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#### **In this issue**

*Like it or not,  
whichever way you  
turn there are changes*

*in the air. The ACP small island states are among those suffering upheavals. Their inhabitants are being sorely tried by the effects of climate change which are eroding their coastlines and disrupting their way of life. Cattle living on the shores of Lake Chad are also victims of change; their numbers are declining just as the waters of the lake are receding — a tangible sign of dwindling livestock biodiversity, which is a problem here as elsewhere. As for the poorest people living in the towns of the South, they must choose between going hungry or becoming obese, now that traditional foods have all but disappeared in many cities. Who is to blame? Western nations, who generate the major share of greenhouse gas emissions? Researchers who show scant interest in local breeds or the agro-alimentary industries, who care too little about the health of consumers?*



Photo: G & M Woss @ Sijll Pictures

## Climate change

# Preparing for a warmer world

**Agriculture, fisheries and forestry have traditionally provided the main sources of food and income for ACP islands. But these livelihoods are increasingly threatened by climate change, mostly caused by emissions on the other side of the globe.**

**P**eople living in ACP small island states could be forgiven for feeling a sense of injustice. There is a cruel irony in the fact that although many of these remote communities produce little pollution, they will suffer some of the earliest and most severe consequences of climate change. Take the Pacific Island countries. They account for just 0.03% of the world's carbon dioxide emissions, with the average islander producing one-quarter of the emissions of the average person worldwide. Figures are similar for other island states in Africa and the Caribbean.

According to a report by the UN's Intergovernmental Panel on Climate Change (IPCC), recent rises in surface air temperatures in the Pacific Ocean and the Caribbean Sea regions have been greater than global rates of warming. The report

forecasts a global average temperature rise of 1.4-5.8°C by the year 2100, and more frequent flooding, especially for islands of the Caribbean and the Indian and Pacific Oceans. It is projected that sea level will rise by as much as 5 mm per year over the next century. With many ACP islands just 3-4 m above sea level, some will be submerged entirely. Others will lose large tracts of coastline to the sea.

The effects of climate change are already being seen in many small island developing states (SIDS), in the form of coastal erosion, changing rainfall patterns, severe droughts and an increase in extreme weather events, such as hurricanes, floods and cyclones. The International Meeting on SIDS, held in Mauritius in January 2005, heard that 14 recent storms and hurricanes in the Caribbean caused US\$20 billion in

economic losses and acknowledged that some island states may disappear altogether. The tiny Pacific Island nation of Tuvalu is likely to be the first to be swallowed by the waves. Because of salt water intrusion, many islanders have already abandoned arable farming.

### A variable outlook

One crop model quoted by the IPCC forecasts that in Trinidad and Tobago, sugarcane yields may fall by 20-40% due to the warmer climate. Projections are similar for sugarcane in Mauritius. Biodiversity is seriously threatened by global warming, with impacts already observed including changes in reproduction cycles, growing seasons and the frequency of pest and disease outbreaks. Coral reefs have seen devastating losses as a result of increased water temperatures. “Anyone interested in global warming

Strategy — drawn up at the end of the 2005 Summit — urged all international bodies to pay attention to island needs, it set no specific tasks and no timeframe.

### Countdown to catastrophe

Many islanders need no statistics to tell them that all is not well. Imogen Pua Ingram, president of the Taporoporo Ipukarea Society in Rarotonga, says global warming is already making itself felt in terms of different weather patterns, lower yields of black pearls and crop outputs. “We increasingly suffer droughts, followed by extremely heavy rainfall over several days,” she said. “Temperature changes have affected currents, changing the migration corridors of fish.” Penina Moce, who lives in Udu on Kabara Island in Fiji, also has first-hand experience of climate change. “We have begun to notice that the fish and shellfish we

would drastically affect fish stocks. The Mauritius Meteorological Services has set up a National Climate Committee, to evaluate local vulnerability to climate change and identify strategies to mitigate its impact, including the building of structures and the use of more vegetation to fend off erosion.

Most climate change experts agree that the response needs to be two-pronged — mitigating risks from climate variability and optimising food security by adapting to what most now see as inevitable. Said Diane McFadzien of the World Wildlife Fund (WWF): “Island countries cannot prevent climate change occurring, but through development policies, they can increase their resilience to its impacts.”

Early warning will be an important component of preparing SIDs for the effects of climate variability (see *Spore* 116). At a local level, there is a need for renewable energy projects, help with installing proper drainage and watersheds, seeds for drought-resistant crops, water tanks to catch rainfall, alternative pest management systems and reforestation. Spurred on by reasons of cost and sustainability, several small island states are making significant progress in introducing alternative power technologies. In Vanuatu, some vehicles now run on coconut bio-fuel. On Rarotonga, wave energy is being investigated. The Caribbean Renewable Energy Development Project (CREDP) plans to supply 10% of the region’s electricity needs from renewable energy technologies by 2015. In Barbados, 33% of all households now use solar water heaters.

### A race against time

Some experts stress the importance of incorporating indigenous knowledge into adaptation strategies, and community level initiatives appear to offer some of the best hope for preparing for change. Traditional planting calendars may need to be altered. Farmers switching to multi-crop agriculture can spread the risk, and plant drought- and pest-resistant crops which have more resilience. Improved water management and conservation methods can help preserve dwindling supplies. One initiative launched by a Fiji-based NGO, the Organisation for Industrial, Spiritual and Cultural Advancement is training young people to plant mangroves, which provide protection against tides, cyclones, and storm surges. Also on Fiji, the WWF is working with the coastal community of Tikina Wai to establish marine protected areas, in an effort to increase the resilience of its marine resources.

As the countdown begins, some ACP islanders may draw a crumb of comfort from the fact that not all the effects of climate change are negative. Farmers in the Cook Islands speak of breadfruit trees bearing fruit out of season. Fruit growers in Fiji say the mango season is lasting longer. And taro is now growing in dry areas of Fiji due to more frequent rainfall, with yields up by an estimated 5 to 15%.



As here on Mauritius, small island states are being affected by climate change and there is a need to limit their impact

should be watching coral reefs as they are the most sensitive ecological indicator we have,” said Gregor Hodgson, executive director of Reef Check, which monitors reefs worldwide.

In Saoluafata, a coastal village on Samoa, islanders have been warned to expect more frequent floods, but also more drought, as well as more intense and frequent tropical cyclones. The community has identified several priorities, including a sea wall, a water drainage system, water tanks and a place to store food supplies. But many of these are costly projects, and it remains to be seen who will pay. The United Nations Framework Convention on Climate Change (UNFCCC) explicitly charges developed countries with assisting “the developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.” But some critics complain that countries of the North are not doing enough, and that although the Mauritius

used to be able to gather so easily are getting harder to find,” she said. “Fish used to bite quickly. Now we can spend more than an hour before we get a single bite.”

Recent flooding in Guyana, and hurricanes and tropical storms in other parts of the region, have highlighted the Caribbean’s vulnerability to climate change. Though islanders can see the effects all too clearly, planners complain they still lack reliable data to assess the threat. The Mainstreaming Adaptation to Climate Change (MACC) project has been launched to help 12 Caribbean Community (CARICOM) countries prepare for global warming. One goal is to help farming communities identify crops and agricultural practices best suited to the new conditions.

On Mauritius, where coastal erosion can already be seen with the naked eye, it has been calculated that with a 1-m sea level rise, some 26 km of beaches would be swept away and thousands of hectares of sugarcane plantations engulfed. Predicted temperature rises





Photo: M. Morzot © FAO

The Kuri breed is disappearing in the Lake Chad region

## Preservation of local breeds

# Tradition — a path for the future

**Loss of biodiversity does not just affect plants and wild animals. Livestock are an important genetic resource in the South and there is an urgent need to register and preserve native breeds, in recognition of the patient selection work carried out by farmers through the centuries.**

Loss of domestic animal breeds around the world is continuing at an alarming rate”, the Food and Agriculture Organization of the United Nations (FAO) warned in March 2004. Of the 6,300 breeds registered, 1,350 are threatened with extinction or have already disappeared. FAO is currently compiling a full country-by-country list of breeds, together with their characteristics, and expects it to be ready by 2007. Characterising breeds is an important part of the Global Strategy for the Management of Farm Animal Genetic Resources which FAO was charged with drawing up in 1993.

Between now and 2007, just how many domestic breeds will have been definitively erased from the surface of the planet? Global figures for 2001 estimated that 53.5% of chicken and 46.8% of duck breeds were endangered, as well as 26% of pigs and 23.1%, 18.1%, 16.5% and 5% of cattle, sheep, goats and camels, respectively.

### Food insecurity and poverty

“Just 14 out of the about 30 domesticated mammalian and bird species provide 90% of human food supply from animals”, observes FAO. The intensification of livestock systems, and the replication of these animal farming models in other parts of the world means that there is now a concentration on a limited number of breeds. The result is substantial animal genetic erosion.

It is now widely accepted that maintaining animal genetic diversity is crucial if productivity and food security are to be improved. While livestock play a role in the livelihoods of 70% of the world population, loss of biodiversity has particularly serious consequences for the countries of the South. In pastoral zones where livestock rearing is the only option available, the decline of animal breeds and the low productivity levels which result combine to threaten the survival of millions of people.

Loss of animal biodiversity affects every continent and every single ACP country — no region is spared. In Papua New Guinea, numbers of the Javanese Zebu are rapidly dwindling, even though this is a prolific breed with good resistance to ticks. In the small island states of the Caribbean and the Pacific, local breeds of duck, geese and chickens are at serious risk. Of 25 cattle breeds identified in West Africa in 1992, four (Kuri, Liberia Dwarf Muturu, Ghana Dwarf Muturu, Manjaca) were endangered or facing extinction. There has also been a sharp decline in numbers of Dwarf Shorthorn cattle in Benin, Côte d'Ivoire and Togo, while in Angola, the Damara or Herero cattle breed is in critical danger. In South Africa, 10 cattle breeds, 10 horse breeds, 9 sheep and 3 pig breeds are threatened.

The causes of genetic erosion are many and vary not just between continents, but

from one region or country to another. Wars, livestock diseases, desertification, global warming and unchecked cross-breeding — or a combination of these — all play a role. A case in point is the shrinking of the Lake Chad basin. The basin has forced the native Kuri cattle, which were well adapted to an aquatic environment, into uncontrolled cross-breeding with Arab Zebu and M'bororo cattle.

### Lack of recognition

But, according to FAO, the greatest cause of genetic erosion is “a failure to appreciate the value of locally adapted breeds”. The low meat and milk outputs of tropical cattle breeds has led national and international programmes to seek to improve performances by using more productive animals imported from the North, either for cross-breeding or as pure breeds.

Several studies have shown that imported breeds are less adapted to local climatic and management conditions than native breeds and have lower resistance to diseases. For example, in Africa, in areas infested by the tsetse fly, smaller livestock breeds such as the Ndama cattle, Djallonké sheep or dwarf goat breeds have a stronger resistance to trypanosomiasis. This observation has led to a change of focus for programmes aimed at conserving and developing local livestock resources, with a shift towards setting greater store by local animal farming systems and traditional knowledge.

### Whose breeds are they?

This awareness has gone hand in hand with a renewed interest in native breeds, now considered to be a reservoir of precious genes. Against a backdrop of genetic engineering, their conservation is seen as a safeguard — for example in the event of disease — offering protection for the South, but also for the North. That poses the question of who holds the intellectual property rights to these breeds, which are the fruit of centuries of hard work by livestock breeders in the South, who have selected domestic animals according to their needs and their particular environments. The German development agency GTZ warns that “various breeds with characteristics that could make them attractive for commercial purposes are currently in the hands of marginalised communities.” In both the North and South, there is growing pressure for the introduction of a treaty which would protect animal genetic resources, in the same way that the 2001 International Treaty on Plant Genetic Resources for Food and Agriculture provides protection for plants. In that way, the communities involved would reap their share of any commercial rewards that might ensue.

See *Links*, page 10



## Feeding the towns

# A weighty dilemma

Feeding the growing towns of the South is a hefty challenge for ACP countries, already forced to import massive quantities of food at the expense of local production. To limit deficiencies, and the already alarming levels of obesity in many regions, they need to pay attention to the quality of food.

In all ACP countries, growth in urban populations has already outstripped — or very soon will — that of rural areas. In the Caribbean and Latin America, 75% of people live in towns. According to FAO, that figure will rise to 83% by 2030. In the Pacific and Asia, the percentage is set to increase from 37 to 53%, and in Africa it will rise from 38 to 55%. In coastal countries on the Gulf of Guinea, the urban population increased nine-fold between 1960 and 2000, while the rural population fell from 80% to 50%.

Feeding towns which often have more than a million inhabitants is a considerable challenge for the governments of countries in the South. For a long time now, their main concern has been how to supply sufficient quantities of food for these people. In many countries, local farmers have dramatically stepped up production in order to supply the new urban demand. Food crops have become “cash crops”. Agriculture has also developed rapidly in and around the major cities, and this contributes to the supply of fresh vegetables, eggs, and poultry, among other products, for people living there.

But in spite of the efforts of producers, local agriculture simply cannot keep pace with the growing requirements of these towns, which are forced to resort to imports. Rice, wheat, meat, oil, industrial agro-alimentary products — imported merchandise — is flooding the markets, often selling for less than local products. Countries vary in the extent to which they depend on these imports. In the Pacific, urban populations now rely almost entirely on imported products made by agro-alimentary industries. In the Caribbean, consumption levels of such products differ from one island to another.

### The cost of imports

In sub-Saharan Africa, per capita imports have remained unchanged for the past 20 years, but according to recent studies, the overall figure has increased substantially due to the growth of urban populations. The fall in world commodity

*"Non-communicable diseases" often linked to a diet that is too high in fats are becoming increasingly common in towns*

### Mauritius, sick of junk food

The mobile health missions which have been plying through the towns and villages of Mauritius for the past two years have made an alarming discovery: 40% of adults over 30 are obese, 30% suffer from high blood pressure and 20% are diabetic. In Mauritius, one out of every two deaths is linked to a "non-communicable disease" (NCD). Forever pushed for time, the islanders buy frozen and ready-to-eat food or eat street food. As part of the price of modern-day life, no one has time anymore to prepare meals or exercise — not even walking.

These bad habits became more widespread around 1995/1996, 5 or 6 years after the onset of Mauritius' economic miracle. Traditionally, the people of this island ate large quantities of vegetables and very little meat. These days, however, junk food is the norm for town and rural dwellers alike, and no one is spared its effects.

prices, together with trade liberalisation and agricultural subsidies to Organisation for Economic Co-operation and Development (OECD) countries have led to a steady rise in cheap imports to countries of the South. FAO figures show that between 1995 and 2002, the volume of cereal imports to African countries rose by 58.2% while the price per tonne of rice fell by 35.2% (see *Spore* 115). Likewise, poultry imports have increased threefold while the price has dropped by more than 40% (see *Spore* 114).

Thanks to these imports, food security for urban populations has not been a major worry for governments and the international community over the past decade, in contrast with the rural areas. But the cost of importing food has placed a heavy burden on a number of countries, which are forced to devote a growing share — often more than half — of their export revenues to feeding their people. Dependent on world prices, Africa is finding it increasingly difficult to pay for the imports needed to supply its urban growth. The recent rise in import prices is threatening to upset the balance of supplies for the towns and to leave the poorest sectors of urban populations to go hungry. Local products cannot replace them — the supply is inadequate and they are usually more expensive than imported products. Since 2001, Africa has seen a deficit in its agriculture and food trade sectors.

### Food imbalances

However, even though the towns in the South may not actually experience food shortages, the nutritional status of the people who live there is still far from satisfactory. A significant proportion of urban dwellers suffer from malnutrition. In the Pacific islands, no one dies of hunger, but there are high levels of anaemia and deficiencies in vitamin A and in trace elements. The same is true in West Africa, where one symptom of



Photos: © Sylla International



urban poverty is the rising level of micronutrient deficiency, especially in children. Lacking the means or even a place to cook meals, the poorest households often have no choice but to buy street food — which just fills their stomachs as opposed to feeding themselves in any balanced way.

In many towns of the South, there are now two categories of people living side by side — those suffering from serious nutritional deficiencies and those who have a diet that is much richer, but which is often far from balanced. The eating habits of urban populations has in fact changed dramatically over the past few decades. In the big cities, traditional food based on dishes which take a long time to prepare are being increasingly replaced by processed foods made by agro-alimentary industries, which often contain too much fat, sugar and salt. High consumption levels of sugary, carbonated drinks, fast food and food additives all take a toll on people's health. Families no longer sit down to eat together; instead, people eat on the run, relying on pre-packed food, a tendency which encourages snacking.



Photos © Syifa international



### Senegal: a vegetable garden on your balcony

Tomatoes, salad leaves, cucumbers — all these vegetables grow in profusion in Senegalese towns, planted in hydroponic "micro-gardens" set up in courtyards or on balconies. Launched by the Centre de Développement Horticole (CDH), an NGO in Cambéréne, near Dakar, the "micro-garden" project was designed to help combat the malnutrition that affects many of the poorest families in the Senegalese capital who cannot afford fresh vegetables. The scheme also helps the gardeners earn extra income.

The vegetables are grown in wooden tubs or polystyrene boxes. Instead of earth, the substratum is made up of peanut shells, rice husks and clay pellets and watered with a solution containing micro-nutrients.

A study carried out in 133 developing countries revealed that urban migration could result in a doubling of consumption levels of cheap, ready-to-eat food with a high fat and sugar content, in preference to more costly traditional dishes, which take longer to prepare and which are often also rich in fat. Added to these strictly nutritional factors is the problem of changing lifestyles — more time spent sitting down, more use of transport, the mechanisation of the workplace, more passive leisure activities — and the effects are beginning to make themselves felt.

Researchers refer to a "nutritional transition", a phenomenon which is very marked in towns which, depending on the country, have either undergone, or are undergoing a change from food insecurity to a situation where diseases associated with "excessive" nutrition are common — conditions which are linked to unbalanced diets and urban life. The pace of this transition is more rapid

than was thought as studies now show that babies born to malnourished mothers develop mechanisms in the womb to save on both energy and nutrients. Once they become well nourished adults, they have a stronger tendency than others to succumb to obesity. The problem of excess weight, and the string of diseases that it generates — mainly diabetes and cardiovascular diseases — is causing havoc in many towns of the South. Although this was originally an issue affecting the better-off social classes, it is now rapidly becoming a problem for the poorest sectors of the population, who have less choice about the food they eat.

### Non-communicable diseases

Studies show that in Pacific states such as the Cook Islands, Nauru, Samoa and Tonga, 75% of inhabitants suffer from obesity. Diseases linked to obesity cause almost six out of every ten deaths in the western Pacific region. In these islands, rice, sugar and canned fruit and vegetables have taken the place of fresh fish, fruit and local vegetables. In the Caribbean, the fight against obesity, which, for example, now affects one in three Jamaicans, has become a key health priority for governments. In South Africa, which has

the highest obesity rates on the continent, almost 20% of all adults and 30% of black women are affected.

These "non-communicable diseases" are becoming increasingly common throughout Africa, where the percentage of deaths caused by cardio-vascular disease is already higher than in the West. In Cameroon, one out of every two men, and one out of every three women are overweight. And while such figures give cause for considerable concern, it must also be said that most people have very little understanding of the negative implications of excess weight. In Africa, being overweight is often seen as a sign of prosperity. In women, stoutness is considered a sign of good health (especially at a time when AIDS is rife), fertility and material well-being. These days, as participants at a recent CTA seminar in Belize noted, governments' primary concern should certainly be to ensure that people have food in sufficient quantity. But they should also be concerned about the quality, so that people can lead healthy lives, work and be productive.

Farmers should strive for similar goals. Locally produced, high-quality products will always be popular, provided they do not cost too much and are quickly prepared. Increasing the supply of locally produced food is a vital issue for many city dwellers in the South. "Do everything in your power to make sure your traditional diet remains as varied as possible", advises Francis Delpuech, who heads a nutritional research team at the Institut de Recherche pour le Développement (IRD), the French science and technology institute. "If you forget these different ways of preparing food, which help to make up a varied diet, the imbalances are going to get worse." For most people living in the cities of the South, however, the main priority remains eating their fill.

### A trio of CTA seminars

Food and nutrition security is an important theme for CTA, which has arranged three seminars on the subject, covering the three ACP regions. The first was held in Maputo in November 2004. The second took place in Belize in March 2005. The final workshop, for the Pacific region, will be held in Apia.

## An overhaul for the EU import system

■ In Europe, the Generalised System of Preferences (GSP) is designed to allow countries of the South to export their products to the EU with lower customs tariffs than those usually applied. The total benefit should, in theory, be in the region of €80 billion. However, in practice, only half the products exported actually benefit from this system. A revision of the rules was clearly needed, so at the end of 2004, the European Commission proposed simplifying the system by keeping the "Everything But Arms" scheme for products exported by least-developed countries, extending the GSP to include around 300 supplementary products, introducing more flexible rules of origin, a clearer, fairer and more simple graduation process and, finally, establishing a mechanism to encourage sustainable development practices.

## Floriculture flourishes in Fiji

■ Floriculture is blooming in Fiji, where rural women are being taught how to grow and market cut flowers as a new way of boosting their incomes. Floriculture holds good potential for Fiji's farmers, both for sale to the island's hotels and for export to Hawaii and New Zealand. Cut flowers including anthuriums, orchids, ginger and heliconias are already proving big sellers, with training being given for the cultivation of new species, such as sunflowers. CTA has supported one such project, helping smallholder women to grow and sell cut flowers and preparing training manuals as well as organising workshops to ensure high quality production.

## A brighter future for breadfruit farmers

■ Breadfruit farmers on Samoa have been given the green light to export their produce to New Zealand, thanks to the installation of a heat treatment plant. All fresh exports to this important overseas market have to be treated for fruit flies through a high temperature forced air system. Meanwhile, Fiji's Ministry of Agriculture has announced that the demand for breadfruit in export markets is growing rapidly and predicted a "brighter future" for the island's breadfruit farmers. Fiji exported 9.5 t of the fruit in 2003, compared with 8.5 t in 2002. In the first three months of 2004, exports soared to 7.7 tonnes, compared with just 5.7 tonnes for the same period of the previous year.

# African cashew nut producers rally together



Photo: © Sylla International

■ African cashew nut producers are worried about the new phytosanitary standards for food products imported into the EU that came into force in January 2005. From the trees to the consumers' plates, these procedures must all be followed to the letter and cover areas including the use of fertilisers and pesticides, the cleanliness of the factory and the hygiene practices of the staff (see *Spore* 113). Faced with such strict measures, India — which buys 98% of the raw nuts from Africa

before reselling them, shelled and processed, to Europe — has announced that it no longer wants to buy from the African market. Asian countries are already well positioned in the global market, with large plantations in Vietnam, Indonesia and Malaysia which produce outputs of 2 t/ha as opposed to African plantations, which produce only 500 kg/ha.

In a bid to resolve this problem, an international seminar was held in September 2004 in

Abidjan, Côte d'Ivoire. It was organised by PROMEXA (Côte d'Ivoire's non-traditional agricultural export promotion association), ARECA (the regulatory authority of Côte d'Ivoire for cotton and cashew nuts) and APCAM (Mali's permanent assembly of chambers of agriculture), with the financial support of PROINVEST, the EU-ACP partnership programme.

Major results of the seminar included the adoption of an industrial processing development plan for cashew nuts in Africa and the creation of an association that brings together the major players in the African sector. Still in its preparatory stage, this grouping will develop the sector under the name of ADEFICA (Association for the Development of the African Cashew Network).

In Senegal and Guinea-Bissau, Enterprise Works, an American non-profit organisation, is developing processing mechanisms and helping to train local business people in production and marketing skills.

## Turning back to traditional trees

■ Pacific Islanders were once among the most self-sufficient and well-nourished peoples in the world, building their agricultural systems around a diverse base of local tree species. But as traditional trees were cut down and replaced with cash crops, much of the valuable knowledge was lost and there is now a critical shortage of information about local tree species and their roles in resource conservation and food security.

The Traditional Tree Initiative, launched by the NGO Agroforestry Net, aims to reverse the trend, recognising that time-honoured indigenous tree species are essential for sustainable agriculture and economic development in the islands. The project offers a unique educational resource for anyone interested in learning about traditional trees, and provides essential information about their cultivation, as well as their uses and by-products.

The goal is to foster the planting and conservation of native trees across the landscape, whose benefits — aside from the valu-



Photo: © Craig Elevitch

*In the Pacific islands, it is vital that knowledge of traditional tree species does not disappear*

able crops and timber they yield — include soil conservation, crop shade, use as windbreaks,

and protecting wildlife habitat. The first step in the Traditional Tree Initiative is the launch of a series of fact sheets covering 50 of the most important species in the region. Each one offers detailed, practical information on products, uses, interplanting applications, environmental requirements, and propagation methods. The fact sheets will be freely available on the internet, and will also be distributed as a searchable CD, with live internet links, to 200 agricultural offices, libraries, and schools in the region.

An important target will be extension agents, often forced, through a lack of information, to turn to newly introduced exotic species whose applications and products are well-documented in international literature. Many of these exotics are untested in the region, unfamiliar to local growers, and pose a potential threat to Pacific Island ecosystems through the introduction of potentially invasive plants.

Website: <http://agroforestry.net/proj/tradtree.html>



## Protecting African rice



Photo: P. Barrot © Syfo International

■ West African rice producers are invoking their right to protect their commodities, as laid down in the latest draft agreement on agriculture drawn up by the World Trade Organization (WTO) to regulate imports to the continent. In December 2004, delegates from farmers' organisations in Benin, Burkina

Faso, Ghana, Mali, Niger, Senegal and Togo delivered a petition urging action to the West Africa Economic and Monetary Union (WAEMU).

They argue that rice is not simply an export commodity but is a staple food which is crucial to African people (see *Spore* 115). They claim that massive imports

have destroyed local markets and plunged producers into poverty. WAEMU countries could produce a better quality rice than the "by-products (broken rice) or poor quality products which are inappropriate for consumption (from 5 to 10 years old)" which are currently imported from Asia. They say that the WAEMU should use all its political weight and influence (in an area which is essentially made up of least developed countries) to convince its partners to accept certain principles for protecting the domestic market.

Specifically, the signatories are urging that custom tariffs for white husked rice and broken rice be immediately increased from 10% to 20% and that the quality of imports be regulated. They also want to see some sort of legal obligation which would force importers to purchase at least part of their requirements from local sources.

## Farmers embrace *Striga* control in Nigeria



Photos: © T. Babaleye

Damage caused to maize by *Striga* can be seen on the plot to the right

■ Farmers in over 50 communities in Nigeria's Middle Belt, often known as the food basket of the country, have successfully used *Striga* control methods to increase crop productivity and improve their livelihoods. The success is the result of a 4-year programme, Participatory Research and Extension Approaches (PREA), conducted by the International Institute of Tropical Agriculture (IITA). *Striga* infests about 40% of arable land in the savannah regions of sub-Saharan Africa, threatening the livelihoods of more than 100 million people who depend on cereals

and grains in the sub-region. A single *Striga* plant can produce over 50,000 seeds, which are capable of remaining in the soil for more than 20 years until a susceptible plant is available to stimulate their development. *Striga* causes low yields of sorghum, maize, rice and pearl millet and, in some cases, total crop failure. In sub-Saharan Africa, maize yield loss attributed to *Striga* is estimated at US\$7 billion annually.

The PREA technology uses *Striga*-resistant maize varieties,

which have doubled yields in farmers' fields. These include ACR 94 TZE COMP.5-W, an early maturing variety; IWD-STR, an intermediate maturing variety; and ACR.97TZL COMP.1-W, a late maturing variety. Many farmers who had abandoned their farms because of *Striga* have now returned to farm their land. Funded by the Department for International Development (DFID), of the United Kingdom, the PREA project has also involved setting up community-based seed production. A number of farmers have gone into partnership with private seed companies in the area. A micro-credit scheme has helped small-scale farmers get started with *Striga*-free seed production.

The success of the project has brought calls for the scheme to be extended to Uganda's 19 northern states, where the weed has become a major cause of environmental degradation and poverty.

## Fiji's suitcase radio

■ Fiji's femLINKpacific (Media Initiatives for Women), a women's media NGO, is going mobile with a community radio project, dubbed "Radio in a Suitcase". The radio programme has already broadcast interviews with a group of women involved in making chutney in Navua. Other programmes will include a broadcast from femLINKpacific's Lautoka-based partner organisation, the Foundation for Rural Integrated Enterprises 'N' Development (FRIEND). The aim of the mobile radio project is to provide practical opportunities for women within their own communities to highlight and address issues relevant to them.

## A fistful of caterpillars

■ A new study from FAO claims that the collection of edible insects is a good source of income, especially for women, as they can gather them by hand and the activity requires little capital input. Sold by the glass, bowlful or handful, as well as in sacks and baskets, insects are widely offered in local village markets. Some of the most sought after species, such as *Sapelli* caterpillars, can fetch as much as €15 a kilo and are sold in urban markets, in Central Africa, Nigeria and Sudan, and as far as Belgium and France. In Central Africa, prices range from FCFA1,000 per kilo (€1.5) when bought direct from the collectors to FCFA1,500 (€2.25) when purchased from a wholesaler and up to FCFA1,800 (€2.6) when bought from a retailer.

## Useful relatives

■ A new programme aims to boost use of the wild relatives of some of the world's key crops. The project, launched by the United Nations Environment Programme (UNEP), the International Plant Genetic Resources Institute (IPGRI) and various national and international partners, will create a network for scientists and breeders to exchange knowledge and identify promising traits for improving crop production. Wild relatives are useful for breeding purposes — allowing development of new varieties with higher yields, greater disease resistance and higher nutritional values. The new programme will determine the conservation status of crop relatives, both in the field and in gene banks. It will also help local communities protect wild crop relatives and understand their benefits and uses.

## Plastic bags cause indigestion

■ A survey among farmers in Burkina Faso has revealed that 18% of small ruminants and 10% of cattle reared in the town die as a result of eating plastic bags. Figures for animals sent for slaughter are even higher. A researcher at the livestock research institute, the Centre international de recherche-développement sur l'élevage en zone sub-humide (CIRDES), found plastic bags in the stomachs of 28% of small ruminants and 29% of cattle. In Rwanda and South Africa, legislation requires that plastic bags have a maximum thickness of 100 and 30 µm, respectively, in order to protect both the environment and livestock. In Kigali, black plastic bags have disappeared from shops and streets. In Kenya, thin plastic bags should soon be banned and the thicker ones heavily taxed. Financial incentives will favour the use of environmentally-friendly bags such as those made out of cotton.



Photos: © S. Antoine

## A beehive from Vietnam

■ Senegal's national beekeepers' organisation, the Union nationale des apiculteurs du Sénégal (UNAS), is seeking to modernise honey production with the help of a Vietnamese-style hive. According to UNAS President Babacar Cissé, the Asian hive, made of clay and concrete and vertical in shape, is better suited to the climate of Senegal than the Kenyan hive, which is made of wood and has a horizontal form. The Vietnamese hive should also cost less. UNAS's aim is to help beekeepers become more autonomous by selecting hives that are suited to local conditions, but which also conform to modern requirements. The ultimate goal is to see beekeeping develop as an activity in its own right, rather than allow it to remain as a highly marginalised sub-sector of livestock rearing.

## Organising inputs

■ "Providing effective support to agricultural development in Africa by supplying quality inputs." That is the declared aim of the Fédération africaine des associations du commerce des intrants agricoles (FACIA), a federation of fertiliser suppliers which was launched in Ouagadougou (Burkina Faso) on October 7, 2004. Some 27 national and sub-regional organisations, representing around 5,000 professionals supplying fertiliser, phyto-sanitary products, seeds and agricultural equipment from 14 countries in West and Central Africa took part in the general assembly to launch the new body, which is based in Mali. The first task that the association has set itself is to build up contacts with partners in the market and to defend the sector's interests during the harmonisation of regulations at regional level.

✉ Mamadou Abdoulaye Kane  
Fax: +224 45 39 95

## A local flour

assimilated and digested, Misola complies with the norms recommended by the World Health Organization (WHO).

In view of these benefits, the World Food Programme (WFP) has decided to use it in preference to imported flours, which are three times as expensive. In Mali, WFP has just signed a 5-year agreement with the organisation making Misola to supply an annual 400 t of the flour. If the initiative proves successful, WFP may develop the sector and extend it to involve more African farmers.

Both Cameroon and Burkina Faso, which produce respectively 3 and 24 t each year, are still far from able to satisfy demand for the flour.

The infant flour produces income for farmers who grow cereals and legumes and also benefits women's groups which have set up small-scale production units to manufacture and package the food in sachets of 200 or 500 g.



✉ Association burkinabé des unités Misola  
Pharmacie Yennenga  
03 BP 7178 Ouagadougou 03  
Burkina Faso  
Email: [santoine@wanadoo.fr](mailto:santoine@wanadoo.fr)

## Better technology for African farmers

■ Resource-poor African farmers are being given the chance to grow high-yielding crops, thanks to an initiative by the African Agricultural Technology Foundation (AATF), which links small-scale producers up with technological solutions for agriculture.

The foundation is a public-private partnership that aims to boost incomes and food security for the rural poor in sub-Saharan Africa by overcoming the high costs and restrictions imposed by intellectual property rights, which act as barriers to African farmers' adoption of new technologies. Based in Nairobi, the foundation has already raised US\$14 million for its work in the first 5 years of operation. AATF's role is to negotiate between farmers and technology providers to offer solutions to improve productivity and reduce costs. Once access to technologies has been agreed upon, the foundation finds ways of adapting them to African conditions and mass production.

One project identified by the AATF will give small-scale farmers access to maize varieties with B-carotene and other pro-vitamin A elements. The AATF sources the germplasm, negotiates intellectual property rights and facilitates field-testing in Africa, as well as the adoption and dissemination of the maize. A cowpea productivity improvement project will enable farmers to access high quality cowpea seed, with increased productivity and resistance to infestation by insect pests.

✉ AATF  
c/o ILRI  
PO Box 30709  
Nairobi 00100  
Kenya  
Tel: +254 20 422 3700  
Fax: +254 20 422 3701  
Email: [aatf-information@cgiar.org](mailto:aatf-information@cgiar.org)  
Website: [www.aatechfound.org](http://www.aatechfound.org)

## A safer pump

■ In Diola, the most widely spoken language in the Casamance region of Senegal, 'Erobon' means spring. That is also the name chosen for a pump being made here and designed to provide drinking water for rural households, villages and neighbourhoods in the towns. The 'Erobon' can pump water up from a depth of 40 m, either from a well or a small bore hole.

Its main advantage is that it works in a hermetically sealed well, so that water cannot be polluted by waste or animal carcasses and there is less risk for children. Easy-to-use, this pump lightens the workload of women, who no longer have to draw water up from the bottom of the well. It also saves on ropes and buckets.

Besides its technical advantages, the pump has the advantage of being manufactured



Photo: M. Seck © Sylla international

locally, as are its spare parts. It sells at between FCFA100,000 and 120,000 (€150 and 180), which includes installation and a cover for the well.

✉ EnterpriseWorks Worldwide  
1828 L Street NW, Suite 1000  
Washington, DC 20036  
USA  
Fax: +1 202 293 45 98  
Email: [info@enterpriseworks.org](mailto:info@enterpriseworks.org)



## Battling the *Chromolaena* weed

■ The National Agricultural Research Institute (NARI) has declared war on the *Chromolaena* weed (*Chromolaena odorata*) in Papua New Guinea (PNG), and has won the first battle. *Chromolaena* is one of the most serious invasive weeds in the tropics. As well as having a highly damaging effect on agriculture, the weed is also a major threat to biodiversity. *Chromolaena* has been spreading since it was first sighted in the Gazelle Peninsula in East New Britain in the 1960s and is currently confirmed in 12 provinces of PNG. Now NARI, which has been conducting research into the biological control of this weed since 1999, has found two natural enemies of the alien species. Two insects have been released for biological control, the moth *Pareuchaetes pseudoinsulata* and the gall fly *Cecidochares connexa*. The larvae of the moth feed on *Chromolaena* leaves and, when there are sufficient quantities of them, they cause heavy defoliation, resulting in the destruction of the weed. Adults of the gall fly lay eggs in



Photos: © NARI

A moth and a gall fly are chalking up points against the *Chromolaena odorata*

soft apical stem tissue and the larvae, upon hatching, feed in the stem, causing gall formation. The galls affect the flow of water and nutrients to other parts of the weed, thus stunting plant growth and reducing seed production. In the Markham Valley of Morobe Province, the combined effect of the moth and the gall fly has produced spectacular defoliation and the death of many plants in

areas of previously impenetrable *Chromolaena* weed. NARI is rearing and releasing more moth larvae and gallflies, which can be supplied for release when new infestations of *Chromolaena* weed are detected.

✉ NARI Weeds Programme  
PO Box 1639  
Lae  
Papua New Guinea  
Fax: +475 1071  
Email: [nariweeds@global.net.pg](mailto:nariweeds@global.net.pg)

## New bread law boosts cassava sales



Photo: © T. Babaleye

■ The Federal Government of Nigeria has introduced a law making it compulsory for bakers to use composite flour of 10% cassava and 90% wheat for bread production. The new regulations, which came into force in January 2005, stipulate that the large flour mills that

supply flour to bakeries and confectioners must pre-mix cassava flour with wheat flour. To help those involved in the industry adapt to the new law, the International Institute of Tropical Agriculture (IITA) is working with the Office of Special Assistance on Food Security in

the Presidency to draw up a series of programmes including training and sensitisation workshops and quality control seminars for food processors, caterers, bakers, confectioners, and flour millers.

Nigeria spends US\$400 million a year to import wheat to meet local demand for flour from the baking industry. By replacing 10% of wheat flour with cassava, the government will save an estimated US\$40 million per year, which, it says, will be injected into the Nigerian cassava industry. With an annual output of some 34 million metric t, Nigeria is the world's leading cassava producer. At present, all of the crop is consumed locally, and none exported. In an effort to earn more foreign exchange and improve incomes for cassava farmers, the Nigerian government is planning to use cassava in a range of industrial products, such as ethanol, glue, glucose syrup, industrial starch, and livestock feeds.

## Fair trade cotton

■ The Max Havelaar Association has launched its 12th product — fair trade cotton. Introduced in March 2005, the cotton is the first non-food product in the range and the first fair trade cotton anywhere in the world. The association will initially certify raw cotton from Mali, Burkina Faso and Cameroon. But it also plans to sell socks and T-shirts in France made from fair trade cotton produced in Mali and Mauritius. Encouraged by its success in improving livelihoods for the 800,000 small-scale producers of tea, honey and rice with which it already works, the Max Havelaar network now hopes to boost incomes for producers in the cotton sector, helping them to find markets and guaranteeing them revenues that are higher than the market price.

## Boosting banana production

■ The Marshall Islands (RMI) has launched a plan to increase banana production in an effort to help feed a growing population and raise the standard of living of small farmers. With help from the United Nations Food and Agriculture Organization (FAO), a project has trained 30 farmers and research assistants in the narrow pit-system of planting bananas, a sustainable method for producing bananas in an atoll setting. The project also involves distribution of high-yielding disease-free suckers to farmers and the development of tissue culture, to produce clones which are resistant to the devastating black Sigatoka disease.

## Pacific islanders can sell noni to EU

■ Members of a small trade association, the Pacific Island Noni Association (PINANA), have won approval to export pure noni (*Morinda citrifolia*) juice to the UK and other EU Member States. This important ruling marks the first time Pacific producers have been able to export noni juice since the passing of the restrictive EU Novel Food Directive in 1996, which limits access to imports of any products deemed not to be traditional. Producers were supported by the ACP-EU Centre for Development of Enterprise (CDE), which helped finalise negotiations with the UK Food Standards Agency.

✉ Henriette Dodet/Peter Alling  
CDE  
Av. Hermann-Debroux 52  
1160 Brussels  
Belgium  
Fax: +32 2 675 26 03  
Email: [ado@cde.int](mailto:ado@cde.int)/[pal@cde.int](mailto:pal@cde.int)  
Website: [www.cde.int](http://www.cde.int)

# Small islands, big challenges

Given their size and limited resources, many small islands now realise it may be wise to club together to push their case for more help with climate change, and to draw up strategies to offset the impact. A growing network of alliances have been launched in recent years, culminating in the global summit held in Mauritius in January 2005 with the slogan, *Small Islands, Big Stakes*. The **International Meeting on Small Island Developing States (SIDS)** has a well-organised website,

with climate change featuring strongly. Here you can read the Mauritius Declaration, issued at the close of the summit, as well as background documents which explain the special challenges that global warming poses for small island nations.

The **Small Island Developing States Network (SIDSnet)** links 43 island states, and its website provides a good selection of information on sustainable development issues, with a special section devoted to climate change, where visitors can carry out

detailed searches as well as take part in discussion forums. Linked to SIDSnet is the **Alliance of Small Island States (AOSIS)**, a highly active lobbying network of small island and low-lying coastal countries that share similar concerns about the environment, especially their vulnerability to the adverse effects of climate change.

Two island groupings which have already begun to draw up regional strategies are the **Caribbean Community Climate Change Centre (CCCCC)**, whose Mainstreaming Adaptation to Climate Change (MACC) programme is being implemented by 12 Caribbean states, and the **Pacific Regional Environment Programme (SPREP)**. This Samoa-based organisation operates the Pacific Islands Climate Change Assistance Program (PICCAP) for 10 Pacific Island countries, and its website is a mine of information about the effects of climate variability in the region.

The Internet-based **Science and Development Network (SciDev)** has a rich dossier on cli-

mate change. There is also a well-written booklet, *Climate change: A developing world perspective*, downloadable in PDF format, with a range of articles examining the impact of climate change on the South and analysing some ways in which these countries can prepare for it.

## For further information:

### AOSIS

[www.sidsnet.org/aosis](http://www.sidsnet.org/aosis)

### CCCCC

University of Belize, R.L.C. Building  
City of Belmopan, Belize  
Fax: +011 501 822 1365  
Email: [admin@caribbeanclimate.org](mailto:admin@caribbeanclimate.org)  
Website: [www.caribbeanclimate.org](http://www.caribbeanclimate.org)

### International Meeting on Small Island Developing States

[www.un.org/smallislands2005](http://www.un.org/smallislands2005)

### SciDev

Go to [www.scidev.net/dossiers](http://www.scidev.net/dossiers) and select climate change from the options. Climate change booklet downloadable as PDF from: [www.scidev.net/pdf/files/ClimateChangeLeaflet.pdf](http://www.scidev.net/pdf/files/ClimateChangeLeaflet.pdf)

### SIDSnet

[www.sidsnet.org](http://www.sidsnet.org)

### SPREP

PO Box 240, Apia, Samoa  
Fax: +685 20231  
Email: [sprep@sprep.org](mailto:sprep@sprep.org)  
Website: [www.sprep.org](http://www.sprep.org)



Photo: N. Ackbarally © Syfira International

Small island developing states met in Mauritius in January 2005

## Trails for local breeds

Given FAO's role in drawing up the Global Strategy for the Management of Farm Animal Genetic Resources, it is only natural that its website should offer the best starting point for this subject. As a first step — and to get an idea of the global nature of this strategy — go to the section on the **Commission of Genetic Resources for Food and Agriculture (CGRFA)**. Here you will find reports from the Intergovernmental Technical Working Group on Animal Genetic Resources (ITWG-AnGR). Other more specific documents relating to certain ACP regions can be found in the virtual library of the **Domestic Animal Diversity Information System (DAD-IS)**, which is full of useful links and contacts. Among other purposes, this site seeks to provide information and assistance to

governments, NGOs, research and training teams and international agencies working in the field of farm animal genetic resources in various regions of the world. It has several searchable databases so that visitors can find out about the local breeds present in a given country, together with their chief characteristics. Another good source of information is the **International Livestock Research Institute (ILRI)**.

Progress in characterising native breeds and the extent of interest in farm animal genetic resources varies from one region to another. Among the front-runners, the countries of the Southern African Development Community (SADC) are brimming with ideas on how to protect local breeds (see *Spore* 107). The proceedings of four regional workshops organised within the

SADC (Mbabane and Lusaka in 2001, Luanda in 2002 and Maputo in 2003) are summarised in a book published by the German development corporation (GTZ) with the support of FAO and CTA. Its conclusions are also relevant for other parts of the world. *Farm Animal Genetic Resources* comes with an accompanying CD-ROM, containing the full proceedings of these workshops. For the Caribbean region, take a look at the website of the **Caribbean Small Ruminants Network (CASRUNET)**.

GTZ is closely involved in studying the role of pastoral communities in the preservation of diversity among farm animals. A useful document, though available only in French, is a report entitled *Gestion à base communautaire de la diversité zoogénétique*. It offers a good introduction

to these issues, as does the website of the **League for Pastoral Peoples**.

## For further information:

### CASRUNET

[www.procaribe.org/networks/casrunet/index.htm](http://www.procaribe.org/networks/casrunet/index.htm)

### CGRFA

[www.fao.org/ag/cgrfa/AnGR.htm](http://www.fao.org/ag/cgrfa/AnGR.htm)

### DAD-IS

[www.fao.org/dad-is](http://www.fao.org/dad-is)

### ILRI

[www.ilri.cgiar.org](http://www.ilri.cgiar.org)

### • Farm Animal Genetic Resources

Book and CD-ROM  
CTA number 1221  
10 credit points

### • Gestion à base communautaire de la diversité zoogénétique

By I Köhler-Rollefson  
Downloadable in French only from: [www2.gtz.de/agrobiodiv/download/koefrenc.pdf](http://www2.gtz.de/agrobiodiv/download/koefrenc.pdf)

### League for Pastoral Peoples

[www.pastoralpeoples.org](http://www.pastoralpeoples.org)



# Publications

## Practical help for small-scale farmers



A useful trio of new handbooks has just been issued in the Agrodoks series, published by CTA and Agromisa.

*Pesticides: compounds, uses and hazards* is a revised edition of the 1989 Agrodok publication, and takes into account the rapid developments that have been seen in the use of agro-pesticides since then. While stressing that non-chemical protection measures should be used wherever possible, this book recognises that in some cases, pesticides are the only answer, and attempts to advise farmers on the safest and most effective way of using them. As well as offering detailed information about the various types of pesticides available, the guide provides copious advice on their effective application, with detailed discussions on the best equipment to use and the critical issue of timing. Hazards, both to human safety and to the environment, are carefully explained. A chapter on safety looks at the importance of wearing protective clothing and masks, and proper transport, storage and stock-keeping.

Before deciding whether or not pesticides are necessary, farmers must first develop a good understanding of the pests and diseases that affect their crops. *Identification of Crop Damage* has been written as a tool to help farmers diagnose and treat serious crop damage. The book guides farmers through the various damage-causing agents — plant diseases caused by fungi, bacteria or viruses, insects, nematodes mites or others — and gives plenty of descriptions to help the reader in the often difficult task

of making an accurate diagnosis. For each group, the guide offers possible control measures, favouring integrated pest management where possible, and only using pesticides as a last resort.

*Small-scale Seed Production* looks at the importance of boosting farmers' involvement in seed production, at a time when multinationals are becoming more and more dominant, and the advent of genetic engineering is making itself felt. Written for extension staff and small-scale farmers, this guide outlines the general principles and practices of cultivar maintenance and seed production.

## Green facts and figures

Close on the heels of the *miniAtlas of global development* (Spore 113) comes another mini-volume in the World Bank series, the *Green miniAtlas*. With a similar pocket-sized format, this little book packs an impressively large amount of information into its pages. It surveys the most pressing environmental problems around the world, providing key information for more than 200 countries. Agriculture features strongly, with useful facts and figures relating to quantities of arable land, fertilizers and irrigation.

Other interesting sections contain information on forests, biodiversity, energy, transport and water. The well designed graphics help bring the data to life and a useful table at the end of the book presents a list of country profiles, together with statistics

In the clear, easy-to-understand style that is the hallmark of the Agrodok series, the author explains basic 'must-know' features of genetic inheritance, such as the difference between self-pollination and cross-pollination and genetic variation in cultivars. It also looks at important factors in producing good seed quality. Special chapters are devoted to post-harvest care, storage and selling seeds as a small business.

Pesticides: compounds, uses and hazards

By J Boland, I Koomen, J van Lidth de Jeude & J Oudejans  
Agromisa – CTA, 2004. 108 pp.  
ISBN 90 77073 41 8  
CTA number 1216  
5 credit points

Identification of Crop Damage caused by diseases, pests and mineral deficiencies

By J van Lidth de Jeude  
Agromisa – CTA, 2004. 78 pp.  
ISBN 90 77073 31 0  
CTA number 1190  
5 credit points

Small-scale Seed Production with variety improvement of cereals and pulses

By H van den Burg  
Agromisa – Kerkinactie – CTA, 2004  
92 pp.  
ISBN 90 77073 43 4  
CTA number 1218  
5 credit points



on how their populations affect the environment, and vice versa.

Green miniAtlas  
World Bank, 2004. 64 pp.  
ISBN 0 8213 5870 7  
US\$7 • €5.75

The World Bank  
1818 H Street NW  
Washington, D.C. 20433  
USA  
Fax: +1 70 661 1501  
Email: books@worldbank.org  
Website:  
<http://publications.worldbank.org/ecommerce>

## Grappling with the cotton crisis



Cotton plays a crucial role in the economies of a number of African countries, providing livelihoods for around 10 million people in West and Central Africa alone. In July 2004, participants from 28 countries gathered in Paris for the EU-Africa Cotton Forum, organised by the European Commission with the support of the ACP Group, CTA and the French Ministry of Foreign affairs. The goal was to seek common solutions to the African cotton sector crisis. This booklet is a summary of the proceedings and is accompanied by a CD-ROM of the internet site set up for the Forum.

European Union-Africa Cotton Forum: Summary of Proceedings, Paris, 5 and 6 July 2004  
CTA, 2004. 62 pp (+CD-ROM)  
ISBN 92 9081 2850  
CTA number 1233  
10 credit points

## Four pages on Africa

The trilingual website (English, French and Spanish) of the Network for Science and Development, better known as SciDev.Net, publishes a free four-page electronic newsletter on sub-Saharan Africa. The October issue is a special edition on science and gender. The newsletter can be downloaded directly from the site.

[www.scidev.net/africanewsletter/scidev-africa-oct04.pdf](http://www.scidev.net/africanewsletter/scidev-africa-oct04.pdf)

## Controlling plant genetic resources

Many people depend on plant genetic resources. Yet whilst controversies over the ownership, control and exchange of such resources for food and agriculture are old, modern-day management of these resources is more complicated than ever before. Developments in international and national law and policy over the past 15 years have changed the working environment for those in charge of making decisions about genetic resources. Trade relations, intellectual property rights, biosafety, indigenous communities and public-private sector relations are just a few of the topics that are on the agenda. This paper from the International Plant Genetic Resources Institute (IPGRI) attempts to guide the reader through the international agreements and policies of most relevance.

International Law of Relevance to Plant Genetic Resources: A Practical Review for scientists and other professionals working with plant genetic resources  
Edited by S Bragdon  
Downloadable from:  
[www.ipgri.cgiar.org/publications/pubsurvey.asp?id\\_publication=937](http://www.ipgri.cgiar.org/publications/pubsurvey.asp?id_publication=937)

## Ideas for farmers

■ The Cameroon-based NGO, Support Service to Grassroots Initiatives (SAILD), has launched an on-line newsletter. Called *Zones' Dynamics*, the bulletin, currently on its third issue, reports on the progress of farmers and producers in Cameroon, involved in a range of new initiatives to try to improve their living standards.

### *Zones' Dynamics*

Newsletter downloadable from: <http://64.91.253.81/~a151cecm/59.php>

## Sustainable treatment

■ For 30 years, the Onchocerciasis Control Programme (OCP) in West Africa has battled to eradicate the parasitic worm (*Onchocerca volvulus*) which causes onchocerciasis, or river blindness in humans. In former times, this disease caused entire villages to leave land close to rivers, which was also the most fertile. This book celebrates the double success of the programme: which has managed to wipe out the insect using applications of chemical insecticides without damaging the environment, and which has also succeeded in attracting villagers back to their land.

Thirty years of Onchocerciasis Control in West Africa: Blackfly larviciding and environmental protection

By M Hougaard, C Leveque & L. Yameogo

IRD, 2004, 200 pp.  
ISBN 2 7099 1530 8  
€38

IRD Éditions

32, avenue Henri Varagnat  
93143 Bondy cedex  
France

Fax: +33 (0)1 48 02 79 09

Email: [diffusion@bondy.ird.fr/us](mailto:diffusion@bondy.ird.fr/us)  
Website: [www.ird.fr](http://www.ird.fr)

## Natural resource management

■ Two case studies described in this paper from the International Food Policy Research Institute (IFPRI) offer innovative solutions to the problem of growing demographic pressure on the natural resource base of sub-Saharan Africa. First is the use of planting basins, an approach that has emerged in recent decades in both the Sahel and Zambia. The second strategy involves the use of improved fallows, introduced over the past decade in eastern Zambia and western Kenya. The authors look at the impact as well as key lessons learned for building future successes.

Strategies for sustainable natural resource management

Edited by S Franzel et al.  
IFPRI, 2004. 2 pp.

Downloadable as PDF from: [www.ifpri.org/2020/focus/focus12/focus12\\_08.pdf](http://www.ifpri.org/2020/focus/focus12/focus12_08.pdf)

## The big question

■ Professor Ajaga Nji spent more than 25 years travelling to some of the most under-privileged corners of the world to ask the question that has been puzzling him ever since he was a young man in Cameroon: why do poor people remain poor?

His travels took him to most parts of his native Africa, as well as to Asia, Europe and the United States of America. Wherever he went, he spoke to poor people, and painstakingly recorded his conversations and interviews as he went.

Over the years, a pattern began to emerge. Whether he was talking to farmers in Machacos, Kenya, or to herders in Sabongari, in the North West Province of Cameroon, a common thread of injustice, poor access to natural resources and lack of opportunities and education ran through the picture. Given that it took the author quarter of a century to investigate this vast subject, it would be absurd to try to synthesise the answers here.

In one chapter, he comes up with 26 reasons why poor people



remain just that. One clue, however, comes with the account of a poor fisherman he met in Cameroon, distraught because his old canoe leaked badly and because his net only caught a few young fish. "This book is written for the fisherman, who might come to understand[...]that he is poor because the rich, deep-sea fishermen use their wealth, greater resources and larger vessels to catch the big fish, pushing only the fries to the shores into his net," writes the author, many years after that encounter.

But this is not a book of despair. The author is Professor of Rural Sociology and Technology Issues at the University of Dschang, Cameroon and has long experience of practical ways of alleviating poverty, many of which he outlines in his book.

He concludes with the conviction that while poverty can probably never be eliminated altogether, it can be reduced in good measure "through focused, targeted, anti-poverty programs based on a commitment to justice, peace, good governance, democracy and sustainable development."

Why Poor People Remain Poor: Key Elements for Poverty Alleviation and Sustainable Development

By A Nji

DeScholar Press

2004. 240 pp.

ISBN 9956 401 05 6

US\$20 • €15

Ajaga Nji & Associates

PO Box 138

Dschang

Cameroon

Fax: + 237 345 19 55

Email: [ajaga\\_nji@yahoo.com](mailto:ajaga_nji@yahoo.com)

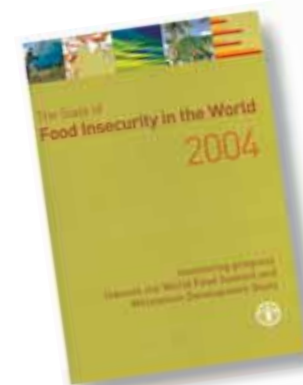
## Must do better to halt malnutrition

■ The 2004 edition of the United Nations Food and Agriculture Organization's *State of Food Insecurity in the World* sets out to monitor progress towards the goal laid down by the 1996 World Food Summit — that of halving the number of hungry people on the planet between now and 2015.

Given that the number of people suffering from chronic hunger has only been reduced by 9 million since 1992, the objective of cutting the total from 800 to 400 million is clearly still a long way off. There can only be one conclusion: we must do better. The report does its best to show that this is indeed possible. It offers the example of 30 countries (together accounting for almost half the total population of the developing world) where malnutrition rates are falling.

Sub-Saharan Africa is the region where the greatest number of countries have managed to reduce levels of malnutrition by more than 25%. Their strategies

vary considerably, and the very diversity of these approaches is itself a determining factor. For example, polyculture on the one



hand, and the use of local knowledge on the other can enable the problem of hunger to be tackled simultaneously on several fronts.

Improvements in other areas, such as education and literacy rates, can also play an important role in the struggle. For although

neither is directly related to food production, both are fundamental, since improving standards of living depends partly on the extent of peoples' knowledge.

Most important of all, claims the report, is the relationship between food insecurity and local armed conflicts. Levels of malnutrition will begin to fall when such civil strife ends, for fighting does not simply cause food emergencies — it also engenders a state of widespread chronic hunger.

State of Food Insecurity in the World 2004: Monitoring progress towards the World Food Summit and Millennium Development Goals  
FAO, 2004

ISBN 92 5 105178 X

US\$15 • €12

FAO Sales and Marketing Group

Viale delle Terme di Caracalla

00100 Rome

Italy

Fax: +39 6 5705 3360

Email:


[publications-sales@fao.org](mailto:publications-sales@fao.org)

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## A business in baking

 Cereal processing offers good potential for anyone wanting to set up a small or medium-scale business, either for primary processing — converting grain to flour — or secondary processing, which involves converting the flour into higher-value foods such as bread, cakes, pies or pizzas. Factors which make this an attractive option include the relatively inexpensive and accessible nature of the technology, the simplicity of many techniques involved and the high level of demand. In recent years, a range of new cereal products have entered the markets of many ACP countries, including leavened breads, cakes and pastries, and fried cereal products such as samosas and doughnuts, all of which are considerably more profitable than traditional fare. This well designed book takes readers step-by-step through the process of setting up the business, from choosing the product to selecting a site and equipment and developing markets. It also gives practical advice on managing the financial and operational



side of operations. Each chapter has a helpful set of tips, with a checklist of important points to bear in mind, and a good selection of clear drawings and photographs. A series of case studies provides concrete examples of how other entrepreneurs have managed to take advantage of this burgeoning market.

Setting up and Running a Small Flour Mill or Bakery  
 Edited by B Axtell, P Fellows et al.  
 CTA, 2004. 248 pp.  
 ISBN 92 9081 276 1  
 CTA number 1176  
 40 credit points

## Sharing information to protect forests

■ Forests face a number of natural threats, including fire, insects and diseases. This edition of *Unasylyva*, FAO's journal on forestry issues and industries, takes a look at some of the measures taken to protect forests, and the progress made so far in protecting forest ecosystems and the goods and services they provide from these destructive agents.

The central argument is that man must become a key player in protecting forests. And since neither insects nor fires respect national borders, the solutions



will sometimes need to be global. In some countries, international aid may be necessary. In others, the approach may be more localised. It is up to man to intervene in the appropriate fashion in each case, for example, to organise proper tree clearing in certain forest settings.

The journal raises the point that human intervention can at times aggravate the problem of natural threats to forests, for example by introducing new pests and diseases. It also tries to put a number of controversial issues into perspective, such as genetically modified trees and the invasion of trees introduced as a means of combating desertification.

A strong message to emerge is the importance of sharing information in order to find sustainable ways of managing forests, rather than falling back on short-lived solutions.

Forest Threats  
*Unasylyva* n° 217, vol. 55, 2004/2  
 FAO, 200., 60 pp.  
 ISSN 0041 6436  
 US\$15 • €12  
 (For FAO's address, see page 12)

## New databases for maize and wheat

■ The International Maize and Wheat Improvement Center (CIMMYT) has unveiled a significant addition to the field of DNA fingerprinting for wheat and maize in the form of two new databases, the largest public information sites of their kind. Offered online, the databases currently contain over 80,000 data points, but their dynamic nature allows constant updating, so scientists worldwide can add information to the original studies. The size of these databases is expected to double within one year. Recorded in the databases are characterisation information for CIMMYT varieties (pure lines and populations), breeding materials, and landraces, as well as materials from collaborating universities and national agriculture research programs in developing countries.

Maize database:  
[www.cimmyt.org/english/docs/manual/dbases/contents\\_mz.htm](http://www.cimmyt.org/english/docs/manual/dbases/contents_mz.htm)  
 Wheat database:  
[www.cimmyt.org/english/docs/manual/dbases/contents\\_wh.htm](http://www.cimmyt.org/english/docs/manual/dbases/contents_wh.htm)

## Compilation CD for agricultural marketing

■ This CD brings together many of the publications on agricultural marketing produced by FAO over the past 15 years. Its contents include training material for extension workers and university students, books on marketing policy, guides on the planning and design of markets, and books on market information and farm input marketing. The CD is mainly aimed at people who do not have access to the Internet, or who have trouble in downloading large files.

Agricultural marketing resources (CD-ROM)  
 FAO, 2004  
 ISBN 92 5 005221 9  
 US\$20 • €15  
 (For FAO's address, see page 12)

## Making the most of forest resources

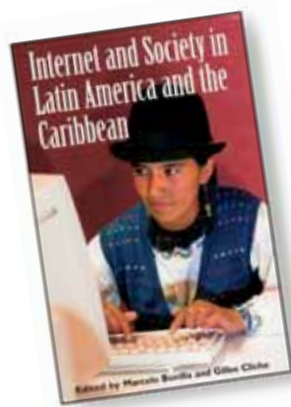
■ This sixth edition of FAO's *State of the World's Forests* focuses on the financial benefits that can be gleaned from forests, recognising that the economic viability of the forest sector is a prerequisite to safeguarding the environmental, social and cultural functions of the resource. The report examines some of the challenges and opportunities associated with enhancing these benefits, with sections on agroforestry, wood energy and ways in which tariffs and non-tariff measures affect trade in forest products.

State of the World's Forests 2005  
 FAO, 2005. 168 pp.  
 ISBN 92 5 105187 9  
 US\$45 • €34  
 (For FAO's address, see page 12)

## The Internet and its impact

■ Back in 1999, the International Development Research Centre (IDRC) helped launch a competition for research projects on the social impact of communication and information technologies (ICTs) in Latin America and the Caribbean. The main aim was to identify and evaluate the changes that the Internet is bringing about in different areas that are key to the region's development, among them education, agriculture, governance and the environment. The contest particularly focused on the need to address the digital divide which has barred certain groups, especially in rural areas, from taking advantage of ICTs.

The ideas and experiences presented in this book are the product of the eight winning research projects. They examine the social impact of the Internet in the context of schooling, government and public services and look at ways in which access could be improved. The book also contains articles from six experts dealing with issues that include copyright and the Internet, a



proposal for franchising telecentres in the region and a description of a project for monitoring Internet policies in Latin America and the Caribbean.

Internet and Society in Latin America and the Caribbean  
 Edited by M Bonilla & G Cliché  
 Southbound/IDRC, 2004. 436 pp.  
 ISBN 983 9054 37 6  
 US\$30 • €24  
 Southbound  
 Northam House  
 55 Jalan Sultan Ahmad Shah  
 10050 Penang  
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 Fax: +604 228 1758  
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 Website: [www.southbound.com.my](http://www.southbound.com.my)

## Annual Report

# Exploring new channels of communication

**W**hen CTA was launched 2 decades ago, its brief was to use the transfer of agricultural information to boost the profitability of small-scale rural producers in ACP countries. In parallel with the dramatic developments seen in the field of information technologies since those early days, CTA's own strategies have also undergone sweeping changes. For although traditional communication tools still have an important role to play — including, we are pleased to say, our own *Spore* magazine — the Centre has developed an impressive array of state-of-the-art instruments which enable it to share information more quickly and among a wider audience.



### Spore magazine



*Spore* is the bi-monthly flagship publication of the Technical Centre for Agricultural and Rural Cooperation (CTA) – ACP-EU. CTA operates under the Cotonou Agreement between

the countries of the Africa, Caribbean and Pacific (ACP) Group and the European Union.

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Technical Centre for Agricultural and Rural Cooperation (CTA) – ACP-EC Cotonou Agreement.

CTA, PO Box 380,

6700 AJ Wageningen, The Netherlands

Tel: +31 317 467 100

Fax: +31 317 460 067; email: cta@cta.int

Website: <http://www.cta.int>

**Editorial staff:**

Executive editor: Marie-Agnès Leplaideur

Syfia International

20, rue du Carré-du-Roi,  
34000 Montpellier, France

Fax: +33 4 67 52 70 31

Email: [redaction.spore@syfia.info](mailto:redaction.spore@syfia.info)

Editor of English version: Clare Pedrick

Via dello Spagna 18

06049 Spoleto (PG), Italy

Email: [english\\_spore@hotmail.com](mailto:english_spore@hotmail.com)

Editor of French version: Denise Williams

Syfia International (see above for address)

Email: [redaction.spore@syfia.info](mailto:redaction.spore@syfia.info)

Contributors to this edition of *Spore* included:

N Ackbarally, A Agutu,

T Babaleye, J Bodichon, V Hild,

F Le Meur, D Manley, C Nforgang,

M Seck, and with the editorial support of CTA.

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The *CTA Annual Report 2004*, available again on CD-ROM this year, outlines some of the most recent developments at the Centre. Key examples are CTA's five web portals. Many *Spore* readers are already familiar with *Agricta*, *Knowledge for Development*, *ICT Update* and *Agritrade*, all of which continue to attract a dedicated band of users. These have now been joined by *Anancy* (see *Spore* 116), which serves as a gateway to global online sources of agricultural information, as well as offering users easy access to CTA's other information sources.

Technological developments aside, it has been an action-packed year at CTA, with a busy schedule of internal and external seminars and workshops. The highlights of the year were the celebrations in June, organised to mark the Centre's 20th anniversary. Guest speakers included Dr Monty Jones, winner of the 2004 World Food Prize for his work on New Rice for Africa (NERICA), two previous directors of CTA, and some of the Centre's earliest partners and beneficiaries. You will find details of all these events in the *Annual Report*, as well as accounts of a host of other activities, including CTA's involvement in agricultural distance learning networks, progress made by CTA's revamped Brussels office and contacts with new EU member states. A warm welcome was extended to six new Pacific states in the ACP group. And CTA's Director for the past 5 years, Carl B. Greenidge, whose term of office ended in February 2005, made his goodbyes. In his Introduction to the *Annual Report*, Mr Greenidge acknowledges that some progress has been made in raising



awareness of CTA — a goal outlined in last year's report. But although the Centre's public image is sharper than it was, more still needs to be done to ensure recognition for the importance of CTA's work, and of agriculture in general. Being realistic, that is likely to remain an uphill struggle. As the outgoing Director remarks drily: "Agriculture is not one of the sexy subjects".

 CTA Annual Report 2004  
CTA, Wageningen, 2005. 116 pp.  
ISBN 92 9081 287 7  
CTA number 1238  
0 credit point  
Downloadable in sections or in full from  
[www.cta.int](http://www.cta.int)

### Africa and agricultural innovation

Africa's ability to respond to the many agricultural challenges facing it will depend largely on its capacity for innovation. That is the key message from Dr Monty Jones, author of the Special Paper in the *CTA Annual Report 2004*. Among areas needing urgent attention are sustainable land management, water control, market access, food supply and agricultural research and technology. All these pressing needs are set against a forbidding background of rapid population growth, the spread of poverty-related diseases, and challenges posed by climate change and globalisation. But Dr Jones, who is Executive Secretary of the Forum for Agricultural Research in Africa (FARA), is not one to sit and wring his hands, and this paper has the positive slant that one might expect from the man who invented a new variety of rice for the continent.

He looks at concrete initiatives, set up by FARA, as well as other institutions, to help Africa answer some of its challenges. Among them are programmes to give African farmers better access to agricultural information, and to new proven technologies, including his own NERICA. Among CTA initiatives highlighted in the paper are the *Knowledge for Development* and *Agritrade* web portals, the programme to analyse national agricultural science and technology systems (ASTI) in ACP countries and the Centre's involvement in BASIC (Building African Scientific and Institutional Capacity), a programme which aims to reinvigorate the agriculture sector in African further education.

*The Special Paper is also available, free-of-charge, from CTA, separately from the Annual Report. 14 pp. CTA number 1240. PDS subscribers please use your publication order forms*



# A new director for CTA



At the beginning of May, Dr Hansjörg Neun became CTA's fourth director, taking over from Carl B. Greenidge (see Viewpoint *Spore* 116). German-born Dr Neun has a degree in social and economic sciences and is the author of a thesis

on "transfers of technical cooperation development projects to developing countries".

With considerable field experience in Europe and Africa, Dr Neun has managed projects and major programmes for German and European technical development agencies. He is also skilled in negotiating with governments, donors and international institutions. In addition, he has a wide-ranging knowledge of rural development, food security and natural resource management issues.

Our readers will be pleased to hear that the new director also has hands-on experience of agriculture — while still very young he worked on his family's fruit and vegetable farm in Germany.

Before taking the helm at CTA, Dr Neun was employed as advisor in the Middle East department at Germany's Federal Ministry for Economic Cooperation and Development (BMZ).

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*Spore* Mailbox, CTA  
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[www.cta.int](http://www.cta.int)

- All other publications, indicated by an orange square, are available from the publishers listed, or through commercial booksellers.

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Stevenage  
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## Mailbox

The tone of this edition's Mailbox is refreshingly upbeat, with *Spore* readers who all have one thing in common — a firm belief in the importance of farming.

### Women farmers can triple their incomes

From Ethiopia, **Habtamu Yehualashet**, who works in the agriculture and rural development office of the Mena-Angetu district, writes to tell *Spore* about the agriculture-based development strategy launched by the government, and supported by international agencies and NGOs, to help solve the country's problem of chronic food insecurity. Such food shortages are mostly unnecessary, says Habtamu, given that Ethiopia has "sufficient natural resources, professionals, labour and a relatively stable political situation." The letter ends on an optimistic note with details of a project which is training women in horticultural crop production and post-harvest handling. After attending the 15-day course, most women managed to increase their annual income from US\$75 to between US\$250 and 300.

### And farmers could double their yams

More good news come from Nigeria, where **Dr Ndubisi Igwilu**, of the Institute of Agricultural Research and Development, is keen to pass on the promising results of trials to change the seasonal growth cycle of yams



(*Dioscorea* sp.). The team has succeeded in extending the growth cycle so that Nigerian farmers can grow not one, but two crops per year. "Yam is a rainy season crop because yam tubers sprout mainly in February in Nigeria," explains Dr Igwilu. "Recently, researchers have developed a technique for changing the seasonal growth cycle of yams from the rainy season to dry season cycle, so that the tubers can be made to sprout in September. When these tubers are planted at the end of the rains and the onset of the dry season in October/November, they grow and mature in May/June." After the 3-4 month dormancy period, the tubers sprout again in September, ready for another dry season cropping. "In other words", says Dr Igwilu, "once the seasonal growth cycle of yam is changed, it remains permanent. Nigeria can now grow two crops of yam in a year — the dry season crop and the rainy season crop."



Dr Randy Thaman is Professor of Pacific Islands Biogeography at the University of the South Pacific in Suva, Fiji Islands. He has long been involved in agriculture and rural development in the region and is a founding member of the Fiji National Food and Nutrition Committee (NFNC).

**B**iodiversity is *the* most important foundation for food security. This is particularly true in the isolated, resource-poor, small island developing states of the Pacific Islands. Food security will ultimately depend on the protection of the cultural and natural ecosystems and services, as well as the knowledge and materials needed to produce and process our food and drinks, for example our forests, reefs, rivers, agricultural systems, firewood and knowledge about farming, fishing, food preservation, processing and cooking, etc.

Food security, here, as elsewhere, depends on three sources: wild harvest, agricultural production, and trade. Islanders originally depended almost exclusively on the first two: wild food and water from our forests, non-forest land, rivers and seas, and plant and animal products from our agricultural systems.

In terms of wild harvest, Pacific Islanders eat wild yams, ferns, birds, bats, guavas, citrus fruits, tropical almonds, wild leafy greens, and an extremely wide variety of freshwater and marine foods. For example, in eastern Viti Levu, Fiji Islands, the people eat over 200 different types of finfish and over 70 different types of shellfish, crustaceans and marine invertebrates. Over half of these are sold to provide cash incomes and feed the growing urban population.

### A rich heritage

In terms of agricultural production, staple root crops include four taro species, five yam species, sweet potato, and cassava. Important tree crops include coconut, banana and plantain, breadfruit, pandanus, Tahitian chestnut and a wide range of fruit and nut trees.

Other locally grown foods include taro leaf spinach, hibiscus spinach, sugarcane and sugarcane inflorescence, corn and many other vegetables, beans and pulses and a wide range of spice and beverage plants. There are wild and locally-raised chickens, ducks, pigs, goats and cows to supply fresh lean meat, eggs and dairy products.

These local foods traditionally provided us with all the proteins, fats, carbohydrates, vitamins, minerals and other micronutri-

## Natural resources

# Biodiversity is the key to food security

**Loss of biodiversity has been identified as one of the main obstacles to sustainable development. In the remote Pacific region, it has a special resonance, posing a tangible threat to the health and livelihoods of island communities.**

ents, and the fibre and water needed for good health. They are low in salt, sugar and saturated fats. Most of these plants and animals have many different varieties or breeds. For example, in Fiji there are at least 100 named taro varieties, 7 cattle and 5 traditional pig breeds. In the atoll country of Kiribati, there are over 200 edible varieties of pandanus, a staple food plant that will produce during the severest droughts when no other plants can. This genetic diversity adds insurance to our food system, protecting our

some of these local foods are now rare or too expensive, or because people no longer know how to catch, produce or prepare them, or have even lost the taste for these foods. Unfortunately, given the purchasing power and low level of nutritional awareness of most of our people, much of the imported food they eat consists of nutritionally inferior products that are high in animal fat, sugar and salt and low in high-quality protein, vitamins and minerals, fibre and water. As a result, Pacific Islanders now have some of the highest and most rapidly increasing levels of diabetes, heart disease, stroke, obesity, dental disease and cancer.

*“Today, Pacific Islanders are increasingly dependent on trade and imported foods”*

### An irreplaceable loss

Sadly, many of the sources of our nutritious food plants and animals are now endangered. Our mangrove forests and coral reefs are dying or being destroyed. Many of the fish that were common in the past are now rare. Our coastal and inland forests are disappearing and our agricultural lands are being eroded. Many of the traditional varieties of taro, sugarcane, rice, breadfruit, coconut, pandanus and wild yam are dwindling, as are fruit and medicinal trees. Our traditional chicken, pig and goat breeds are disappearing.

Of at least equal concern is that the current generation often know few of the names of our fish, shellfish, crabs, wild and cultivated plants and cultivars. They don't know how to hunt, fish, farm, preserve, prepare or eat many of our traditional foods. Young farmers, who don't know the names of our fruit trees and medicinal plants, no longer protect or plant them. In short, because of our ignorance and the shortsightedness of our national planners, we are losing our biodiversity. It is our choice. The sustainable use and protection of island and marine biodiversity is vital for food security for all of our island people.

Email: [Thaman\\_r@usp.ac.fj](mailto:Thaman_r@usp.ac.fj)

food plants and animals against diseases and natural disasters, such as hurricanes and drought. Unfortunately, many of these have already disappeared or are disappearing because they have been replaced by new or imported varieties and breeds.

### Traditional knowledge

But perhaps most important is the great knowledge of our diverse cultures, through which we have traditionally known how to collect, hunt, fish, farm and care for wild and domestic plants and animals. Such knowledge includes beliefs, seasonal migrations, recipes, ways of preserving and preparing food, how to breastfeed and nurture babies, as well as the language and names associated with the plants and animals that supply our foods and drinks, and how they affect our health.

Today, Pacific Islanders are increasingly dependent on trade and imported foods. This is partly because they live in towns and

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