

# SPORE

The magazine  
for agricultural and  
rural development  
in ACP countries

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INTERVIEW  
Fabrice Larue,  
Fondation FARM  
project leader

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ZOONOSES

**Together  
in sickness  
and health**

BAOBAB

**Tree of life**

GENDER

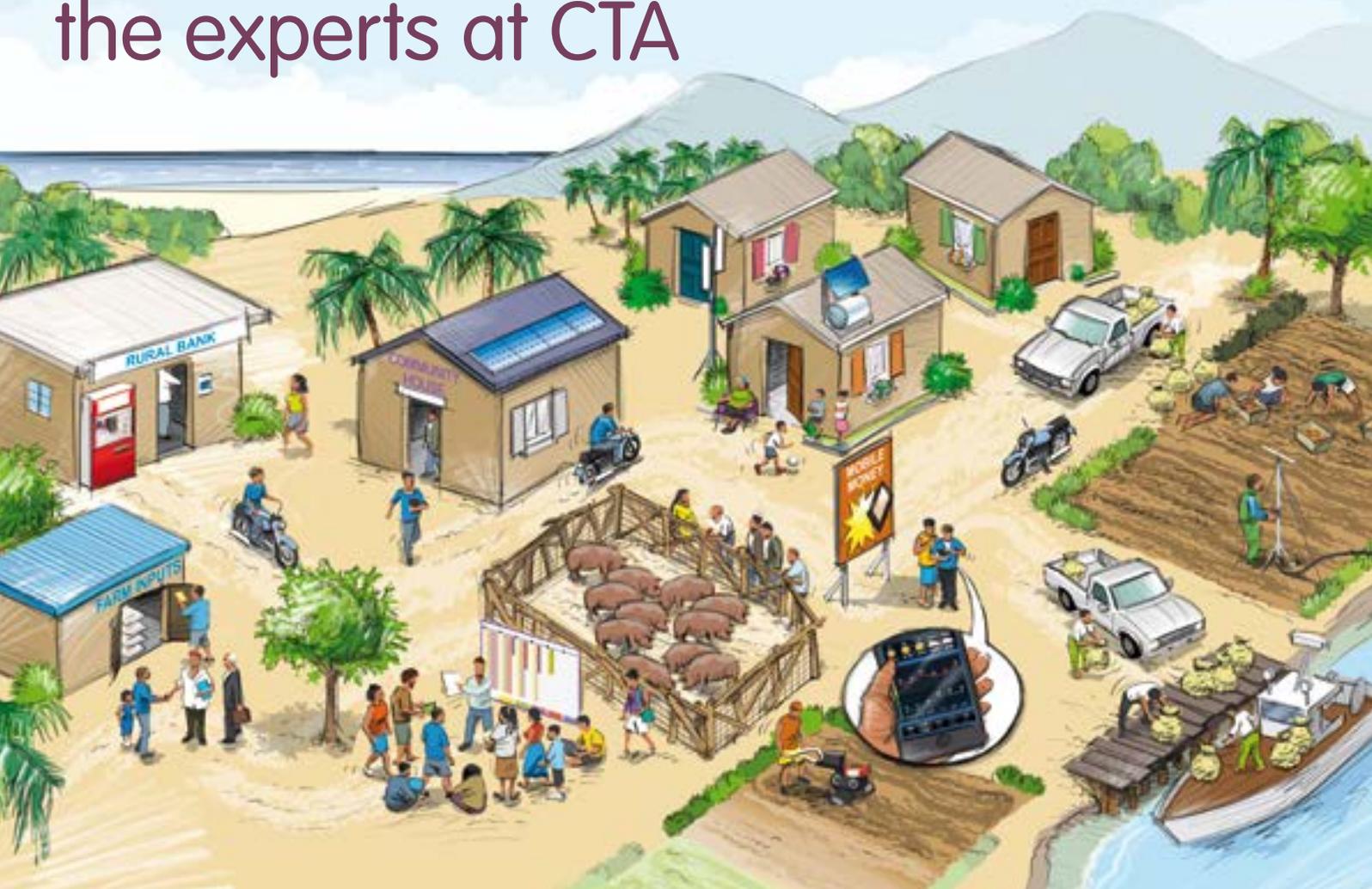
**Empowering  
women**



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INTERVIEW

# Editorial

A boon for climate-smart agriculture



The UN Secretary General's Climate Summit in New York in September 2014 provided an ideal forum for the launch of the Global Alliance for Climate-Smart Agriculture. The very slow progress on agriculture in the UN climate negotiations through the meetings of the Conference of the Parties prompted many stakeholders to initiate action on the ground. This is indeed welcome, as we get beyond the rhetoric and see what works where, and learn to scale up climate-smart agricultural practices.

The Alliance, which has an ambitious target of enabling 500 million farmers to practise climate-smart agriculture (CSA) by 2030, brings together governments, international organisations, farmers' groups, companies and NGOs. France, Ireland, Mexico, Niger, Nigeria, Norway, Spain, Tanzania, The Netherlands, Uruguay, USA and Vietnam have signed up to the Alliance. Major development partners, including CGIAR, DFID, the EU, FAO, USAID, WFP and the World Bank, are members.

To implement CSA successfully, three key elements are needed: knowledge of what works where; innovative financial mechanisms such as weather index insurance schemes; and policies that create an enabling environment for CSA implementation.

Partnerships, including those between the public and private sectors, are also key to the success of CSA. Already major new partnerships have been announced, including by the New Partnership for Africa's Development (NEPAD) and five major international NGOs.

CTA has joined the Alliance with a commitment to promote knowledge sharing on successful CSA practices across Africa, the Caribbean and the Pacific. Multinational companies, including MacDonald's and Walmart, have committed themselves to sourcing more of their supplies from climate-smart farms. However, not everyone has joined the movement yet, with sceptics holding back for the moment. But with time and more actions demonstrating the value of CSA on the ground, I am confident the critics will be convinced to join the Alliance.

Michael Hailu  
Director – CTA



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# Together in sickness and health

Headline-grabbing outbreaks bring global attention to the diseases we share with animals. But compartmentalising human and animal health is a habit we are still trying to break.

In mid-2014 Ebola fever erupted in West Africa, triggering a scramble by national and global health authorities to contain a fast-moving killer. Such zoonotic diseases, capable of passing between animals and humans, are an ever-present threat. The top 13 of these diseases cause 2.2 million human deaths and 2.4 billion cases of human illness every year and, by infecting one-seventh of livestock in developing countries, zoonoses destroy assets and productivity estimated at US\$9 billion per year.

Zoonoses account for 60% of human diseases, but traditional divisions between human, livestock and environmental health undermine their control, which has led to a call for greater intersectoral cooperation and sharing of services such as laboratories and monitoring. Spurred by summits on avian and pandemic influenza, the approach - known as One Health - is beginning to take hold, endorsed by FAO, the World Health Organization (WHO) and the World Organisation for Animal Health (OIE). At the regional level, the Caribbean Animal Health Network has taken up the One Health banner through an initiative supported by the European Union. But endorsing an approach is only the start; evidence suggests that medical, development and research sectors are largely carrying on as before.

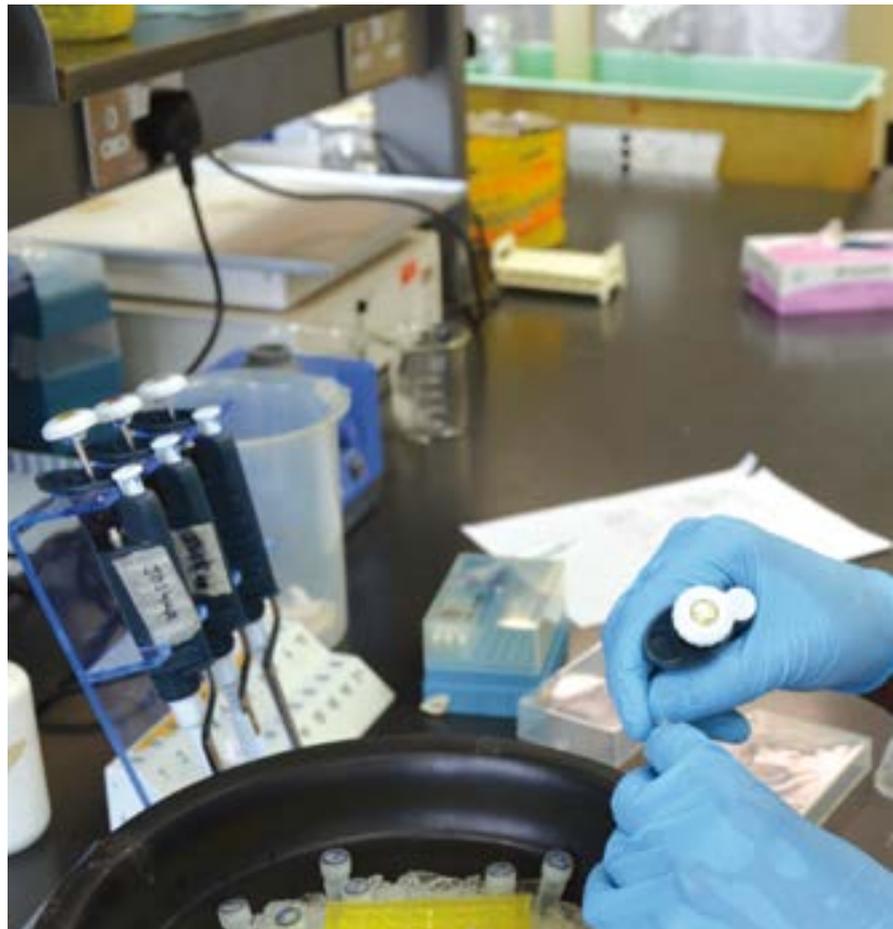
## One Health, many benefits

"It takes an average of 17 years for research evidence to reach clinical practice, and One Health only began in the 2000s," says Delia Grace, leader of the Food Safety and Zoonoses Program at the International Livestock Research Institute (ILRI). Yet the apparent lack of traction has frustrated ILRI and others that advocate an urgent rethinking of our approach to zoonoses. "There are psychological and institutional costs in doing things differently and it sometimes takes a crisis to stimulate uptake, and use of One Health has been high during crises and lower in peacetime," says Grace. Early work focused on the effectiveness of the One Health approach, but implementers suspect that focusing on economic benefits might get greater decision-maker buy-in. To advocate a more mainstream role for the movement, Grace's team authored the first global cost-benefit analysis, *The Business*

*Case for One Health*, with persuasive conclusions; a worldwide investment in One Health of US\$25 billion a year for 10 years could generate benefits worth at least US\$125 billion per year.

An example of a One Health approach developed by ILRI is a decision-support tool for managing Rift Valley fever (RVF) in the Horn of Africa, a disease shared between people, livestock and wild animals. ILRI's surveys found that RVF epidemics occurred only infrequently - sometimes

Joshua Amimo, from Kenya, is researching viral swine diseases in Kenya and Uganda at the BecA-ILRI Hub



only once every 10-20 years - so that staff who fought one outbreak were often not around to share their knowledge during the next one. After the last devastating outbreak in 2006-07, stakeholders, including the Kenya Department of Veterinary Services, the Ministry of Health and the Zoonotic Disease Unit, came together to pool their fresh experiences. The decision-support tool they created incorporates a sequence of events - such as weather patterns - that point towards an outbreak, along with a list of possible interventions at each stage. Importantly, the plans call for results of livestock monitoring to be provided to human health workers, and vice versa. So far, the tool has been incorporated into Kenya's RVF Contingency Plan only at the higher levels of the Department of Veterinary Services. Its real effectiveness will depend on how well it can be introduced to the veterinary and health officers who respond on the ground.

### Back to the village

For the average animal-owning household in a developing country, the big concerns are not pandemic disease but more common - and often neglected - diseases like brucellosis, anthrax, rabies and cysticercosis (tapeworm). Their toll on human and animal health is much higher than that of epidemics, and many - including FAO - are asking whether One Health can be realigned towards neglected diseases at the community level.

"As yet organisations like FAO, WHO and OIE have not been able to get One Health to people in the local community," says Roland Suluku, a veterinary scientist

## Voices of experience

Livestock-raising communities worldwide have developed systems to keep their animals healthy and sometimes such 'ethnoveterinary' concepts can lead to valuable control mechanisms for zoonoses. For example, women swine raisers in Nicaragua know that pigs can transfer *Trichinella* to humans. They palpate their pigs' tongues for signs of the parasite and destroy any animal with such signs. Being aware of such local knowledge can help in shaping and targeting information campaigns for zoonosis control and provide low-cost approaches to control.

at Njala University in Sierra Leone. Suluku has therefore taken on the challenge, setting up animal health clubs in schools to spread ideas for better animal, human and environmental health. The clubs have been a success, says Suluku, because students love to share as much as they love to learn. "They want to tell their parents and neighbours about what they have been told in school. Then they transmit the information to other villages through youth activities." Club initiatives have included vaccinating village dogs against rabies and constructing healthier shelters for goats to allow droppings to be swept away, preventing disease spread.

In controlling zoonotic diseases, "We care for the health of the animals, the people and the environment in which they live," says Suluku. "The animals are treated to prevent disease transfer. Farmers are supplied with inputs to have enough food to eat and feed their animals. They are provided clean drinking water and taught good waste management and disposal. Bylaws make provision for the animals to be in a shelter, their manure is collected and the owners use it to grow vegetables. This is what One Health looks like at the community level."

In one sense, this points back to the time before One Health. In the late 1990s the veterinarian Calvin Schwabe, long a proponent of cross-sector collaboration, pointed out that many local health practitioners in villages treat both humans and animals. Hence, he suggested combining animal and human health services at field level. However, when One Health emerged as a movement just a few years later, it began at the top, aiming to unite large-scale laboratory services and coordinate disease control at national or international level.

Recently, there have been signs of a return to the local scale. In 2013, in north-eastern Uganda FAO began work with villagers, district health officials and agriculture and wildlife authorities to find ways to support better health for pastoralists and their livestock. They found that brucellosis was sickening both people and cattle, and set out to treat the disease in its entirety. In combining the core insight of One Health with a local focus, their approach suggests that One Health could gain renewed traction among livestock-keeping communities, where human and animal health have always been most closely tied. ■



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T Paul Cox

## FOOD GARDEN

### Crops gain height

Unable to acquire more land, Robert Ngala, manager of the 'Urban set up hanging garden' in Ndu in the northwest of Cameroon, is growing his crops in wooden boxes. The boxes are placed on bamboo poles at a height of at least 1.40 m above the ground, which prevents goats from eating the vegetables and enlarges the crop area.

## CASSAVA

### A tuber to fight food insecurity

The cassava sector in the Congo is improving. To perpetuate the success of semi-industrial processing, the NGO, Locomotive du développement rural au Congo (Loder-Congo), with technical assistance from FAO and US\$320,000 of funding, is aiming to halve the manufacturing costs of *chikouang* (cassava dough) and *foufou* (cassava flour).

## NUTRITION AND PRODUCTION

### Programme improves school lunches and encourages local production

A new School Lunch programme is part of the Angolan government's efforts to fight poverty and bridge the gap between social classes. In the town of Camacupa, Bié Province, local authorities are encouraging the use of regional products in school meals, combining food quality with incentives for the local agricultural production of yams, fruit and potatoes.



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## GENETICS

### Sorghum DNA reveals sociological facts

A Franco-Kenyan research team has demonstrated the influence of ethno-linguistic diversity on the genetic patterns of sorghum in eastern Kenya.

It is difficult to distinguish the impacts of domestication by man from natural factors on the evolution of crop plants. And yet, a Franco-Kenyan research team has managed to do this for sorghum, one of the main cereals in Africa. So far, few studies have been able to underline this differentiation between man and nature regarding diversity in cultivated sorghum species in Africa.

To shed some light on this question, researchers became interested in a particular territory: the eastern slopes of Mount Kenya, which offers an ecologically homogeneous environment and brings together different ethnic groups (Chuka, Mbeere and Tharaka).

This approach enabled the researchers to compare the influence of the ethnic groups' different agricultural practices and traditional knowledge on the diversity of sorghum, a major cereal in this region.

DNA analysis of the 300 plants gathered has identified four genetic groups of sorghum, two of them corresponding to two introduced varieties. These are varieties genetically improved by NGOs or national agricultural extension services. One, which was introduced almost 15 years ago, seems to be more genetically diverse among the Chuka than the other ethnic groups. This suggests that the practices of the three communities leave their 'signature' in the genomes of sorghum populations. At the same time, the researchers inventoried and sampled the different varieties of sorghum grown by 130 Chuka, Mbeere and Tharaka households.

This multidisciplinary approach, which brought together anthropologists, geneticists and agronomists, shows the role of human societies in the geographic distribution and evolution of the genetic diversity of crop plants. ■

The genetic patterns of sorghum in eastern Kenya are linked to the agricultural practices of different ethnic groups

## ADAPTATION

### Boosting production to overcome drought

To help combat drought and reduce food imports in Jamaica, the Ministry of Agriculture and Fisheries is implementing measures to increase production within agro-parks (cluster of related agriculture production and agroprocessing businesses) and also increase greenhouse farming and aquaculture. In an interview with the *Jamaica Gleaner*, acting portfolio minister, Derrick Kellier, explained that agro-parks had additional land that could be put into production: "We are working assiduously with our farmers in the parks to ensure that every square inch of land is utilised." The Ministry is also conducting an audit of available but underutilised greenhouse capacity in the country.

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The number of states in Nigeria that have redemption centres, manned by agro-dealers, where farmers collect subsidised fertilisers,

seed and feed. The centres also offer extension services through mobile phone alerts.

## BOOSTING TRADE

### Rehabilitation of the Niangoloko cattle market

The livestock sector in West Africa is being boosted by the revitalisation of the cross-border cattle market of Niangoloko in Burkina Faso.

Rehabilitated by the West African Economic and Monetary Union (UEMOA) to support efforts of economic integration in the Liptako-Gourma Authority (ALG), the cross-border cattle market of Niangoloko in the southwest of Burkina Faso is being revitalised. The market is a resting area for livestock and a meeting point for many stakeholders coming from countries in the subregion - from Côte d'Ivoire, Mali and Niger - so has a major role to play in the development of the livestock-meat sector in West Africa.

Cross-border cattle markets are enhancing regional trade in West Africa



The cattle market is under the responsibility of the ALG. Created in 1970 in Ouagadougou, ALG brings together stakeholders from Burkina Faso, Mali and Niger, in order to promote and enhance the mineral, energy, water and agro-pastoral resources within a regional framework for integrated and harmonious development. The cattle and small ruminants that usually arrive exhausted in Niangoloko after their journey from Pouytenga, Fada N'Gourma or Ouahigouya, can find a safe place to rest and receive care before leaving for other markets.

Rehabilitation works of the cross-border market, amounting to CFA105 million (€159,600), helped the delineation of the 48 ha area dedicated to the market, restoration of the water system, the construction of a platform at the railway station and building of 20 isolation booths. This initiative completes a larger project launched in 1999 in Sahel by the Permanent Interstates Committee for Drought Control in the Sahel and the International Livestock Research Institute that was supposed to come to an end in 2004 and had as its goals the rehabilitation and development of improved markets in Bittou and

Niangoloko in Burkina Faso and Sikasso in Mali. It also completes another project launched between 1992 and 1998 (Central corridor) aiming to promote trade in the livestock-meat sector in Burkina Faso, Côte d'Ivoire, Mali and Niger. According to ALG representatives, and the regional livestock organization Confédération des fédérations nationales de la filière bétail et viande de l'Afrique de l'Ouest (COFENABVI), it's a win-win situation for all the countries benefiting from the cattle market. ■

## RUMINANTS

### When diversity leads to productivity

In Luma Tatesa in Ethiopia, livestock farmers are exploiting the genetic diversity in their herds of goats to improve productivity. Supported by International Livestock Research Institute researchers, animals are tagged to distinguish the difference between goats whose parentage is known and those of unknown pedigree, so the performance of future offspring can be monitored.

## ARTIFICIAL INSEMINATION

### Regional achievement

The Centre de multiplication des animaux performants (CMAP), a breeding centre in Loumbila in Burkina Faso, has become increasingly recognised in the sub-region. Specialising in artificial insemination of cows, the centre is undertaking almost 5,000 inseminations per year with an average success rate of 60%. Côte d'Ivoire, Niger and Togo are calling upon CMAP expertise.

## FISH DRYING

### Wire-mesh racks reduce losses

On the shore of Lake Tanganyika in Burundi, the introduction of wire-mesh drying racks suspended 1 m above the ground has halved the amount of fish lost to poor drying practices. With improved quality, fish prices have also doubled from US\$2.5/kg in 2013 to US\$6/kg in 2014. The number of driers at official fishing sites has risen from 500 to over 2,000.

## SURVEILLANCE

### Personnel trained on animal health

To ensure improved reporting of disease outbreaks, researchers from two Australian universities have trained 116 livestock owners and animal health specialists in Papua New Guinea (PNG) to recognise and record information on diseases. PNG has 600,000 smallholder farmers who rely on livestock for their livelihoods.

## FISH PONDS

### Women dig for a better future

In May 2013, senior female executives from the UK's food industry and women farmers from Kenya dug a large fish pond, the size of an Olympic swimming pool, as part of the 'Dig for Good' challenge. Twelve months after the pond was completed and stocked with fish, the Afula Women's Farmers' Group, who own and manage the pond, harvested 238 kg of tilapia, which was sold for 66,8200 Ksh (€5,800). The group has now decided to reinvest the money and stock an additional three ponds, providing them with a sustainable source of nutritious food and a long-term source of income that will help them provide their families with enough food, pay medical costs and send their children to school.

# FISHERIES AND LIVESTOCK

## KNOWLEDGE

### Analysing fisheries

Implemented 3 years ago and ending in July 2014, Burkina Faso's sustainable fishery and water management project led to real results. Led by Burkinabe researchers within the University of Natural Resources and Life Sciences, the project identified 142 fish species, of which half are under threat, and mapped the conservation status of threatened and endangered species.

## QUEEN BEES

### Reviving the honey industry

Over 130 mated queen bees from Australia have been taken to the Solomon Islands in an attempt to revive the country's honey industry. Honey production has recently slowed almost to a standstill, compared to 1999 when 500 farmers had over 2,000 hives. The queen bees are expected to significantly improve the quality and quantity of honey being produced.

## TUNA

### Fishing reinforced with 30 vessels

The Mozambican government is focused on controlling tuna fishing in its territorial waters, and wants its ports to be used as unloading points, with investments of €300 million for the acquisition of 30 new ships. This investment is coupled with the development of a modern fish market in the country's capital, Maputo.

## CLUSTER FARMING

### Improving tilapia farming in Fiji

By working together in cluster groups, tilapia farmers in Fiji have doubled their production in 2 years. Cluster groups allow farmers to improve economies of scale and increase their bargaining power for inputs, such as fish feed or hatchery seed supply, share knowledge and vital equipment like harvest nets, and coordinate better to regularly supply fish to markets.

## DIVERSIFICATION

### Karamoja pastoralists learn to farm

In Uganda's north-eastern semi-arid region of Karamoja, 13,200 pastoralist households are adopting crop farming as a form of livelihood.



Karamoja pastoralists attending an Agro Pastoral Field School

Karamoja pastoralists have adopted crop farming after attending new FAO Agro Pastoral Field Schools (APFS). Training topics have included land preparation, weed control, environmental conservation, entrepreneurship, livestock management, nutrition, health, hygiene, HIV/AIDS, micro credit schemes, postharvest handling and gender inclusivity. FAO has also provided start up inputs, such as seeds and irrigation kits.

"The season long trainings in APFS are location specific and depend on farming challenges existing in each area," explains technical advisor, Alastair Taylor. Pastoralists who previously relied solely on livestock are now growing onions, cabbages, carrots, maize, millet, beans and sorghum. Through crop diversification household nutrition has improved and with new skills in irrigation the farmers are growing vegetables during the dry season, which are sold in local markets. The agro-pastoral training focuses on achieving high crop yields with minimal use of chemicals, to limit environmental degradation. Energy-saving stoves have also been demonstrated to reduce the amount of fuel wood used by households. ■

## DAIRY

### New prize to support milk sector in Tanzania

The 2014 Dairy Value Chain Challenge Prize will support the Tanzania Dairy Board's effort to improve milk quality and increase consumption.

With the rising demand for dairy products in Eastern Africa, the dairy sector has great potential to improve livelihoods along the value chain. Yet challenges, including poor access to veterinary services, insufficient knowledge on animal breeding and milk handling, and weak market links, constrain growth of this industry. As winner of the 2014 prize,

Dr Mayasa Simba, from the Tanzania Dairy Board, has won a package of technical support to foster quality milk production in Tanzania with the goal of improving farmer incomes and public health.

Selected from more than 50 proposals to solve problems in the dairy sector, Simba's proposal focused on incentivising compliance with dairy regulations through a training and certification scheme for stakeholders in milk production. With 97% of milk production in Tanzania provided by the informal sector, the team is aiming to encourage milk producers to enter the formal market, increase consumer confidence and strengthen the national dairy sector.

Partners of the prize will provide training, consultation and networking to Dr Simba's team to help support the development of technical components of the project and build the capacity of the Dairy Board. "The overall goal of our intervention is to have a regulated, competitive, and healthy dairy industry," explains Simba. ■

## CARBON CREDITS

### Protecting Kakamega forest and sustaining livelihoods

*Msitu Tena* is the first carbon credit project of its kind in Kenya, running on state-owned forest for 40 years.

**M** *situ Tena*, meaning ‘Forest Again’, is a 490 ha carbon credit project in Iloro forest in Kakamega county. The Ksh 200 million (€1.7 million) project, expected to sequester 420,000 t of carbon dioxide from the atmosphere in 40 years, is a partnership between Muileshi Community Forest Association, ECO2 Librium (a local NGO responsible for trading the credits) and the Kenya Forest Service. Since 2010, 182 ha of forest have been planted with indigenous tree species. Local communities are directly involved and are paid for their labour, raising the seedlings, planting the trees and taking care of them until they mature. About 120 community members are employed at one time to rehabilitate the forest.

The trees must reach a certain height before they begin earning carbon credits, so until this can happen ECO2 Librium

is sourcing funding for other activities. Alternative means of livelihood are being provided, such as beekeeping and fish farming; snake rearing and the construction of camps for tourists are in the pipeline. “We plan to allocate a milk cooler for every 20 households,” explains Sylvester Imbwaga, secretary of the Muileshi Community Forest Association. “Already we have purchased fruit machines for producing juice from guavas and we are planning to start packaging and selling maize flour.” Energy saving stoves are also being installed in homes to reduce the amount of firewood that communities use for fuel.

About 6,000 households are benefitting from the project so far. People who plant trees and look after them are paid for their time, while women who make the energy saving stoves are paid for both making and installing them in homes. “I have managed to buy a dairy cow and pay school fees for my child who is almost about to complete secondary education,” explains Zakaria Lihanda Masheti, who directly depends on the forest for charcoal, animal grazing, fuel wood and collecting natural herbs. But increased income isn’t the only benefit: “We lost our herbs, our animals, our birds, our snakes and our bees because the forest was cleared in the 1960s,” explains Meshack Amalemba. “We are maintaining the forest not for ourselves but for our future generations.” ■

Presentation of carbon rights to the Muileshi Community Forest Association that will allow them to access carbon credits under the *Msitu Tena* project



## SATELLITES

### Agricultural micro-insurance available to all

Developing a low cost crop insurance that would reach every farmer in Africa was the ambition of EARS Earth Environment Monitoring when the company launched Food Early Solutions for Africa micro-insurance. This challenge was successfully met thanks to the climate data provided by Meteosat satellites.

## CONSERVATION

### Protecting sacred forests

Initiated in 2011, following a collaborative process, a project to integrate sacred forests into Benin’s protected areas has defined and delineated the sacred forests. At the same time, alternative forest exploitation activities have been launched such as botanical gardens, ecotourism, small livestock farms and cultural activities.

## SOLAR SALT

### An environmentally-friendly approach

Production of iodized salt in Guinea has found new life-saving opportunities through collaboration between the World Food Programme (WFP) and the farmer organisation, Fédération paysanne de Basse Guinée. WFP has already purchased 35 t for its school feeding programme.

## AGROFORESTRY

### Trees increase water supply

After learning about agroforestry and planting 4,000 trees on their farms, farmers in Melong, Cameroon, have planted over 2,000 trees around water catchment areas in a bid to protect and increase water supply in their area. “We have always suffered from water shortages but our water scarcity is now over,” explains farmer Tagni Pierre.

## SWEET POTATOES

### Enterprising small farmers

How is it possible to find an asexually propagated plant imported from Latin America among more than 1,000 sweet potato varieties in Papua New Guinea? By analysing a sample of 417 local varieties, the French research institute, Centre de coopération internationale en recherche agronomique pour le développement, concluded that small farmers have selected these varieties, demonstrating a remarkable adaptation to change.

## BANANA

### A natural ally to fight blindness

Researchers from the Queensland University of Technology have developed a beta-carotene (vitamin A) enriched banana to combat blindness. The aim is to provide these banana plants to growers in Uganda by 2020, after further human trials have been completed.

## NEMATODES

### Sustainable solutions

A scientific study conducted by the Europe-Africa-Caribbean-Pacific Liaison Committee on nematodes on vegetable crops in Senegal has helped to develop effective and environmental control strategies. These include a regime for monitoring nematode populations and methods of counting and identification nematodes on infested farms.

## ADAPTATION

### Wheat breeder wins World Food Prize

Wheat breeder Dr Sanjaya Rajaram has been selected as the 2014 World Food Prize Laureate for work to develop nutritious wheat types, resistant to rust diseases and adaptable to a vast array of climates. The majority of his research, which led to the release of over 480 varieties, was conducted at the International Maize and Wheat Improvement Center.

## EUCALYPTUS

### New source of biofuels

An international research project on eucalyptus genetics has found that they can be used to manufacture biofuels, potentially offering a new source of income for eucalyptus farmers across the world. The 5 year study by scientists from Brazil, South Africa and the US, successfully unravelled the genetic blueprint of the fast maturing *Eucalyptus grandis* tree. It also found that bacteria and yeast genes present in the trees can be used to manufacture biofuels on a large scale. "We can also breed trees that grow faster, have higher quality wood, use water more efficiently and will cope better with climate change," said project leader Professor Zander Myburg from the University of South Africa.



Women cultivating upland rice developed by the platform in partnership for research and training in Madagascar

## RICE

### Successful knowledge sharing

With support of a research and training partnership, a Madagascan research institute has developed upland rice varieties adapted to the Hautes Terres of Madagascar.

For 10 years, the French research institute Centre de coopération internationale en recherche agronomique pour le développement, the Madagascan research institute Centre national de recherche appliquée au développement rural (FOFIFA) and the University of Antananarivo have been implementing an innovative scientific partnership. The platform in partnership for research and training (DP) consists of co-developing research programmes, establishing collective management, sharing and pooling resources, and training young researchers.

Two DP are currently implemented in Madagascar: one on forests and biodiversity, and one on production systems and sustainability in the highlands (SPAD). The purpose of the forests and biodiversity DP is to study Madagascan forests and agroforests to help establish a scientific basis for the preservation and promotion of biodiversity and for the development of ecosystem services. The SPAD-DP focuses on the sustainability of highland farms, which addresses irrigated lowlands management, sustainability of rainfed rice-growing, interactions between agriculture and livestock, and innovation processes adapted to production systems. Within this framework, an upland rice variety has been developed.

In May 2013, FOFIFA officially handed over nine new rice varieties adapted to north-western, middle-eastern and south-western areas to the Madagascan Ministry of Agriculture. These more productive and efficient varieties have increased rice yields from 0.5 to 5 t/ha. They are resistant to disease, in particular to the rice yellow mottle virus, and to climate hazards (cold, drought, etc). ■

## MOBILE MONEY

### Agri-finance for farmers

Farmers in Eastern Africa are benefitting from an increase in the availability of different mobile money services.

In Tanzania and Uganda, 46,000 coffee and cotton farmers are being paid for their crops through the Smart Money mobile platform. Three cotton ginneries in Tanzania and four coffee companies in Uganda are using the platform for payments, halting thefts that were

prevalent when money was paid to farmers in person.

Since 2012, farmers in Uganda have also been able to save and borrow money, repay loans, make purchases and receive payments through an SMS service offered by not for profit organisation, Ensibuuko. Farmers apply for financial services, such as loans, by sending an SMS containing their name, transaction type, amount and unique PIN code. More recently, the organisation has expanded the services it offers to enable smallholder farmers registered with a cooperative to access farm inputs, market information and solar products. Their mobile platform also includes a rural advisory network of extension workers. Ensibuuko currently has 1,000 registered farmers using their online platform. ■

## TIME-HONOURED QUALITY

### Cabo Verdean coffee revitalised by exports to Europe and the US

Dutch and Cabo Verdean entrepreneurs combine efforts to save coffee from the island of Fogo.

In 2014, the Fogo Coffee Spirit Lda company, created by Dutch and Cabo Verdean entrepreneurs, will export 8 t of coffee produced on the island of Fogo to markets in Europe and the US. The commitment to boost the production and quality of the coffee

has succeeded, with exports in 2014 due to exceed previous volumes (always less than 2 t) by more than 6 t.

The increase in production stems from a project launched in recent years focusing on the renowned quality of Fogo's coffee to reverse a downward trend in production where consumption had been almost exclusively confined to the island's inhabitants.

The decline in Fogo's coffee, cultivated for more than 200 years, resulted from the abandonment of fields after the country's independence in 1975; these are now being replaced with new plants to preserve the one-of-a-kind features of this Arabica variety.

The creation of Fogo Coffee Spirit Lda was a turning point allowing the reputation of Fogo coffee (organic and non-organic), especially the Coffea Arabica L variety, to go beyond the country's borders and reach markets such as the US and Europe. ■

Right: The first coffee crop washed on the island of Fogo for Fogo Coffee Spirit Lda

## BUSINESS WOMAN

### Success with cashews

Minata Koné is a role model for other women in Burkina Faso: she founded the first private cashew processing company made up of completely national capital. Established in 2003 in Banfora, the company managed to conquer international markets and boost the cashew sector thanks to the ability of its founder to connect with people.

## HONEY

### Markets open for Ethiopian beekeepers

Honey processors in Ethiopia have trained 8,250 beekeepers to increase production and improve quality. The processors are also hoping to purchase new hives for the beekeepers that can hold 30 kg of honey, which the beekeepers only pay for after being paid for their honey. The country is estimated to have 1.4 million beekeepers rearing 8-10 million colonies.



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## MARKETS

### Southern Zambia gets milk collection centres

A non-profit Zambian company has partnered with dairy company, Parmalat Zambia, to establish four milk collection centres (MCCs) in southern Zambia. The project, which aims to support the growth of the smallholder dairy sector, is providing smallholder farmers with opportunities to do business with private sector companies and have improved access to markets. About 400 farmers have already benefited, selling milk at the MCCs valued at over €25,500. Training is also being provided, with the support of private veterinary operators, to help smallholder beef farmers improve their herd management practices and intensify their dairy husbandry.

These 6 pages were produced with contributions from: **L Adoma** (Solomon Islands), **E Aidasso** (Benin), **O Alawode** (Nigeria), **M Andriatiana** (Madagascar), **J Karuga** (Kenya), **M A Konte** (Senegal), **M Makoni** (South Africa), **A Matho** (Cameroon), **N Mendes** (Angola), **N Mutemweno** (Zambia), **E Ntungwe** (Cameroon), **A C Santos** (Cabo Verde), **P Sawa** (Kenya), **A Silva** (Mozambique), **T Tiemtoré** (Burkina Faso) and **M Waruru** (Kenya).



Fabrice Larue is leader of the Financing and Agricultural Value Chains project at Fondation FARM.

FABRICE LARUE

## A new age for African cooperatives

Agricultural cooperatives now have considerable leeway to set out their operational and governance strategies following publication of the Organisation for the Harmonisation of Business Law in Africa (OHADA) Uniform Act on Cooperatives.

***OHADA's 9th Uniform Act on Cooperatives has been in force since May 2011. Could you explain this new legislation and its benefits?***

This Act is designed to harmonise the national cooperative laws of OHADA member states by replacing inconsistent national and statutory rules. The cooperative statutes now have two legal tiers - community (OHADA Uniform Act) and local or private. This innovative law gives a choice between two legal forms of cooperative: simplified cooperatives (SCOOPS) and cooperatives with a board of directors (SCOOP-CA). The Uniform Act is also, to some extent, a framework law that gives private operators considerable freedom to set their own operating rules.

The first significant improvement is the simplification of procedures for legal recognition of cooperatives. The Uniform Act has boosted the appeal of the legal form of cooperatives by replacing the often tedious approval procedures with a more flexible registration approach.

The Act also provides concrete measures to promote the democratic organisation of cooperatives by withdrawing government involvement in their management and monitoring, while strengthening internal governance principles. For instance, administrators are limited in the number of mandates they can concurrently hold. Another key feature is that the new rules promote greater financial transparency, thus enhancing the credibility and creditworthiness of

cooperatives. Administrators are obliged, for example, to create mandatory financial reserves to cover operating and training expenditures. Audits of financial statements should also be strengthened.

Finally, the Uniform Act attaches great importance to inter-cooperation by allowing networking of cooperatives and their umbrella agencies under the subsidiarity principle.

***Where do we stand concerning the mandatory compliance of African cooperative statutes?***

Following a 2-year transitional period (up to May 2013) given to member states and cooperatives to meet the compliance requirements, the commendable aims of the Uniform Act seem to be showing their limitations since it is hardly being applied, or is even unknown. Some countries (Gabon and Togo) are currently registering cooperatives under the new OHADA legislation, but most other countries are somewhat behind, many of which have not even clearly designated a ministry to manage cooperative registrations. There is also a lag in setting up essential programmes for training state officials on the new legislation.

***How do the cooperatives perceive this new legislation and have they adopted it? Have they encountered any difficulties in applying the law?***

The new OHADA law on cooperatives has aroused concern among national

and regional farm unions. Some are critical because they were not adequately consulted when the law was drawn up, while others feel that this is just a way for governments to increase the tax burden. Initial issues concerned the agricultural community's understanding of the law and differences in its interpretation with government agents, who themselves had received little training on its application. For cooperatives able to meet the eligibility and operational criteria, the difficulty now lies in the fact that few countries have finalised their cooperative registration procedures. This new statute could nevertheless serve as a revitalisation tool if public policies - especially regarding training on financial and accounting management and marketing support - are intensified to support the economic development of agricultural organisations in the OHADA zone\*. Then they could take advantage of this new legal status, which the different stakeholders should deem as an asset in their favour and not as a tool for controlling farmers' organisations. ■

\* The OHADA zone encompasses 17 member states bound by a treaty, signed in October 1993, to promote the harmonisation of business law in Africa.

Anne Guillaume-Gentil

Over 50% of all economically active women in developing regions work in the agricultural sector, but the gender gap persists. It is therefore essential to mainstream gender in production enhancement policies, while also empowering women.

## GENDER

# Empowering women



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Wanjiru Kamau-Rutenberg:  
women's quest for leadership

18 | FIELD REPORT FROM BURKINA FASO  
Women owners –  
a fresh lease of life

**A**ster Wotango, chairwoman of the Aheba Women's Group in Ethiopia, has learned to save, enabling her to borrow money to buy four hens and earn income from the sale of eggs. This savings concept was introduced by Farm Africa through Village Savings and Lending Associations established in remote rural areas of the country. Around €100,000 has been saved and over 13,000 women are able to access credit for the first time. Other members of Wotango's group have borrowed money to set up similar small businesses to produce maize flour, spices, coffee, mangoes and local beer.

Women from the village of Peko-Misegese in Tanzania are obtaining fairer prices for their crops by communicating with potential buyers and obtaining market information via mobile phone. They have also created a twice-a-week market and built storehouses.

Further east, in Rwanda, Jeannette Maniraho joined the One Acre Fund programme and obtained a loan of fertiliser, an input that was otherwise hard to procure as the selling outlet was located a five hour walk away. The fertiliser was delivered on time and from the very first year she was able to harvest enough rice to feed her family, and have a surplus. The One Acre Fund has delivered seeds and fertiliser to over 100,000 farmers in Burundi and Rwanda.

Finally, since setting up her South Sea Orchids business in 1996, Aileen Burness has been supporting women in Fijian villages to help them earn a living in horticulture



Above: While their husbands tend livestock, the Koulibaly sisters update the accounts for a mill (located in the province of Thies, Senegal) they do not own



Left: Anne Wafula, Kenyan farmer and member of the One Acre Fund network

© One Acre Fund/H Tucker



- some 270 women have become flower growers or set up their own businesses. Burness' current mission is to train women on other Pacific islands.

These few examples illustrate how women manage to access productive resources, express their needs and be heard, placing them on an equal footing with men. Yet reducing the gender gap continues to be a challenge for most societies - developed or not - at several levels: work, income, democratic representation, education, etc. This issue is even more relevant in agriculture, a sector in which women's crucial role has been overlooked until recently, and where glaring inequalities prevail regarding access to resources, markets and services.

### An often invisible role

In 2010, on average, 42% of the global female workforce was employed in agriculture, rising to about 53% in developing regions. But disparities between regions (70% in Central Africa, 80% in Eastern Africa, 7.3% in Latin America, 67% in Oceania and 9.2% in Southern Africa) and countries (93% in Burkina Faso, 24% in Fiji, 50% in Ghana and 80% in the Solomon Islands) is marked. Moreover, the share of women in the agricultural workforce has increased in some countries due to conflicts, HIV/AIDS or migration.

Women are very active in the agricultural sector, often producing enough to meet most of their household food needs, especially in Africa (up to 90% according to the African Development Bank), but produce lower yields than men. In *The State of Food and Agriculture 2010-11*, FAO estimates this difference to be about 20-30%, but the gap may vary between countries, cultures, ages and ethnic groups. According to FAO, in Nigeria, the productivity of men and women is identical for maize, yam, cassava, vegetable and legume crops in Oya state, but women rice growers' yields are 66% lower than those of men in Osun state.

This difference in performance can primarily be explained by the fact that women have less access to productive resources. Moreover, they are helped by fewer labourers from the family, the immediate community and elsewhere. They use fewer inputs (fertiliser), have less access to technology and innovations (improved seeds), and to ►

## How can women's empowerment be measured?

"Women need empowerment, which amounts to giving them authority to negotiate, request and act," says CTA's Tarikua Woldetsadick. The Oxford Poverty and Human Development Initiative, in collaboration with the International Food Policy Research Institute and the United States Agency for International Development, sought to measure such empowerment by creating the Women's Empowerment in Agriculture Index. This composite index is designed to measure women's role and involvement in the agricultural sector. It takes five factors into account: decisions on agricultural production, access to productive resources, control of income use, leadership in the community and workload distribution. It also measures women's empowerment relative to men in their household. Pilot projects have been conducted in Bangladesh, Guatemala and Uganda.

This indicator - initially created to assess the impact of the US government's Feed the Future Initiative on women's empowerment - is a tool that can be implemented to identify and gain greater insight into factors requiring action in order to overcome barriers and constraints on women.

# DOSSIER

► credit, and men are often the landowners. Significant progress has been made regarding education, especially in girls' primary school enrolment, but disparities persist to the detriment of women farmers. Women also have less time for agricultural activities as they are responsible for gathering wood, water and caring for their children and home. Moreover, poor infrastructure, particularly transport, often limits women's access to markets.

If these inequalities were eliminated, agricultural production would increase by 2.5-4% and 100-150 million fewer people would be hungry. But beyond productivity and increased production, "If women were to have greater access to the resources they need - inputs, land, credit, etc. - each country would benefit by a 4% increase in gross national product," explains Tarikua Woldetsadick, who is in charge of CTA's gender strategy. "Why this increase? Studies have shown that women invest in their community, creating a chain of productivity. This includes immediate crop production on cultivated land, as well as investment in nutrition, health, better living conditions and education, thus boosting the economy."

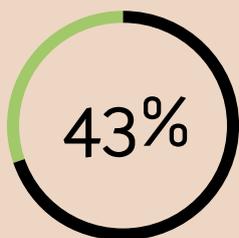
## Tailored policies

"A gender policy has to be introduced at all levels in agriculture. Women should be able to use and access the policies, financial and technological tools, and innovations," says Woldetsadick. However, just having

## Gender and climate change

The 20th anniversary of the adoption of the Beijing Declaration and Platform for Action by the World Conference on Women will be celebrated in 2015. Women and the environment is one of the 12 critical areas of concern within this framework of action for women's empowerment and the elimination of gender barriers. This is a highly topical issue in the current climate change setting, which particularly impacts women. Women are highly dependent on agriculture and represent a significant proportion of the poor population. They are especially vulnerable to climate change but should not be considered only as victims. They already have a leading role in natural resource management and conservation and have shown capacity to adapt. Women should be better represented in international and national bodies and the gender dimension should be taken into greater consideration in policymaking.

## WOMEN AND AGRICULTURAL LABOUR



43% of the agricultural labour force in developing countries are women

Latin America



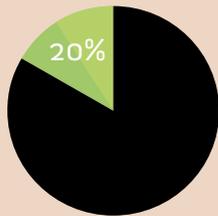
Africa and South and South-East Asia



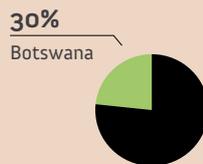
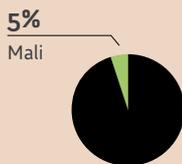
5% of women are recipients of agricultural extension services



7% of total agricultural investment in agriculture, forestry and fisheries benefits women



20% of landowners in developing countries are women

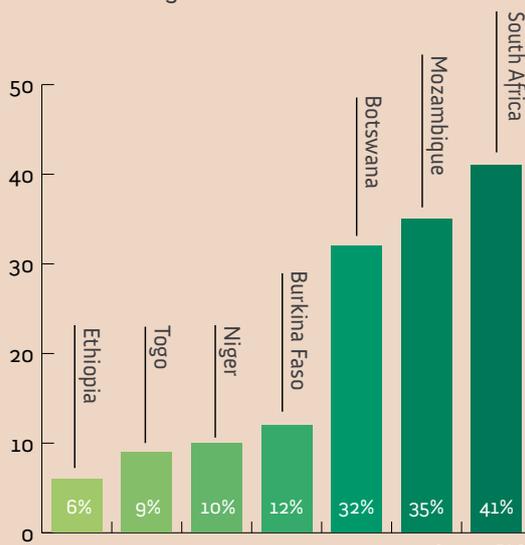


Smallholder farms headed by women are 1/2 to 2/3 smaller than farms managed by men



2/3 illiterate adults worldwide are women

## Percentage of women in research and higher education in agricultural sciences



access to these tools is not enough, according to a report by the World Bank and the international campaigning and advocacy organisation ONE, based on studies carried out in six African countries (Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda). If we compare the productivity of men and women on plots of similar size and setting, for instance, the differences range from 23% in Tanzania to 66% in Niger, illustrating the importance of cultural issues. Extension services in Ethiopia and Uganda are also more beneficial for men than for women in terms of boosting agricultural productivity, perhaps because these services are less tailored to women's needs. Moreover, just having a land title is not sufficient - land sold to women is often smaller and/or of poorer quality compared to that owned by men, and resources are also required to be able to develop the land.

ICT projects are essential for linking farmers to markets and must be tailored to women's real-life situations. CTA's small grants programme for Gender, Agriculture and Rural Development in the Information Society has dealt with this issue for a decade. Its recommendations include improving rural infrastructure by focusing on common public access facilities, developing community access telecentres, as well as translating content into local languages.

More generally, radio and video is an effective way to inform women since they do not often leave their villages and surroundings. Women's needs can be more effectively fulfilled and gender issues managed by taking women's multi-tasking schedules into account when planning extension service interventions, using diagrams for training, supplying fertilisers and seeds in small affordable batches and ensuring that the introduction of industrial technology will not lead to income loss for women. The capacities of women farmers in Malawi and Mozambique have, for instance, been enhanced through community theatre, which has helped them identify their specific needs, formulate solutions and transmit them to policymakers. Women Accessing Realigned Markets is a pilot project coordinated by the Food, Agriculture and Natural Resources Policy Analysis Network that aims to give women a means to influence policy making through theatre. This approach is deeply rooted in African traditions and serves as an advocacy tool to address women's needs and constraints.

Agricultural policies and donors still give insufficient weight to gender issues. Several studies have revealed that only 10% of official development assistance for agriculture takes gender equality into consideration. Moreover, ActionAid International and Peoples Solidaires feel that the policies of donors and institutions only take women into account in terms of being responsible for children's food security, nutrition and health, whereas they are also farmers.

There is now an opportunity to mainstream gender in policies due to the renewed interest in agriculture, the heightened recognition of the importance of nutrition and food quality, and of the role and constraints of women in this sector. Women's status in their families, homes and communities also requires enhancement since inequalities affecting women are essentially within the social sphere. ■

Anne Guillaume-Gentil

## Viewpoint

**Dr Wanjiru Kamau-Rutenberg** is the director of African Women in Agricultural Research and Development (AWARD). She is the founder and ex-director of Akili Dada, a leadership incubator that invests in high-achieving young women from under-resourced families.



### Women's quest for leadership

**You recently became director of AWARD, a career-development programme that builds the research and leadership skills of African women agricultural scientists. Why is AWARD needed?**

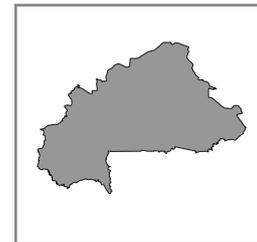
If Africa is to feed 2.4 billion people – double its current population – by 2050, it must increase its food production by 260%. To achieve this, the research outputs of agricultural scientists – both men and women – are urgently needed. However, one must take into account that women are hardly involved in research. Although those who produce, process, and market the majority of Africa's food are women, only one in four agricultural researchers are female. Even fewer – one in seven – of the leadership positions in African agricultural research institutions is held by a woman. AWARD is helping to bridge that gap by equipping top women scientists with the skills they need to obtain leadership positions where they can influence research agendas and policies.

**How can women scientists help food production? How does this differ from a male scientist's approach?**

Women play a decisive role in household food security, dietary diversity, and children's health. Women agricultural scientists are well positioned to understand farmers' needs from production to processing to marketing. They know the dynamics and limitations that farmers face in obtaining household food and economic security, and they are often more informed about relevant technologies that women farmers will readily adopt.

**Please share with us two or three good examples of agricultural research undertaken by AWARD scientists.**

There are so many. I think of Flower Ezekiel Msuya, a senior researcher at the University of Dar-es-Salaam. She is helping women seaweed farmers to process their harvests into value-added products such as soap, cosmetics, and even jam, thereby increasing their income. Dorcas Olubunmi Ibitoye, a principal research officer at Nigeria's National Horticultural Research Institute, is focused on finding efficient and affordable screening methods for identifying drought-resistant traits in cowpeas. And Mary Obadai of Ghana's Council for Scientific and Industrial Research is doing remarkable research on using agricultural waste for mushroom substrate. She has trained more than 3,000 farmers, predominantly women, in mushroom production.



# Women owners – a fresh lease of life

In Cassou, a rural community in central-western Burkina Faso, the NGO Groupe de recherche et d'action sur le foncier (GRAF) took up the challenge of implementing the land-tenure law adopted by the Burkinabe government in 2009 and increasing women's access to land – it paid off.

“Many husbands felt that women didn't need to own fields since everything their wives had actually belonged to them. So why should they want to be land owners?” says Mariam Ouédraogo, who now manages 2 ha of land donated by her husband. “Some husbands feared that once their wives became economically better off, they would leave them for someone else,” she continues.

In Burkina Faso, women account for 51.7% of the population and over half of them are subsistence farmers on land - often inherited - belonging to their husbands and which they could lose at any time. In 2009, the Burkinabe government passed a rural land tenure act (Law 034) designed to ensure equal access to rural land. In 2011, in line with the implementation of this law, GRAF - a network of people concerned

Left: Salamata Nignan's rice field in Cassou

Centre: GRAF promotes dialogue between women and men



about land issues - initiated a project to promote land security for women in the villages of Panassian and Nessian in the rural community of Cassou. Men in these villages voluntarily accepted to permanently hand over some land to women. This two-step transfer process first involved getting men's agreement in principle to take part in a procedure of securing their properties, followed by the surrender of their land.

### Independent and empowered

Has the transfer of lands changed women's livelihoods? "They are now more comfortable and responsible in their agricultural production activities, which they now carry out uninhibited. The increase in production also comes hand-in-hand with economic profits, to the benefit of the family," says Pama Bénao, federal agent and head of the rural land service at Cassou. "Our activities have enabled us to provide schooling for our children. Some of the women have even been able to buy motorcycles and bicycles," says Mariam Zallé.

Owning a piece of land empowers women and enables them to be independent. "Women are becoming more independent and are participating in covering some family expenses. I have my own crops and I'm able to help out my husband in paying the health and schooling costs," says Salamata Nignan, who now owns 3 ha of land on which she grows groundnut and rice. Access to land also opens up other opportunities, such as access to credit for income-generating activities. However, "while developing the land they've acquired, women also have to preserve the cohesion of their family and maintain a good relationship with their husbands," says Bénao.

The first step of the GRAF project was to create local structures, including a village land commission to manage land at the village level, a village land conciliation commission to settle local land disputes,

and a rural land service to draw up land titles within the community. Around 100 women have now become landowners in Panassian and Nessian, but not without some challenges. "Making women landowners on par with men in rural areas was no easy task, in fact nobody believed it possible at the outset," says Pierre Aimé Ouédraogo, executive secretary of GRAF. "The reluctance of husbands, associated with traditions, has emerged. But now the barriers have lifted and many women hold land deeds," says Bénao.

### Tomorrow?

GRAF has adopted an awareness and information based approach. Two women - Rose Marie Sanwidi, agricultural engineer, and Fatoumata Tall, legal expert - have established a dialogue between male landowners and women in both villages. To ease this process, GRAF has agreed to bear the cost of transferring land deeds for all landowners who agree to hand over or lend their land to women. A deed concerning around 1 ha of land costs FCFA 5,000 (€7.60) for staking out the land boundaries, FCFA 300 (€0.40) for the requested area (per ha of land involved), FCFA 1,000 (€1.50) for registration and FCFA 2,000 (€3) for stamp duties. "We identified 70 customary landowners. One hundred and sixty-four women were land beneficiaries following negotiations, i.e. 64 at Panassian and 100 at Niessan," explains Dramane Diasso, deputy mayor of Cassou.

GRAF has clearly succeeded in its quest to use the rural land law to ensure that women have secure access to land in the rural community of Cassou. But holding a land deed is not enough. GRAF considers that women also need support to be able to develop their land and make them more profitable. "This is the price to be paid to enhance women's livelihoods," says Diasso. ■

Tiego Tiemtoré

Right: In Cassou, 164 women now have secure access to land



# Tree of life

Regulatory approval for baobab in global markets is providing a promising new export market opportunity for African dryland farmers.

**B**aobab (*Adansonia*) is a genus of eight tree species, six native to Madagascar, one to mainland Africa and the other to Australia. In 2008, the fruit pulp from *Adansonia digitata* (the species native to Africa) was approved for sale as a Novel Food ingredient in the EU, and subsequently attained the equivalent status (Generally Regarded as Safe - GRAS) in the US. These regulatory approvals have paved the way for baobab fruit pulp to be marketed as a food and beverage ingredient in EU and US markets.

Baobab fruit is justifiably described as a 'superfruit' for its exceptional nutritional profile. In addition to high levels of vitamin C, calcium, potassium, magnesium and other vital vitamins and minerals, baobab pulp has been shown to play an important role in regulating the body's glycaemic response (important for managing blood sugar levels), as well as providing valuable pre-biotic dietary fibre.

The work to unlock the global market for baobab was undertaken by PhytoTrade Africa, a regional non-profit trade association of Southern African producers in the natural ingredients sector. In supporting its baobab-producing members in Malawi, Mozambique, South Africa and Zimbabwe, PhytoTrade helps them to deal with the regulatory hurdles for accessing global markets, and to ensure a reliable, high quality and sustainable supply chain. Significant baobab value chains also exist in Eastern and West Africa, in Kenya, Senegal, Sudan and Tanzania. The UK-based Natural Resources Institute estimates that with this new agreement, the fruit could be worth up to US\$1 billion a year for African producers, bringing jobs to 2.5 million households across baobab-producing countries.



© PhytoTrade Africa

## Sustainable support for communities

"We help communities and their leaders to recognise that their woodlands have commercial potential and can be a source of income. By doing so, we encourage them to protect the trees and to stop burning and clearing the forest," says Chris Dohse of TreeCrops Malawi, a member of PhytoTrade. Established in 2003, TreeCrops has trained over 800 baobab collectors in how to harvest baobab sustainably, how to handle and store it, as well as how to plan their land use. With a guaranteed market for their baobab, and the potential for harvesters to earn between €20 and €400 each depending on the volume they harvest, communities have a financial incentive to protect their forests. A percentage of TreeCrops' sales is also paid to the communities to help fund projects such as schools, clinics and forest regeneration.

Unlike other fruits, baobab fruit is naturally dry. To obtain 5 t of baobab powder (pulp), 50 t of fruit is required, with harvesters paid by weight. However, whilst harvesters can be trained to carefully extract the pulp and seeds for transporting to the processing depot, separating the pulp from the seeds requires sophisticated

machinery. Avoiding contamination during processing is also essential if the powder is to reach international export standards.

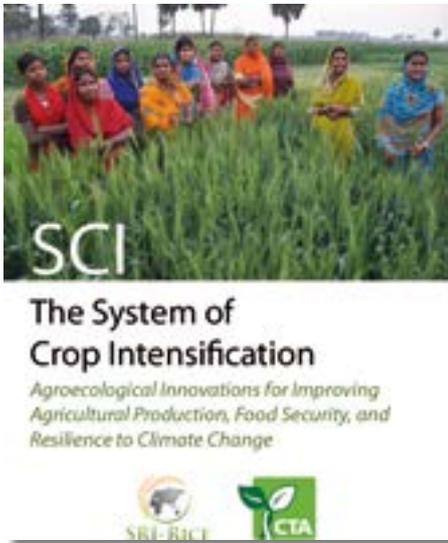
More than 800 producers, mostly women, are involved with sustainable harvesting of baobab fruit in Malawi

"Baobab provides a means for helping marginalised communities. It is their resource and these communities should benefit," says Henry Johnson of PhytoTrade. Increasing consumer demand for product traceability is driving the expansion of ethical supply chains, such as PhytoTrade, supporting trade in high quality, ethically-sourced products for export. The expanding market and increasing consumer recognition for baobab is also providing a niche market for branded products.

"A few years ago, baobab was relatively unknown and the powder would have only been found in specialist health food shops," continues Johnson, "but it is increasingly appearing in more mainstream products." Waitrose, a UK supermarket chain, for example now has a juice including baobab extract and the Eden project produces an array of products using baobab." ■

Susanna Thorp

# Agroecological innovation



## The System of Crop Intensification: Agroecological Innovations for Improving Agricultural Production, Food Security, and Resilience to Climate Change

By B Abraham, O O AdeOluwa, H Araya, et al.

CTA/SRI-Rice, 2014; 76 pp.

CTA no. 1795

10 credit points

Downloadable as PDF file from:

<http://tinyurl.com/njaod55>



In contrast to 'modern' agricultural systems that depend on increased use of inputs to achieve increased yield, the principles and practices illustrated in this excellent publication seem to offer a deal that's too good to be true: achieving higher output with less use of (or expenditure on) land, labour, capital and water. As such, they fit well with the current focus on 'sustainable intensification', as a means to

feed an expanding global population while having a lighter environmental footprint.

Drawing on the experiences from farmers' fields rather than research stations, the book features examples of intensification in a range of crops, including finger millet, wheat, maize, legumes and vegetables. The methods used draw heavily on principles established in the 1980s by those developing the System of Rice Intensification in Madagascar. They focus on maximising healthy root growth, by giving plants more space, careful application of water and generous soil enrichment with organic matter.

Taking advantage of natural biological processes in plants and soils to improve plant health and productivity, such 'agroecological' innovations depend on farmer knowledge more than financial investment. And while the authors would not advocate them as a panacea to global food production, as a means of increasing farmers' options in the face of climate change and land degradation they deserve careful consideration.

## Progress report



### Opportunities for Sustainable, Green and Inclusive Agricultural Value Chains in ACP Countries

By M J Westlake

CTA/FAO, 2014; 98 pp.

CTA no. 1794

20 credit points

Downloadable as PDF file

from: <http://tinyurl.com/pg6ujgh>

@ Drawing on case studies from 11 ACP countries, this tightly-written report examines private-sector-initiated value chains and their potential for small-scale farmers. It is not surprising that market forces are crucial in the formation and evolution of such chains, which invariably develop, notes the author, in order to exploit a market opportunity rather than as a means of finding a home for farm surpluses. Government policies and trade agreements are other key drivers, although use of fiscal incentives to encourage value chain development can be tricky, and lead to market distortions if not done carefully, the report warns.

Value chains featured in the report, chosen for their proven or potential sustainability, include pineapples, maize and rubber in West and Central Africa, sorghum, tea and milk in Eastern Africa, hot peppers, mangoes and citrus fruits in the Caribbean, and taro, papaya and vanilla in the Pacific. For decision-makers and donors looking for a concise, readable overview of how this important development in agricultural production and marketing is becoming a reality in ACP countries, look no further.

### ▼ ICTs

After exploring how ICTs could be used to accelerate the uptake of sustainable agriculture, this paper concludes that the rapid growth in mobile phone penetration in developing countries offers a significant opportunity to support a transformation in agricultural development and food systems. But without a cooperative and focused effort across different stakeholder groups, the potential for mobiles to empower sustainable agricultural development is unlikely to be maximised.

#### Is There a Role for Mobiles to Support Sustainable Agriculture in Africa?

By S Batchelor, N Scott, A Valverde, et al.

Oxfam, 2014; 9 pp.

ISBN 978-94-6252-022-6

Downloadable as PDF file from:

<http://tinyurl.com/kl7y6kf>

### ▼ Value chains

@ From cassava and poultry in Mozambique to sesame in Ethiopia and dairy in Kenya, this paper looks at how inclusive business models have been implemented and scaled up, based on 10 African case studies across a wide range of commodities. While each value chain is different, *Is Inclusive Business For You?* provides lessons learned, in terms of incentives and mechanisms for inclusiveness, success factors and obstacles, and opportunities for scaling up successful models.

#### Is Inclusive Business For You?

By M Sopov, Y Saavedra, Y Sertse, et al.

CTA/Wageningen UR, 2014; 148 pp.

CTA no. 1789

Downloadable as PDF file from:

<http://tinyurl.com/m7ynm4b>

### ▼ Cutting emissions

This report identifies greenhouse gas mitigation options in the agricultural sector that also support food security and improve climate resilience. One key recommendation addresses the need to shift consumption patterns by changing diets and reducing food loss and waste. This could potentially save nearly 3 gigatonnes of carbon dioxide equivalents per year and reduce agricultural emissions by 55% by 2030.

#### Strategies for Mitigating Climate Change in Agriculture

By A Dickie, C Streck, S Roe, et al.

Climate Focus and California Environmental Associates, 2014; 87 pp.

Downloadable as PDF file from:

<http://tinyurl.com/l3unruk>

## Niche exports



**Developing Sustainable, Green and Inclusive Agricultural Value Chains in the Caribbean and Pacific Islands**

By M J Westlake  
CTA/FAO, 2014; 136 pp.  
CTA no. 1790  
20 credit points

Downloadable as PDF file  
from: <http://tinyurl.com/pknykej>

 **@** A 'sister' publication to the ACP-wide report (page 21), this report offers more detail on the Caribbean and Pacific Island value chains, and in doing so, provides some interesting insights. Nearly all the examples come from small island states, including Fiji, Haiti, Jamaica and Vanuatu. In each case, the value chain has taken advantage of the unique agro-climatic, physical and cultural characteristics of the island to successfully exploit a niche export market, whether it be for organic vanilla, hot pepper mash, chocolate or another product.

The case studies describe the various stages of production, processing and marketing within the chain, and steps made to include small-scale growers and introduce green practices and organisational systems. Once again, market forces are seen to be decisive in driving sustainability and environmental responsibility, with the private sector companies aware of the need to protect the resource base they depend on. A short chapter comparing the Caribbean and Pacific examples and drawing out implications ends the report.

### ▼ Sustaining livelihoods

Marine ecosystems support a diversity of living resources that sustain the livelihoods of millions of people, but world fish stocks are running dangerously low. This paper states that fisheries must be central to the post-2015 development agenda and highlights issues that need to be addressed. Restoring fish stocks, improving fisheries statistics, mainstreaming fisheries in national development plans, understanding climate change impacts, eliminating barriers to trade, and clearly defining use rights of coastal communities are all highlighted.

**Fisheries and the Post-2015 Development Agenda**

By E Y Mohammed  
IIED, 2014; 4 pp.

Downloadable as PDF file from:  
<http://tinyurl.com/m5cpw7j>

## Practical guide



**Improving Lowland Rice Cultivation: Useful Management Practices for Smallholders in Tropical Africa**

By B Meertens & M de Vries  
CTA/Agromisa, 2014; 92 pp.  
CTA no. 1785  
5 credit points

Downloadable as PDF file  
from: <http://tinyurl.com/oomf1np>

 **@** Up to now, most information on lowland rice cultivation has, perhaps not surprisingly, drawn from the experience of Asian countries. This publication - number 51 in CTA's series of practical 'Agrodok' guides - will therefore be strongly welcomed by rice farmers and their advisers in Africa, as it draws on the authors' experiences of rice research and development in Tanzania, Togo and the Sahel. It includes developments such as the New Rice for Africa varieties and the System for Rice Intensification developed in Madagascar.

The guide begins with a description of the rice plant and its growth, and highlights the benefits of improved water control for African rice farming. All the important farming operations are described, including land preparation, water and nutrient management, weed and pest control, harvesting and postharvest operations, with helpful illustrations where necessary. The guide ends with a section on economics and marketing, and for those of us unfamiliar with terms such as 'panicle', 'tillering' and 'lodging', there is also a very useful glossary.

### ▼ Investments

This latest report by the Montpellier Panel, a group of European and African experts, argues that investments in rural and food sector entrepreneurship, particularly amongst Africa's growing youth population, can do more than achieve sustainable food and nutrition security for the continent – they can create jobs, wealth and robust livelihoods. Ten recommendations are provided, including the need for vocational and business management training and the provision of adequate and affordable financing.

**Small and Growing: Entrepreneurship in African Agriculture**

By Agriculture for Impact  
Agriculture for Impact, 2014; 28 pp.

Downloadable as PDF file from:  
<http://tinyurl.com/pata7nz>

## Rewarding rodents



**Backyard Grasscutter Keeping**

By A Vink  
CTA/Agromisa, 2014; 102 pp.  
CTA no. 1787  
5 credit points

Downloadable as PDF file  
from: <http://tinyurl.com/pqzml37>

 **@** The greater grasscutter, Africa's second largest rodent after the porcupine, has been extensively hunted for its tasty meat. As wild populations have declined, an increasing number of farmers have begun to rear the rodents for home consumption or sale. Clean, generally disease-free and thriving on grasses that can often be harvested at little cost, grasscutters have acquired a reputation as a means to make quick money. But, while keeping them can be quite profitable, it requires good preparation, care and commitment, say the authors of this new Agrodok manual. Initial investments for the would-be grasscutter farmer are not inconsiderable, notably the cost of pens or cages and a breeding stock of one male and four to five females. Grasscutters are not highly productive in terms of breeding, producing on average between one and two litters of three to four young each year. Farmers will need to wait for at least a year before they can begin to earn something back on their investment. For those ready and able to accept the challenge, however, this practical guide to their production is highly recommended.

### ▼ Sustainability

Forests and the services they provide are key to sustainable development and human wellbeing; the ecosystem service value of tropical forests has been valued at US\$6,120 per ha per year. This report describes the many benefits of forests and outlines the current status and future potential of REDD+. It summarises the elements necessary for integrating REDD+ into a 'green economy' and for providing policymakers with innovative ideas to support economic development while enhancing forest cover.

**Building Natural Capital: How REDD+ Can Support a Green Economy**

By UNEP  
UNEP, 2014; 87 pp.  
ISBN 978-92-8073-352-5

Downloadable as PDF file from:  
<http://tinyurl.com/00y53v2>

## Research for development



### Water Scarcity, Livelihoods and Food Security: Research and Innovation for Development

By L W Harrington & M J Fisher  
Routledge, 2014; 246 pp.  
ISBN 978-04-1572-847-8  
£29.99 • €38  
Routledge, 130 Milton Park, Abingdon  
OX14 4SB, UK  
[www.routledge.com](http://www.routledge.com)

■ The primary goal of much research is academic recognition and advancement, achieved through publication in peer-reviewed journals. Even for those working in fields such as water scarcity and food security, achieving development outcomes on the ground has often been a secondary consideration. In contrast, this review of the 12-year CGIAR Challenge Program on Water and Food (CPWF) charts an evolution through which research became increasingly focussed on improving people's lives and livelihoods.

The book synthesises experiences from 120 CPWF projects working in 10 river basins in the developing world, including the Limpopo, Niger, Nile and Volta. It shows the role of research in bringing about changes in knowledge, behaviour, attitudes and skills among local communities, and how development challenges were addressed through technical, policy and institutional innovations. Examples include improving the safety (and legality) of wastewater use for urban vegetable production in Accra, and corralling of livestock to reverse desertification and reservoir siltation in Uganda's cattle-corridor.

### ▼ Adaptation

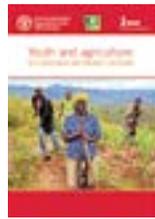
To show the diversity of potential climate-smart systems across different regions and agricultural systems, this book showcases 10 examples from Africa, Asia and Latin America. In Kenya and Tanzania, for example, FAO worked with farmers to develop a menu of potentially suitable practices – including construction of terraces to conserve soil and water – that could be easily integrated into their farming systems. Urea deep placement and livestock waste management are also covered.

#### FAO Success Stories on Climate-Smart Agriculture

By FAO  
FAO, 2014; 28 pp.

Downloadable as PDF file from:  
<http://tinyurl.com/n993xsx>

## Young people



### Youth and Agriculture: Key Challenges and Concrete Solutions

By FAO/CTA/IFAD  
FAO, 2014; 129 pp.  
ISBN 978-92-5108-475-5  
US\$20 • €15  
FAO Publications  
Viale delle Terme di Caracalla  
00153 Rome, Italy  
[www.fao.org/publications](http://www.fao.org/publications)

Downloadable as PDF file from:  
<http://tinyurl.com/mkps39f>

■ Whatever agricultural model we choose, meeting the food needs of our expanding population may stand or fall on the willingness of young people to get involved. But, as rural to urban migration by the world's young people continues apace, is there any hope that a re-engagement between youth and agriculture can be achieved? Those looking for answers, and a spark of optimism, may find what they need in this publication.

Based on a large number of short, summarised case studies, the report focuses on six principal challenges facing young people which currently deter them from pursuing agricultural careers. These include their access to knowledge and information, to land and financial services, to green jobs and to markets, plus their difficulties in engaging with policy processes. For each challenge, the case studies offer examples and answers of how it might be met, from rebranding agriculture in schools (in St Lucia and Uganda), to crowd-funding for a goat dairy in Grenada. Lessons learned from the studies are helpfully summarised at the end of each chapter.

### ▼ Sustainable farming

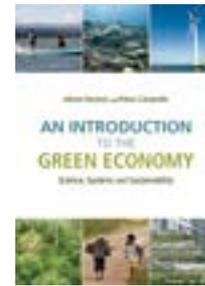
With a growing body of anecdotal evidence highlighting the environmental and social benefits of agroecological farming, these practices have begun to be promoted by those seeking more sustainable food production systems. This paper looks at the benefits and challenges of agroecological practices, how they compare with more input-intensive, large-scale farming, and what needs to be done to mainstream agroecology in agricultural policies and practices.

#### Agroecology: What it is and What it Has to Offer

By L Silici  
IIED, 2014; 28 pp.  
ISBN 978-17-8431-065-3

Downloadable as PDF file from:  
<http://tinyurl.com/omth03>

## Masters textbook



### An Introduction to the Green Economy: Science, Systems and Sustainability

By A C Newton & E Cantarello  
Routledge, 2014; 382 pp.  
ISBN 978-04-1571-161-6  
£32.99 • €42  
For Routledge's address, see left column

■ The concept of a 'green economy' first rose to prominence following the financial crisis of 2007-2008, when rising food and fuel prices and widespread business failure combined with increasing concerns about the impact of climate change on human livelihoods. While definitions of a green economy vary, they generally include being low-carbon, resource efficient and socially inclusive, creating a better world for all within the ecological limits of the planet.

This introductory textbook is based on a new Green Economy MSc course offered (entirely through distance learning) by Bournemouth University in the UK. It aims to explore, and promote reflection on a large number of key issues, including what the green economy actually entails, how it should be developed and what its impacts might be. In so doing, it allows students to consider whether the concept of a green economy, which the authors believe is one of the most exciting ideas of our times, genuinely does offer a 'win-win' solution to both environmental and economic problems. Essential reading for would-be green economists.

### ▼ Land, fisheries and forests

Africa is a rich continent, but this Africa Progress Panel report states that to sustain growth that improves the lives of all Africans, the continent needs an economic transformation that taps into its fertile land, extensive fisheries and forests, and the energy and ingenuity of its people. The report describes what such a transformation would look like, the obstacles that would need to be overcome, and how African governments and their international partners can cooperate to remove those obstacles.

#### Financing Africa's Green and Blue Revolutions

By Africa Progress Panel  
Africa Progress Panel, 2014; 186 pp.  
ISBN 978-29-7008-214-9

Downloadable as PDF file from:  
<http://tinyurl.com/ld7y8zm>

## Enabling change



### State of Food Insecurity in the World 2014

By FAO  
FAO, 2014; 57 pp.  
ISBN 978-92-5108-475-5  
US\$36 • €28  
For FAO Publications' address, see p23

Downloadable as PDF file from:  
<http://tinyurl.com/l6b26mm>

■ In 1990-92, roughly one in three people in sub-Saharan Africa were undernourished. In 2012-14, that number was found to be one in four - an improvement, albeit a less dramatic one that has been achieved in most other regions. This report does more, however, than simply chart regional progress towards achieving the Millennium Development Goal on hunger. Based on a series of seven country case studies (including Haiti, Madagascar and Malawi), it also derives important lessons and recommendations for those lagging behind in achieving their food security goals.

Key to those lessons is that hunger, malnutrition and food insecurity are complex problems that cannot be solved by a single stakeholder or sector. Multiple actors at local, national and regional levels must play their part, and in doing so, must be supported - and given incentives - by an 'enabling environment'. The report sets out five key dimensions to creating such an environment, including comprehensive policies and investment programmes, evidence-based decision-making and approaches that increase livelihood resilience.

### ▼ Data

Forests, trees on farms and agroforestry systems play a crucial role in the livelihoods of rural people and have the potential to contribute to sustainable development. Clear evidence of this is required to inform forest policies and ensure that forests are recognised in the post-2015 development agenda. This edition of FAO's annual *State of the World's Forests* analyses data on forests' contributions to people livelihoods, food, health, shelter and energy needs and suggests how policies might be improved to enhance socioeconomic benefits from forests.

### State of the World's Forests 2014

By FAO  
FAO, 2014; 133 pp.  
ISBN 978-92-5108-269-0

Downloadable as PDF file from:  
<http://tinyurl.com/nvseac4>

## Information mapping



### Atlas of African Agriculture Research and Development

Edited by K Sebastian  
IFPRI, 2014; 109 pp.  
International Food Policy Research Institute  
2033 K Street, NW  
Washington, DC 20006-1002, USA

Downloadable as PDF file from:  
<http://tinyurl.com/mc8vzeh>

■ While most atlases contain a series of maps of different countries and regions, this publication from the International Food Policy Research Institute takes a different approach. All the maps show the same area - the African continent - but each uses colour and shading to present different information. As a form of data visualisation it is very successful, providing a quick, accessible snapshot of agricultural development across the continent.

Information presented in the maps spans a wide range of topics, including public investment in agricultural research, land productivity in staple crops, soil fertility and use of irrigation. An important sub-group of maps show current drivers of agricultural change, such as changing lengths of growing seasons and stem rust vulnerability. And most importantly, each map or group of maps is preceded by a clearly written summary of 'what the maps are telling us' and 'why this is important'. The atlas is likely to be of use and interest, both to those working in agricultural research and development, and those tasked with enabling, funding and directing such work.

### ▼ Local organisations

The participation of local stakeholders helps to ensure that integrated conservation and development efforts are more equitable, relevant to rural communities and sustainable. But activities to create the conditions in which they can grow, prosper and have impact are limited. Using the profiles of five local organisations working to link biodiversity conservation and local development in protected areas in Eastern Africa, this report reveals key lessons about the factors that have supported or constrained their effectiveness.

### Getting it Together

By O Hughes, D Roe, D Thomas, et al.  
IIED, 2014; 115 pp.  
ISBN 978-18-4369-987-3

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<http://tinyurl.com/nl5tafb>

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## 4 QUESTIONS FOR JUAN CHEAZ

Senior Programme Coordinator, Agricultural Policy and Value Chains



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### 1 *What were the main outcomes of the 2014 Caribbean Week of Agriculture (CWA)?*

One of the big achievements of CWA 2014 was the very strong collaboration between the organisers, which marked a new way of working that will make future events more focussed and effective. The Government of Suriname, through its Ministry of Agriculture, Animal Husbandry and Fisheries, the Caribbean Community Secretariat, and the member institutions of the CWA Alliance, worked hand in hand to make it a success, which was underlined by the outstanding organisation of the host country.

In addition, the major stakeholders in agriculture and related sectors had the opportunity to come closer to a shared vision for the repositioning of agriculture in the Caribbean. An overarching achievement

was the collective acknowledgment of 'family farming' as the economic activity on which hundreds of thousands of livelihoods depend, as well as a major activity for the protection of the natural environment in the face of climate change.

Three workshops on value chain development, climate change, and policy and strategy for development spearheaded CWA. Eleven technical seminars on other important issues and ministerial-level meetings brought the necessary additional ingredients for a successful event. For each workshop clear technical, organisational and policy recommendations were agreed to enhance on the ground interventions, and to create the enabling environment for greater impact and sustainability.

### 2 *How was CTA involved?*

CTA technically and financially supported CWA by sponsoring or facilitating the participation of its own staff and over 120 persons from the Caribbean and some also from the Pacific. We ensured both regional and global visibility of CWA by supporting a team of 10 professional journalists from the Caribbean and the Pacific. The media coverage was a way to inform stakeholders and people all over the world about what was happening at CWA.

CTA's contribution also brought Caribbean youth and ICTs centre-stage at CWA 2014. The three finalists of the Science and Agriculture Film and Video Competition were recognised and awarded. The video *The Fruit of Life*, from Saint Lucia was the top winner. Also, the eight national finalists of the second edition of the AgriHack Talent Competition Caribbean were brought to CWA to work intensively on their applications and publicly showcase them. The team from Jamaica, Node420 was awarded the top prize, including 6 month incubation support for their application on real-time weather analysis and automatic yield forecasts for farmers, also called 'Node420'.

Two ICT-related seminars culminated the fourth day of CWA, one on sustaining and scaling the integration of ICTs for a 'Stronger Caribbean Agriculture', and another on 'Participatory 3 Dimensional Modelling', aimed at enabling grassroots organisations to geo-reference and spatially document their landscape knowledge.

### 3 *Saint Lucia will most likely organise the next CWA.*

*What may be the main issues for 2015 and what kind of benefits can CWA partners expect from this event?*

Indeed, Saint Lucia has expressed its intention to host the next CWA, in 2015. The main issue for this next event is not yet decided. However, I can say there was a general call for focusing more on best practises on the ground. It is important to show what progress has been made from one year to the other, to follow up on what is really working, and see how can it be best supported and scaled up. CWA partners can expect to gain better knowledge, shared experiences, and key relationships to help improve the national or regional efforts they are driving.

### 4 *A Pacific Week of Agriculture will be organised in 2015. Is it a sign of a new dialogue between the Caribbean and the Pacific?*

Yes - most definitely. In 2014, a delegation of the Secretariat of the Pacific Community, and Honourable Minister of Agriculture, Livestock, Forestry, Fisheries and Bio-security, Mr David Butulso Tosul from the Republic of Vanuatu attended CWA. The Minister participated actively at CWA and extra meetings. He announced the first Pacific Week of Agriculture in 2015 to be held in Vanuatu. The Caribbean and the Pacific have so many things in common that I am confident they will share the experience and all necessary knowledge to organise a successful event.

# Coming up in the next issue

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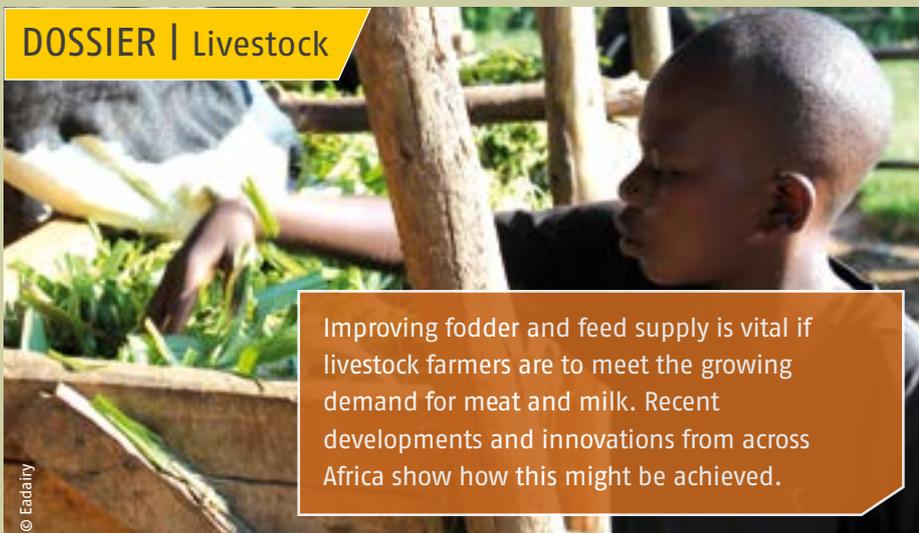
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