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Website: spore.cta.int



In this issue

Of Humans and Nature. In this issue of Spore, you will find out a lot about the

intense and sometimes turbulent relationship between the two. How each one must find its proper place, without encroaching on that of the other: plants and animals offer their benefits to humans, so long as humans do not invade or disrupt their habitats. In the same way, the soil – farmers' primary resource – ends up rebelling if humans pummel and pound it too much. But it rewards those producers who listen to it and protect it from harmful outside forces. Likewise, species can turn into conquerors, colonising land and water, often helped by humans who transport them long distances from their place of origin. Plants, animals and humans – they all need to step up their efforts to get the better of invaders



Photo: © WWF

Protected areas

A delicate balancing act

Economic growth and environmental protection are not necessarily mutually exclusive. Properly managed, the conservation of natural resources can make tangible contributions to poverty reduction and help preserve cultural identities. But local communities must be closely involved in such management if they are to reap the rewards

As a term, it does not exactly trip off the tongue. But whatever its semantic shortcomings, 'collaborative protected area management' is widely being touted as the best practical approach for conserving biodiversity in the developing world. The concept is based on the premise that poverty cannot be eliminated without protecting the environment, and that the environment cannot be protected without tackling poverty. In a nutshell, the idea is to manage terrestrial, wetland, coastal and marine environments in such a way as to achieve the twin goals of economic growth for local people and the long-term sustainability of the natural and cultural resources on which their livelihoods depend. Give people an incentive to look after their

surroundings, goes the theory, and they will invest more in preserving them for the future.

The notion stands in marked contrast to the old-style paternalistic formula, which saw conservation as something to be dished up to poor rural communities whether they liked it or not, and often involved separating them from the very biological, physical and cultural resource bases on which they relied. The idea of designating land and seascapes as protected areas has gathered growing momentum in recent years. The 2003 *United Nations List of Protected Areas* shows that since records began in 1962, the total number of sites has risen from 1,000 to more than 102,000, covering 18.8 million km², or 12.5% of the global land surface. But in

spite of such progress, there is concern in some conservation circles that focusing on the quantity of protected areas set aside may ignore the *quality* of the conservation effort or of the biodiversity contained within those zones. Just as importantly, there are doubts

of income, through gate fees or hunting fees. In the forest of Teifoula, Burkina Faso, a co-management scheme launched with the backing of the World Bank has turned former poachers into park rangers. Men who once tracked and killed local populations of

initiatives around the world, however, have shown that nature conservation can be an important tool in the fight against poverty in coastal areas. The Caribbean Regional Environmental Programme is operating more than a dozen protected area sites, based on co-management and aimed at developing fisheries and tourism in a sustainable way. In the Pacific island of Samoa, 38 coastal communities have set up Village Fish Reserves to combat over-fishing, and enforced laws banning the use of explosives and chemicals. Already, stocks have increased and there are signs of recovery in reefs damaged by destructive fishing methods. Six West African countries – Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania and Senegal – have joined forces to establish a network of Marine Protected Areas, aimed at restoring fisheries to sustainable levels, preserving the cultural heritage of local communities and developing ecotourism. In Papua New Guinea, with its rich but vulnerable ecosystem, villagers in the Sepik River Basin are being helped to develop conservation areas and to create enterprises for the sustainable harvesting of crocodiles.



Photo: Joel Oemphiler © IRD

about the land and resource rights of people living in or near protected areas, and how their costs and benefits are distributed. It is now widely agreed that in order to be effective, local people have to be at the very core of management. Successful outcomes have involved an inclusive approach, where rural people are able to share in both the responsibility and the rewards.

“Traditionally, people were kept out of protected areas, but there is now a general shift towards planning them *with* and *for* people, rather than against them as sometimes happened in the past,” said David Sheppard, head of the World Conservation Union’s (IUCN) Protected Areas Programme, in an interview with *Spore*. “To a large degree, whether they work or not depends on whether people are involved, and on the extent to which they can see the benefits.”

The call of the wild

At their best, community-based protected areas deliver a range of advantages to rural communities, including jobs, income and other tangible benefits such as health centres and schools paid for with revenue from activities that are compatible with conservation. In South Africa’s Richtersveld National Park, rural communities are paid rent for parkland, with the funds kept in a trust and used for local educational and social purposes. In Kenya, Uganda and Tanzania, park management authorities return a portion of gate fees and other revenue to local people.

With demand growing for nature-related leisure pursuits, ecotourism offers good prospects, generating income for rural dwellers, while also fostering a sense of the economic value of natural resources. Wildlife management is one area where the ecotourism approach has proved particularly successful, with animals once seen as a threat to crops and livestock now prized as a source

of income, through gate fees or hunting fees. elephant, lion and antelope are now just as keen to protect them.

Around the world, various forms of co-management systems are being developed, in parkland, forestry and fisheries sectors. One model taking hold in post-apartheid South Africa is the contractual parks scheme, where conservation areas that were formerly State-owned have become the domain of rural people. Under this arrangement, poor rural communities are involved in managing natural resources, in tandem with conservation agencies. There are stipulations about rights and roles, and these often involve a trade-off.

“Often, there is a need for compromise, and this sometimes means taking decisions that are not readily acceptable to all parties,” said Sheppard. In the northern part of Kruger National Park, the Makuleke people have had to agree not to live on the land or use it for agricultural purposes, in exchange for economic benefits and jobs from ecotourism.

In some cases, the move towards more community-based management has been accelerated by lack of funds to conserve plant and wildlife diversity, and lack of resources to police them. Law enforcement remains a problem in many protected areas, especially in those where memories of heavy-handed treatment are still raw. But experience has shown that it works best when communities themselves are drawn into the process. The Kibale Semuliki Conservation and Development Project in western Uganda formed a partnership between park officials and rural communities to monitor illegal activities.

Coastal conservation

Conservation efforts in the world’s coastal areas are less advanced. Marine resources are suffering critical declines, yet less than 1.7 million km² (or 0.5%) of the global ocean area is protected. A number of

Conflicts of interest

Whether on land or at sea, the general verdict is that management-sharing still has a long way to go. At times, conservation agencies and rural communities make uneasy bedfellows, and conflict can easily arise over competing interests. “Sometimes, conservation organisations working in protected areas are more focused on Nature than on people,” remarked one protected areas official. Communities themselves may be divided. The 6,000 rural dwellers who co-manage the Richtersveld National Park are far from united in their vision of the park’s future, with divisions occurring along ethnic, political and geographical fault lines. In Jamaica, a co-management scheme launched for four protected areas has run into difficulties because the community management team is not seen as truly representative of the people.

Sometimes, benefits do not match up to expectations, with the number of jobs generated turning out to be fewer than hoped for, or revenues from tourism dropping significantly due to changes in the worldwide economy and security concerns. Conversely, partnerships which have succeeded have generally been based on full community involvement at the earliest planning stage and an understanding by all of the possible shortcomings as well as the probable benefits.

In Belize, a process of consultation during the feasibility study for the ambitious Meso-American Biological Corridor has paid dividends, with indigenous communities joining forces to create and manage several micro-corridors. In some of the other seven countries involved in the project, where community involvement was less evident, the advent of the corridor was seen as a threat rather than a blessing.

Global strategies, local remedies

The spread of invasive alien species is a worldwide problem. Given the costs involved, it is proving to be one of the most serious challenges facing development. The globalisation of trade makes prevention difficult, but out in the field, small-scale initiatives are attempting to control and sometimes exploit these uninvited guests.

They receive less media attention than the disappearance of natural habitats or the over-exploitation of flora and fauna. But the proliferation of invasive alien species constitutes the third largest cause of biodiversity loss on the planet. These foreign species cover the whole gamut of living organisms, ranging from plants, both aquatic and non-aquatic, to rodents, insects, fish, trees and micro-organisms. The World Conservation Union (IUCN) has identified 217 culprits. The 100 most dangerous ones feature on its black list. In tropical countries, two plant pests are among the most destructive and common invaders: the water hyacinth (*Eichhornia crassipes*), which needs no introduction, and Siam weed (*Chromolaena odorata*), which is devouring African pasturelands.

The aliens are here

The IUCN defines these aliens as foreign species which, when they “become established in natural or semi-natural ecosystems or habitat, are agents of change, and threaten native biological diversity”. Far from their original environments and with no natural enemies, there is nothing to halt their expansion. They often gain the upper hand over local species, sometimes forcing them into extinction. The consequences are “immense, insidious, and usually irreversible,” says the IUCN. No continent, and no environment, be it land or water, is immune. The rich but fragile ecosystems of small island states are the most vulnerable. In the Seychelles, rats (*Rattus rattus* and *R. norvegicus*) are threatening six bird species with extinction.

This ecological challenge, recognised as a global priority by the Convention on Biological Diversity (CBD), carries very high financial and human costs. Each year, invasive species inflict losses amounting to several billion US dollars in the crop, forestry, fisheries and livestock sectors. In South Africa, 10 million ha, or 8% of the land area, has been colonised by invasive plant species. The proliferation of aquatic plants encourages the spread of diseases such

as bilharzia by creating an environment that favours the disease hosts – in bilharzia’s case, aquatic gastropods (*Bulinus* spp.).

Struggles and successes

This scourge has been recognised and studied for decades, but it is only in the past few years that a coordinated international response has been mounted. The Global Invasive Species Programme (GISP), supported by the United Nations Environment Programme (UNEP), was set up in 1997. A global strategy to control or eradicate alien

species requires the involvement of the countries themselves. It also means investing substantial physical and human resources. In South Africa, for example, the Working for Water programme has a workforce of no fewer than 42,000 people.

Tactics to halt invasions may be physical (manual or mechanical), chemical (using herbicides), biological (introducing natural enemies) or integrated (a combination of methods). Integrated approaches have produced some encouraging success stories in Africa, notably on Lake Victoria in Uganda. In Senegal, the targeted introduction of a weevil species (*Cyrtobagus salvinia*) has halted the spread of the water fern (*Salvinia molesta*), which took hold after a dam was built. In Benin, the introduction of another weevil species has managed to check the spread of the water hyacinth.

Putting the invaders to work

By turning the problem on its head, some communities have come up with yet another solution – using the alien species as a source of income. For example, the water hyacinth can be turned into compost (see *In Brief*), biogas, fishmeal and even paper. In Thailand, plaited hyacinth stems are used to make furniture and basketwork for sale in Europe. In Burkina Faso, the water lettuce (*Pistia stratiotes*) is being used as a water purifier (see *Spore* 83).

In the field, initiatives aimed at ousting invasive species are often launched by small groups of individuals who lack adequate support and information. Mauritius had to use volunteers to restore a forest reserve on the island of Rodrigues.

In the absence of a cure, prevention – deliberate or accidental – seems to be the most promising solution. The IUCN has adopted the principal that “every alien species needs to be managed as if it is potentially invasive.” That is a huge challenge at a time when global trade and mass tourism are creating the perfect conditions for a wide variety of species to be on the move.



Photo © CIRAD

See *Links*, page 10

Zero tillage

Covering the soil to make it more fertile

More and more agronomists and producers are turning their backs on conventional sowing methods and opting for a new technique: sowing without tilling and covering the soil with a protective blanket of cover crops or mulch. Proponents claim this approach offers better soil conservation and reduces the need for chemical inputs. But Africa's small-scale farmers have yet to be convinced.

Farmers, put aside your ploughs, hang up your hoes. That is the advice being given by a growing body of researchers who maintain that, far from improving the land, tilling is actually the main cause of soil degradation and erosion. The golden rule is never to allow the soil to lie bare, but instead to protect it at all times with a layer of leaves and stalks from previous crops, or with suitable cover crops. Soil covered in this way offers better resistance to invasive species, is less susceptible to run-off and is better protected against wind erosion, goes the argument. And it does not become compacted, allowing roots to penetrate more easily and water to filter down to where it is needed. The layer of mulch slowly enriches the soil and fosters the development of fauna, especially earthworms, which play a key role in soil fertility. To sow, just make an opening in the covering and dig a small furrow; place the seeds in the furrow, in direct contact with the soil.

This revolutionary technique has been dubbed 'zero tillage' or 'conservation agriculture', since it enables farmers to conserve lost soil properties, or even restore them. It flies in the face of standard practices and the advice meted out by agronomists over the past few decades. But it has already taken hold in much of the United States of America, where 20 million ha are cultivated using this method, and in several Latin American countries, including Brazil, where some 13 million ha are now under zero tillage. Used on large farms it can cut costs significantly – for labour, as land preparation is no longer necessary, for machinery and the fuel needed to power it, and for fertilizer, as far less is required because the mulch gradually nourishes the soil.

Growing and eating healthier food

"Conservation agriculture produces yields comparable to those produced by modern intensive agriculture, with the advantage that it does so in a sustainable manner," notes the Food and Agriculture Organization of the United Nations (FAO). In fact, productivity increases rapidly using this method, and crops are less vulnerable to



climate changes. In some cases, yields may double or even triple. From both an ecological and an economic point of view, it is a technique that pays dividends. It has been estimated that in the past 10 years, Brazil has preserved more than 1 billion tonnes of arable land and saved US\$ 11 billion and 1.3 billion litres of fuel!

The farmer is not the only one to benefit. Better water penetration replenishes the water table. And, with reduced erosion, the water table contains less soil. It is also less polluted by chemical products. Furthermore, the researchers say, the organic matter that builds up in the soil traps carbon, preventing it from escaping into the atmosphere in the form of carbon dioxide, thereby helping to counter the greenhouse effect.

But in spite of the widely acclaimed advantages of the system, its use in Africa and Asia is almost negligible. And yet,

particularly in Africa, the cultivation of fragile, marginal soils and the reduced use of fallow have combined to produce worrying levels of soil erosion and declining fertility. In areas where the soil is most seriously degraded and demographic pressures are strongest, there is an urgent need to restore soil productivity to supply the growing demand for food. Sustainable agriculture techniques such as zero tillage enable farmers to preserve their capital – the land – while ensuring regular and plentiful harvests. "Zero tillage is a system which brings hope to both people and the planet," says Lucien Séguy, an agronomist specialising in the technique, at the Centre de coopération internationale en recherche agronomique pour le développement (CIRAD) in France. "By imitating the forest ecosystem, which is known for its natural sustainability, it also allows us to grow and eat healthier food." In hot tropical zones where organic matter

decomposes rapidly and crop residues are often used as animal feed and fuel, the decline in soil fertility is becoming irreversible.

A gentle blanket for the soil

To halt this degradation, it is important that the soil is disturbed as little as possible and is protected by a covering layer of vegetation, either 'dead' (mulch) or 'alive' (cover crops); if the latter, their spread can be checked by a light application of herbicide. Cereal, cotton and soya seeds may then be drilled directly through the layer. The aim is to use plants with good coverage and high biomass, which, when they decompose, produce a thick enough mulch to protect the soils throughout the year. Climbing legumes have these properties, with the added bonus that they are nitrogen-fixing species.

This direct sowing technique, which has been closely studied by agronomists at CIRAD, has been found to have many advantages apart from the obvious one of dispensing with the need to plough. It cushions the effect of temperature changes, keeps the base of the plants cool and helps control the growth of weeds which find it hard to compete with cover crops. The species chosen are selected partly for their powerful root systems, as these help improve soil structure.



Cover plants protect the earth and help control weeds. They encourage biological activity in the soil, thus improving its structure. Thanks to their powerful root system, they also help recycle water and nutrients which support crop growth

They act as biological pumps, sending soil nutrients back up to the surface.

To be effective and sustainable, zero tillage must be used in tandem with crop rotation, to encourage biodiversity in the soil. CIRAD is currently conducting trials in Cameroon in an attempt to increase cotton yields while cutting back on fertilizer and other chemical inputs. The system entails cropping *Crotalaria*, a legume species, with cotton, in rotation with maize. In Mali, where other trials are under way, the goal is to develop a system for Sahel countries involving a rapid increase in the production of biomass which can then be used as livestock feed.

In conservation agriculture, a major problem remains – keeping weeds at bay. Rather than resorting to weed killers,



Photo © CIRAD



Photo: M. Rounei © CIRAD

agronomists are studying the allelopathic properties of certain plants whose roots act as natural herbicides and which can check the growth of self-propagating plants. The risk of fire and termites are other concerns that discourage some farmers in developing countries. In addition, zero tillage requires special tools, such as an animal-drawn seeder and a planting stick, used to make an opening in the covering layer and to dig a hole for the seeds.

A slow revolution

The basic principles of zero tillage are simple, but putting them into practice is a delicate process. For each climatic region, the right combination of suitable cover and rotation crops must be identified. This involves field trials over several years before the most appropriate combinations can be recommended to small-scale farmers. Many of these farmers are highly sceptical about new methods and want to see positive results before they are willing to take any risks. But for commercial and small-scale producers alike, the rewards are considerable.

To date, only a few large-scale farms in Kenya, South Africa and Zimbabwe have

Madagascar A slow but steady conversion

It is early winter in Vakinankaratra, the coldest area in Madagascar, where temperatures can fall below zero. But, nothing daunted, three young men are busy sowing seeds. One makes a furrow with a small trowel, while the other two throw in seeds and quickly cover them with the rice straw which covers the soil. Peas, oats and radishes for animal feed will be their out-of-season crops this year. It is a new development; normally, no crops are grown in this period, and farmers bury cassava plants beneath the soil to protect them from frost.

This is the third year that Jean Do and his friends have used zero tillage. They have begun selling oat seeds and have seen their rice yields grow. "But I use half conventional sowing and half zero tillage as this latter technique takes far more time for follow-up and for adding more cover," he explains. Technical staff maintain zero tillage saves time and money in the long run; "working a hectare of rice field costs 1,200,000 FMG (€ 80)," explains Célestin Randrianarisoa, from Tafa, an NGO which is promoting zero tillage in the area. And that is without taking into account the other benefits: using *Bracharia* fallows – a grass favoured by cattle and used as cover – and the chance to grow crops all year round.

Almost 10 years ago, an experimental site was set up in a nearby village to demonstrate the advantages of zero tillage. In the surrounding areas, about 30 farmers have adopted the system. "We're getting the message across slowly," says the Tafa official. In the area as a whole, there are now about 200 farmers who have gone over to the new technique.

embraced this new technology. As in Latin America, farmers who have done so can be found swapping experiences in associations set up to promote zero tillage.

Small-scale farmers using the technique are few and far between, though some initiatives have been launched in parts of Southern and Eastern Africa, including Kenya, Malawi, Namibia, Tanzania, Uganda, Zambia and Zimbabwe. Changing to zero tillage is a slow process, with farmers needing assistance for a number of years. They have to be helped to understand how it works and the advantages it brings, as well as to choose the best system for their particular conditions.

The transition period may prove a difficult time for farmers, who will not see the benefits immediately. But once they grasp that, with less work and lower costs, they are getting bigger harvests, they are unlikely to need any more convincing.

For further information:

<http://lagroecologie.cirad.fr/index.php?rubrique=&langue=en>
www.fao.org/ag/magazine/0110sp.htm

FAO launches information management tool

■ *IMARK, The Information Management Resource Kit*, is a computer-based initiative which offers a comprehensive suite of distance learning resources for agricultural information management. Created by the Food and Agriculture Organization of the United Nations (FAO), together with other organisations, *IMARK* learning materials are being developed as a series of modules on CD-ROM. These are backed up by an Internet-based discussion forum, where contributors can exchange views, share information and request help from each other. The interactive tutorials, in five languages, are specifically designed for individual self-paced learning and access is free of charge.

Website: www.fao.org/IMARK

Developing countries wary of sharing plant data

■ Botanical organisations in developing countries are unwilling to share information on their collections and prefer not to make it freely available via the Internet, according to a new survey. Their reluctance is due partly to concern that private companies could use such information to develop commercial products from biological resources without returning any benefits to the countries where the specimens were found. The survey report, called *Study on Data Sharing With Countries of Origin*, was published in March 2004 by the Global Biodiversity Information Facility (GBIF), an inter-governmental organisation based in Denmark.

The report is downloadable from www.gbif.org/prog/ocb/sdco

Good news for Africa

■ A radio-based news agency focusing on development issues in Africa has been launched by the World Association of Community Radio Broadcasters (WACRB), with the help of the Food and Agriculture Organization of the United Nations (FAO). Called the Simbani Africa, the Johannesburg-based venture covers the entire continent and makes use of FAO's technical information on food and agriculture. Its material is broadcast in a variety of local languages, and is also available from the Internet.

Website: <http://simbani.amarc.org/en/>

Bringing the bamboo back to Kenya

■ Once, Kenya was thickly planted with bamboo, but the forests were cleared and few were replanted. The World Agroforestry Centre (ICRAF) is working to restore bamboo to the Kenyan landscape and help small farmers find ways of using it as an income earner. One use being explored is aimed at countering water pollution. Bamboo is already used in several parts of the world for cleaning sewage and is known to absorb heavy metals. Scientists in Kenya hope to use its pollution-sucking properties to clean the waters of Lake Victoria, where levels of pollution have risen almost three-fold in 20 years, due to agriculture and untreated sewage. Pilot sites in Kisumu, Musoma and Nairobi are already demonstrating bamboo's potential for waste water treatment. This versatile plant could help solve other problems too, and ICRAF researchers have joined forces



Bamboo – a blessing for both water and the soil

species of bamboo grow long straight culms that can be sustainably harvested and used as wind breaks. Bamboo is also a valuable source of firewood, because of its high calorific content and fast growth. Making charcoal with bamboo is still a new technology in Africa, but ICRAF is planning to import cheap equipment from India to process bamboo for biogas and charcoal production. One of bamboo's great strengths is its prolific growth.

Arundinaria alpina,

the species native to Kenya, can yield up to 20,000 12 m-high culms per hectare each year.

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with the Kenya Forestry Research Institute and Jomo Kenyatta Agricultural University to unlock the potential of both native and exotic bamboo species available in Kenya.

Bamboo rhizomes are effective at holding topsoil on steep slopes, so staff are planting them in the highlands and along riverbanks to combat erosion. Some

Fruit trees blossom in Ugandan highlands



■ The Ugandan government is investing US\$ 2 million in a plan to introduce fruit trees as a cash crop in the Kigezi highlands. This area of south-western Uganda has no definite cash crop, and subsistence crops such as sorghum and potatoes generate little in the way of income for

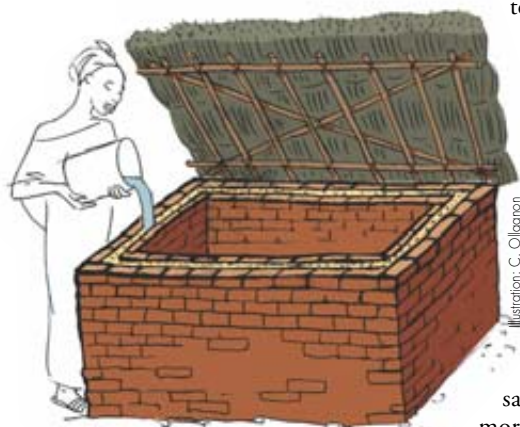
households. Fruit is much more profitable, but until now thought to be impossible to grow on the highland slopes, where altitudes reach 1,800 m. The few apple and avocado trees that were planted took too long to mature, and yields were low. At present, apples and other fruit are

imported from South Africa, at prohibitively high prices for most families.

Now, an ICRAF project is using grafting techniques to boost fruit yields. The programme has tested four types of fruit tree – apple, pear, peach and plum – in four orchards. Results show that the grafting method can produce fruit trees that are short, mature early, and yield abundant fruits, even at high altitudes. To speed up the process of seedling production, ICRAF plans to train grafters who can move around and perform the grafting operation for farmers in the field. The injection of funds from the Ugandan government puts the seal of approval on the plan to introduce fruit farming to the highland region. It will be used to set up nurseries, procure germplasm and fund training for fruit farmers and nursery operators.

For ICRAF address, see above

Cool idea cuts post-harvest losses



temperatures reach a maximum of 26°C, the storage structure uses the cooling power of evaporation to stop metabolic breakdown and fungal deterioration. The chamber is made of double walls, built of brick, with a 15 cm space in between them which is filled with wet riverbed sand. The sand is watered each morning and evening to maintain the required temperature and humidity. Healthy green peppers and sweet oranges were stored in the cool chamber, to test its efficacy. Similar products were kept at room temperature as a control. After 9 days, all products kept at room temperature were unfit for consumption. But 86.3% of the products kept in the chamber were still in good condition. Some 50% of the products were still healthy after 18 days in the storage unit. In the

■ A cool chamber developed by researchers in Ethiopia could help horticultural producers extend the shelf-life of their fruits and vegetables and reduce wastage due to spoilage. The chamber, adapted from an Indian design, uses inexpensive locally available materials, including bricks, bamboo and riverbed sand to keep produce fresh for up to a month after harvesting. Tested in Adet, where average

case of green peppers, some of those stored in the chamber were still fit for consumption after a month.

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The deadly clutches of the silver leaf



Amphicallia pactolicus replaces pesticides

■ Farmers in Kenya have proved reluctant to grow *Crotalaria grahamiana* – a shrub that is valuable for improving soil fertility – for fear of attracting large populations of *Amphicallia pactolicus*, an insect that commonly feeds on this species' leaves. Now, an effective biological method has been developed to control the pests. The leaves of another tree, the silver leaf (*Desmodium uncinatum*), have been found to trap both the adults and larvae of *A. pactolicus*. The *Desmodium* silver leaf can be intercropped or planted on the boundaries of a *C. grahamiana* fallow, without the need for costly and harmful pesticides. Once insects touch the silver leaf tree, there is no escape. Butterflies which accidentally land on the plant are trapped by the hairs on the leaf and stem. Young larvae searching for food, and more mature ones moving to pupate, are trapped in a similar fashion. When used in rotational fallow, the nitrogen-fixing *C. grahamiana* has been shown to supply almost all the nitrogen requirements of the subsequent crop – maize in the case of Kenyan farmers. It also produces fuel wood and plays a valuable role in suppressing weeds.

Raising the standards of streetfood



Photo: I. Razanamperry © Sylla International

■ The hygiene and quality of traditional street food often leaves much to be desired, though few seem to worry about this. But sometimes, improvements can be made with very little input. These are the findings

of the Institut Pasteur de Madagascar (IPM), which analysed 120 samples of *koba ravina*, a popular cake made with rice flour and groundnut flour and rolled up in maize or banana leaves. The microbiological analyses showed that there were problems, and the institute initiated training courses to provide the makers and sellers of *koba ravina* with a basic knowledge of hygiene and microbiology. The trainees were also given tips on how to improve the production process and the presentation of their product for sale, such as: do not stock groundnuts, work on a table rather than a rough plank, install protective windows. If they follow these suggestions scrupulously, the cake can be kept, at no risk to the consumer, for up to 3 days at room temperature and 10 days if refrigerated.

Makers have been quick to adopt these simple measures. The many producers and sellers of traditional foods available on Africa's streets could follow their lead to ensure better quality, better preserved streetfood.

Traditional laws may help save Pacific seas

■ Coastal communities in the south-western Pacific may be granted legal control over local seas in a move that acknowledges the failings of Western-style centralised fisheries management systems. The action follows falling fish and mollusc populations in Papua New Guinea, Fiji and other Melanesian nations and involves setting up local marine area committees, fishing quotas and 'no-take zones' based on the Melanesian custom of taboo. A pilot study in Fiji has yielded encouraging results. Micronesian and Polynesian nations are also exploring ways to invoke traditional law to protect the environment.

Protecting plant resources

■ After 7 years of negotiations, the International Treaty on Plant Genetic Resources for Food and Agriculture came into force on 29 June 2004. So far, it has been ratified by 40 countries, 16 of which are African. Its goal is 'the conservation and sustainable use of plant genetic resources for food and agriculture and equitable sharing of the benefits arising out of their use'. This treaty better protects the rights of farmers – who are, after all, the main guardians of plant biodiversity. For all those countries that have ratified the treaty, it offers access to plant resources for research and training purposes in the areas of agriculture and food production.

Coffee takes over from citrus in Guinea

■ In the past 2 years the cultivation of arabica coffee has spread rapidly in the foothills of Foutah Djallon in Guinea, unaided by any development project. The growth is due entirely to private nursery owners promoting arabica cultivation through roadside stalls selling coffee and providing plants for local farmers. Thousands of hectares have now been planted with arabica; it is even being grown in the tapades, the permanently cultivated fenced gardens. Local traders jostle each other to buy coffee from the producers at 1,500 Guinean francs (€1.15) a kilo. This is an astonishing success for a crop that is doing so badly elsewhere of the world. In much of the area it is replacing citrus fruit which, for several years now, has been attacked by cercosporiosis (*Phaeoramularia angolensis*), also called 'the AIDS of orange trees', a devastating disease caused by fungi and found in some 20 African countries.

SEGOU WORKSHOP FAIR

Farmers teaching farmers

■ *Zai la sida* is the name of a farmers' association in Yatenga, a dry region in northern Burkina Faso. Since 1997, the association has built five schools in the region to teach farmers how to make use of improved *zai*, a traditional soil conservation technique. The courses are free and begin each January after the end of farm work. They last a day and take place once a month. The farmer-students come from almost all over the country. In the rainy season, the field schools are kept going by association members. Produce from the schools is sold to buy the agricultural inputs and equipment needed to keep the schools running. Today, *zai* is practised throughout Yatenga and has spread to Niger and Nigeria. The dry, encrusted fields are green again and the crops are showing much greater resistance to drought.

Mali's seed supply chain

■ In Mali, the Association des organisations paysannes professionnelles (AOPP), a farmers' organisation, is playing a major role in the seed supply chain. The national seed service, SSNM, supplies seeds to producers and certifies the production process. Trained farmers, identified by AOPP, grow the seeds on their plots in 21 of the country's regions. AOPP then buys the certified seeds which it sells through a network of village shops.

More communication, less confrontation

■ By listening to pastoralists, and by disseminating information through radio, newspapers or listening groups, the Réseau de communication sur le pastoralisme (RECOPA), a pastoralism communication network, has been able to prevent and resolve a great number of conflicts related to herding in Burkina Faso. Other notable achievements of the network include the creation of herding trails and grazing areas and the setting up of villagers' negotiation committees.

Local inputs

■ In some parts of Niger there is no longer any need to go to town to buy fertilizer — farmers can now go to the village inputs store to buy whatever they need. Not only that. They can also get advice and training at these outlets. The Fédération des producteurs du Niger, the national producers' federation, representing 300 farmers' groups, has already set up 17 such outlets and, not surprisingly, they are proving popular with local farmers.

Giving the floor to farmer inventors



Photo: Ibrahim Tiemogo © CTA

■ Meetings where small farmers are the main players are rare. But at an innovation workshop fair held in March in Segou, Mali — which brought together farmers' organisations from Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Mali and Niger — it was the farmers themselves who took centre stage to present the results

of their ideas and experiments: 17 inventions, three of which won prizes. Some of the presentations are outlined in the side columns on this page and page 9. The stands at the fair were crammed with brochures, films and posters. In the meeting rooms, the farmers took turns describing and demonstrating

their inventions, some speaking in *Dioula*, some in *Mooré*, several in a hesitant French, but always with pride. The public, made up of farmers, researchers and donors, listened and watched with keen interest. Working group networks were quickly formed. Everyone agreed that the best way to disseminate information on the innovations was to strengthen ties through such networks, to convene fairs such as this one, to organise study trips and to involve the media. This fair, organised with the support of the International Fund for Agricultural Development (IFAD), CTA and Inter-Réseaux Développement Rural, a network for rural development, was rich in ideas and inspired everyone who took part in it.

Inter-Réseaux Développement Rural
32 rue le Peletier
75009 Paris
France
Fax: +33 (0)1 42 46 54 24
Website: www.inter-reseaux.org

Conservation pays dividends

■ The proposed restoration of the Waza Logone floodplain in northern Cameroon makes economic as well as moral sense. Officials from the World Conservation Union (IUCN) have calculated that the scheme will pay for itself in 5 years. Restoration of 90% of the floodplain would create annual benefits of €2.5 million, according to IUCN estimates, so that the €12 million cost would be absorbed in just 5 years.

The figures are from a report, *The return of the water – restoring the Waza Logone floodplain*, which puts forward the case for financing the complete restoration of the floodplain. The Waza Logone floodplain has suffered badly in the past two decades from low rainfall and the construction of a dam. The once fertile region became a dustbowl. The loss of dry season pasture, fishing, flood farming, water, wildlife and plant resources proved devastating to local communities. One third of the rural population, or almost 8,000 households, suffered annual losses of nearly €2.5 million. Experiments with partial artificial re-flooding have already



Photo © IUCN

led to improvements in the rural economy. Over 1,700 tonnes of fish have been caught in the restored areas. Perennial grasses have returned, leading to a 260% increase in the number of cattle in the region. The provision of clean drinking water has reduced water-borne diseases by 70%. The benefits of these experimental releases are put at €871,000 per year. The IUCN, which man-

ages the pilot project through an agreement with the government of Cameroon, is now hoping its various partners, including the Netherlands Ministry for Development Cooperation, the European Commission and WWF, will be able to raise enough finance to complete the restoration and help the region continue along its path to sustainable development.

Tackling diabetes with herbal tea

■ Medicinal plants in many ACP countries offer affordable health remedies for local communities. But they also present a way of making money for small-scale producers, while at the same time protecting biodiversity. In South Africa, scientists believe that three species from the Eastern Cape have potential as a low-cost treatment for diabetes, a growing problem in much of the developing world.

Apart from its health implications, the remedy offers hope as a cash earner in this economically depressed region. Nurses running rural clinics in the Eastern Cape were the first to become interested in the plants after seeing their effects on patients when administered by traditional healers. In the past 18 months, a series of laboratory tests has produced what researchers at the Cape Town-based Diabetes Research Group for the Medical Research Council describe as impressive results.

A consortium of researchers and traditional healers has been formed, and clinical trials are due to start before the end of the year. Tests for toxic substances and for effectiveness have been carried out, starting with lab tissue culture and moving on to experiments using three species of rats.



Photo: R. Faidutti © FAO/17502

All were successful. Vervet monkeys are now being used to double-check the tests in a 3–6 month process which monitors the primates' blood, kidney and liver functions.

For now, the names of the indigenous plants are a closely kept secret, in order to protect both the plants themselves and the traditional healers who have long used them to treat diabetes. Meanwhile, the Agricultural Research Council's Post-Harvest and Wine Technology division is investigating the creation of small herb farms, with a small processing plant on site to turn the dry

ingredients into herbal teas. Diabetes is soaring in Africa, mainly because of urbanisation, processed Westernised food and reduced physical activity.

The anti-mine plant

■ Thale cress (*Arabidopsis thaliana*) is a strange plant. Genetically modified by Danish scientists, it has acquired the curious property of changing its colour from green to red in 3–5 weeks when in the presence of certain heavy metals and explosives found in antipersonnel mines and unexploded ammunition. This bio-detection system could prove useful in the 75 countries where landmines remain after wars and other conflicts. Until now, detecting such devices has meant using dogs or special equipment, operations that are not only delicate, but also long and costly.

The first field trials involving the plant will take place soon, mostly in sub-Saharan Africa. In some countries, such as in Mozambique and Angola, despite the return of peace, agricultural development continues to be hampered by the presence of landmines. Farmers dare not go back to their fields for fear of losing a limb, or their lives, by stepping on one inadvertently. Thale cress has the advantage of reproducing itself naturally by self-pollination and, having sterile stamens, its spread can be easily controlled, according to the scientists who have developed it.



Photo: M. Seck © Syfia International

weevils and whose larvae eat the stored grains of leguminous plants such as peanuts and cowpeas. The silos have significant advantages over the barrels or the simple bags used until recently to store millet, maize and sorghum. Demonstrations have been held in various regions of the country, and a local-language users' guide has been published to show the effectiveness of the silos in reducing post-harvest losses.

Metal silos to protect grain

■ For a long time, farmers in Bolivia have used small metal silos to protect their harvests from predators. Now, Senegalese farmers are drawing on this experience, with the help of the Food and Agriculture Organization of the United Nations (FAO), as well as the government of Senegal and the Association sénégalaise pour la promotion du développement à la base (ASPRODEB), a Senegalese association for the promotion of grassroots development.

Bolivian technicians have travelled to Senegal to teach 58 artisans how to make the silos. Nearly 2,000 silos have already been built. With capacities of between 125 kg and 1,800 kg, they will be used to store foodstuffs that are vulnerable to attack by bruchids, beetles that resemble

SEGOU WORKSHOP FAIR

Fertilizer from water hyacinth

■ Now that water hyacinths can be used to make compost, market gardeners on the banks of the Niger are quickly clearing the river of this invasive plant. Today, 13 market gardening cooperatives are producing compost from it. The technique is simple. First, dig a pit and line it with layers of straw, finely chopped water hyacinth and animal manure, and repeat until the pit is full. Next, apply a covering of matting and plastic sheets. Two weeks later, turn the contents over, and after 45 days, the compost will be ready to spread on the fields. So, no longer any need to buy costly chemical fertilizer for a good harvest — and the river breathes easier too!

Selling rice at a good price

■ The dream of all farmers is to sell their entire crop at a good price, and it has become a reality for the rice producers of the Mogtiedo area in Burkina Faso — thanks to good organisation and a strict adherence to the rules. At the start of the harvest, producers and vendors fix the market selling price of paddy and dehulled rice. The producers sell their rice directly to the cooperative, where it is bought by women who have it milled by the dehullers and then sell it at the market. Only white rice can be sold to traders from other areas. The approved measuring instrument is a plate that can hold about 4 kg of rice. Supervisors watch to make sure that the rules are respected and they have the power to impose penalties. Everyone gets a fair deal: producers are assured of their income, and the women vendors and out-of-town traders are assured, well in advance, of the price.

One woman, one radio

■ With no radios of their own, women depend on the goodwill of men to listen to programmes — all too often, programmes not of their choice. Against this background, an association called *Munya* ('the voice of women') in Banfora in Burkina Faso, sought to set up a radio station producing programmes of interest to its members. The plan was simple. *Munya* mounted an advertising campaign with the slogan, 'One woman, one radio', then it set up a tontine (shared) radio station, costing 200 CFA (€0.30) per person per week and then, assisted by grants from Oxfam and Terre des Hommes (an international NGO), it placed an order with a supplier. The result is that 8,000 women can now listen to their own radio station, *unya*, which has quickly become a valuable communication tool and source of information.

Invasive alien species

The best defence is information

In order to tackle the problem of invasive species, one must first know how to recognise them and be sure of identifying them properly. For this purpose, the global database set up by the Invasive Species Specialist Group (ISSG), part of the World Conservation Union (IUCN), is a mine of information. It can be consulted on-line and is regularly updated. It provides a description of 217 invasive species, many with photographs. Here you will also find the blacklist of the 100 most destructive species. The names – common, Latin and local – are given for each species. Also listed are the countries where the species are creating havoc, as well as descriptions of successful control strategies. For each species, a main source of in-

formation is given, offering the chance to delve further. Another useful site is the Global Invasive Species Programme (GISP), which provides excellent up-to-date information on invasive alien species.

Exchanging experiences on prevention and control strategies is crucial, be it between one country and another, or between continents. The 'bible' here is a document on the Web summarising a book published by CAB International (CABI). *Invasive alien species: A toolkit of best prevention and management practices* presents about 100 case studies, as well as a whole host of links and downloadable documents about these species in various parts of the world. For the Pacific islands, the Pacific Island

Ecosystems at Risk (PIER) website provides outlines on a country-by-country basis. And for the Caribbean, there is a report published on the ISSG website entitled *Invasive species threats in the Caribbean*.

IUCN's Species Survival Commission (SSC) has published an on-line report with guidelines on how to reduce the threats posed by invasive alien species to global biodiversity. Regrettably, there are no websites dealing with potential uses of invasive species, such as aquatic plants, which would be useful for those wrestling with the problem.

For further information:

CABI

Invasive alien species: A toolkit of best prevention and management practices

By R Wittenberg & M J W Cock
CABI, 2001. 240 pp.
ISBN 0851 995691
GBP 30.50 • € 45
Toolkit summary downloadable from:
www.cabi-publishing.org/bookshop/readingroom/0851995691.asp
CAB International
Wallingford, Oxfordshire
OX10 8DE
UK

SSC

Guidelines for the prevention of biodiversity loss caused by alien invasive species
Downloadable from:
www.iucn.org/themes/ssc/pubs/policy/invasivesEng.htm

GISP

www.gisp.org

ISSG

Full list of alien invasive species on:
www.issg.org/database/species/List.asp
Black list of 100 most destructive species on:
[www.issg.org/database/species/search.asp?st=100ss&fr=1&sts=Caribbean region:
www.issg.org/database/species/reference_files/Kairo%20et%20al,%202003.pdf](http://www.issg.org/database/species/search.asp?st=100ss&fr=1&sts=Caribbean%20et%20al,%202003.pdf)

PIER

www.hear.org/pier

IUCN

www.iucn.org

Protecting landscapes and livelihoods

For anyone interested in exploring protected areas in greater depth, look no further than the World Conservation Union (IUCN), which brings together government agencies, NGOs, scientists and experts from around the world. Its dynamic Programme on Protected Areas (PPA) serves as the secretariat for the World Commission on Protected Areas (WCPA), an organisation which covers all aspects of the selection, planning and management of protected areas. The IUCN-WCPA partnership co-publishes a range of books and journals on the issue. Two that deserve a special mention offer guidelines for management planning and sustainable tourism in protected areas. See also the very readable Parks series of magazines, which can be downloaded free from the IUCN-WCPA website or ordered as hard copies.

The UNEP World Conservation Monitoring Centre (WCMC) is the biodiversity assessment arm of the United Nations Environment Programme (UNEP), and its website is well



Photo: M.A. Laplaudeur © Sylla International

worth a visit if you are after facts and figures. A link takes you to the 'Protected Areas' section, which offers a well-organised searchable database. This is the World Database on Protected Areas (WDPA), the largest source of global information on the subject. Other services directly accessible from the WCMC site include a virtual library and an array of maps downloadable from the Internet, showing the distribution of protected areas by region or country.

For information about co-management initiatives in ACP countries, WWF is a good source in Africa and the Pacific, while the Caribbean Conservation Association has a range of interesting projects linking people and conservation in the Caribbean.

For further information:

Caribbean Conservation Association

Chelford
The Garrison,
St Michael
Barbados
Fax: +246 429 8483
Email: reic@ccanet.net
Website: www.ccanet.net

The IUCN Programme on Protected Areas

and WPCA, both at the same address:
The World Conservation Union
28 Rue Mauverney
CH-1196 Gland
Switzerland
Fax: +41 22 999 0015
Email: jce@iucn.org
Website: www.iucn.org/themes/wcpa

Guidelines for management planning of protected areas

By L Thomas & J Middleton

IUCN, 2003. 80 pp.

GBP 15 • € 22.50

ISBN 2 8317 0673 4

Downloadable as a PDF (1.26 Mb)

from:

www.iucn.org/themes/wcpa/pubs/pdfs/guidelinemanagementplanning.pdf

Sustainable tourism in protected areas: Guidelines for planning and management

By P Eagles et al.

IUCN, 2002. 184 pp.

GBP 17.50 • € 26

ISBN 2 8317 0648 3

Downloadable as a PDF (1.46 Mb)

from:

www.iucn.org/themes/wcpa/pubs/pdfs/tourism_guidelines.pdf

WWF International

Avenue du Mont Blanc
1196 Gland
Switzerland
Fax: +41 22 364 0640
Website: www.panda.org

Publications

Spreading the word about IPM

Extension agents face the challenge of helping small-scale farmers achieve increases in food production in a cost-effective manner, while at the same time conserving the natural resource base. As anyone who does this job will know, that is no easy task.

One of the problems farmers most often complain of is crop pests and diseases, and many of them believe that the only effective solution is to spray with chemical pesticides. This quartet of booklets seeks to help extension agents in their sometimes uphill task of spreading the word about integrated pest management (IPM), now widely held to be the best method of plant protection, and one which leaves no scar on the environment. Written by one of the top IPM extension experts in Africa, the guides outline the general principles of IPM before moving on to describe strategies for the various crop groups.

Each booklet identifies the major crop pests and diseases for its category, as well as their natural enemies. Written in clear, simple language, the booklets contain drawings of pests and their predators. The guides' slim, light format makes them perfect

for taking out on field visits to farmers.



Integrated Pest Management
Extension Guides
By A Youdeowei
Ministry of Food and Agriculture
(MOFA) Plant Protection and
Regulatory Services Directorate,
Ghana – CTA – Deutsche Gesellschaft
für Technische Zusammenarbeit (GTZ)
GmbH, 2004

Guide 1:
Principles of integrated pest
management: Growing healthy crops
38 pp. ISBN 9988 0 1085 0
CTA number 1180
10 credit points

Guide 2:
Integrated pest management
practices for the production of
cereals and pulses
64 pp. ISBN 9988 0 1086 9
CTA number 1178
10 credit points

Guide 3:
Integrated pest management
practices for the production of roots
and tubers, and plantains
54 pp. ISBN 9988 0 1087 7
CTA number 1179
10 credit points

Guide 4:
Integrated pest management
practices for the production of
vegetables
56 pp. ISBN 9988 0 1088 5
CTA number 1177
10 credit points

Coping with cocoa disease



Each year, up to 30% of the world's cocoa harvests are lost due to cocoa black pod rot, a disease caused by various species of the genus *Phytophthora*. The most virulent and damaging

species, *P. megakarya*, is currently wreaking havoc on cocoa production in Côte d'Ivoire, the world's leading cocoa producer. In an attempt to tackle this pest once and for all, researchers from Cameroon, Côte d'Ivoire, France and Trinidad joined forces to find ways of breeding cocoa trees with greater resistance to *Phytophthora*. This book is the result of the 5-year project, which was based at the French research centre, Centre de coopération internationale en recherche agronomique pour le développement (CIRAD). The scientists have made substantial advances in their efforts to breed cocoa trees with greater resistance, and some varieties have already been planted as a result of the research. The team has also developed tests

which will greatly accelerate the rate at which resistant plants can be identified. As well as holding out hope for producers threatened by the dreaded cocoa black pod rot, the project, and the study which came out of it, also offer lessons and techniques for preventing other cocoa diseases, such as witches broom, monilia and vascular streak dieback.

Improvement of cocoa tree resistance
to *Phytophthora* diseases
By C Cilas & D Despréaux (eds)
CIRAD, 2004. 176 pp.
ISBN 2 87614 562 6
€ 23
CIRAD
TA 283/04
Avenue Agropolis
34389 Montpellier Cedex 5
France
Fax: +33 4 67 61 55 47
Email: librairie@cirad.fr

A little green gem

The little green data book 2004 is a pocket-sized ready reference source, packed with key environmental data for over 200 countries. The information is organised under the headings of agriculture, forestry, biodiversity, energy, emission and pollution, and water and sanitation.

The little green data book 2004
World Bank, 2004. 240 pp.
ISBN 08213 5734 4
US\$ 15 • € 12
The World Bank
PO Box 960
Herndon, VA 20172-0960
USA
Fax: +1 70 661 1501
Email: books@worldbank.org

Small credit, big needs

Over the past 15 years, microfinance institutions have played an increasingly important role in providing credit for rural activities. But on a global scale they continue to be poorly adapted to the specific needs of the agricultural sector, and especially to small family farming concerns. What can be done, given that liberalisation is putting ever more pressure on small farmers to change and modernise? A bilingual CD-ROM brings together the results of a workshop held in Dakar, Senegal in 2002 which tackled this issue. It presents the findings of the research programme on 'Microfinance and family farming' carried out by CIRAD and CERISE, a French-based network set up to promote microfinance.


The financing of family farming in the context of liberalisation. What can be the contribution of microfinance?
Results from the research programme and international workshop proceedings, 21–24 January 2002, Dakar, Senegal
Bilingual CD-ROM, English-French
CIRAD, 2003.
ISBN 2 87614 556 1
15 €
For CIRAD's address, see opposite

The rise and fall of maize in Africa

From the International Food Policy Research Institute (IFPRI) comes this short history of maize in Africa, which charts its beginnings as a minor imported food crop to its rise to become the continent's principle staple in the first half of the 20th century. Subsequent government support programmes resulted in a surge in smallholder production and a move towards high-yielding varieties. But once the heavy subsidies were withdrawn, production levels fell, making African maize only a qualified success story.

Maize breeding in East and Southern Africa, 1900–2000
By M Smale & T S Jayne
IFPRI, 2004.
Downloadable as a PDF (101 Kb) at:
www.ifpri.org/2020/focus/focus12/focus12_04.pdf

Better irrigation

 With the exception of Madagascar, South Africa and a few countries in North Africa, the potential for irrigation development has not been effectively tapped in Africa. Out of a total arable land area of about 874 million ha, the current area under managed water and land development totals only 12.6 million ha, or 3.7% of the surface area of sub-Saharan Africa. In spite of this potential, and the demand for more dependable sources of water, the development of irrigation has lagged behind over much of the continent. In January 2003, 16 experts from six countries – Ethiopia, Ghana, Kenya, Malawi, Tanzania and Zambia – gathered to share information on mutual irrigation problems, and to learn from each other. This Working Document, which presents success stories as well as obstacles, is the result.

Small-scale irrigation for food security in sub-Saharan Africa
Summary report of a CTA study visit, Ethiopia, 2003
By M Tefesse
CTA, 2004. 50 pp.
ISBN 92 9081 273 7
CTA number 1170
5 credit points

Report and recommendations available in the Working Document series:
CTA Working Document 8031
5 credit points
Downloadable as a PDF (306 Kb) from:
www.cta.int/pubs/wd8031/index.htm

Digital development

■ RedISTIC is a new coalition of groups that work on information society-related issues in Latin America and the Caribbean. As one of its first undertakings, it has published this collection of contributions which, as the title suggests, looks at the other side of the digital divide. Among the subjects it sets out to tackle is the crucial one of the extent to which ICTs are contributing towards development and poverty reduction in the region. The answer, in a nutshell, is that a great deal more needs to be done.

The other side of the divide:
Latin American and the Caribbean Perspectives on the World Summit on the Information Society (WSIS)
By Rosa-Maria Torres et al.
RedISTIC, 2004. 72 pp.
RedISTIC
c/o FUNREDES
Apartado Postal 2972
Santo Domingo
Dominican Republic
Fax: +1809 689 3388
Email: contact@funredes.org
Downloadable as PDF 2.2 Mb at:
<http://www.redistic.org/indexj.htm?body=proyectosjen>

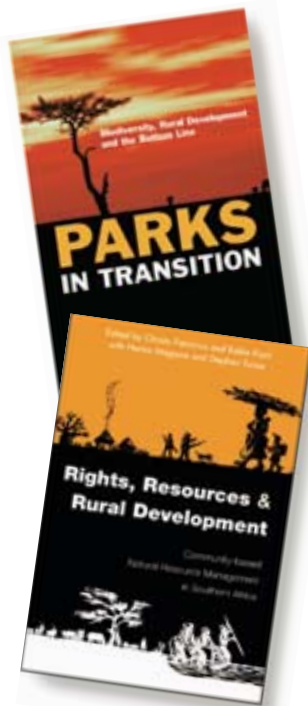
Conservation and development

■ Two new books take up the theme of community-based natural resource management (see p. 1), with its twin goals of conservation and economic development. *Parks in transition* focuses on how national parks in Southern Africa can help promote both rural development and the conservation of

biodiversity. But it also looks at the competing demands facing many parks, and examines the difficult juggling act between conservation and commercialisation, using more than 50 case studies to draw out lessons for the future. *Rights, resources and rural development* takes a critical look at some of the pitfalls of community-based natural resource management in Southern Africa. It highlights some of the flaws of the system which, claim the authors, are often swept under the carpet, by those involved in such schemes, and offers remedies which may be adapted to a variety of circumstances.

Parks in transition: Biodiversity, rural development and the bottom line
Edited by B Child
Earthscan, 2004. 224 pp.
ISBN 1 84407 069
GBP 17.95 • € 26.50

Rights, resources and rural development: Community-based natural resource management in Southern Africa
Edited by C Fabricius et al.
Earthscan, 2004. 288 pp.
ISBN 1844070093
GBP 18.95 • € 28
Earthscan
120 Pentonville Road
London N1 9JN
UK
Fax: +44 20 7278 1142
Email: earthinfo@earthscan.co.uk



All you ever wanted to know about ostriches



■ My brain weighs 40 g and my body 150 kg: what am I? Answer: an ostrich. I have 24 pages and 106 drawings: what am I? Answer: the new bilingual (English-French) educational comic book published as part of CIRAD's Les savoirs partagés ('shared knowledge') series. The book, which will appeal to a wide-ranging audience, was written in order to "better understand the ostrich, in its natural environment and its relationship with humans". The light-hearted presentation of sound scientific material works well. Once you have read this book, you will never see these big birds "which humans dream of turning into giant chickens" in quite the same light again. The misfortune of being an ostrich is that, like pigs, nothing is wasted: its feathers, eggs, skin and meat are all used.

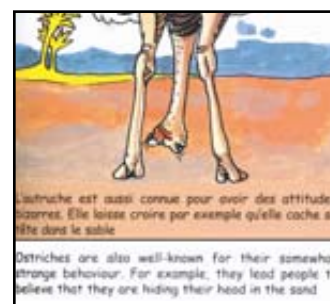
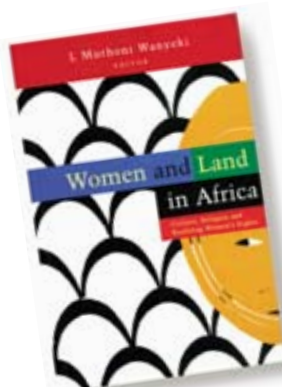
The all-round ostrich
Series: Les savoirs partagés
CIRAD, 2003. 24 pp.
ISBN 2 87614 569 3
€10
Délégation aux productions innovantes
CIRAD
TA 173/05
Avenue Agropolis
34398 Montpellier Cedex 5
France
Fax: +33 4 67 61 59 73
Email: espace.idees@cirad.fr

Women and land

■ This book contains original research conducted to understand how culture and religion influence women's land rights in Africa. It takes seven African countries – Cameroon, Ethiopia, Mozambique, Nigeria, Rwanda, Senegal and Uganda – and looks not just at land ownership, but also at the extent to which women are able to participate in decision-making about land use and benefits. The answer is that, although the degree to which women control land differs from one country to another, there are many similarities in their situations – and many imbalances to be redressed. Common to almost all African women is the gap between the rights that they hold in theory, and their inability to enforce them. Whether in a Christian or an Islamic setting, power is concentrated in the hands of men when it comes to managing land, deciding on how

it should be used and holding the household purse strings.

Women and land in Africa: Culture, religion and realizing women's rights
Edited by L Muthoni Wanyeki
Zed Books, 2003. 384 pp.
ISBN 1 84277 097 7
US\$ 27.50 • € 23
Zed Books
7 Cynthia Street
London N1 9JF
UK
Fax: +44 20 7833 3960
Email: zed@zedbooks.demon.co.uk



Helping rural dwellers to help themselves



■ Given the growing trend towards globalisation, State withdrawal and privatisation, rural dwellers are increasingly likely to become the main players in their own development. But in order to make the right decisions, they need to have proper and timely information.

They also need more skills and the self-confidence to carry them along the path towards change. First published in French, this handbook offers approaches and experiences in rural development that have already proved successful in West Africa, and may be adapted to other parts of

sub-Saharan Africa. The book is aimed at development practitioners, extension agents and technical staff involved in rural development projects, and the emphasis is on practical advice. Every method described in these pages has been tried and tested in the field and has produced worthwhile results. The result is a book which lends itself to dipping into, rather than reading from cover to cover. A whole range of topics is covered, among them farm management, farmers' organisations, natural resource management and product management. The product management chapter gives detailed advice on how to help small-scale farmers find markets and pitch their products at the right price in order to make a sustainable profit. A special section looks at women and development, and the increasingly important role they play in the rural economy. The book argues that some kind of specific support for women is vital.

But it urges an approach which takes both sexes' inter-dependent roles into account, rather than one which may lead to divisive segregation.

Supporting small-scale farmers and rural organisations: Learning from experiences in West Africa
 Edited by S Perret & M Mercoiret
 Protea Book House – Institut Français d'Afrique du Sud – CIRAD, 2003
 320 pp.
 ISBN 2 87614 505 7
 € 26
 For CIRAD's address see page 11

The outlook for Africa



■ This is the follow-up to the widely acclaimed *Africa environment outlook*, published last year (*Spore* 103 p. 13). The second time around, the authors take a different approach, homing in on case studies to analyse examples of how environmental change is affecting the people of Africa. Whether it be the impact of deforestation on communities in Cameroon, the effects of land degradation in the drylands of northern Namibia, or the consequences of rapid industrialisation in Saldanha Bay, South Africa, the picture that emerges is an alarming one. For while, traditionally, African communities have shown great versatility in adapting to environmental patterns, the pace and scale of the changes currently reshaping the continent are proving an intolerable strain on many coping strategies, and are increasing communities' vulnerability to poverty, food insecurity and disease. It is not all gloom, however. One chapter reveals how Mauritius has done battle with the major environmental health scourge of malaria, and won – at a cost of less than US\$ 1 per head per year.

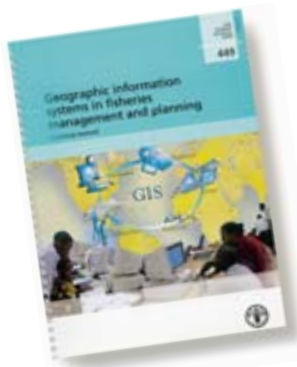
Africa environment outlook: Human vulnerability to change
 By R F Fuggle et al.
 United Nations Environment Programme (UNEP), 2004. 188 pp.
 ISBN 92 807 2365 0
 US\$ 37.50 • € 31.50
 Earthprint, Box 119, Stevenage
 Herts SG1 4TP, UK
 Fax: +44 1438 748844
 Email: ied@earthprint.com

Using technology to map fish

■ The potential for geographic information systems (GIS) to contribute to fisheries management systems in developing countries is considerable. Yet material to help understand and apply this new technology is sorely lacking. Here is a manual to use alongside GIS software, even if you are not a seasoned GIS user. This do-it-yourself guide, produced by the Food and Agriculture Organization of the United Nations (FAO), gives a short introduction to GIS software and its application for fisheries, before moving onto the nuts and bolts of how to get on with the job. It is aimed at fisheries biologists, aquatic resource managers and decision-managers in developing countries who have no knowledge of this technology, but who are ready to be persuaded of its benefits. Clearly written, with plenty of screenshots to help newcomers through the process, the package comes with two CD-ROMs containing exercises to

illustrate how GIS can be useful for both inland and fisheries management.

Geographic information systems in fisheries management and planning
 FAO Fisheries Technical Paper No. 449
 By G de Graaf et al.
 FAO, 2003. 178 pp. + 2 CD-ROMs
 ISBN 92 5 104999 8
 US\$ 60 • € 50
 FAO Sales and Marketing Group
 Viale delle Terme di Caracalla
 00100 Rome
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 Email: publications-sales@fao.org



Events that shape the environment

■ Billed as the flagship publication of the United Nations Environment Programme (UNEP), the *GEO year book 2003* has been launched as the first in a new annual series. The report highlights significant environmental events – both good and bad – presenting the information in clear terms, with plenty of graphics and boxes to make the facts and figures more digestible. There is a special section on freshwater and its importance to health and food production.

GEO year book 2003
 UNEP, 2004. 76 pp.
 US\$ 20 • € 16
 ISBN 92 807 2415 0
 For Earthprint's address see below

Reducing the risk factor

■ The risk of importing animals and animal products is that you inadvertently import diseases as well. But while it is important to reduce the chances of this, it is also vital that any health safety measures are seen to be reasonable from an international trade perspective. With this in mind, the World Organisation for Animal Health (OIE) has produced a handbook which outlines a comprehensive method of assessing the risks. It will help veterinary services determine whether a particular animal-based commodity poses a significant threat and, if so, what sanitary measures could be adopted to reduce that risk to an acceptable level.

Handbook on import risk analysis for animals and animal products
 Volume 1: Introduction and qualitative risk analysis
 OIE, 2004. 60 pp.
 ISBN 92 9044 613 7
 € 30
 OIE
 12 rue de Prony, 75017 Paris
 France
 Fax: +33 1 4267 0987
 Email: pub.sales@oie.in

An opportunity worth milking

■ Dairy markets offer promising opportunities for non-farm rural employment, especially in informal milk markets, which rely less on modern milk-processing equipment and more on traditional labour-intensive methods. Here, case studies from Kenya and Ghana demonstrate how small-scale dairy farming can generate jobs for rural communities, even when only a limited quantity of milk is involved.

Employment generation through small-scale dairy marketing and processing.
 FAO Animal Production and Health Paper No. 158
 Food and Agriculture Organization of the United Nations (FAO), 2004. 60 pp.
 ISBN 92 5 104980 7
 US\$ 12 • € 10
 ISBN: 92 5 105077 5
 For FAO's address see above

The first 20 years of CTA

Using experience to chart the future

On 4 June, at a hotel in Wageningen near CTA's headquarters in The Netherlands, festivities and congratulations were the order of the day. Former and current directors and country representatives of CTA filed into the conference hall for a session of speeches, punctuated by knowing nods when mention was made of the past and hopeful smiles when the talk was of the future. Among those present was one of CTA's oldest friends, Bernard Njonga, Secretary General of the Service d'appui

aux initiatives locales de développement (SAILD), a grassroots development organisation in Cameroon. Also there was Professor Monty Jones, winner of the 2004 World Food Prize for his work on New Rice for Africa (NERICA). These celebrations of CTA's 20th anniversary provide a good opportunity to look back at its history, and ahead to some of the challenges still to come...

"Knowledge is power"

The birth of the CTA, 20 years ago, was the result of a compromise. At the time, the African, Caribbean and Pacific (ACP) Group of countries wanted a fund to support their agricultural sectors. The European Union (EU) Member States did not agree and opted instead for an approach based on partnership: a technical centre financed by the European Development Fund (EDF), aimed at improving the profitability of small-scale agricultural producers and enterprises in ACP countries. It was decided to focus on the transfer of agricultural information and, in time, on access to and management of information technologies. The goal was to increase agricultural output, within the context of development as an economic process.

At first, the emphasis was on North-South technology transfer, using conventional technologies to, as Haniteli 'Ofa Fa'anunu, the current Chairperson of the CTA Advisory Committee, put it, "convert information to make more food". Since then, CTA has concentrated more on South-South knowledge exchange, especially through its support for seminars. Mr Njonga observed that CTA recently supported a seminar on European exports of frozen chickens to Africa by paying the participants' travel expenses, adding that what he found constructive about CTA is the way it "supports interesting initiatives without imposing them. We dream of a sub-regional dimension. CTA has helped us with this and we in turn have become its point of reference for Central Africa." It is all part of CTA's moves towards decentralisation.

Past and future challenges

The advent of new information and communication technologies (ICTs) has brought many changes to CTA's work and opened new doors, especially with the recent proliferation of portable telephones, which has widened the potential of technologies for developing countries, according to

Carl B. Greenidge, the Centre's third and current Director. On the political front, several major developments have had an impact on CTA. Under the Cotonou Agreement, the Centre has seen its mandate change to reflect a stronger supporting role for national agricultural policies. For Heleni Boulkou, outgoing Chairperson of the Advisory Committee, political dialogue "is a pre-condition for implementing cooperation, that will not only be economic, but also political." At a socio-economic level, CTA is also adjusting its approach. As Mr Njonga observed, "The small-scale farmer does not just need bread, he has other concerns. The support of CTA is welcome, but too often it is dominated by concerns of agricultural development."

According to Mrs Boulkou, the main problem now facing small-scale producers is that they find themselves caught up in the global market system, and yet locked out of it. They are asked to be more competitive when they do not have the means to do so, she said, and have to meet food standards imposed, for example, by EU sanitary and phytosanitary (SPS) measures and by Northern hypermarket food chains. CTA tries to help alleviate poverty by keeping ACP smallholders well-informed and linking them to markets, she added. Mr Fa'anunu pointed out the need for much more market information, specifically geared towards ACP countries. "CTA will have to be able to meet the demand," he observed.

Mr Greenidge noted that before the extensive opening up of EU markets in 2007, investments must be made in the trade infrastructure in many ACP countries. "That is, an ability to get whatever they produce to market," he said. To offset the probable negative impact of full trade liberalisation on ACP countries, the Centre plans to step up information on product diversification, he added. "Information is going to be critical with regard to the trade of traditional commodities produced by ACP countries exported to Europe, such as coffee, cocoa and bananas, given their declining prices," he continued. "The question now is how to get them to invest in areas such as wood products, leather products, off-season flowers. And more than investment, what is needed is management capacity, and information critical to management. If the flowers are not delivered on time, they are dead... We can offer that service to the holders, to strengthen their management capacity in that regard".



Spore magazine



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The CTA Advisory Committee and gender issues

This year, the annual meeting of the CTA Advisory Committee was held just prior to the 20th anniversary celebrations. The Committee, mandated by the ACP-EU Committee of Ambassadors, under the Cotonou Agreement, to advise the Centre on its annual programme of activities, brings together specialists in agriculture, people with years of experience. No one on the Committee has been chosen by chance, and everyone knows each other – the friendly pats on the back lighten many long hours at meetings. The Restricted Group within the Committee meets more regularly; as well as attending the annual gathering, this smaller group meets twice a year to examine the progress of CTA projects. The Committee members work as equals, a principal at the very heart of the ACP-EU Lomé Convention and its successor, the Cotonou Agreement. On the Committee there is one representative from each of the original 15 EU Member States, and 15 specialists chosen from the 79 ACP countries, ensuring a balance between the six ACP regions – West, Central, Eastern and Southern Africa, the Caribbean and the Pacific.

Heleni Boulkou, the Greek delegate, presided over the Committee meeting in

June and at the ceremony for the 20th anniversary, before handing over to the Pacific representative, Haniteli 'Ofa Fa'anunu, who will be the Chairperson until June 2005. Mrs Boulkou was enthusiastic in her praise of CTA's achievements. While Europe debates the issue of gender, at CTA "we are not only discussing it, but we are implementing programmes specifically adapted to the information needs of women smallholders," she commented, on the eve of the anniversary celebrations. "Here at CTA, we are very glad that such specific and tangible measures have not only been adopted and implemented, but they have had the desired and expected outcomes."

But after sleeping on it, she was obliged to note, at the ceremony on the following day, that appearances of equality can be deceptive. For although there is a rotation between EU and ACP countries for the post of Committee Chairperson, the same cannot be said when it comes to gender. The balance of men and women is far from equal: of the 30 members of the CTA Advisory Committee, only three are women. The chances are that this, too, will be sorted out – after all, the Committee always enjoys a good challenge.

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Working the land does not mean there is no time for reflection. Quite the opposite, as extracts from letters published below clearly show. Large or small, these are the kind of ideas that help make the world a better place. Keep them coming

Let's hear it for the female environmentalists

Cecila Musonsong, from Cameroon, introduces herself as an environmentalist and women's advocate. She too has some interesting comments to make and is not one to mince her words. She believes that when it comes to managing the environment and natural resources, the main players – rural women – are often neglected. Donors who take part in workshops in the town are only interested in bodies whose officials have often never even seen a forest, she remarks tartly. Meanwhile, women continue to burn and destroy their natural resources day in, day out.... But not all of them! The members of the Association pour la reconstruction et le développement des Moko-oh au Cameroun (AFRADEMOP), a women's organisation in Guzang in north-west Cameroon, are a case apart. For 2 years now they have been practising agroforestry, and they have realised that, right next to their kitchens, they can grow everything they find in the forest.

The graveyard of the forests

Usually, the living are blamed for destroying the forests, but for **Félix Alomadin**, director of Aide et développement (BADEV), an NGO in Benin, the dead also have something to answer for. "Take a look around a funeral parlour," he writes, "and look at the coffins made from precious woods, like mahogany, teak and others, all on show and ready to bury the dead. This practice is contributing to the disappearance of the great woods from our forests and is emptying them. If every person still living each has a coffin, one day there will be no forest left." For Mr Alomadin, it is wrong to criticise people who cut down trees to grow crops or for fuel, since these are vital necessities. But he believes it would be better to find a solution for burying the dead which does not involve the use of wood. In that way, he concludes, "If we act quickly, the few forests we still have will last for longer on our earthly planet." Let everyone think on this before their final hour...



Roberta Williams is a horticulturist who has headed the Gilbert Agricultural and Rural Development Centre (GARDC) for 14 years.

This non-governmental, church-based organisation gives young men and women a head start in life through its focus on agriculture and rural entrepreneurship. In 1999, Mrs Williams received the Inter-American Award for the Participation of Women in Rural Development from the Inter-American Institute for Cooperation in Agriculture (IICA).

In the Leeward Islands, where the Gilbert Agricultural and Rural Development Centre (GARDC) is based, the average age of people in the farming sector is 50 years old. This vital economic activity is further threatened because many young people do not view farming as offering gainful employment. It still carries a slavery image, with connotations of drudgery, high risk and small returns. One of GARDC's goals is to show that farming is a business and is a worthy and economically viable occupation.

Some of the problems facing our Caribbean people have arisen as a result of structural adjustment programmes, down-sizing, declining budgets and the increasing effects of multilateral and bilateral trade agreements.

And 11 September 2001 shocked many people when, for several weeks, air and sea travel were suspended, blocking all imports and exports of food and other products to our countries. The repercussions from all of this include a rise in youth unemployment, crime and violence, the continuing degradation of our environment and increased poverty.

The challenge

Through our work at GARDC, we have witnessed the negative impact on Caribbean youth. For example, during our Enterprise Development Course for Unemployed Women, it became very evident that as a result of a lack of skills, poor institutional support systems and poverty, a number of young women find themselves trapped in relationships that end up in teenage pregnancy and parenting, abuse, drugs and HIV/AIDS.

In our small island tourist economies, young people working in the tourist industry are exposed to drug use through contact with some visitors and traffickers posing as tourists. Rural youths often face the additional challenges of poor educational, health and recreational facilities. Ours is one of a

Young people

The future lies in farming

Getting young people interested in agriculture is crucial, both for rural development in the Caribbean and for securing the future of young people in the region. One initiative launched recently in Antigua and Barbuda is already yielding positive results.

number of community-based organisations which are trying to address these problems. GARDC's mission is to improve the living standards of young men and women through their involvement in agricultural and rural enterprises. Our aim is to give them greater access to income-generating opportunities.

Getting started

The process involves training in, for example, crop and livestock farming, agro-tourism, agro-processing, soap making, beekeeping and the production of handicrafts. There is a revolving loan fund to assist

*“Farming
is a business
and is a worthy
and
economically
viable
occupation”*

with start-up expenses, and business management training provides help with preparing business plans, product development, marketing research, packaging, costing and pricing, financial management, record keeping and developing negotiation skills.

For those who require land for their enterprises, the Centre collaborates with the Ministry of Agriculture. We also run a 5-acre demonstration farm for hands-on training, complementing the classroom sessions. The farm is being developed to demonstrate the use of: agro-ecological practices such as the

use of cover crops and green manure crops for enhancing fertility, weed management, composting, mulching and bio-pesticides; and small farm equipment, with the emphasis on the introduction of light farm tools and equipment for women.

Real returns

It is very satisfying to see young people turning their lives around. At the end of one of our training courses, a young woman told the touching story of how she could not believe that she had been able to present her business plan in front of the class. She said that she had always been someone who sat at the back of a room, but she had gained so much self-confidence, as well as the knowledge and skills to start her own business. She is now one of Antigua's new and promising young agro-processors.

She has built her own processing unit and has developed a range of hot pepper products, including hot pepper sauces mixed with mango, tamarind and other interesting ingredients, and hot pepper powder, jelly and even candy. Her income has greatly increased and she and her husband have been able to build their own house.

Yet, more needs to be done. Governments in the region should promote agriculture with as much enthusiasm as is done for other professions.

There must be a major drive to encourage young people into agriculture and its related industries and to provide the necessary microfinance facilities to support youth enterprises. There also needs to be greater awareness of the potential of young people and their unique qualities. We must recognise that *there is much more to youth than age!*

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