



Corporate social responsibility

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By Malick Faye

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Many businesses are taking steps to improve their environmental and social performance through voluntary initiatives. Codes of conduct can produce tangible benefits for communities in developing countries. But they could also act as a barrier to market access.

When Hurricane Ivan swept across Grenada in 2004 leaving a trail of destruction in its wake, the Belmont Estate, a 400-acre cocoa and nutmeg plantation, was among the first to step in. Managers quickly mobilised emergency food, clothing, cash, building supplies, seeds and agricultural tools to help stricken families. In common with a growing number of companies, the plantation believes it has a duty to plough some of its profits back into the community.

New social and market pressures are leading to changes in the way companies do business, with many of them integrating ethical and environmental concerns into their operations, a process known as corporate social responsibility (CSR). The World Bank defines CSR as "the commitment of businesses to contribute to sustainable economic development by working with employees, their families, the local community and society at large to improve their lives in ways that are good for business and for development."

CSR is partly a response to growing calls for the private sector to make a greater contribution to development. Companies, especially corporate giants operating in the developing world, are frequently criticised for exploiting workers, causing pollution and extracting

resources without offering proper compensation to local communities. The trend is also being driven by consumers, who are increasingly keen to source their purchases from firms that treat their workers fairly and respect the environment. Nowhere is this more so than in the food industry, with shoppers scrutinising both the quality of what they buy, and the conditions in which it was produced.

"Corporate responsibility will increasingly become a priority to companies, pushed forward by consumers who are paying more attention to how their food is produced and the impact their lifestyles have on the rest of the world," said Kavita Prakash-Mani of UK consultancy firm SustainAbility.

Moral commitment or window dressing?

CSR is certainly good PR. It can help companies boost their image, build customer loyalty, attract good staff and even secure contracts from governments. However, some critics are sceptical of the CSR approach, questioning the extent to which it makes a real contribution to development. "Despite widespread rhetoric, its impact is still patchy," declares the World Bank.

The list of major companies doing good deeds grows daily, with most of them keen to advertise their worthy actions. In the UK, Marks and Spencer is offering education to children in Uganda and a range of other CSR programmes, which are trumpeted on giant screens posted in every store. For each bottle of water sold by French firm Volvic, the company makes a contribution to sinking wells in Niger. A survey carried out for *The Economist* in 2008 found that while in 2004 just 35% of businesses gave CSR high or very high priority, that figure has now risen to 55%. Some corporations have formed strategic alliances with NGOs to strengthen their credibility. The transport company TNT has teamed up with the World Food Programme to improve school food distribution in Liberia and Congo. Drug company Merck has joined forces with the Bill and Melinda Gates Foundation to provide HIV/AIDS treatment in Botswana.

North and South

But while businesses in the North dominate the CSR limelight, the movement is taking hold in the South too. Botswana entrepreneur Seteng Motalaote, who runs a waste sanitation business, has forged links with local communities by sponsoring the Clean Up the World Campaign, a global initiative aimed at encouraging people to conserve their environment. In Papua New Guinea, Oil Search Limited, a major oil and gas company, has made a point of improving conditions for staff, who are given the opportunity of buying shares and enjoying other benefits. A growing number of Kenyan companies are supporting an initiative launched by the Ufadhili Trust which fosters links between businesses and poor communities to organise interventions such as borehole drilling, bursary schemes and medical facilities. Kenyan automobile company D T Dobie has extensive internal CSR activities that include counselling and drug treatment for employees living with HIV/AIDS. Sher Flowers, based in Naivasha, offers education to workers' families. "They pay for my kids from primary to secondary school," said one staff member Biruk Tesafaye.

Taken to its logical conclusion, CSR should cover all activities in the supply chain, a sizeable challenge for firms operating in a global market. Some companies have already started to replace suppliers who fail to meet their standards, a move that may open opportunities to small-scale producers who can satisfy requirements, but which may equally develop into a non-tariff trade barrier for others. The burden of monitoring and certification can present a significant expense that could exclude small-scale ACP enterprises from markets.

Coffee is one sector where companies are increasingly monitoring the social and economic responsibility of suppliers, through certification schemes such as UTZ Certified and Max Havelaar. Other organisations tracking CSR performances include the UN Global Compact, whose business members pledge to respect principles in the fields of human rights, labour, environment and anti-corruption and the Global Reporting Initiative, which aims to provide an international sustainability standard. In spite of such frameworks however, CSR is still not controlled or certified in the way that fair trade or organic products are, so there are no objective parameters to evaluate its impact.

Photo: © Syfia Internmtnal



Photo: © Terre Nourricière



Some experts are calling for help for countries and businesses in the South to adopt CSR practices. Transnational corporations, civil society organisations, governments and multilateral bodies such as the United Nations can play a crucial supportive role says the United Nations Industrial Development Organization (UNIDO) which offers governments and regions support in the establishment of networks or hubs for CSR excellence.

Some companies are paying the school fees of their workers' children and are carrying out HIV/AIDS prevention programmes.

Picking up the tab

Not all businesses are entirely honest about who pays for CSR. "Research by ODI suggests that the cost of complying with ethical standards is often passed down the supply chain to developing country producers, rather than being borne by the instigating companies," said Overseas Development Institute (ODI) researcher Karen Ellis, author of a paper on the subject.

Critics also point out that CSR is not simply a question of getting out the company cheque book. Impact assessments should examine a wide range of issues, including use of local inputs – materials and staff – as opposed to imported ones. Trinidad energy company Petrotrin has invested heavily in the local community with cultural, educational, sports and conservation initiatives but has faced criticism for not hiring more local labour.

There is widespread agreement that there need to be more incentives to reward companies that practise genuine CSR approaches. To do that, agreed benchmark indicators will have to be established, so that companies – and consumers – can measure the effect their policies are having on staff, communities and the environment. To get the ball rolling, the ODI is pushing for the launch of a 'Good for Development' label with gold, silver and bronze levels for products sold by companies that make a genuine impact on local development. ■

Global problems, local solutions



For further information

GRI

www.globalreporting.org

ICTSD

International Centre for Trade and Sustainable Development
<http://ictsd.net>

IISD

International Institute for Sustainable Development
www.iisd.org/standards/csr.asp

ITC

International Trade Centre
www.intracen.org

ODI

www.odi.org
• **Is CSR just Corporates Saying the Right Things?**
By K Ellis
www.odi.org.uk/resources/odi-publications/opinions/100-karen-ellis-corporate-social-responsibility.pdf

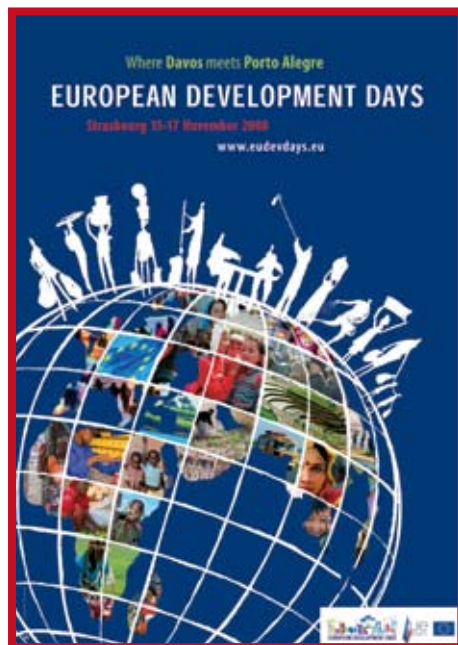
UN Global Compact

www.unglobalcompact.org

UNIDO

www.unido.org/index.php?id=876

□ Finding local answers to global challenges. That was the focus for more than 1,200 organisations taking part in the third European Development Day (EDD) held in Strasbourg, France, in November 2008. "Deliberating on development at a time when various simultaneous global crises are hitting the world takes on a particular tone," said CTA Director Dr Hansjörg Neun in an interview between sessions. Developing countries realise that the support that they expect from developed countries will very likely be reduced and promises probably not be kept. This could trigger



□ Farmers' rights

A new website offers information about Farmers' Rights as defined by the International Treaty on Plant Genetic Resources for Food and Agriculture, as well as help in how to enforce them. Launched by the Norwegian Fridtjof Nansen Institute (FNI), the tool is aimed at decision makers, practitioners and researchers. It provides information on the history, legal status and contents of farmers' rights and on the implementation of these rights. There is a comprehensive database of legislation and policies as well as concrete recommendations on how to go about enforcing rights, including a free workshop module and success stories from all over the world.

www.farmersrights.org



new ways of rethinking development. The EDD's theme 'local governance' is a possible leverage for implementing programmes managed by communities with the assistance of a variety of partners. "Food security is just the supply of calories," echoed Phillippe Mathieu of Oxfam Haiti. "We have to think at local level."

Dr Neun said that CTA's sponsorship of 10 ACP partner organisations to attend the 3-day gathering reflected the importance of harnessing local potential to tackle development issues. "CTA's partners are the best placed to give first-hand information on their practice of development

activities, explain the challenges that they face and show how they address them," he said. "They can also network among themselves, improving their understanding of cooperation opportunities."

Thembi Ndema, of the Food, Agriculture and Natural Resources Policy Analysis Network (FAN-SPAN), reported a good response to several of its information products showcased at the event. Meanwhile, Prisca Githuka, representing the Kenya National Federation of Agricultural Producers (KENFAP), was impressed with the layout and quality of stands. "EDD is a very good opportunity to learn how to market organisations more effectively, especially those from developing countries," she said.

The EDD also provided an opportunity for CTA to showcase its work on the use of low-cost laptop computers to improve access in rural areas to agricultural information for local decision-making and innovation.

□ New network for the South

The Intellectual Network for the South (INSouth) brings together policymakers, research and academic staff, members of the media, the private sector and civil society from countries of the South. It offers a range of interactive services including a database of contacts, inter-governmental organisations and think tanks. The network is the latest initiative of the South Centre, a Geneva-based organisation that supports the South on major issues through research, negotiations assistance and policy support, and through training, capacity building and networking activities.

www.insouth.org

□ Grants galore

Terra Viva Grants is a new website offering information about grants in the agriculture, energy, environment, and natural resources sectors. It can be used to find out where and how to look for grants that finance technical assistance, capacity building and research, as well as prizes and awards. The resource currently displays profiles of about 300 grant providers worldwide, including independent foundations, corporate foundations, NGOs, government and international organisations. Visitors can browse the profiles of grant providers or search the database to speed up filtering and comparison.

<http://terravivagrants.org>

Top schemes for Women and ICTs



Photo: © www.apcwomen.org

□ In rural Nigeria, as in many other ACP communities, good agricultural information can make all the difference to a household's revenue and food security. ICTs play an important role in spreading this kind of knowledge, but access to them is often weighted against

women. A programme to build the ICT capacity of female teachers in Olanla, an isolated community in Oyo State mainly populated by women who produce yams, cassava and citrus, aims to shift this balance. The scheme, designed by the Information Development Network (IDevNet), is one of 15 initiatives that have made it through to the fourth and final round of the CTA-sponsored Small Grants Fund to address Gender

Issues in Information and Communication Technologies for Agricultural and Rural Development in Africa, the Caribbean and the Pacific (GenARDIS). Each organisation will receive a €6,000 grant to help their prize-winning ideas become a reality.

Submissions to this, the third round of GenARDIS since its launch in 2002, attracted a record number of entries. All the projects focused on innovative use of ICTs by or for rural women to improve the well-being of their families and communities. Award-winning entries included that of Women Learning Women (WLW), which is launching women-led community information centres in the Tigray Region of northern Ethiopia, and a scheme to promote ICTs use for the waste water irrigation of vegetable crops amongst rural women in Zimbabwe. Another project, in the Dominican Republic, will help women to use e-business tools to manage rural cooperatives. In Benin, a programme will help women use ICTs to improve production and processing methods in the fisheries sector.

<http://genardis.apcwomen.org/en/node/38>

"I like local milk!"

□ Senegal's agricultural research institute (ISRA) has launched a travelling exhibition in various parts of Senegal, Burkina Faso and Mali. Called "*I like local milk!*" it seeks to increase awareness about the diversity of West African dairy products and know-how.

Posters show amusing photographs of cows posing with stars (a rapper, a fashion model and a wrestler), while underneath are



Illustration: © ISRA

Reviving maize

□ Two maize varieties, Amen and AB11, are newly available in Togo after disappearing for more than 15 years due to the socio-political crisis that gripped the country from 1990 onwards. Producers like the varieties because of their short growing cycle (between 95 and 105 days), their high yields (an average of 3 to 4 t/ha), and their resistance to maize streak virus. An added advantage is that their grains are easy to mill.

Amen and AB11 both eventually disappeared after difficulties caused by the crisis prevented the renewal of plant material and caused problems with the maintenance of conservation infrastructures, especially cold storage facilities. The two varieties had been developed in 1980 by Togo's agronomic research

institute (ITRA) in response to strong demand for maize to feed a rapidly growing population.

In 2004, repeated requests from farmers prompted ITRA to embark on a programme to retrieve the varieties by cleaning degraded stock recovered from several farmers. After 3 years of work to regenerate the material, the varieties were again ready for production. They have again proved very popular with producers, who can obtain them from ITRA centres.

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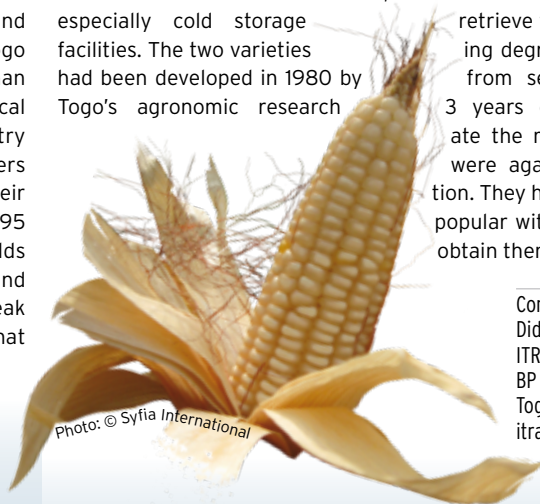


Photo: © Syria International

□ Pacific waters

The Pacific Islands Applied Geoscience Commission (SOPAC) has launched an interactive information portal for the Pacific region. Here you can find information on SOPAC programmes and projects relating to water. A search facility allows visitors to look for specific initiatives or by country while a resource centre offers key documents and links. The quarterly *Pacific Water Partnership* sends information straight to your email inbox.

www.pacificwater.org

□ Measuring carbon footprints

South African fruit and wine farmers have launched a scheme to determine their environmental impact. The initiative, coordinated by the Deciduous Fruit Producers Trust (DFPT) and funded by the UK's Department for International Development (DFID) through the South African based ComMark Trust, examines the overall impact of products through their entire life cycle. It includes the development

of an online assessment tool that can be accessed by farmers to load the variables — including energy input and power costs — in order to calculate their carbon footprint.

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□ African gardens

GardenAfrica is a UK-based NGO working in Southern Africa to create organic training gardens in schools, hospitals and clinics. These gardens produce nutritious food and medicinal plants, building community health and livelihoods and helping to pass on valuable botanical and horticultural knowledge to the next generation. The organisation works with local partners. Projects are currently under way in Lesotho, South Africa, Swaziland and Zimbabwe.

www.gardenafrica.org

Easier organic trade

Two new practical tools aim to make it easier for organic farmers in developing countries to steer their way through the maze of different standards and requirements. Designed by FAO, the UN Conference on Trade and Development and the International Federation of Organic Agriculture Movements, they aim to streamline acceptance of products that are traded internationally.

Equitool is a guide to help decision-makers assess whether an organic production and processing standard applicable in one region of the world is equivalent to another organic standard.

The second tool, International Requirements for Organic Certification Bodies (IROCB), is a minimum set of performance requirements for organic certification bodies that will enable import of products certified under foreign control systems. Both tools are managed by the International Task Force on Harmonization and Equivalency in Organic Agriculture (ITF).

Organic trade is expanding at the annual rate of 15-20%, but is hindered by a multitude of standards, regulations, and conformity assessment systems. Over 400 public and private certification bodies now operate in the global organic marketplace, leading to confusion and high costs for producers and exporters.

Both tools can be downloaded free from the ITF website:
www.itf-organic.org

Eco educator

'Eco educator' Andrew Muir is offering AIDS orphans training and jobs in ecotourism, a rapidly growing sector in South Africa. He is one of 10 laureates in the 2008 Rolex Awards. Chosen by an independent jury from nearly 1,500 candidates drawn from 127 countries, he plans to use his US\$100,000 (€77,000) prize money to develop his academy in the Eastern Cape Province. He is hoping that his innovative programme will be emulated throughout southern Africa, which is home to a large number of the world's HIV/AIDS orphans.

<http://rolexawards.com/en/index.jsp>
www.wildernessfoundation.co.za

Sweet cactus

The arrival in 2000 of Chinese remedies and cosmetic products based on *Aloe vera* set agronomists and biologists thinking in the Béni region of eastern DR Congo. "We saw that most of the products were based on *Aloe vera*, a plant that grows well here", explained Kato Ndako, a chemist and pharmacist from Beni. "Since then, we have been encouraging farmers to grow more of it, before starting to process it". In Nord-Kivu, the number of producers, encouraged by improved facilities for distributing and marketing aloe, has risen from 1,000 to almost 5,500 in 4 years, according to Jule Katoto, head of rural development.



Photo: © Syfia International

Since 2007, farmers have been grouped into the Béni *Aloe vera* Planters Cooperative (Coopevac), receiving advice from agronomists on how to manage their land. Although it is a cactus, *Aloe vera* needs a certain amount of water to germinate, and does

best in a well-drained, preferably sandy soil.

More than 200,000 plants are grown around Béni. Coopevac buys the leaves from the farmers and processes them into soaps, creams, juices and syrups that are sold locally.

Better baby food

In Congo, producers and consumers are enjoying the benefits of improved *potopoto*. Generally prepared using just fermented maize, this paste contains nothing but starch. The addition of peanuts produces a pap that has twice as much protein and four times as many lipids. Used as a supplement to breastmilk for young children, it can also be consumed by adults.

To make the paste, simply wash and soak the maize and peanuts in separate bowls of water, then mix them (75% maize and 25% peanuts) before grinding and sieving.

The maize-peanut mixture is then left to settle for about 6 hours before being drained overnight so as to obtain a compact paste that will be used to make the porridge.

This technique was developed as part of the EU-funded CEREFER fermented cereals project, which is also being carried out in Burkina Faso. The aim of CEREFER is to diversify and improve certain foods so that producers have access to processes that are technically and economically viable and consumers have access to products of good quality.

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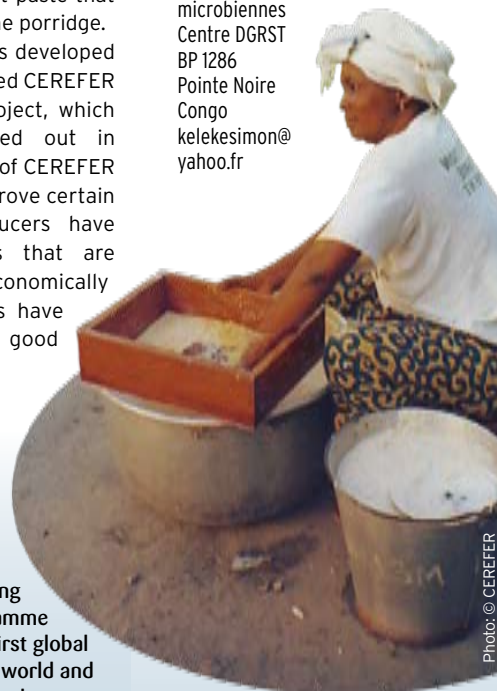


Photo: © CEREFER

Groundwater resources

UNESCO's Worldwide Hydrogeological Mapping and Assessment Programme (WHYMAP) offers the first global inventory (maps of the world and continents) of transboundary groundwater resources. Almost 96% of the planet's fresh water is located in underground aquifers, most of which are shared by at least two countries. This detailed database offers information on their location, quality and the rate at which they are replenished. To date, 273 groundwater sources have been documented, including 38 that are among the largest in the world. These latter are still considerably under-exploited, and are all in Africa.

www.whymap.org/cln_092/whymap/EN/Downloads/downloads_node_en.html?_nnn=true

Local fish feed

In northern Namibia, the government of Galicia (Spain) and the Spanish Agency for International Cooperation for Development (AECID) are building a factory to produce fish feed. The aim is to cut the cost of buying food for fingerlings and encourage the production of local species such as tilapia and catfish. Fish feed was previously imported from South Africa, in small quantities and at high cost to local fish farmers.

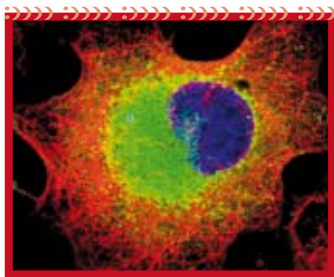


Photo: © Institute for Animal Health

Detecting foot-and-mouth disease

□ A new test for foot-and-mouth disease offers hope for better control of the highly contagious viral infection. The technique, developed by the Australian branch of the Commonwealth Scientific and Industrial Research Organisation (CSIRO), uses recombinant antibodies to differentiate between infected and vaccinated animals.

Efforts to control past outbreaks have been hampered by an inability to distinguish between infected and disease-free animals, prompting governments to slaughter more cattle than they needed. An epidemic in the UK in 2001 was finally contained after the culling of more than 6 million animals. Most were not infected. CSIRO officials say the new 'DIVA' test will be relatively inexpensive and produces rapid results.

Foot-and-mouth disease is the world's most economically devastating livestock disease, with an especially serious impact in Africa. Botswana is the latest country to be affected by an outbreak.

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□ Blogging for development

The bilingual blog (English/French) *Africa can... end poverty* launched by Shanta Devarajan, chief economist of the Africa Region at the World Bank, promotes exchanges on development issues for the continent. Here you can read, access and comment on various opinions and information sources. Searches can be made by country or by theme (agriculture, climate change, energy, rural development, trade). There is also a rich array of interesting links to help you find out more.

<http://africacan.worldbank.org/node>

Miraculous papaya

□ Researchers at Togo's agro-nomic research institute (ITRA) have turned to papaya seed as a weapon against internal parasites in chickens. The treatment, developed to counter the problem of finding adequate local supplies at affordable prices of the two main veterinary medicines used to treat worms and coccidioides in poultry, has a 100% success rate in eliminating parasites.

A number of tests conducted by ITRA have shown that powdered papaya seeds administered to chickens, at a ratio of 3 g/kg of live weight for two consecutive days, is as effective as using piperazine

citrate to treat gastro-intestinal worms. For coccidioides, another intestinal parasite, the recommended dose is 3.5 g/kg of live weight for 6 days.

"This discovery makes us feel much safer," said poultry keeper Mathieu Koffi. Intestinal parasites account for 50% of all poultry deaths, according to ITRA. They also cause slower growth and significantly lower output levels.

ITRA is now pursuing research to assess the efficacy of these seeds in treating other poultry, as well as measuring their long-term



Photo: © Syfia International

effect on chickens. The goal is to make this treatment widely available to small-scale producers.

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Cassava crackers for export

□ In a bid to empower local women a Surinamese cassava grower has spearheaded a plan to build a factory producing crackers made from the crop. With her enterprise Agnes Leewani is not just realising her own dreams but is

Photo: © I. Cairo



also creating income-earning opportunities for other women in the rural community of Ovia Olo in east Suriname's Marowijne district. Building of the facility began in March 2008. By the time it is finished, it is expected to create jobs for at least 125 people and help female producers to secure a steady revenue by supplying cassava.

"For 45 years I have been growing cassava and I know all about it; this is a dream come true," said Agnes Leewani. The remote community of Ovia Olo offers few openings for local producers. It has no running water or electricity and little in the way of infrastructure.

Most of the funding for the factory has come from investors in the Netherlands. While the cassava crackers will initially be sold in Suriname, plans are already in hand to export them to the Caribbean and Europe.

Useful waste

□ The use of chopped banana stems as mulch has numerous benefits according to Abubaker Matovu, a farmer from Rakai district, south-western Uganda. Matovu says the stems, which are left over from harvesting, improve fertility by retaining soil moisture and preventing erosion. The technique also enables the farmer to cut the amount of time spent weeding since only small quantities of grass manage to push their way up through the soil.



Photo: © A Nabwowe

□ Medicinal database

The African Association of Medicinal Plant Standards (AAMPS), a Mauritius-based NGO dedicated to the development of quality control for African medicinal plants and herbal products, has produced an African herbal pharmacopoeia. The AAMPS Medicinal Plants Monographs, the result of three years' work with five African and European universities and 17 researchers from 12 countries, covers 52 species.

Each entry contains information and technical data required by growers, collectors, traders, practitioners, researchers and manufacturers of African medicinal plants and herbal products. The plants were selected on the basis of a systematic review of published and unpublished literature and extensive consultation across the continent. The monographs are available to AAMPS members on-line.

www.aamps.net

□ Paradise found

Some 1,600 m up on the slopes of Mt Mabu in north-west Mozambique, a team of British scientists has discovered a lost paradise and recorded several new species of plants, butterflies, birds, insects and snakes. With the help of Google Earth satellite mapping software and local trackers, biologist Jonathan Timberlake and his team, have found an 80 km² forest. It was previously unknown and has been totally uncontaminated by human activity.

Careful reforesting

■ Reforesting and tackling desertification are worthy objectives, but not at any price! Studies conducted since 2005 by the French Institute of Research for Development (IRD) and its partners in Burkina Faso and Senegal reveal the negative impact of fast-growing imported tree species (eucalyptus, exotic pines, Australian acacias) on soil fertility.

These exotic plants, which are well adapted to the extremely harsh conditions and mineral-deficient soils of tropical regions, have undoubtedly proved their effectiveness in producing biomass and combatting erosion over the past 40 years. But they have also upset the structure of the soil and reduced the diversity of certain mushrooms and bacteria that are crucial to a healthy ecosystem. *Eucalyptus camaldulensis*, the world's most commonly planted eucalyptus tree, is one such species. In Senegal, *Acacia holosericea* has reduced the biodiversity of



Photo: E. Katz © IRD

the environment and its resistance to thermal and hydric stress, with the risk of creating a new ecosystem whose characteristics will not necessarily be favourable to recolonisation by local species. Contradictory results were however obtained during the same study in Burkina Faso.

These very different scenarios highlight the importance of only introducing exotic species on a case-by-case basis after extensive studies, and taking into account their potential impact and the nature of the soils they will colonise.

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No sting in the tail



Photo: © A. Khalif

■ African bees are notoriously aggressive, but in Kenya, apiculture is thriving using a bee with no sting. *Hymenoptera apidae*, which lives in the Kakamega, Arabuko Sokoke and Mwingi districts, is not only harmless, but it also produces honey of exceptionally high quality. Traditionally, gatherers collect honey from tree cavities, but concerns over forest degradation has prompted the UN Development Programme to domesticate the stingless bee. So far, 1,150 Langstroth hives have been distributed to farmers.

Local communities have signed a deal to supply Dubai-based company Viking Ltd with honey from the stingless bees. The company exports honey and natural medicinal products to markets in Europe and the Middle East and pays farmers €15/kg of honey, compared with €10 for honey made from normal bees. Young beekeepers are especially attracted to rearing stingless bees. More than 60 youth groups have started farming them. "The communities around Kakamega are now reaping good profits from stingless bees," said bee farmer Joshua Shitikho. "It has helped us earn a livelihood and our boys are not idle."

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Cooking with jatropha oil

■ Boubacar Zongo, a versatile inventor from Burkina Faso, has developed an ingenious cooker powered by jatropha oil, aimed at farmers who cultivate this tropical plant. This environmentally-friendly invention uses no wood and very little petrol (just enough to light the fire). It uses just 1 l of jatropha or other oil for 3 hours of cooking and can boil 1 l of water in 6 minutes.

The cooker, which will cost between FCFA10,000 and 12,500 (€15 and €19), is lit with a piece of cotton or paper soaked in petrol. Once the fire has taken hold, a small tap is turned to release the required flow of oil, which then ignites. As the flames spread inside the cooker, they heat the base of the pot, while the smoke is discharged through the chimney.

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Photo: © Sylla International

Powered by algae

In an effort to reduce dependency on oil and offer an alternative to first-generation biofuels made from sugar, cereals or oleaginous plants, US industries and researchers are working on biodiesel made from algae. These organisms do not compete for valuable food resources and their cells are rich in lipids. Output of oil per unit of area cultivated could be much higher than that obtained from soya. This promising biodiesel is said to be closer to industrial production than bioethanol made from ligno-cellulosic material.

Electronic coffee trade

The Ethiopian Commodity Exchange (ECX) has started trading coffee through a new electronic system. Trading is conducted in the afternoon, to tie in with the New York market. Ethiopia has won trademark rights for three of its specialty coffees, Sidamo, Harar and Yirgacheffe, and has signed an agreement with 70 global companies to promote its coffee brands. The country is the largest coffee producer in Africa. Last season, it exported a total of 170,888 t, earning US\$525.2 million (€395 million).

A virtual fish pot

FAUNAFRI, a centralised geographic database developed by the mapping department of the French Institute of Research for Development (IRD), is drawing up an inventory of all known fresh and salt water species found in Africa. This vast virtual fish pot provides access to every classified species, using a link to the global database *Fishbase*, together with original data from the IRD. Specialists use maps on the site to analyse and compare the distribution of fish families, genera and species throughout the continent.

www.cartographie.ird.fr/faunafr.html

Information sharing

A new project aims to give fast and reliable open access to results of research funded by the EU. The scheme gives unrestricted online access, primarily to research articles published in peer reviewed journals, after an embargo period of between 6 and 12 months. Research sectors include health, energy, environment, social sciences and ICTs.

<http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.topic&id=1680>

Soil fertility

Feeding the land

Restoring and maintaining soil fertility is a vital prerequisite for increasing output, especially given the current food crisis. Chemical fertiliser remains essential, in spite of soaring prices. But its use must be combined with other techniques for conserving and improving land and these must be adapted to the ecological and economic conditions of each region.

Soils are fragile. If they are to give their best they need to be regularly nourished and cared for, and allowed to rest from time to time. If they are starved or mistreated, they quickly become depleted. That is the grim reality in many ACP regions, especially in sub-Saharan Africa where already naturally low soil fertility levels have rapidly declined in recent decades. According to an FAO study published in 2000, soils in Africa lose an annual average of 48 kg/ha of nutrients, the equivalent of 100 kg/year of fertiliser. To compensate for this loss, they receive an average of just 10 kg of mineral fertiliser, compared with a global average of 90 kg. Today, it is here in Africa that soil degradation presents the most serious problems. In the Caribbean, productivity is also hampered by inadequate natural fertility and shallow soils, erosion due to steep slopes, poor drainage and high levels of salinity.

When they are used for intense cultivation, soils quickly become degraded, especially in mountain or highland areas where they are subject to severe erosion. In the most serious cases, the land becomes unfit for farming. Lower productivity levels prompt farmers to look further afield and use land that is ill-suited to crop growing... which produces even lower yields. Faced with poor harvests, producers opt not to buy fertiliser. And failure to offset losses in soil fertility leads to lower agricultural output or to insufficient increases in production levels to feed a growing population.

The food crisis has led to renewed efforts to intensify crop cultivation. A number of major programmes aimed at restoring soil fertility have been launched recently. These include Terrafrica – a partnership between the main UN agencies, the New Partnership for Africa's Development (NEPAD), the EU and a wide range of regional and international organisations – and the Alliance for a Green Revolution in Africa (AGRA) which has set the goal of regenerating 6.3 million ha of agricultural land.

Costly fertiliser

Less fallow land, or none at all in the most highly populated areas, intensive deforestation, erosion, overgrazing and pollution – these are the main causes

of land degradation. The effects vary depending on the soils and climate: deterioration of soil's chemical and physical properties, lower levels of organic matter and biological activity, degradation of soil structure and fewer principal soil nutrients (nitrogen, phosphorus, potassium – NPK). The remedies are therefore as numerous and varied as the causes. It is important that they be adapted not just to the ecological conditions, but also to the agro-economic context of each region.

Supporters of heavy use of mineral fertiliser and those who propose organic or sustainable farming methods have long been divided. But there is now widespread agreement that the best way to maintain soil fertility is through an integrated approach adapted to local conditions.

Chemical fertiliser generally remains an essential ingredient for achieving significant growth in output. But in Africa, where most of the land is farmed

Compost from charcoal

New archeological finds reveal that the ancient Amazonian Indians used charcoal mixed with compost to increase the fertility of their soil. The discovery has sparked fresh interest in using this time-honoured method, especially in areas where soil is poor or scarce. Charcoal improves the capacity of soil to absorb nutrients, which is particularly beneficial when it comes to growing food crops.

In Belize, a project launched by the Taiwanese Mission at Central Farm in the Cayo District is using layers of charcoal and compost to grow vegetables, just as the ancient Indians did thousands of years ago. Another method being studied is to combine charcoal with waste from rice cultivation and fish farming, together with composted organic food matter.

This technique can only be applied on a large scale if existing forestry resources are managed sustainably, especially for charcoal production.



Microdosing: a profitable pinch

The microdosing technique, which was developed by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and its partners, enables farmers to obtain good yields without spending a fortune on fertiliser. Using an empty bottle, producers simply apply a pinch of suitable fertiliser during sowing, or alternatively, three weeks later. This system has proved successful in Zimbabwe, where cereal yields have risen by 30 to 40%, and in West Africa, where millet and sorghum output has increased by between 44 and 120%. In an effort to promote the use of microdosing, ICRISAT has persuaded fertiliser manufacturers to package the product in small quantities for distribution in villages, together with advice on how to apply it.

www.icrisat.org/New&Events/Smallfertilizer.htm



Compost, alley cropping (banana and Leucaena) and mixed cropping protect and enrich the soil.

by small-scale producers, its use is limited to cash crops. Very little fertiliser is applied to subsistence crops, which are unprofitable to grow or difficult to sell. Now sold by private traders, these inputs are not available everywhere and their quality is not always guaranteed or adapted to producers' needs. The cost of fertiliser has soared in recent years, as a result of rising oil prices, strong global demand and export taxes imposed by some exporting countries such as China. Small-scale producers find it increasingly difficult to afford them and are caught up in an endless spiral: less fertiliser, poorer harvests, even less fertiliser...

Burundi is a case in point. In the north, the high population density means there is no more fallow land. Farmers can no longer afford to buy fertiliser and make do with rice bran to enrich their soils. Recurrent food shortages are the result. The same problem can be seen in western Cameroon, where the price of fertiliser tripled between November 2007 and May 2008. For the past 12 years or so, overworked soils impoverished by the practice of burn-beating (plants are burned in the ridges) can no longer produce crops without fertiliser. Manure is rare, especially in the wake of recent outbreaks of pig and poultry disease, and farmers still have little experience in using compost and planting fertiliser trees such as *Calliandra* and *Pygeum africana*.

Some countries have opted to review policies in order to encourage greater use of fertiliser. In 2006, during the *Nourish the soil, feed the continent* summit held in Abuja, Nigeria, African governments pledged to increase fertiliser use from 9 to 50 kg by 2015. Malawi was one of the first to take action by introducing substantial subsidies for fertiliser and distributing vouchers to farmers to help

them buy it. This policy was certainly a costly one in the short term, but it managed to double agricultural output in the space of two years. In 2008, Malawi began exporting maize, while in 2004, 35% of its population had been under-nourished. This success, achieved in spite of advice to the contrary from international donors, has prompted others to follow suit – this year, Ghana introduced a 50% subsidy on fertiliser for smallholder farmers.

To contain costs, local phosphates can be used in some regions such as Togo, or imported fertiliser can be packaged locally. Microdosing (see box), which involves applying small amounts of fertiliser in the seed pocket during planting, is an effective low-cost solution for boosting output.

Covering the soil

The food crisis and rise in fertiliser prices make this a good time to put into general practice soil conservation and improvement techniques that have long been developed but are still not widely used. "Fertilisers alone do not make soils fertile. Fertiliser is a highly carbon-intensive, acidic nutrient source especially on less organic sandy soils," said Dr S Apiiga, a scientist at Ghana's Ministry of Food and Agriculture. "In addition to short-term subsidies we need to educate farmers on good agricultural practices such as intercropping legumes (beans, groundnuts, pigeon pea) with cereals (maize, millet, sorghum)... motivating and encouraging smallholder farmers to use manure, crop residues and compost to enrich their fields."

The basic principles of conservation agriculture (CA) are well known. The first is to ensure permanent cover for the soil. Crop residues left after harvest, straw, compost, waste from wood or other products can all help protect precious soils from wind, extreme heat and heavy rainfall, which leach nutrients and compact the soil. Secondly, it is crucial not to disturb the top layer of the soil by working it too vigorously; a light forking of the earth is sufficient. The third principle is crop rotation. This enables farmers to alternate leguminous plants, which enrich the soil with nitrogen, with more intensive crops such as cereals.

Soils conserved in this way can be further improved by spreading manure and compost – both highly recommended – as well as mineral fertiliser. Farmers from the Ugandan producers' association *Nangabo*, near Kampala, do just that. They have also introduced mulching and crop rotation, a strategy that has helped them increase the productivity of their banana trees, which had fallen sharply.

Some producers go even further and practise direct sowing (see *Spore* 112). In Madagascar, almost 10,000 farmers from the island's south and central regions have virtually tripled their output of rice (from 1.5 to 4 t/ha) without any chemical fertiliser, using only plant cover that also acts as green fertiliser.

In the Cook and Solomon Islands, Niue, Samoa, Tonga and Vanuatu, the use of cover plants such as *Mucuna* and *Dolichos lablab*,

Fertiliser on demand

Tropical soils are generally very poor and require different combinations of primary nutrients (nitrogen, phosphorus, potassium) and secondary ones (calcium, magnesium, sulphur and others) to make them more fertile. However, for an effective production system that respects the environment, the composition of fertiliser should reflect the chemical properties of local soils, as well as the crops planned and the output required. Imported ready-made fertilisers that have been formulated for other regions are not recommended. Farmers need special mixtures carefully designed to address the deficiencies of their particular soil.

Bulk blending is a promising technology for many ACP countries. It enables mixed fertiliser to be produced more cheaply using local materials or the least expensive fertilisers available on the international market. Phosphates, which are present in many countries, are an excellent and inexpensive source of phosphorus for crops. Put simply, bulk blending allows small-scale units to produce mixes of effective fertiliser, but these must be made up by experts so as to provide the right type of input to address specific soil fertility problems. If local materials are available, this strategy can do away with the need for costly imports or the sometimes unnecessary heavy investments involved in building traditional fertiliser factories.

as well as multi-purpose tree species such as *Gliricidia sepium*, have improved soils in the space of a year and increased cassava yields while reducing the need for purchasing fertiliser.

For further information

- **Soil fertility management in support of food security in sub-Saharan Africa**

FAO, 2001. 66 pp.

ISBN 978-925104-5633

Downloadable free from:

<ftp://ftp.fao.org/agl/agll/docs/foodsec.pdf>

- **La fertilité des sols tropicaux Le technicien d'agriculture tropicale**

Maisonneuve & Larose, 2000

ISBN 978-2706814297

In French only

- **The Global Fertiliser Crisis and Africa**

www.future-agricultures.org/pdf/files/briefeffertilisercrisis.pdf

AGRA

Alliance for a Green Revolution

in Africa, funded by the Rockefeller and Bill Gates Foundations
www.rockfound.org/initiatives/agra/agra.shtml

CIAT

International Center for Tropical Agriculture
www.ciat.cgiar.org/tsbf_institute/index.htm

TSBF

Tropical Soil Biology and Fertility Institute
www.ciat.cgiar.org/tsbf_institute/index.htm

Globalsoilmap.net

www.globalsoilmap.net

ISRIC

World Soil Information
www.isric.org

Alley cropping, between rows of fertiliser trees, enriches soils and improves their structure. It has proved a successful technique, especially in Kenya, but it only works in humid regions. In dry areas, the trees will not flourish and will absorb some of the water needed by the crops. In the Sudano-Sahelian region, farmers are advised to work organic matter into the soil and spread fertiliser on top. A soil conservation and agroforestry programme in Tanzania promotes ridge cultivation and the planting of trees or elephant grass (*Miscanthus giganteus*) to reduce erosion, which is the main challenge facing farmers in this country.

Will farmers subscribe?

An agricultural, ecological and economic diagnosis is essential for determining the best strategies for improving soil fertility in a given region. But though often vaunted as inexpensive miracle cures, these techniques are not always suitable for small-scale farmers. They generally involve considerable amounts of labour to plant shrubs, transport manure or crop residues and scythe plant cover, and sometimes require a financial outlay if a mineral fertiliser has to be added. The biomass needed for most of these methods is not always available, especially in the most densely populated regions. Grasses or crop residues are often used for other purposes such as feeding livestock.

Only farmers who have secure long-term land rights (see *Spore* 138, Land tenure) and are convinced of the advantages of these techniques will be inclined to try their hand at putting them into practice. ■

[FIELD REPORT]

Rich harvests at last !

Rwanda

Jean Baptiste Kanyankore and his wife are proud and happy – at last they are digging potatoes from their plot of terraced land. Behind them their 12 year-old daughter is busy putting

the harvest into sacks. Here in the Rulindo district's remote Rukozo mountains, these farmers, like those throughout northern Rwanda, have watched their soil become increasingly barren over the years, due to erosion and lack of fertiliser. "The most I could harvest from a 3-are plot (ed note: 1 are = 100 m²) was 50 kg of potatoes", recalls Marie Goretti, who is in her early thirties. "And I hardly got any wheat or pulses either."

To counter constant food shortages, the couple first decided to tackle the problem of erosion which, in the Land of a Thousand Hills, carries the fertile soil down into the valleys. With help from the World Food Programme (WFP), which supplied food in return for their labour, they developed 100 ha of 'radical terraces'. Armed with picks and shovels, the husband-and-wife team gradually reshaped the slopes, carving them into a giant staircase with wide steps that would be easier to cultivate.

Having defined the area they wanted to develop, they had to remove the layer of humus and place it to one side before banking up the earth to form terraces and levelling out the surface with fertile soil. "I'm convinced that with my 3 ares, I'll be able to buy two sheep this season and a cow next season", says Jean-Baptiste

determinedly, as he digs up his potatoes. In this region, a sheep is worth 20,000 Rwandan francs (€27) and a cow costs 10 times as much.

Building these terraces disturbs the topsoil in places, reducing the amount of productive land in the process. So at a later stage, the farmers joined forces to restore their soil's fertility. They clubbed together to buy a dozen cows, in addition to the ones they already owned, and decided to raise livestock together, keeping them in on the terraced land. "At the time, children were having to leave school so that they could transport manure needed for cultivating peas. Each week, they would carry it in baskets for distances of up to 10 km. Never again!", swears Cyprien Nteziryimana. He now looks after the cows on the terraces and estimates the quantity of manure distributed naturally by these animals to be about 2 t/month.

None of this means there is no longer any need to use chemical fertiliser to improve output. FAO supplies the inputs, but the 300 producers who farm the terraces have grouped together to hire vehicles to transport them to their plots. Each farmer continues to work his own piece of land and pays according to the area he needs to fertilise.

The executive secretary of the Rukozo sector is delighted to see the land becoming more fertile and notes that hygiene is also improving. In the stables, which are close to human dwellings, there is no more manure – a positive development since this attracted flies and mosquitoes which served as vectors for disease.

Jean de la Croix Tabaro

Livestock keepers have clubbed together to buy cows which fertilise the terraces they have built.



Agricultural theft

Rich pickings

Agricultural theft is a serious problem for many ACP producers, causing massive losses and prompting some farmers to give up altogether. Technology can offer some solutions, but other producers have developed their own tactics for battling crime.

They may not recognise the technical term – praedial larceny – but many producers in ACP countries are all too familiar with the devastating effects of theft from their farms or fishing boats. Crops, livestock, fish, tools are all targeted, causing serious damage for smallholder producers who have neither the means to set up security measures nor the resources to weather the losses. Nowhere is this more so than in the Caribbean where growing numbers of farmers are giving up as a result. Others are taking the law into their own hands, fuelling a dangerous spiral of violence.

Praedial larceny has been identified in Trinidad and Tobago as the most serious problem facing farmers. In Barbados, thieves are proving a greater obstacle to farming than bad weather, according to James Paul of the Barbados Agricultural Society. Officials investigating agricultural crime in the Caribbean estimate that farmers and fishers lose millions of dollars worth of revenue each year. Shortages caused by the withdrawal of producers pushes up local food prices. As well as direct losses, producers suffer indirect losses when thieves damage crops that are not yet ready for harvesting. "I can say with confidence that over 80% of all farmers in Jamaica have experienced praedial larceny at one time or another," said Alvin Murray, general manager of Jamaica's Christiana Potato Growers Association. "Just last Friday night, our greenhouses were broken into and about 200 lb of tomatoes stolen. Another farmer, Glen Mason of Devon, Manchester recently lost seven cows." A Trinidadian farmer with a herd of 120 cows invested in a milking parlour and a dairy processing plant. Within 2 years every animal had been stolen. Today, the farm has been cut up into building lots.

Fish, cattle and fuel

No sector is immune from agricultural theft, which is sometimes driven by poverty but is increasingly the work of highly organised gangs, many of them armed. As well as farmers, small-scale fishers are also victims, with catches stolen from their boats, nets or ponds. In South Africa, thieves are targeting diesel stored in tanks kept in farmyards. Livestock theft is a major source of conflict among African pastoral tribes. Sometimes it is fuelled by cultural traditions; in Guinea and Madagascar, youths have to steal cattle as a rite of passage.

Many farmers are critical of the police and some have taken the law into their own hands. Delays in judicial systems compound the problem. In Antigua, a case involving the theft of 19 pigs has still not been concluded, 6 years after the event. The owner died 2 years ago. Another case involving a stolen goat is unresolved after 5 years, and the goat itself, which lived at the police station in Parham, is long dead.

Photo: © A Khalif



Dr George Matete from Italian NGO Terra Nuova tags an animal with an electronic chip in order to monitor its movements.

Exasperated producers have devised a range of strategies to protect their produce. In many rural communities, farmers sleep near their crops

or granaries at harvest time. In Zimbabwe's Matabeleland, a group of farmers are rearing puppies alongside goats to make the dogs more protective of their herds. In parts of the Democratic Republic of Congo (DRC), meanwhile, some producers surround their plots with geese, which can be just as fierce as dogs with the added advantage that they can later be eaten.

Tracking crime

Technology offers some solutions. In Lubumbashi, south-east DRC, farmers club together to pay guards to watch over their horticultural crops, supplying them with mobile phones to raise the alarm. In Guinea, an ID card for livestock (see *Spore* 124, p.6) has helped curb cattle theft. An innovative livestock tracking programme on the Kenya-Somalia border is using electronic tagging and iris scanning to halt cattle rustling. Computer databases, with details of bona-fide farmers and the products they trade in, can help detect crime. In Trinidad and Tobago, the National Agricultural Marketing and Development Corporation (NAMDEVCO) launched its NAMISTT (National Agricultural Marketing Information System of Trinidad and Tobago) database system in January 2007. In Jamaica, a computerised farmers' register – the Rural Agricultural Development Authority Agribusiness Information System (ABIS) – is being used to tackle crime, together with official Jamaica Agricultural Society farmer receipt books. In Papua New Guinea, where theft of cherry is

a serious threat to the coffee industry, new regulations introduced by the Coffee Industry Corporation (CIC) are restricting the sale and purchase to licensed operators and monitoring its transport. Since the launch of the campaign in early 2008, a number of arrests have been made, stolen cherry seized and growers are returning to their neglected coffee gardens.

In the Pacific islands, theft of high value cash crops such as vanilla or cocoa has long been a problem and in Tonga, farmers have an individual vanilla identification number which they prick into the growing beans with a pin. But this technique will clearly not work for lower value crops and more recently, thieves have begun targeting fruit, vegetables and even taro. One farmer in Tonga who grew seedlings of special gourds, beans and other vegetables in his backyard nursery woke up one morning to find every single plant had gone. ■



Photo: © A Khalif

An anti-theft electronic chip that relays information to a central station is tagged onto cattle ears.

Plants that heal



In much of tropical Africa, *Voacanga angolensis*, a small-fruited wild frangipani, is well known for its medicinal properties. It is variously used to treat skin conditions, heart problems, rheumatic afflictions, eye disorders and relieve post-partum pain. Since the 1980s, there has also been a steady international trade, with seeds exported from Cameroon, Côte d'Ivoire, DR Congo and Ghana to pharmaceutical companies in France and Germany where it is used in medicines for geriatric patients and to treat heart diseases, high blood pressure and even cancer. This plant is one of several hundred to be profiled in the first volume of four books on medicinal plants in the Plant Resources of Tropical Africa (PROTA) series. The book describes the wild and sometimes cultivated plant species of tropical Africa that are traditionally used in local medicine. Some of these plants are also used in veterinary medicine, or, in the case of poisonous plants, are used as pesticides or dart poisons.



For each plant, there is a detailed description of its geographic distribution, local uses, properties and botany. Where possible, information is also given about plant management, pests and diseases, harvesting and prospects for further development. Maps and drawings of the plants complete this valuable compendium, which comes with an optional CD-ROM.

Medicinal plants 1
Edited by A Gurib-Fakim
& G H Schmelzer
PROTA/Backhuys/CTA. 2008. 792 pp.
Book without CD-ROM:
CTA number 1459.
60 credit points
Book with CD-ROM: CTA number 1460.
80 credit points

Below ground

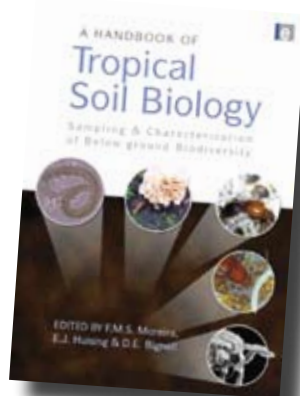


Beneath the earth, a wide range of organisms including insects, earthworms, nematodes, fungi and bacteria are busy working to ensure soil biodiversity. Earthworms improve soil nutrients by ingesting mineral and organic matter. Termites, ants and beetles influence soil porosity and texture through tunnelling, soil ingestion and transport and gallery construction. Other macrofauna such as woodlice, millipedes and some types of insect larvae act as litter transformers, performing an important shredding action on dead plant tissue. Certain types of fungi associate with plant roots, improving nutrient availability and reducing attacks by plant pathogens as well as improving tolerance to environmental stresses.

This practical manual unlocks the secrets of the rich tropical soil biota beneath our feet. It describes sampling and laboratory assessment methods for the biodiversity of a number of key groups of soil organisms, using a standardised system developed

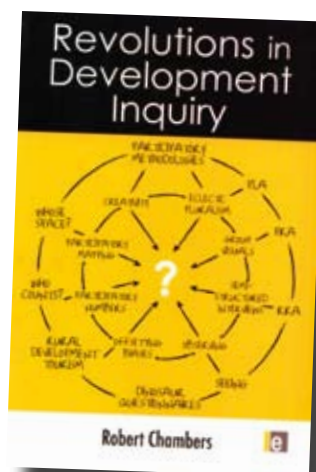
for characterising soil biodiversity and land uses in tropical settings. The aim is to assess soil biodiversity against current and historic land use practices and to identify opportunities for improved land management through the introduction or improved management of soil biota. The result should be a healthier soil, with less need for external inputs such as chemical fertilisers and pesticides.

A Handbook of Tropical Soil Biology: Sampling and characterization of below-ground biodiversity
Edited by D E Bignell, E J Huisling & S Moreira
Earthscan/CIAT/CTA/GEF/TSBF/UNEP.
2008. 244 pp.
CTA number 1458
40 credit points



Methods of inquiry

Recent decades have seen a great many changes in systems used for development inquiry. Author Robert Chambers, who has worked in the field of development for more than 40 years, traces the dramatic shifts in methodologies, from the multi-subject questionnaire surveys of years gone by to the modern day techniques based on participatory approaches. He examines and explains the explosive proliferation of recent systems, with their often confusing acronyms – rapid rural appraisal (RRA), participatory rural appraisal (PRA) and participatory geographic information systems (PGIS).



The main conclusion is that a participatory approach holds exciting potential for gaining real insight into the needs of communities. But he cautions against being caught up in the rush to invent new systems, while ignoring the value of more traditional methods of inquiry.

"The frenetic search for new fashions abandons and buries a lot that has lasting value," he observes.

Revolutions in Development Inquiry
By R Chambers
Earthscan/IDS, 2008. 232 pp.
ISBN 978-1-84407-625-3
GBP8.99 • €10

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Bananas 2008



The *MusaDoc 2008* CD-ROM provides access to the MUSALIT and BRIS databases, which contain more than 11,100 bibliographic entries and almost 900 records on banana researchers. You will also find the most recent publications, the latest issues of InfoMusa, technical manuals, etc.

MusaDoc 2008
CD-ROM
CTA/Bioversity International, 2008
ISBN 978-2-910810-84-4
CTA number 1464
10 credit points

Wider access to ICTs

Around the world, ICT enthusiasts are developing innovative new solutions to bring access one step closer to communities, but these pioneering efforts are currently scattered and largely unavailable in the public domain. To address this issue, the Association for Progressive Communications (APC) has launched a series on equitable access to ICT infrastructure. It offers papers and commentaries on the themes of business models, policy and regulation, tools and technologies, networks and capabilities. One of the most recent, Capacity Building for Equitable Access, examines concrete steps that can be taken to make ICTs more widely available.

All the documents can be downloaded free on-line:

www.apc.org/en/pubs/briefs/openaccess/all/equitable-access-papers-and-commentaries

Agriculture and wetlands

Agriculture is the main cause of wetland degradation and loss. A new report examines 90 cases from all over the world to assess the character of agriculture wetlands interactions (AWIs) and their impacts on ecosystems and socio-economic conditions. The study, based on a method known as drivers, pressures, state changes, impacts and responses (DPSIR), is designed as a technical framework to measure the relevance and nature of AWIs, identify responses and set out guidelines. An accompanying CD-ROM contains the DPSIR database and tutors.

Scoping agriculture – wetland interactions. Towards a sustainable multiple-response strategy
Edited by A van Halsema & G E Wood
FAO, 2008. 174 pp. + CD-ROM
ISBN 978-92-5-106059-9
US\$55 • €40

For Earthprint's address see page 14

□ Casualties of war

The Democratic Republic of Congo, Somalia and Sudan have all been affected by severe food crises caused by prolonged conflicts. Using concrete examples from these countries and others, this book examines opportunities to bridge the gap between emergency relief and longer term development approaches. The aim is to ensure enduring food security even in settings where there are protracted crises, a goal that can only be achieved through a total rethink of the meaning and purpose of emergency food aid.

Beyond Relief. Food security in protracted crises

By L Alinovi, L Hemrich & G Russo
Practical Action Publishing/FAO, 2008.
272 pp.
ISBN 978-18-53-3966-01
GBP16.16 • €17
Practical Action Publishing
Bourton on Dunsmore,
Rugby
Warwickshire
CV23 9QZ, UK
Fax +44 (0)1926 634502
<http://practicalactionpublishing.org>

□ Biosecurity for bird flu

Biosecurity is an essential tool for containing the spread of avian flu and this paper examines the current situation and state of knowledge on the issue in relation to the H5N1 Highly Pathogenic Avian Influenza virus. It discusses specific species and sectors and how best to protect them and proposes possible options for biosecurity in major areas of the domestic poultry and captive bird sector. It highlights the importance of tailoring biosecurity measures to local economic and cultural settings and stresses the key role of communication.

Biosecurity for highly pathogenic avian influenza. Issues and options

FAO Animal Production and Health
Paper No. 165
FAO, 2008. 88 pp.
ISBN 978-92-5-106074-2
US\$30 • €22

For Earthprint's address see page 14

□ Wireless connections

A new report from the Association for Progressive Communications (APC) examines wireless Internet connections in rural Africa. Based on observations from two telecentres in Tanzania with very different business models, the study argues that the need for telecentres and affordable internet connections exists. The conclusion challenges the theory rapidly gaining ground that ICT needs in rural communities are being met by mobile phones.

Unbounded possibilities: Observations on sustaining rural ICTs in Africa

By I Howard
Downloadable free from:
www.apc.org/en/node/7237

Biotechnology in the community



In spite of rapid advances in recent years, biotechnology and other life science technologies have still not led to real progress in solving food security problems. On the contrary, some biotechnology developments have resulted in greater social and economic inequalities, since they have been largely harnessed by multinational corporations. This book-DVD seeks to offer an insight into the potential that this sector poses for sustainable small-scale food production. Four documentaries, shot in Cuba, Ecuador, Ghana and India, demonstrate how a tailor-made biotechnology approach can offer a dynamic force for development at the community level. The film from Cuba presents an alternative biotechnology model to the established high-tech agro-industrial

approach, showing efforts to improve the food supply in urban settings. Local soil bacteria are being used to protect food crops against pests and diseases and disease-free plant materials are being developed in 26 bio-factories. Local waste products are being turned into bio-fertilisers and seeds attuned to the needs of small-scale farmers are being developed in breeding fields.

In Ghana, biotechnology initiatives are striving to improve the nutritional quality of existing food products used in national dishes such as *waachi*, *kenkey* and *koko*, and targeting groups of vulnerable consumers such as pregnant women and young children. The film shows how maize varieties are being enriched with important protein components, such as lysine



and tryptophan and explains plans to add other micronutrients, such as iron, zinc and vitamin A. Similar breeding initiatives have been launched for cowpea, another crop that is widely consumed.

Biotechnology in development: Experiences from the South

By G Ruivenkamp
Center for Tailormade Biotechnologies and Genomics/CTA/Hivos/Wageningen Academic Publishers, 2008. 94 pp + DVD
CTA number 1463
40 credit points

The right kind of aid

□ On a global scale, the impact of disasters is steadily rising. More than 250 million people have been directly affected each year by emergencies such as floods, droughts, earthquakes or wars since 2000, according to the Centre for Research on the Epidemiology of Disasters. The international response to such crises can be pivotal in determining how local communities cope with them, and indiscriminate aid, though well-meaning, is not always the answer. Massive strides have been made in recent years in improving our understanding of the effects of emergency seed programmes. Just as with emergency food aid programmes, it is crucial to make sure that the assistance is appropriate. Seed is at the heart of agricultural production, so badly designed seed aid can harm farmers, making them even more vulnerable to uncertainties. Supplying them with unsuitable crop species or varieties can lead to low yields and waste precious land and labour. Unnecessary seed deliveries suppress regional economies and undermine emerging seed markets. And since part of the harvest is often saved to be sown in



subsequent seasons, even short-term interventions in the seed system may have significant impacts for years to come.

A new manual presents a seven-step method for assessing the security of farmers' seed systems after disasters. The Seed System Security Assessment (SSSA) is designed to help managers and field staff decide whether interventions are needed, and if so, which type of seed would best help put farmers back on their feet. Case studies illustrate how well-targeted seed aid can help producers to weather the effects of disasters.

Another manual from FAO introduces the Rapid Agricultural Disaster Assessment Routine (RADAR), a tool designed to rapidly assess both the short- and long-term damage to agricultural systems caused by natural disasters. Successful implementation of RADAR could improve disaster

preparedness, facilitate timely relief operations and integrate risk and hazard awareness into longer term agricultural development planning.

When Disaster Strikes: A Guide to Assessing Seed System Security

By L Sperling
CIAT/CRS/USAID, 2008. 64 pp.
ISBN 978-958-694-097-9
Price: US\$7 • €5.5
CIAT-Publications Department
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Rapid Agricultural Disaster Assessment Routine (RADAR)

By A Borgia, M Bernardi, R Gommès & H Kanamaru
FAO, 2008. 78 pp.
ISBN 978-92-5-106003-2
US\$25 • €18

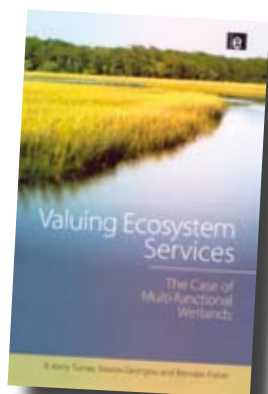
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Setting a price

Although natural ecosystems perform many services, their values have often been ignored. One theory rapidly gaining ground is that communities would take better care of their environments if there was financial recompense for doing so. One of the main difficulties to such an approach lies in assigning an economic value for these goods and services. Two new publications explore the still largely uncharted territory of payments for ecosystem services (PES). *The PES Primer* explains markets and mechanisms with the goal of providing guidance for developing PES deals. It offers information about the opportunities available to poor communities as well as some of the risks entailed in such schemes before setting out a step-by-step approach for the development of PES deals and the identification of potential buyers.

Valuing Ecosystem Services provides guidance on the valuation of ecosystem services, using the case of multi-functional wetlands to illustrate the techniques that can be used for ecosystem management options. Although the focus is wetlands, the approaches provide a framework for assessing the values of other ecosystem assets.



Valuing Ecosystem Services The Case of Multi-functional Wetlands

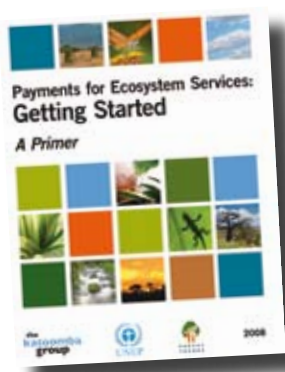
By B Fisher, R Kerry Turner
& S Georgiou
Earthscan, 2008. 228 pp.
ISBN 978-1-84407-615-4
GBP49.95 • €53

For Earthscan's address see page 12

Payments for Ecosystem Services: Getting Started.

A Primer

UNEP/Forest Trends,
Katoomba, 2008; 64 pp.
ISBN 978-92-807-2925-2
Downloadable as PDF file from:
[www.unep.org/pdf/](http://www.unep.org/pdf/PaymentsForEcosystemServices_en.pdf)
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Forest energy sources



Soaring energy consumption coupled with concerns over greenhouse gas emissions are fuelling a growing interest in alternative power sources. In most countries of the South, where wood remains the primary source of energy, there is pressure for the forestry sector to find the means to mobilise 'clean' energy, mitigate climate change and support economic development that is environmentally sustainable.

This study reveals that in natural forests, up to 70% of total volume may be available for energy generation. It outlines the probable impacts of developing solid and liquid biofuels from forests and looks towards the long term goal of gradually phasing out fossil fuels, an objective that can only be reached if governments adopt adequate policies, creating opportunities for real technology transfer to take place.

Forests and Energy. Key issues

FAO Forestry Paper 154
FAO, 2008. 60 pp.
ISBN 92-5-105985-2
US\$16 • €13

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Growing mushrooms in Swahili

Mushrooms are a good cash crop, ideally suited to small-scale farmers. They are easy to grow, full of protein, vitamin and minerals, and have a very short span between spawning and harvesting. Mushroom cultivation is also perfect for producers seeking sustainable farming methods. It uses agricultural waste products and makes good use of limited surface areas. And after picking, the spent substrate can be recycled as a valuable soil conditioner.

This guide, the first of the popular Agrodok series to be made available in Swahili, offers

advice on cultivating oyster, shiitake and wood ear mushrooms. The manual takes readers through the life cycle of fungi before going on to explain in easy-to-follow terms how to lay out a small mushroom farm, set up a starter culture, grow mushrooms and handle them after harvest. A separate chapter is dedicated to each of the three varieties, with practical details on what to do to ensure a good crop.

Bustani za uyoga kwa wakulima wadogo vijijini Uyoga aina ya oyster, shiitake na wood-ear

By B Nieuwenhuijzen
& P Oei
Agromisa/CTA/
Nyarumbugu Outgrowers
Projects. 2008. 92 pp.
CTA number 1477
0 credit points

Also available from:
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Projects
PO Box 131
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muterere2006@yahoo.com
TZS3,000 • €2



Climate change special issue



You can now order the *Spore* special issue on climate change, published in August 2008. This edition, which covers the topic from a wide range of angles, can also be consulted on the CTA website, or downloaded free of charge.

Climate change

Spore special issue, 2008, 24 pp.
CTA n° 1478

2 credit points

<http://spore.cta.int/climatechange/fr/index.html>

A glossary of aquaculture

An essential prerequisite for the successful development of aquaculture is a language that everyone understands, together with a standardised terminology for technical aspects. This publication, which comes with an accompanying CD-ROM, contains more than 2,500 definitions, information sources, synonyms and related terms.

A glossary of aquaculture

Edited by A Coche & V Crespi
FAO, 2008. 424 pp. + CD-ROM
ISBN 978-92-5-005917-4
US\$75 • €54

For Earthprint's address see opposite

Small but smart

Many small states are already at a disadvantage due to their size, vulnerability and remote locations. In recent years, their prospects have suffered even further due to preference erosion and the emergence of larger competitors such as China and India. But as a number of small countries have already shown, there is scope for exploiting niche markets and moving into knowledge-based and service industries. Focusing on case studies from countries including Botswana, Mauritius, St. Lucia and Vanuatu, this book examines how small states can reposition themselves in the global economy by diversifying into the financial sector, ICTs, education, professional services and tourism.

Working Smart and Small:

The Role of Knowledge-based and Service Industries in Growth Strategies for Small States

By M Saeed Qureshi
& D Willem te Velde
Commonwealth Institute, 2008; 150 pp.
ISBN 978-0-85092-877-8
GBP15 • €16

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Mailbox

Spore readers and Internet surfers often share their ideas, knowledge and experiences. Frequently, they are also on the lookout for answers to their problems. Don't hesitate to get in touch if you have tried out any solutions and found them to be helpful.

Sharing knowledge

From Ghana, **Alex Kwame**, project manager at the Shape Lives Moringa Farm, has a request. He writes about a scheme to introduce local farmers to this useful plant and train them in cultivation and harvesting techniques. "We started this project last year and we have established a 2.5-acre moringa plantation," he says. But the initiative would benefit from more information about ways of adding value to the crop. "We are looking for people who have knowledge about moringa processing to share ideas with us," says Mr Kwame. Anyone interested should look at the farm's website for more details (<http://farm.shapelives.org>) or contact Mr Kwame on moringa@shapelives.org

Livestock and climate change

Meanwhile, **S Y Apiiga**, an animal scientist and prolific *Mailbox* contributor, urges policy-makers to introduce more measures to help livestock farmers cope with climate change. "In view of the socio-cultural roles played by livestock in African communities it is vital to protect this resource," he says. "Livestock farmers should be supported to cultivate pastures, fodder and other edible plant species for livestock feeding, especially in the long dry seasons. The proper collection, treatment and storage of crop residues could generate stall feeding of livestock (zero grazing).... The harvesting of rainwater and proper protection of water bodies will help reduce drying, increasing water availability throughout the year for livestock."

Seed cakes boost milk yields

In northern Ethiopia, as in a number of ACP countries, herders use traditional oil seed cakes to feed their animals. **O A Abu** writes to explain the potential of sesame and noug cakes as livestock feed to boost milk yields in dairy cows. "Noug seed is a major source of oil for cooking and medication, while the oil from sesame is mostly exported," he explains. "Oils from noug and sesame are traditionally extracted mechanically with a mortar and pestle drawn by a blind-folded camel. The cake resulting from the extraction is high in protein and energy. The cakes are mostly fed to choice animals especially lactating dairy cows."

Diploma of honour

Jean Claver Nguimeya Dongmo is grateful to *Spore* for having helped the Communities Collaborating Together (CCT) association in Dschang, western Cameroon, in the course of a number of its projects. He even organised a debate on the "impact of CTA/*Spore* information on community development and other social activities." "For 10 years now, I have been studying projects in *Spore* which I then put forward to active womens' and youth groups," he writes. (...) Your articles have always been a great help to us for the solutions they have offered to difficulties encountered during our many years of research (...). You can see the difference in the work we do - even our community has noticed it. We have now started to get to know the many good things that surround us, and we are determined to put them to good use." As a show of thanks, the CCT association has bestowed this diploma of honour on *Spore*, a gesture that is also extended to all you readers!

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Animal health



A veterinary surgeon and graduate of the Dakar-based veterinary school EISMV,

Dr Malick Faye was director of Livestock at Senegal's Ministry of Agriculture and Livestock from July 2004 to June 2008. In this capacity he served as Senegal's delegate to the World Organisation for Animal Health (OIE) and as a member of the Veterinary Committee for the West African Economic and Monetary Union (UEMOA). He now works as an independent consultant.

Livestock keepers lend a hand

In response to a desperate shortage of vets, the government of Senegal has successfully experimented with the idea of community animal health workers. These are livestock keepers who are recognised and trusted by their peers and act as go-betweens for vets and animal owners.

In Senegal, as in most developing countries, livestock keeping is mainly carried out at the household level, with very little done on an industrial scale. Nearly one in three families keeps livestock. They generally practise pastoral livestock production, which relies on the mobility of herds and families. Herders are found virtually everywhere in the country. They have little in the way of formal organisation and most of them are illiterate. They live on the margins of society and generally lack information about programmes run by central or local government, including those relating to their own sector. All this makes it very difficult to involve them in national animal health programmes. For that reason, we have had to find other ways of reaching them, to overcome these difficult circumstances.

Stronger organisations

First and foremost, we have helped them to join forces amongst themselves. We took as our starting point the few organisations that already existed in pastoral communities. We offered them support so they could open up and expand their networks to take on new members. We encouraged them to become more legitimate and representative in the eyes of livestock keepers so as to have a better chance of being recognised and accepted.

*Dynamic individuals
who have the trust
of their peers*

The second phase of our task was to promote grassroots veterinary care. The problem is that there are very few vets in Senegal – about 150 of them for 3 million livestock keepers. This is on a par with the average for the developing world, where the mean figure is 140 vets per country. Most of them practise close to the big cities, with very few working in rural areas. To be honest, there are not many incentives for vets to set up private practices in rural areas. So we opted to train veterinary auxiliaries, also known as community animal health workers (CAHW), who are themselves livestock keepers.

We have drawn up a range of criteria for selecting herders to receive this training and become veterinary auxiliaries. Key

prerequisites include a basic level of literacy and that they be dynamic individuals and have the trust of their peers, so that their authority and position will be recognised and accepted. It seemed to us that the best way of ensuring this was to ask officials of livestock organisations to appoint them, since in theory their authority is undisputed and these auxiliaries would remain under their control. That is why we began by strengthening these organisations, which also enabled the auxiliaries to gain recognition from the government.

We then went on to define what we saw as the two main tasks they needed to perform. The first is to serve as a focal point for early warning signals relating to epidemics in their community. This role is already being carried out. A study presented at the 76th general assembly of the OIE, in May 2008 in Paris, France, indicated that in developing countries, small-scale livestock keepers are the main source of information for monitoring diseases and found that they are able to diagnose common animal diseases. The second role of veterinary auxiliaries is to be active in providing basic care, such as pest control, treating superficial wounds and even some of the simpler vaccinations that use inactive bacteria and are heat resistant, given the lack of cold chain facilities in rural areas.

Supervision

The same study showed that 72% of the world's veterinary services believe that small-scale livestock keepers should be authorised to carry out worming procedures. On the other hand, they are divided about allowing them to give injections or administer vaccinations. But the vast majority of veterinarians agree that livestock keepers should play a greater role in animal health.

However, one problem quickly emerged, due to the fact that some auxiliaries overstepped their powers. A tendency emerged for some to pass themselves off as actual vets and, for example, to start selling medicines. So we decided to set up a system to supervise auxiliaries. To do this we linked each auxiliary to a private veterinary surgeon, who undertook to train and monitor them. It is the vet who gives the auxiliary veterinary products and who explains how to administer them.

The issue of monitoring still needs to be regulated and we believe it would be in the best interests of all concerned for the OIE to draw up supervision guidelines for institutions to develop their own animal health system. ■

mfaye@refer.sn

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

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