies themselves, of whom 230 attended, or between them and investors, advisors and financial partners from European Union and other countries, who numbered about 115.

This was a conference turned inside-out and on its head, with the informal contacts that arise at any meeting lying at its heart, and traditional plenary sessions at the edge. For 3 days, the building buzzed with 1,021 one-to-one contacts, officially mediated, plus thousands more informal parleys. Workshops were held on project preparation and monitoring and, co-organised by the Centre for the Devel-

opment of Enterprise (CDE) and CTA, on health and hygiene standards for fish products and on opportunities in the (mainly organic) fruit and vegetable markets, with the COLEACP promotion agency.

When not doing their deals, participants went shopping. Not in the nearby *médina*, but at the supermarket-style Technical Information Centre. There, information suppliers, including CTA, helped clients to locate key data. Other valuable data, including country profiles of the agro-industrial potential in the West African market of 220 million people, are available in Agro-Ind reports and online.

📍 Agro-Ind
PRO€INVEST
52 avenue Hermann Debroux
1160 Brussels, Belgium
Fax: +32 2 679 1870
Email: sbu@proinvest-eu.org
Website: www.agro-ind.com

Smart, smooth and spotless

■ In 2000, almost 30 women in Kathangu, a village in Embu, north of Nairobi, Kenya, started a project on making soap and oil from avocados. With extension and support from the National Agriculture and Livestock Programme, the project is now running successfully. Originally the community, like many other communities in the area, relied on coffee, but the low prices forced them to look for alternative sources of income. They were already growing avocados but much of it got wasted through the lack of markets. Kenya produces around 19,000 t of the fruits annually. The fact that it is a bulk product and does not keep easily makes it difficult to transport, store and market.

In Kathangu, the overripe fruits which fall on the ground are now being collected every morning and processed into soap. A laborious task, both making the oil as well as the soap.

For the oil, unripe fruits are cut into pieces and left to dry. When wrung in a cloth sack, the oil is released (1,000 fruits for a jar of oil, which can be sold for 500 Ksh or € 6.45).

For the soap, the ripe avocados are mashed and sieved through a wire mesh. This paste is mixed with cooking fat or coconut oil to get a homogenous mix. To this is added a little caustic soda (carbon hydroxide NaOH, the aggressive substance

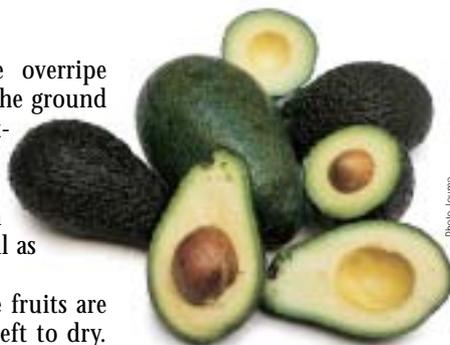


Photo: Gama

used for cleaning out blocked drains), which hardens the mixture. The mixture is then boiled over a slow-burning fire and stirred, and a little perfume is added. It is then left to cool slowly – for 2 weeks – into soap. The end result is a nice soap, especially popular with men for use as shaving soap.

Vincent Agoya, Pambazuka, August 2002

Complementary insects



Photo: Scott Bower - ARS, USDA

It's the quiet, small ones you have to watch out for. This pesky *Ceratitidis capitata* is about 6 times smaller than in this photo.

■ The fight against fruit flies (*Ceratitidis capitata*) has entered a new stage. The flies lay their eggs inside ripe fruits and are thus a

major pest for fruit growers in the tropics and subtropics. A new combination of two known techniques has turned out to be

successful in the United States and Mexico, and recently Brazil has implemented the combined control programme.

On the one hand, the programme concerns mass rearing of sterile males and releasing them, a practice already used in many parts of the world. On the other, it involves releasing a parasitic wasp (*Diachasmimorpha longicaudata*) which, once established in an infested area, starts to prey on the fruit flies. The new approach involves releasing both the wasp and the sterile male fruit flies simultaneously in large numbers.

The sterile flies reduce the number of fertile eggs. The wasps seek out the larvae of the flies in the fruits, feed on them and lay their own eggs inside them. In this way, the wasp reproduces itself and its offspring continues the struggle against the fruit fly.

The Brazilian Agricultural Research Organisation (EMBRAPA) has tested the method in various ecosystems in the country and has found that it is a viable biological control method, usable at a large scale and thus saving on pesticides.

Embrapa Mandioca e Fruticultura
44.380-000, Cruz das Almas
Bahia, Brazil
Fax: + 55 75 621 1118
Email: sac@cnpmf.embrapa.br
Website: www.cnpmf.embrapa.br

Partners shape partnerships

■ If the enlarged village which is Wageningen, and home to CTA's headquarters, has no baobab tree for sheltering discussions, it is only for reasons of climate. For, indoors, those intense, familiar, time-consuming, fruitful discussions indeed take place, just as they should between partners.

In two separate meetings in mid-September 2002, CTA's national and regional partners came together at CTA to

review progress and share experiences on their individual partnership projects, and shape future directions. For the national partners, their agenda brimmed with talk of their magazines, media activities and training needs. Regional partnerships, by nature further removed from local priorities but not necessarily any the vaguer for that, focused *inter alia* on networking practice and network densities.

Living gourd museum

■ With support from the Japanese International Cooperation Agency, Kenya has established the world's first gourd museum, annex documentation centre and genebank. The gourds species, *Lagenaria siceraria* and *Luffa cylindrica* also known as African calabashes were once common foods and the shells are still used as containers and kitchen implements. With gourds falling victim to changing lifestyles and plastic, the museum, set up and managed by the Kyanika Adult Women's Group in Kitui, north of Nairobi, will promote their use of gourds and conserve the knowledge and gene pool of more than 250 known species.

Another cup of tea?

■ The Government of Uganda has dismantled the Uganda Tea Authority (UTA) and the Uganda Tea Growers Corporation (UTGC) and is establishing a single tea board. The two bodies were not functioning well in reviving the tea sector, once the country's third foreign exchange earner. Current production of about 27 million kg is, according to the Ministry of Agriculture, far below the country's potential.

Slow and steady...?

■ By November 2002, the price of coffee had risen to its highest level in 2 years. The composite indicator price – an average of various coffees traded on various markets – reached US\$ 0.50/lb, compared to US\$ 0.42/lb in August, despite the continuing oversupply situation. According to the International Coffee Organisation, this could well be linked to a dry spell in Brazil and reduced production in Vietnam and Central America.

Hedging catches on

■ In the April 2002 issue of *Spore* (98), the article "The dice have no dots" made a strong plea for producers to consider taking out insurance against calamities, as protection against low yields or rock-bottom prices for their commodities. A novel approach for much ACP farming, and hard to organise for many single farmers, it was adopted in late October 2002 by a leading group of South African fruit growers in the Ceres area, reports the *Financial Times*.

Dairy information

Interested in getting hands-on information for dairy projects? Despite the recent growth in dairy development programmes in many countries at local and national levels, and their associated networks, most of the reliable information sources are still at the international level.

The fullest range of information is available, not surprisingly, from the dairy section of the Food and Agriculture Organization (FAO). In printed and electronic form, there is a wealth of data, practical information, policy documents, project planning guides and much more from the FAO Livestock Production Service. This covers milk production, collection, marketing, processing and preservation. It is best seen, if you can, on the FAO Website's Dairy Information Page which is a model for clarity and ease of access at www.fao.org/ag/aga/agap/lps/dairy/intro.htm. Or address written enquiries to the Dairy Information Service, Animal Pro-



Illustration: Lukino

duction and Health Division, FAO, Viale delle Terme de Caracalla, 00100 Rome, Italy; fax: +39 06 5705 5749; email: jeanclaude.lambert@fao.org

The FAO dairy section co-publishes the *Dairy Development Newsletter* with the International Dairy Federation (IDF), a highly informative if rather dry bulletin about best practice, new trends and policy formulation. Subscribe (for free) through the address above. The IDF is a small body for the professional dairy sector and is useful for institutionalised links. IDF, Diamant Building, Boulevard Auguste Reyers 80, 1030 Brussels, Belgium; fax: +32 2 733 0413;

email: info@fil-idf.org. Website: www.fil-idf.org

If you're short of time for searching, but ready to do some reading, a good source of information is the recent report of a South-South workshop on smallholder dairy production and marketing held in Anand, India, from 13 to 16 March 2001. It describes the national situation in countries throughout Africa, Asia, the Pacific and Latin America. Various papers also discuss the implications of international trade regulations and food quality standards (based on the Codex Alimentarius regulations) for smallholders, support mechanisms and policy development at national level and research priorities. There is also a healthy portion of practical case studies on micro-credit, forage technologies, preservation techniques and more. *Smallholder dairy production and marketing - Opportunities and constraints*. Edited by D Rangnekar and W Thorpe W. Co-published by the National Dairy Develop-

ment Board, Anand, India, and the International Livestock Research Institute (ILRI), Nairobi, Kenya. 538 pages, 2002. ISBN 92 9146 114 8. Available free in print form from ILRI, PO Box 30709, Nairobi, Kenya; email: info@ilri.org, and downloadable from the Website www.ilri.org

If it's actual projects, or project support, that you're looking for, you would do well to plug into the networks that involve the Heifer Project. Their free newsletters and online services open many doors to local experiences throughout the world. Heifer Project International, PO Box 8058, Little Rock, AR 72203, USA; email: info@heifer.org. Website: www.heifer.org

But at the end of day, when the cows come home (as they say), try to visit this page on the FAO Website: www.fao.org/ag/aga/agap/lps/dairy/URL/Url.htm. It has hundreds of well-researched links to the entire small dairy development sector.

The network that bounced back

Now here's a simple, straightforward story of success. The Agridoc network started in France just over 20 years ago, and for years provided a sound but basic service distributing documents about agriculture, principally to francophone Africa. Many *Spore* readers will know it from the 1980s and 1990s as the 'answer' part of CTA's then Question-and-Answer Service.

At the turn of the century Agridoc decided to modernise and change its service, explicitly building customer friendliness into it. This metamorphosis has led to a well-conceived and dynamic set of services, designed to ensure the widest possible dissemination of the wealth of agricultural information which Agridoc can now provide, with support from the French Ministry for Foreign Affairs.

They work along the lines of cascades of information.

Instead of operating from one centre, they are decentralising to eight regional service points based at existing organisations which are recognised as centres of excellence in providing customised services in agricultural information, and are often mentioned in *Spore*. At present, six are operational: at IPD-AOS in Burkina Faso, SAILD in Cameroon, INADES-Documentation in Côte d'Ivoire, CITE in Madagascar, ENAM in Morocco and UTAP in Tunisia.

At the heart of their services are two twice-yearly magazines, produced by the secretariat based at BDPA, near Paris. The first magazine, an information bulletin sent to all network members, is a wonderful collection of *Spore*-style news of technologies, networks, courses, Websites, a bulletin board of members, and reviews of new publications. Here lies the special feature of Agridoc: mem-

bers can request a number of publications. If they are, or work in, an institution able to share the publications with more partners (known as Category 1) they can request copies or purchase them. Smaller groups (Category 2) with no organised dissemination can purchase copies, or obtain sponsored copies, or consult them at Category 1 organisations or the regional service points. There is also a Category 3, encompassing other networks, donor organisations and support bodies. The second magazine is thematic: recent issues have covered trends in local development and the liberalisation of livestock services. This is sent to all members, except for Category 2 organisations when their fields of interest do not include the topic in question.

Most network members can also use Agridoc's question-and-answer and selective dis-

semination of information services, and obtain technical documents, manuals and guides from the Website, plus the range of (French-language) books produced for Agridoc by GRET. The latter are usually mentioned in *Spore*, and 2003 is likely to see a rich harvest of more of these books.

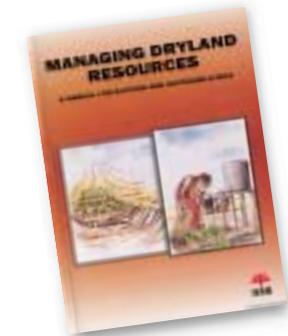
Much of the information in the magazines, and the documents they describe, is in English and French; other services are mainly in French only.

Want to join? Just ask. With their goal of 7,000 members by the end of 2003 not yet met, the door is open to most applicants. Remember, the more you can do with their information, the more the network will do for you. Couldn't be simpler!

BPDA Agridoc
3 rue Gustave Eiffel
FR-78286 Guyancourt Cedex
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Fax: +33 130 124 840
Email: agridoc@bdpa.fr
Website: www.agridoc.com

Publications

What's in a word



Forget the word 'dryland' in a recently published book that carries the title *Managing dryland resources*. At least that is what the authors say, albeit in a different way. Dryland means one thing for pastoralists who can move herds in dry situations and quite another for farmers who grow crops. The meaning of dryland for farmers in Uganda, where once in 5 years there might not be enough rain for a good crop, is different from its meaning for farmers in the north of Chad or Sudan, who might need to sow twice every season in anticipation of the onset of the rainy season.

Anyhow, what remains is a good 'question and answer' kind of book for every farmer in sub-Saharan Africa, where abundant rainfall is absent. It provides a variety of ideas, techniques and information on what to do and what not to do, including ways of conserving and applying water, fighting erosion, different kinds of cropping patterns, managing livestock, using markets, and developing community organisations and participatory extension.

It should be used as a field-work manual and reference guide by farmers and extension and development workers, who all know what they mean when they talk of drylands.

Managing dryland resources: A manual for eastern and southern Africa
IIRR - CTA, 2002. 228 pp.
ISBN 9966 9705 2 5
CTA number 1090. 20 credit points

Drain to the last drop



"There is no natural reason why any single village in any single part of the world should remain short of drinking water." So much becomes clear from browsing and reading through *The rainwater harvesting CD*, from which this quote is taken. And it is not just referring to good intentions but also to physical realities. Imagine, a rain shower of 100 mm, the kind you even get in most deserts annually, yields when collected from a surface of 1 hectare no less than 1 million litres of water!

The CD - so you will need a computer with a CD-ROM drive - offers a lot of background documents and case studies on rainwater harvesting, including the CTA study visit in



Kenya in 2000 (see *Spore* 89). The documents section contains selected articles from the magazine *Waterlines* and the proceedings of the 1999 and 2001 rainwater harvesting conferences.

The rainwater harvesting CD
By H Hartung, co-publication Margraf - CTA - FAKT - NEDA, 2002.
ISBN 3 8236 1384 7
CTA number 1092. 40 credit points

When aware, beware



This book could have been called "How to win friends and influence people" but that title was taken way back in 1936 for what became a classic in the art of persuasion. That art, for institutions seeking funds, favours or friends, is now called 'public awareness building'.

This manual is a solid and comprehensive introduction to the task facing more and more agricultural organisations, namely that of explaining their goals, their needs and their services to the various publics they seek to serve, or rely upon. As such, it fits into the long-term CTA programme of assisting partners to heighten their public profile. It looks in detail at separate and linked approaches and tools: press releases, dealing with the press, interview techniques, newsletters, annual reports, audio-visual presentations, publicity events, fairs, crisis situations, monitoring and evaluation, and more.

But, beware, using all the tools in this book will not necessarily win you all the attention you want. In communication there are two sides to any story, and what you say may not be what your 'targets' hear. They



also notice what emanates from your institution. That aspect is often overlooked by institutions who believe that public awareness is just a set of mechanistic tools. No, it's more than that. Go outside your organisation and try to understand how others see you, how they interpret your body language, your behaviour. Does your institution look confident or brash? Cooperative or sneery? Blustering or reliable? It's not just a question of getting your way; you have to get understood properly too. This book, the simpler side of the coin, can help you get there.

Public awareness: A manual for agricultural NGOs and research institutions in Africa
CTA, 2002. 162 pp. ISBN 9966 9705 3 3
CTA number 1088. 20 credit points

Free virtual science

The electronic version of the science journal *Nature* is one of the latest being made freely available online to countries with a GNP below US\$ 1,000 per capita. Free access to about 2,000 scientific journals, from Blackwell, Elsevier and John Wiley among others, is provided through the Health InterNetwork Access to Research Initiative (HINARI), which was launched by the World Health Organisation in January 2002 and will last for at least 3 years. For countries with a GNP between US\$ 1,000 and US\$ 3,000 per capita, the journals will be offered at reduced prices from 2003 onwards.

www.healthinternetwork.org

Back to basics

Why plants are green, when soil is clay, and why crafting works or not. A wonderful easy-to-read standard work on the science behind all that thrives on and in the soil. Meant for students of horticulture, the book should find its way to a much wider readership! An asset!

Science and the garden. The scientific basis of horticultural practice
Edited by D Ingram, D Vince Prue & PJ Gregory, Blackwell Science, 2002. 304 pp. ISBN 0632053089
GBP 19.99 • € 30.65
Blackwell Science Ltd
Osney Mead, Oxford OX2 0EL, UK
Fax: +44 1865 721205

Upstream, downstream

A book and CD-ROM containing the proceedings, case studies and discussions of an electronic workshop, organised by the FAO on land-water linkages between upstream and downstream water users in rural watersheds.

Land-water linkages in rural watersheds
FAO (includes a CD-ROM), 2002.
88 pp. ISBN 9251047650
US\$ 14 • € 13.60
FAO Sales and Marketing Group
Viale delle Terme di Caracalla
00100 Rome, Italy
Fax: +39 06 5705 3360
Email: publications-sales@fao.org

The benefits of both

An interesting sample of traditional technologies from different parts of the world for keeping livestock in farming systems that combine animal husbandry with crop cultivation.

Mixed crop-livestock farming. A review of traditional technologies based on literature and field experiences
FAO, 2001. 88 pp.
ISBN 9251045763
US\$ 14 • € 13.60
FAO Sales and Marketing Group
Viale delle Terme di Caracalla
00100 Rome, Italy
Fax: +39 06 5705 3360
Email: publications-sales@fao.org

A fertile cooperation

■ The collaborating authors – of whom half are African – of this compilation of scientific papers on nutrient management is to develop practices to maintain or improve nutrient balances by using an optimum mix of local organic nutrients and inorganic fertilisers.

Integrated plant nutrient management in sub-Saharan Africa. From concept to practice Edited by B Vanlauwe, J Diels, N Sanginga & R Merckx, CABI Publishing, 2002. 384 pp. ISBN 0851995764 GBP 55 • € 84.30 CABI Publishing Wallingford, Oxfordshire OX10 8DE, UK Fax: +44 1491 833508 Email: cabi@cabi.org

Join in, read on

■ Three volumes of participatory learning and action (PLA) notes, collected on a searchable CD-ROM. It contains more than 600 articles on participatory approaches.

PLA notes on CD-ROM Full Set of Back Issues of PLA Notes 1-40, published by the International Institute for Environment and Development (IIED), 2002. ISBN 1899825797 Stock number: x165IIED1 US\$ 75 • € 72.80 Earthprint Ltd. P O Box 119 Stevenage, Herts SG1 4TP, UK Fax: +44 1438 748 844 Email: customerservices@earthprint.com Website: www.earthprint.com

Moving on

■ Pastoralism is very much part of the present: it supports 20 million households and is increasingly regarded as a way of preserving biodiversity in marginal areas. This synopsis offers future scenarios.

Pastoralism in the new millennium FAO Animal Production and Health Papers, 2001. 104 pp. ISBN 9251046735 US\$14 • € 13.60 FAO Sales and Marketing Group Viale delle Terme di Caracalla 00100 Rome, Italy Fax: +39 06 57 053360 Email: publications-sales@fao.org

Trees of life

■ Five case studies in Kenya and Zambia of the socio-economic aspects of agroforestry and its adoption by farmers. Academic, for researchers on agroforestry, extension and natural resources management.

Trees on the farm: assessing the adoption potential of agroforestry practices in Africa Edited by S Franzel & S J Scherr, CABI Publishing, 2002. 208 pp. ISBN 0851995616 GBP 35 • € 53.65 For CABI's address see elsewhere in this section

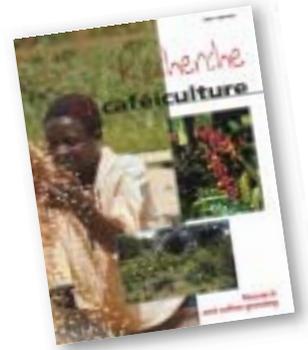
Black coffee

■ Things have been looking black for coffee of late. This delectable berry, known to Ethiopian drinkers for more than 500 years, has never had a crisis like that of 2002 before. Even the very conservative *Forbes Magazine* recently ran a long, indignant article about the intolerable depths to which the market had sunk, starving small coffee farmers and their families.

Whence have we come, and where should we go? These are the two key questions raised with great clarity in this excellent bilingual issue of a journal published by CIRAD, the International Centre of Agricultural

Research for Development. Separate chapters are devoted to issues of quality, fair trade, sustainability, plant breeding and biological pest control. Special attention is paid to the links in the coffee chain and the impact of newcomer producers, particularly those in Vietnam.

If you work in coffee, you could find comfort in this journal. If you like risks and adventure, you will find some useful ideas for playing the market. Otherwise, stand back. Even if the world continues to drink its 1,500,000,000 daily cups of coffee, the future of this noble plant is none too sure.



Research and coffee cultivation Special issue of the journal Plantations, recherche, développement, CIRAD, Montpellier, France, 2002. 156 pp. ISSN 1254-7670, € 23 (+ postage) The CIRAD Bookshop TA 283/04 - Avenue Agropolis 34398 Montpellier Cedex 5, France Fax: +33 4 67 61 55 47 Email: librairie@cirad.fr

Your livestock mapped out

■ In the search of ways for improving the livelihoods of people, there is a need to understand and define the problems. To do this accurately, good data are a prerequisite. The International Livestock Research Institute (ILRI) did its bit in the field of livestock and poverty. The resulting publication reads like an atlas with data in tables and in the form of maps, including data on poverty distribution, population densities, rangelands, animal production systems and animal densities.

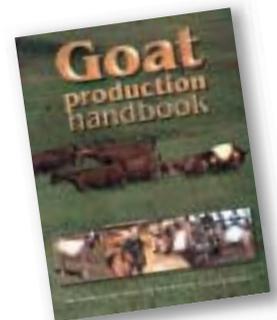
Besides valuable data, the atlas also hazards some prophe-

cies on how the situation will be in 2050.

A nice piece of work, including many, surprisingly detailed, world maps. Good basic material for researchers, policy-makers and planners in the field of livestock-related production systems.

Mapping poverty and livestock in the developing world Published by the International Livestock Research Institute (ILRI), including a CD-ROM, 2002. 124 pp. ISBN 92 9146 109 1 ILRI Information Services PO Box 5689, Addis Ababa, Ethiopia Email: ILRI-Ethiopia@cgiar.org Online version available at www.dfid.gov.uk and www.ilri.org

Don't gloat about goats



■ Following the import of two new goat breeds for a cross-breeding project in Jamaica 2 years ago, and in view of the growing acknowledgement that goat rearing can be a lucrative enterprise, the publication of this practical manual on goat production could not be more timely.

A manual on breeding, keeping and milking goats from A to Z, with a very modest focus on Jamaica, making it useful for other countries as well.

Goat production handbook Published by the Ministry of Agriculture of Jamaica and the Goat Breeders Society of Jamaica, with support from CARDI, 2002. 60 pp. US\$ 10 (Jamaica) US\$ 12 (rest of the Caribbean) US\$ 15 • € 14.55 (rest of the world) A Parke Permanent Secretary, Ministry of Agriculture Hope Gardens, Kingston 6, Jamaica Fax: +1 876 927 19 04 Email: aparke@cwjamaica.com

Nuts about groundnuts



■ The umpteenth volume in the Tropical Agriculturalist series focuses on groundnuts and provides what you expect from this good old series – a thorough overview of all the

aspects of groundnut cultivation and processing, as well as the by-products from haulms and shells. It includes a small section with colour plates showing some common pests and diseases and a range of groundnut products.

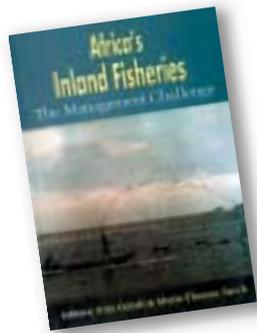
An important book, if you bear in mind that the world production amounts to 30 million t a year and that the plant is cultivated in practically every agricultural corner of the globe.

Groundnut By R Schilling & R Gibbons, Tropical Agriculturalist series, co-published by Macmillan – CTA – ICRISAT – CIRAD, 2002. 156 pp. ISBN 0 333 72365 1 CTA number 1091. 10 credit points

Angling for sustainable fisheries

■ Fish in Africa's lakes and rivers is a highly exploited natural resource. Attempts to manage the resource in a more sustainable manner are proving to be a major challenge for government authorities as well as for community-based initiatives. Clashing interests – not only over the fish themselves, but also over water, power and borders – is resulting in only modest successes in the search for the sustainable management of fishery resources.

Editors Geheb and Sarch have brought together 11 essays of empirical studies on these kinds of management issues for lakes Chad, Kariba, Victoria, Malawi, Chilwa, Tanganyika



and the river Gambia, discussing policies, programmes and realities.

A rich and rare account of a complex management problem, it does leave the reader with many questions. Luckily, the last chapter turns out to have a

too modest title: "A challenge met? Some final thoughts". It lists the issues clearly and serves as a synthesis – almost a bibliography for where to look further.

Africa's inland fisheries: The management challenge
 Edited by K Geheb and M-T Sarch,
 Fountain Publishers, 2002. 304pp.
 ISBN 9970022938
 GBP 16.95 • € 26
 Fountain Publishers
 PO Box 488
 Kampala, Uganda
 Outside Africa:
 African Books Collective
 The Jam Factory
 27 Park End Street
 Oxford, OX1 1HU, UK
 Email:
 abc@africanbookscollective.com
 Website:
 www.africanbookscollective.com

A welcome wasp's nest

■ An update of the CD-ROM originally published in 1998 (see Spore 79) with a specialist overview of Chalcidoidea, one of the largest groups of parasitoid wasps. The species are usually very small; some live on plants, but most are parasitoids of other insects and are considered beneficial and used in biological pest control programmes.

Interactive catalogue of world Chalcidoidea 2001
 By John S Noyes, Taxapad 2001.
 CD Rom for Windows 95, 98, 2000, NT & XP
 US\$ 190 • € 184.50
 Taxapad
 PO Box 48205
 Bentall Centre
 Vancouver B C V7X 1N8, Canada
 Email: DickyS_Yu@telus.net

This living planet

■ A world atlas that shows you where the trees, plants, birds and fish are, where mangroves thrive and which areas have a high biodiversity or face biodiversity loss. It includes maps indicating the world's conservation areas and policies.

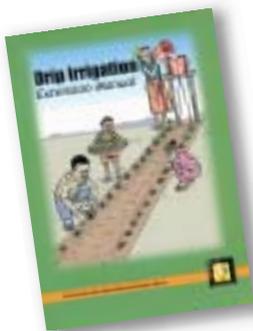
World atlas of biodiversity. Earth's living resources in the 21st century
 By B Groombridge and M D Jenkins, UNEP, 2002. 339 pp.
 ISBN 0520236688
 Stock number: 3114
 US\$ 54.95 • € 53.35
 Earthprint Ltd.
 P O Box 119
 Stevenage, Herts SG1 4TP, UK
 Fax: +44 1438 748 844
 Email:
 customerservices@earthprint.com
 Website: www.earthprint.com

A virtual library

■ This bibliographic database covers the publications of the Organisation for Social Science Research in Eastern and Southern Africa (OSSREA) between 1980 and 2000. Searchable by categories such as environment, gender, pastoralism or economy. Some documents are available as full-text.

OSSREA on CD research publications and official documents
 OSSREA, version 1, 2001. CD-ROM – cased.
 GBP 12.95 • € 19.85
 African Books Collective Ltd
 The Jam Factory
 27 Park End Street
 Oxford, OX1 1HU, UK
 Fax: + 44 1865 79 32 98
 Email:
 abc@africanbookscollective.com
 For customers resident in Africa, also available from:
 OSSREA
 PO Box 31971
 Addis Ababa, Ethiopia
 Fax: +251 1 55 13 99
 Email: ossrea@telecom.net.et
 Website: www.ossrea.org

Drip, drip, drip....



■ A good manual doesn't need to be bulky. The Arid Lands Information Network Eastern Africa (ALIN – EA) proves this with their 36-page booklet on drip irrigation. This water application method consists of hollow tapes with holes at regu-

lar intervals. These holes are positioned nearby the crop's root area, allowing the water to be directed exactly to where it has to be, without losing it through surface runoff or seepage in the sub-soil.

For a long time this method was expensive and was associated with large-scale industrialised cultivation.

This manual presents drip irrigation as being suitable at a small-scale too (e.g., for watering vegetables during the dry season). Technically, all that is required is a bucket and irrigation tape. The bucket should be placed at an elevation of 1 m, high enough to ensure enough water pressure in the tapes and

low enough to be able to fill the bucket manually. From beneath the bucket 30 m of drip tape lead the water to the crops.

All in all, a straightforward text for extension workers, indicating the necessary steps in training farmers to use this method and avoid mistakes made in the past. The booklet is illustrated with attractive drawings and colour photos, adding value to the text.

Drip irrigation. Extension manual
 By ALIN - EA, 2002. 36 pp.
 Kshs 250 (Kenya) • US\$ 5 (Ethiopia, Uganda & Tanzania) / US\$ 8 • € 7.75 elsewhere
 ALIN
 PO Box 10098
 00100 Nairobi, Kenya
 Fax: +254 2 71 00 83
 Email: baobab@iconnect.co.ke

How to obtain these publications



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Publications on CTA's list are available free-of-charge to PDS

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.

Non-subscribers who wish to join the scheme should write to CTA for an application form. Applications will be considered from agricultural and rural development organisations in the ACP (Africa, Caribbean and Pacific) Group of States; individ-

uals resident in ACP countries may also apply.

If you are not eligible for a free subscription to the PDS, or if you need publications beyond your free credit allocation, you may buy publications on CTA's list from our commercial distributor: CTA Publications ITDG Publishing, 103-105 Southampton Row, London WC1B 4HL, UK, Fax: +44 20 7436 2013
 Email: cta@itdpubs.org.— Website: www.itdgpublishing.org.uk

How do you put *Spore* together?

.....

We continue the interview between CTA staff and *Spore*, started in *Spore 101*, and explain, in response to many readers' queries, how *Spore* is produced. It's a tight and complex process, exercising intellects and logistics. In its evolution over the past 17 years, it has not always been easy – as in 2002 – to keep it up, for which our apologies. Here how it works when it works well.

It's a long road from the idea for an article to the time the magazine reaches the reader. *Spore* is the flagship publication of CTA, and its daily management is in the hands of the Information Products and Services Department (IPSD). The IPSD engages an external agency to do the bulk of the work in originating and writing articles, and designing and producing the print and electronic versions. Currently, that agency is the *Spore* consortium, formed by the Médiateurs group based near Amsterdam in The Netherlands, and Louma productions in Aniane, near Montpellier in southern France. Médiateurs provides the editorial services, and runs a network of 24 correspondents in all six ACP regions and beyond. Louma looks after all the design aspects, including the popular photographs and illustrations, and the production. The sister edition of *Esporo* is produced by the Edições 70 group in Lisbon, Portugal – they take most of their material from *Spore*, and add sections of special interest to Portuguese-speaking, in the same way as the French and English *Spore* editions have different articles about publications or some training courses.

Planning

Each October, CTA's *Spore* team (composed of IPSD staff) meets with the consortium team and *Esporo*'s representative to decide on the major topics ('long articles') for the coming year's six issues. Very occasionally, these change during the year. Then, every 2 months, about 90 days before an issue is due to appear (what we call D Day minus 90, the 'D' for 'delivery'), they all meet to plan that issue in detail, section by section, article by article. There is input from IPSD and other CTA departments, the consortium and *Esporo* – with a growing volume of proposals from correspondents and readers. The outlines of long articles are discussed as in a high-level seminar; sometimes a suggestion for a short article will be promoted to a longer article. The air is thick with dozens of suggested articles, and the room full of champions of so many ideas. Books, videos and CD-ROMS are examined and weighed up, and accepted or rejected for a review. In the following weeks, the consortium writes and edits the articles. The only pieces we hardly touch are readers' letters, which speak for themselves. CTA then approves the copy, adding

its own editing touches and suggestions for improvements. Sometimes, an article turns out to be less interesting than expected, and a replacement is found; there are always one or two articles in reserve.

All this is done in accordance with a stout document called the *Spore Content and Style Guide*, the team's own rule book about, as the song says, what to leave in and what to leave out. Such as how much, or how little, coverage there should be of CTA events, how often an ACP region has to be written about, checking stories, spelling rules, type of language to be used, how much should be originated in French, or in English, how many words in a headline – you name it. The quality of writing is also defined, based in part on readers' levels of reading, and with the requirement of having the same quality as, for example, *The Economist* and *Le Monde*. One of the greatest – and few – critics of *Spore*'s accessible style once spluttered that "This article could have been in *Newsweek* magazine", which we took as a great compliment. Another, more cautiously, warned us that our open style is not the right approach for writing for policy-makers, who need their information to be opaque. He had a point, but we decided to keep it open. The Uses of *Spore* Survey has shown that most readers are satisfied with the style, and we always welcome informed comments for improvement. All leading magazines publish their style guides, and *Spore*'s will be published soon.

From words to messages, with graphics

After approval, about 40 days before D day, texts are translated and then comes a period of metamorphosis. Photographs and illustrations are selected, and the words on a typed page are converted into a properly laid-out article in Louma's design studios. First one language edition is completed, and the other follows. Designs, like the photos and texts and draft articles before them, are shared between team members by email. Then CTA approves the design, more usually with a "Wow!" than a whimper, and it is rushed to an impatient printer in Montpellier. While printing is going on, a new phase of work opens up: the design is delivered to the CTA Website; the email Ennouncement goes to subscribers; the new package of *Spore and more* starts being broadcast on our WorldSpace satellite chan-

nel; and the *Spore* indexers add the edition to the *Spore* index, scheduled to go public as from mid-2003. The final design is also sent to Lisbon to complete work on *Esporo*, for distribution a few weeks later.

About 10 days later, D Day, pallets stacked high with more than 40,000 copies of *Spore* are collected from the printers and taken to the distributors in The Netherlands. A few days later, they are on their way by mail to subscribers in 126 countries.

Does anyone have time to put their feet up on D day + 1? Not really. The next issue has already been written, its photos are being selected; correspondents are already researching stories for the issue after that, and trying to tie down two more evasive Viewpoint articles; memos or chitchat fly around on whether the headlines in the last issue were too obtuse or too direct; the consortium updates its score-book on 'how well are we doing'; an anxious subscriber is chasing an errant back number; another 800 subscription applications have been received; and the mailbox of Mailbox is bursting with new ideas from readers. And as for the uses to which the information is put, well, that's what really counts.

The GenARDIS Fund

A Small Grants Fund in the field of gender and information and communication technologies (ICTs) has been launched by CTA, the International Development Research Centre (IDRC) and the International Institute for Communication and Development (IICD). Known as GenARDIS (Gender, Agriculture and Rural Development in the Information Society), it will make awards for innovative, gender-sensitive activities that will contribute to the understanding and application of ICTs for agricultural and rural development in ACP countries.

For the purposes of GenARDIS, the term 'ICTs' encompasses a multitude of equipment and services, ranging from satellite communication systems, telephone booths in rural areas, digital radio programmes, the Internet and electronic databases to e-commerce services via the World Wide Web.

The first competitive call for applications for non-renewable grants of up to € 5,000 requires applications to be submitted by 15 April 2003. Successful applicants will be announced in June 2003.

GenARDIS Small Grants Fund
c/o CTA
PO Box 380
6700 AJ Wageningen
The Netherlands
Fax: +31 317 460 067
Email: genardis@ccta.nl

Mailbox

In the past few issues of *Spore*, we haven't been able to accommodate all your letters and photos in Mailbox. That's why we're carrying a handsome Mailbox this time and if you want even more readers' letters in the next issue, grab your pens now!



Who produces cold sliced meats?

■ **Samuel Louis Oloko Wonbo** (BP 268, Kribi, Cameroon), is manager of a restaurant school and runs a restaurant too. He has established a small chicken farm with 80 chickens and a vegetable garden, where he grows bell peppers, chilli peppers, tomatoes, leek, amaranth, celery and basil. Thanks to that, he managed to increase the net profits of his restaurant. "The meat and vegetable dishes served in my restaurant are fresh and of good quality. What is a pity though, is that I have asked *Mailbox* to bring me in contact with producers of sliced cold meats, but so far did not get any response."

Sorry about that, Samuel. For unclear reasons we did not receive your previous letter but hope that this mention will yield some positive replies!

Faithful readers



■ The **Ekou & Kith's Common Initiative Group** writes to us from Tombel in the South West Province of the Republic of Cameroon, to announce that they have established an agricultural library. "The community has appreciated our initiative. We held a book exhibition during an agro-pastoral show early this year at Division level. The building which hosts the library for now, is their effort as a start, but we have so far under-utilised the house 'TACUDA' (Tombel Area Cultural Development Assistance). We also act as sales agent for INADES-Formation Bamenda (Integrated Rural Agricultural Pamphlets)."

My companion in life



■ "*Spore* is my companion," discloses **Simão Mbonani**, who works for *Save the Children* in Luanda, Angola. "Both in the office and in the farmers' fields, especially when I want to share the news in *Spore*. The magazine is passed from hand to hand among many of my colleagues and farmers."

One Spore more

■ **Innocent Messo Loukelo** works for the Association for Agricultural and Rural Development (ADAR) in Nkayi, Republic of Congo. He has a very interesting idea for the future of *Spore*. "I'd like to see a bi-monthly magazine similar to *Spore*, but in which old as well as newly developed articles and viewpoints are regrouped around one theme. This bi-monthly could be published alternately with the regular *Spore*."

Looking for a partner!

■ The National Farmers Association of Congo (ANAECO) of the Democratic Republic of Congo is looking for an external counterpart in the context of international cooperation, whose field of work focuses on agriculture, animal husbandry and sanitation. Anyone interested in this can contact them at: *ANAECO, Révérend Mvuuala Jean, BP 6141 Kinshasa, Kaluma, RDC - Email: mvuuala_mbona@yahoo.fr*

Distance learning

■ "*Spore* keeps up morale," writes Koffi Woglo from Tsevie in Togo, and he offers an idea worthy of follow-up. "In our societies, there is a good level of awareness of agricultural issues and practices. I am sure that many people ask themselves if it would not be desirable for the CTA, in partnership with others, to set up correspondence courses on agriculture so that we can develop our skills?"



Two CTA working documents

A good introduction to impact assessment in relation to information projects is given in the proceedings of a CTA/IICD/LEAP-IMPACT meeting held in October 2001 (see *Spore* 96: Keep it simple), and integrating statistical and agricultural market information services is covered in the report of a CTA workshop on the topic in November 2001.

Technical consultation on assessing the performance and impact of agricultural information products and services
CTA. 2002. 172 pp., CTA working document 8027. 5 credit points

Technical consultation on the integration of statistical and agricultural market information services
CTA. 2002. 80 pp., CTA working document 8026. 5 credit points

New Internet domain .int

CTA now uses the top-level domain for international organisations: '.int'.
The CTA email address is now cta@cta.int
The *Spore* Web pages are now at: spore.cta.int (note: no need for www).
The old cta.nl address is still operating, but please change your address books, mailing lists, browser favourite lists, links and pointers. Thank you.



Spore is a bi-monthly publication providing information on agricultural development for ACP countries. *Spore* is available free-of-charge to relevant organisations and individuals in ACP and EU countries. Subscriptions may also be purchased from ITDG (see page 13).
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Humberto Rios Labrada is co-ordinator of the Participatory Plant Breeding Programme at the National Institute of Agricultural Sciences (INCA) of Cuba. He recently received the Innovative Rural Development Award of the International Agricultural Centre in The Netherlands.

Participatory plant breeding

Breeding capacity

Historically, plant breeding has followed two independent, parallel tracks – a formal, scientific one and one followed by farmers. Tuning scientific research and formal breeding programmes to farmers' knowledge and selection criteria is an important step for achieving food security, especially if food security has to be ensured by resource-poor farmers.

As one might expect from an academic plant breeder, I started my career as a formal researcher, trying to develop and release 'improved' varieties. The problem in Cuba nowadays is that most farmers cannot afford expensive inputs such as seeds, machinery and agrochemicals. Launching new high-yielding varieties that require inputs in order to perform is therefore not always very useful. At one point, I discovered that scientific breeding in itself can be rather useless. I had to refocus my thinking. From just breeding plants, I became the kind of plant breeder who works with farmers, a facilitator in agrobiodiversity who breeds capacity too. And, all the time, convinced that working for low input-agriculture is absolutely scientific.

Stress situations

A major change swept across Cuba after the collapse of the communist system in Eastern Europe and the former Soviet Union. Cuba's export market evaporated, the country's purchasing power – for fuel and agrochemicals – was greatly reduced and agricultural production was heavily affected. By 1998, the production of seeds for maize and beans, for instance, was half of what it had been in the 1980s. This crisis mainly hit large-scale, industrial agriculture. The subsistence producers were less affected. At the same time, small-scale production mushroomed. A pending food crisis encouraged many to start some sort of agricultural production, and not only in rural areas – in urban areas it also rose significantly. The agricultural research evidently had to refocus too. Crop associations, biofertilisers, biological control and organic agriculture became new areas of attention. And we, as breeders, also face new challenges.

One example concerned the pumpkin, a popular vegetable in Cuba. In the 1990s, yields of pumpkin gradually decreased to

the extent that pumpkin virtually disappeared from Cuban markets. Lack of inputs had taken its toll and it became clear that these pumpkin breeds were bred to be highly responsive to external inputs. At that moment the search began for varieties that would have good yields – even in stress situations, such as drought, high temperatures, and pest and disease outbreaks – without using expensive inputs. This was a major challenge. Until then, varieties had been tested and evaluated under controlled circumstances against one type of stress, and not in multiple stress situations.

We traced 33 pumpkin landraces and some 20 modern pumpkin varieties and evaluated them. That is when participatory plant breeding was born in Cuba. The involvement of farmers in growing, breeding and selecting pumpkin varieties – on their own fields and not in pilot stations, which is very important – and comparing these with what they usually grew, led to two varieties that had promising yields

“ Working for low input agriculture is absolutely scientific ”

under low – input and high – stress conditions. In this example we managed to improve the access of farmers to biodiversity and learn from their ways of selecting varieties.

In another trial, we asked farmers to grow various kinds of rice, landraces and formal breeds on plots in two different locations. One in a slightly hilly area on poor sandy soils and one in a flat and industrial agricultural area, with farmers used to applying fertilisers and other inputs. The farmers on the sandy soils and the scientists selected a mixture of both landraces and formal breeds as favourites.

The farmers in the industrial area preferred the formal sector rice varieties. They were familiar only with these varieties and lacked the knowledge to evaluate the other breeds. Biodiversity is thus also a prerequisite for knowledge. 'Traditional' farmers have a tremendous amount of both experimental and conceptual knowledge about plants, seeds and the performance characteristics of different varieties. They also maintain a rich diversity of varieties of certain plants in their own fields.

Gardens of biodiversity

In the early eighties, when Cuba was at its peak of industrial agriculture, a study showed that the country's diversity in plant genetic resources was being managed and maintained mainly by non-industrial farmers. The home gardens, particularly, were – and still are – the cradle of biodiversity. Here, farmers maintain varieties for many purposes, such as food, medicine, marketing and religious purposes, that were not met by the formal agricultural institutions. So, by involving farmers in the selection and breeding process, both farmers and researchers not only learn from each other, it is also the logical way to increase biodiversity and to improve farmers' access to biodiversity. Furthermore, if you want farmers to be responsible for the country's food security, you will have to take those farmers and their socio-economic situation as the starting point. The world of plant breeding and seed production, as well as that of policy-makers has to be more open and responsive to this.

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Email: humberto@inca.edu.cu

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