

Technical Centre for Agricultural and Rural Cooperation (ACP-EC)

The Technical Centre for Agricultural and Rural Cooperation (CTA) was established in 1983 under the Lomé Convention between the ACP (African, Caribbean and Pacific) Group of States and the European Union Member States. Since 2000, it has operated within the framework of the ACP-EC Cotonou Agreement.

CTA's tasks are to develop and provide services that improve access to information for agricultural and rural development, and to strengthen the capacity of ACP countries to produce, acquire, exchange and utilise information in this area. CTA's programmes are organised around four principal themes: developing information management and partnership strategies needed for policy formulation and implementation; promoting contact and exchange of experience; providing ACP partners with information on demand; and strengthening their information and communication capacities.

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Information Revolutions



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How information and communication management
is changing the **LIVES** of rural people

Paul Mundy and Jacques Sultan

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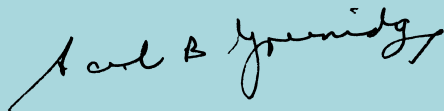
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FOREWORD

ACCESSING INFORMATION coming from physically remote rural locations in the developing world was, until recently, difficult and costly; and it was equally difficult to deliver information to the farmers, extension workers and researchers who live and work in such places. The situation was often little better in the major cities, and to communicate between developing countries required the patience of a saint. Telex services were tedious, telephones were unreliable, publications were costly, mail services were deteriorating and radio services were few and of poor quality. Frustratingly, although there had been an 'information explosion' elsewhere in the world, that phenomenon seemed inaccessible to the developing countries. There was little expectation that the information needs of the developing world could be easily met, let alone those of the agricultural sector. For a long time, therefore, the global store of agricultural knowledge seemed likely to remain just as inaccessible as before.

More recently, the virtual explosion in new information services, and a range of personal gadgets allowing point-to-point communications, have touched the developing world. Cheaper services and new gadgets and products have spawned a number of new opportunities, particularly as governments have taken steps or been prevailed upon to permit less regulated and more open societies. In the wake of the changes, however, enterprising individuals have devised various ways of capitalising on the income-earning opportunities available. Information and communication developments have begun to touch rural populations just as extensively as they had earlier touched the urban communities. The entrepreneurs and enterprising individuals engaged in this exercise paved the way for the effective application of newer and more exciting information and communication technologies to the agricultural and rural sectors, thereby providing the wherewithal for their transformation in the years to come.

The perception that information exchange problems still constitute a major constraint to agricultural development remains widespread, and gives rise to negative views of the prospects for improvement. Yet enterprising individuals and institutions have, against all the odds, taken steps – some modest, some bold – to help revolutionise the management of information for agricultural development. Their achievements deserve to be highlighted, and that is why CTA has published this book. We expect that by so doing we will encourage the sharing of experiences and will raise awareness of what can and has been achieved. It is our fervent hope that others will be motivated to follow these examples in the context of their own lives.



Carl B. Greenidge
Director, CTA

Introduction

PEOPLE ARE GREGARIOUS animals. Alone, each of us is pretty helpless. Alone, we would be condemned to wander, naked and hungry, in search of food and water.

But if we get together, work together, we can do marvellous things. We can build cities, find better ways of growing and storing food, make gadgets that make life more comfortable, build great civilizations, construct spacecraft and reach for the moon.

Information and communication are what makes this possible. Two people cannot make even the simplest house if they don't know what to build, and if they cannot communicate with each other. Let alone a city or a spacecraft.

Information is a basic element in any development activity. Information must be available and accessible to all, be it scientific, technical, economic, social, institutional, administrative, legal, historical or cultural in nature. Information is useful only if it is available, if the users have access to it, in the appropriate form and language – i.e., if it is communicated, if it circulates among the various users with appropriate facilities, if it is exchanged.

Communication (we take this to include information and education as well) is astonishingly diverse. It covers a range from the simplest conversation between two people to the most sophisticated mass medium; from a mother teaching her child to the world's great libraries and universities. Try listing all the different forms of media, starting with television, newspapers, e-mail, billboards, telephones, apprenticeships, schools... and it is easy to fill several pages.

Money may make the world go round, but it is communication that makes it spin faster. (Indeed, money can be seen as a form of information: information about value.)

Without communication, then, progress would be unimaginable. Why, then, is it so neglected in development efforts? Huge research organizations, whose sole purpose is to develop new farming technologies (i.e., generate new information) and *communicate them to farmers*, relegate the communication part to the dustbin. Instead of creating wealth, research findings gather dust. Agricultural extension agencies (never very effective) are being downsized and closed, to be replaced by – well, nothing. Institutions sometimes seem more concerned with self-advancement than with serving their clients. The potential of media that do reach people in remote rural areas (channels such as radio, market traders, churches and mosques) is ignored.

New ideas...

Fortunately, it seems that things are changing. Spurred by two things – the democratic revolutions of the 1980s and 1990s (and the waves of restructuring and decentralization that followed), and the technological leaps made in computers and telephones – there is new interest in all aspects of information and communication for development.

Along with the new freedoms and the new technologies have come new ideas. On the way out are the old ideas that the role of communication was merely to convey technical messages from researchers to farmers, and social messages from policy-makers to groups of citizens.

These messages were sometimes designed specifically for certain “target groups” – farmers, women, cattle-owners and so forth – and members of these groups were sometimes involved in developing the messages. But *control* over the messages remained with those who controlled the media: government officials, project officers, technicians, newspaper proprietors. Rural producers’ and citizens’ groups were almost never in control: they remained mere consumers.

Over the past 20 years, these ideas have evolved. Communication is less and less concerned with merely transmitting messages (though that is still important). It is becoming more open. It is being based more on interactivity, negotiation, exchange, expression and, yes, conflict, over the economic, social and cultural issues of the various players. Grassroots actors, citizens’ groups and NGOs (non-governmental organizations) are increasingly learning how to use communication tools to promote their own agendas.

And networks of users are emerging: cooperatives, producers’ groups, research networks, groups of radio stations. Many of these groups cut across traditional boundaries: NGOs, universities, government research centres and farmers all working together to solve a problem (see the story in this book on the PELUM association, pp. 137–142) They decide what types of information they need, and find it through dialogue with other groups or by tapping resource centres and information banks.

...and new tools

Along with the democratic revolution has come the revolution in technology. Thanks to computers and CD-ROMs, managing and storing information is now so much easier. Telephones, e-mail and the Internet are beginning to make their mark in rural areas (see the section on “Computers and telecommunications”, pp. 101–119).

But it’s not just a high-tech revolution. The media have become closer to the citizens, more interactive. This is especially so for community radio and for newspapers in local languages, which have developed rapidly in rural areas. These new media are organized as networks, allowing rich information flows and greater access to end-users (see the sections on “Radio and television”, pp. 11–46 and “Newspapers and newsletters”, pp. 47–75).

Various tools and devices for grassroots communication have been developed, such as flip charts, audiocassettes, videos, resource centres, photo albums and community theatre. Research and development projects now often begin with a “participatory rural appraisal”: a way to help local people generate information about their environment and about themselves, which can then be used to make sure that the development activities truly serve their needs.

Introduction

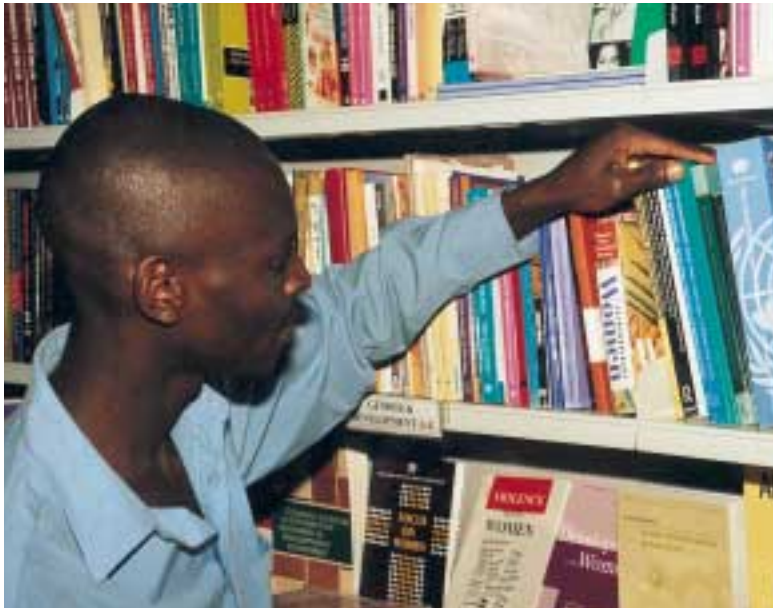
Three tasks

Efforts to use communication in development aim to do three things:

- Provide information to audiences;
- Help audiences find information;
- Facilitate dialogue among audiences.

Providing information to audiences

The first of these tasks is the traditional role of communication. Take an agricultural research institute as an example. The institute scientists identify a new cassava variety that is resistant to a pest (see the story “Controlling cassava mosaic virus in Uganda”, pp. 169–172). How do they get that information out to farmers and traders? And how do they persuade farmers to grow the new variety? They must not only make sure there are enough cassava stakes for the farmers to plant; they must also train extension staff, promote the variety on the radio, provide technical information in the form of brochures, plant demonstration plots so that the farmers can see the variety growing and, not least, persuade policy-makers to give the matter the highest priority so as to avert famine.



Of course, not all of these tasks fall to the researchers themselves. Specialized institutions – extension agencies, printers, radio stations, and many others – assist in the process. But there are so often gaps: the one between high-status research and low-status extension is the widest and most notorious. All too often, the gaps are ignored, the communication effort fails, the new variety stays at the research station, and the farmers go hungry.

There is a lot of information on development, but most of it is written by people from developed countries and is hard to find in Africa. The Legacy Bookstore (left) in Nairobi, Kenya is one of the few places on the continent that has a large selection of development literature for sale (Photo: Paul Mundy)

It is relatively easy to reach certain audiences: officials, decision-makers, researchers. There are relatively few of them; they work for certain institutions; their jobs, names and addresses are known; and they can be invited to meetings.

But the story is very different for local and grassroots actors: extension workers, community organizers, villagers, farmers, livestock owners, craftspeople, women. There are millions of them, scattered in thousands of villages, involved in all kinds of activities, and facing a host of constraints.

To serve these people, it is necessary to develop tools, networks and opportunities for exchange, encouraging people to learn and to pass on information to others.

Some of these tools are already known and tested: rural radio, newsletters, training for extension personnel, extension leaflets, demonstration plots, schools, literacy-training centres, youth centres, farmers' organizations, cultural or religious organizations, market information points.

New media appear very promising, especially to serve the intermediaries in the knowledge system: CD-ROMs, e-mail, the Internet. Others have the potential to serve end-users directly: examples are community telecentres, and the use of satellites for local radios.

Helping audiences find information

Information acquisition is the opposite side of the coin. A farmer whose cassava field is being eaten by pests cannot wait for the research organization to release a new variety, or for the extension worker to make his monthly (more likely, six-monthly) visit. She needs information, fast.

Helping the farmer find the answer to a problem that she faces is rather different from supplying her with information about a problem identified by the researcher. What if the farmer isn't interested in cassava pests, but is thinking about growing oranges and wants to know about the market? Where can she go for advice?

The acquisition of information (the demand side) meshes with information provision (the supply side) in various ways. The two come together during meetings with extension workers, in information centres and community libraries, during visits by farmers to research stations and demonstration plots, in farming-systems-research sites. The communication system must be designed so as to facilitate dialogue, questioning and experimentation. The preachy extension agent, the ivory-tower researcher, the status-conscious bureaucrat, the poorly organized library: all eliminate the possibility that users will be able to get the information they need.

Researchers have a need for information too. They must acquire information about research methodologies and advances in science, and about the problems farmers face. The former need is supplied by libraries, journals, books and conferences, and increasingly by e-mail, the

Internet and CD-ROM. The latter is increasingly being supplied by a whole set of participatory research tools: participatory appraisal and participatory technology development, which help researchers and extension personnel understand farmers' constraints and opportunities, and enable them to work with farmers to overcome these constraints.

Facilitating dialogue

The transition to democracy in much of the world since the 1980s has decentralized the corridors of power, and has given rural people hitherto unknown access to decision-makers. Farmers are organizing themselves to put pressure on the authorities to deal with their problems. With the help of NGOs and media such as community radio, rural people are slowly learning how to use this new opportunity.

The media play a key role in this. A radio station or a newspaper can be an instrument of repression, or it can be a medium of expression. A government-controlled press stifles discussion and quickly loses credibility. A free press can permit and foster confrontation, debate and negotiation. It can identify constraints, promote initiatives, convey new ideas, gather opinions, sensitize people. It can favour expression by those who can rarely express themselves, such as women, children and young people, and the rural poor.

Aside from radio and newspapers, media that can play such roles include audiocassettes, video, flip charts and traditional communication methods such as theatre, music, story-telling, puppets and market plays.

About this book

This book is about successes. It is about how certain individuals or organizations are changing the way communication works, how they are making a difference to the lives and livelihoods of rural people.

We have chosen as examples about 40 organizations in Africa, the Caribbean and the Pacific. Given time, we could have covered more: if your organization is not covered, please don't feel slighted.

Success is easy if you have enough money. We have tried to avoid the large, well-funded, expatriate-staffed development projects, big foreign NGOs and international research institutes. Many of these are doing excellent communication work. But they are not typical of the developing world: they are islands of affluence within a sea of scarce resources, under-funded institutions, and poorly trained and equipped personnel. We wanted to feature some of the many *local or national initiatives* that are doing good communication work despite all the constraints they face. If they can do it, we reasoned, why can't others?

A second criterion for inclusion was a *track record*. In response to our call for information (see overleaf), we received many fascinating reports of new initiatives, especially ideas on how to use the Internet to promote development. But new ideas are, by definition, untested. We wanted to focus on approaches that have been found to work.

A village meeting in Senegal, where pictures are being used to communicate information
(Photo: Jacques Sultan)



A third criterion was *sustainability*. We rejected projects that were totally reliant on donor funding. End of funding? End of project. We also excluded institutions that seemed to be over-reliant on a single donor – though maybe a few slipped through the cracks.

What's left? Quite a lot. Government agencies and private enterprises, farmers' groups and NGOs, research and extension institutions, industry associations, media companies and networks.

We included organizations that relied on donors if they had a record of being able to raise funds from several sources. We also included institutions, such as the IIRR (International Institute of Rural Reconstruction) and ITDG (Intermediate Technology Development Group), which are branches of international NGOs but whose local offices are entirely staffed by people from developing countries and which raise most their funding in-country (see the stories "Traditional experts and barefoot veterinarians in northern Kenya", pp. 149–154, "Workshops to produce information materials", pp. 177–182, and "The ITDG Resource Centre", pp. 225–227).

Our choice of organizations was determined by the information available to us. We drew on personal knowledge, discussions with colleagues and calls for information sent out over the Internet to identify potential organizations to write about. We personally visited organizations in six countries: Burkina Faso, Côte d'Ivoire, Kenya, Mali, Senegal and Uganda. That leaves out huge swathes of Africa and all the Caribbean and the Pacific: colleagues kindly wrote stories or provided information about organizations there.

And of course, we combed the Internet: but note, we were forced to reject most of the fascinating information on the Internet because it was about the wealthy international organizations or donor projects that we had chosen to exclude.

Throughout our visits, we were struck, and inspired, by the enthusiasm of the communications staff we talked to. Working under difficult conditions, often for long hours and with poor salaries and limited equipment, many are highly motivated and care deeply about their work. They listen to their audiences. They try out new ideas. They strive for quality.

Of course, few successes are complete. The organizations we describe still face many problems: lack of funding, uncertain institutional futures, poor organization, lack of skills and equipment. Economic and social conditions change, and technology changes faster. For some

organizations and activities it is still too early to say whether they will prosper. In fact, one of the organizations we most admired, the Arid Lands Information Network, which has done some excellent networking in the Sahel and Eastern Africa, was undergoing major restructuring while we were gathering information. So we were forced to drop plans to write about it.

Casting the net

We have cast the net widely. Some of these institutions have information or communication as their *raison d'être* a library, a press agency, a media-production house. Other stories are about organizations that mainly do something else, but have found that information or communication are vital to what they do; examples are research institutes (see "Controlling cassava mosaic virus in Uganda", pp. 169–172 and the "Research networks" section, pp. 191–216) and the Kenya Agricultural Commodity Exchange (see "The case of KACE", pp. 143–146).

We began by looking at institutions that deal only with agriculture. But we quickly realized that it is impossible to separate farming from other types of information. There are very few newspapers or radio stations devoted solely to farming, yet these are vital forms of communication in rural areas. Telephones – agricultural? During our travels, we witnessed them being used to order feeds and farm chemicals, check on the availability of supplies, call veterinarians, and trade produce. If there is a communication technology that will transform rural areas in the next 10 years, it is mobile phones (see "Plenty to talk about", pp. 113–119).

Faced with this multiplicity of media and overlapping uses, it would seem shortsighted to focus only on those media normally regarded as "agricultural": extension bulletins, research journals, research networks. We've covered them too, but they are really only a small part of the richness of what has come to be known as the "agricultural knowledge system".

We have covered government, non-government and academic efforts, but we have neglected much of the private sector. In addition to the few private sector stories that we have included, there should be stories about seed suppliers, produce marketers, credit providers, processors, industry associations and exporters. Sorry, there aren't.

Other missing topics? Private publishers, booksellers, indigenous communication, street theatre, participatory appraisal, farmer field-schools, religious organizations, lobbying, artwork and comics, television, schools and universities... the list is long. Again, we apologise. Maybe in the next edition.

Arbitrary categories

The book has nine sections, each with up to six stories about particular institutions or sets of institutions. There are sections on radio and television, newspapers and newsletters, literacy and local languages, computers and telecommunications, farmers' groups and markets, farmers' knowledge, research and extension links, research networks, and libraries.

These categories are, we admit, pretty arbitrary. Why not a separate section on extension materials? Why not, indeed? Couldn't the story about the Poultry Surveillance Unit (see "Watching the birds in Trinidad", pp. 155–157) be put in the section on research and extension? Well, yes, it could.

Such confusion is inevitable. Communication organizations tend to do several different things: a ministry's media production unit may publish a newsletter and extension leaflets, produce radio and video programmes, run training courses and maintain a library. The same medium can be used for different things: most of the airwaves are filled with music and entertainment, not agriculture. To be commercially successful, a newspaper has to carry a broad range of topics: agriculture competes for space with news, sport, comic strips, culture, health, education, women's issues, politics, society and economics. Just like in the developed world.

Plus, there are interrelationships among the media: local radio stations promote reading and writing; radio and video can be carried on the Internet, and an information campaign may (and if it is to be successful, *should*) use a combination of radio, television, print and face-to-face extension.

Paying for it all

Admittedly, most of the organizations we feature still receive some support from donors. That is perhaps inevitable. The countries we cover are poor. Governments are strapped for cash and, unlike in developed countries, there aren't lots of wealthy benefactors or middle-class people who provide money to charities. Rural people cannot afford to pay for many services, even ones they see as vital.

This continued dependence on donors is perhaps indicative of the state of communication in developing countries. Yes, donor support is still necessary, and probably will be for a long time to come. There is the danger of "donor fatigue": project officers and board members who question why a radio station or an NGO should continue to receive support for yet another year.

The answer is that successful communication efforts represent large sunk costs. Establishing a radio station or newspaper takes time, patience, effort and skill. Closing it down and opening a new one would mean a whole new set of investments, a whole new set of delays. The trick is gradually to wean the recipient institution away from an over-reliance on donors, and help it seek alternative, sustainable sources of funding.

Once they are established, the media are incredibly versatile: they can be used to do all kinds of things. The *Tembea na Majira* radio programme in Kenya (see "Soap opera for development", pp. 13–19) is an example: at the time we visited Kenya, the programme was teaching listeners about crop pests, malaria and wife-beating; later, the plot and the topics moved on.

To survive, communication efforts must continue to innovate, to try new things. There is no point in continuing to broadcast the same old programme week after week, or to keep putting out a newsletter that no one reads. The onus is on communication professionals to keep

Introduction

their ears close to the ground, to do careful research, to monitor their own activities, to understand their audiences and encourage feedback, to adapt and innovate. Only in that way will they have an impact. And if they do so, they fully deserve continued support.

Is it possible for rural communication activities to be profitable, and therefore to be self-sustaining? The answer is yes – at least for certain types of media. The clearest example is telephones, as shown by the stories about mobile phones in Uganda and fixed-line telecentres in Senegal (see “Plenty to talk about”, pp. 113–119), and e-mail services (see “Africa Online and the e-touch initiative”, pp. 103–106). A sizeable initial investment is necessary, yes (the same is true anywhere), but once the system is up and running, it is highly profitable, and this profitability feeds further growth.



Interviewing farmers for a radio programme in Ghana
(Photo: Jacques Sultan)

Some rural newspapers manage to cover a fair proportion of their costs from sales and advertising.

It's possible that they could eventually become self-supporting. The same is true of radio and television: advertising, sponsorships, payments for services such as announcements, and spin-offs such as T-shirts and hats can all be significant revenue streams.

For other media, such as extension bulletins and research journals, it is harder to see how they can pay for themselves. But even here there are untapped opportunities. One is to foster collaboration between government agencies and the private sector. An example: extension agencies typically print a few hundred copies of a booklet, because that is all they can afford. The booklets are distributed free, but there is no money to mail them, so they sit and rot in a storeroom in the capital city.

A solution? Sell extension leaflets rather than give them away. And make sure that the money goes into producing more copies, not into some general fund. Or strike a deal with a private publisher: split the publishing costs and sell the book on the open market through booksellers, news vendors, street hawkers, farm-supply merchants, and so on. Selling books provides an excellent source of feedback: it's immediately obvious which books are in demand and which are duds. And the money can be used to produce the next edition of the bestseller.

Another possible source of funding is advertising. This is typically seen as a no-no by governments: “We can’t put advertising in our publication because it would imply we endorse a particular product.” But if handled the right way, advertising could not only pay for a share of that extension bulletin; it could also get the information distributed. An example: an extension agency could write pesticide-safety leaflets and arrange to have them distributed along with each bottle of chemical. The agency is happy: it gets its message out. The agrochemicals firm is happy: farmers are more likely to use the chemical safely and effectively. The farmers are happy: they stay healthy, and the pests are controlled.

The only thing stopping such collaboration is government rules. But government rules are changing. Entire departments are being privatized, and others are now required to cover some of their own costs. This presents an ideal opportunity to explore the potential of such partnerships.

Don’t view communication as a cost

Research institutions, especially, all too often see communication as a cost. It comes right at the end of the research process (but it shouldn’t; it should help guide the research process all the way through, right from the planning stage). In these days of tight budgets, it is easy to trim the print run of a magazine from 5000 to 2000, to 1000, to 500. The copies of the magazines are still there for the boss to see, aren’t they? No matter that they are no longer delivered to farmers.

No – communication is an integral part of the development process: as vital as the researcher who breeds a new crop variety, or the microscope he uses. Without communication, development efforts are doomed to fail. With it, they might just succeed.

Making information entertaining: Soap opera for development

Community radio: Local information for local people

Citizenship information for rural people: Putting culture at the heart of development

Networking local radio stations: Local radio meeting rural people's needs

Educational video: Video in service of development

Radio and television

Radio and television

Making information entertaining: Soap opera for development



Paul Mundy

“Why are you letting your goats into my side of the farm?”

Wafula's two wives, Wanjiku and Nanjala, are arguing. Wanjiku's goats have got over the fence into Nanjala's field and are eating her maize. Wanjiku says that Nanjala shouldn't complain so much, as the maize has been attacked by stalkborer pests, so is worthless anyway. Nanjala accuses her of plotting with their husband Wafula against her. Meanwhile, Sipe has left her husband, Nanjala's son Juma, because he has been beating her up... and Dr Owino's little son has just died of malaria.

Sounds like a soap opera? Right: that's just what it is – the story from one week's episode of *Tembea na Majira* (“Move with the times” in Kiswahili), one of the most popular entertainment programmes on Kenyan radio.

But *Tembea na Majira* is a soap opera with a difference. Normal soaps have their characters falling in and out of love, arguing, making mistakes, and rising to challenges. *Tembea na Majira* has all these, but it also has educational messages written carefully into each episode. These messages are woven so skilfully into the programme that most listeners are probably learning about them without realizing it (see Box 1).

The programme is aimed at women listeners, but research has shown that men own 80 percent of the radios in Kenya. If they are not interested in a programme, they may tune out or turn the set off. For any programme to succeed, it must appeal to both women and men.

Tembea na Majira is produced by the AIC, the Ministry of Agriculture's Agricultural Information Centre, in Nairobi, in partnership with the Mediae Trust, a British NGO working in radio and video. AIC's radio unit researches the topics, plots storylines, writes scripts and records programmes for broadcast on KBC, the national radio station. The programme, which has been on the air since 1996, is broadcast once a week, after the 8 o'clock news headlines.

The plot thickens...

At the time we visited Kenya there were three storylines running through the *Tembea na Majira* series: biological control of the maize stalkborer, domestic violence and control of malaria.



Herène Simbowo (left) and Suleiman Juma (right) working on an AIC video
(Photo: Paul Mundy)

BOX 1

Grace and Charles Owino discuss stalkborers¹

GRACE	See for yourself the way these stalkborers have destroyed our maize crop.
CHARLES	These crop pests are really dangerous. They are now invading both the plant and the maize cob at the same time.
GRACE	Truly, farmers are in trouble. Cheruto, the animal-health assistant, has left us without offering a solution.
CHARLES	Well, Cheruto has left, and she was not a crop specialist after all. I understand she went to Mogotio on transfer.
GRACE	There is more to it than just the transfer. She is getting married in Mogotio next month.
CHARLES	Despite her departure, she has left us with some hope in maize farming.
GRACE	What are you talking about?
CHARLES	She had already arranged for farmers to be taken on a tour where they will be taught what the stalkborer is and how it can be controlled.
GRACE	How come I haven't heard of such an arrangement? What is the tour for?
CHARLES	To Mbita Point.
GRACE	Mbita?
CHARLES	Mbita Point Research Centre for destructive pests or insects; in short, ICIPE.
GRACE	Ooh, that's a very important arrangement. Who is going to Mbita?

¹ Translated from the Tembea na Majira programme broadcast on 18 November 1999.

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Take the maize stalkborer, one of the most serious crop pests in Kenya. ICIPE (International Centre for Insect Physiology and Ecology), a research institute in Nairobi, found that damage to the crop could be reduced dramatically by planting Napier grass around the maize plots. The stalkborer moths are attracted to the grass and lay their eggs there, rather than on the maize. And when the eggs hatch, the larvae get stuck in a gooey liquid exuded by the Napier, which holds them fast until they die. Unlike the chemical sprays that many farmers use to control stalkborers, Napier grass is cheap and environmentally friendly. Plus, it makes excellent fodder for the cattle, sheep and goats that many farmers keep.

A useful technology, but how to make sure that farmers hear about it? ICIPE persuaded the Gatsby Foundation, which had funded the original research, to support a series of radio programmes about it. AIC wrote a storyline that runs something like this:

- The *Tembea na Majira* villagers complain that their maize yields are dropping, even though they are using the recommended chemical sprays. They go to an agricultural extension worker, who calls in some ICIPE researchers.
- The researchers visit the villagers' fields, and find two problems: stalkborers and striga, a kind of parasitic weed. The researchers arrange for Wanjiku and her friend Grace Owino to visit the ICIPE research station in Kisumu so they can check things out for themselves.
- The women come back full of ideas, but the men in the village are sceptical: they say that they just went for a party.
- The women decide to try out the new pest-control approach. The villagers watch the trial carefully, and are eventually won over when their maize yields turn out to be much higher than the plots planted without Napier grass.

This storyline lasts a whole year, just like in real life. The broadcasts are timed so that different types of field work – ploughing, planting, weeding, harvesting – take place in the programme at the same time as they do in reality. Some of the characters, such as the researchers, are actual people. That ensures that the episodes sound authentic and touch listeners' own lives.

...and thickens

The two other storylines also touch large numbers of people directly. Malaria is the number-one killer of children under five in Africa, and it is becoming resistant to chloroquine, the most common prophylactic medicine. *Tembea na Majira* tells people how to destroy the places where mosquitoes breed, like cutting grass and removing empty bottles and cans that can hold water where mosquitoes lay their eggs. It also suggests that people use the correct prophylactic medicines to prevent themselves from catching malaria, and – most important – use mosquito nets on their beds.

Domestic violence is the third main storyline running through the programme. Wife-beating and child-abuse are common, yet hidden, problems in Kenya – as in many other countries. The audience hears how Juma, one of the characters in *Tembea na Majira*, hits his wife,



AIC's audio control room in Nairobi, Kenya
(Photo: Paul Mundy)

Sipe, after an argument. He insists that he has to do so in order to make sure she respects him. Sipe leaves Juma and refuses to come back, even though this means Juma has to take on humiliating “women’s work” such as fetching water. Slowly, *Tembea na Majira* is bringing this difficult and contentious subject out into the open.

The power of drama

Drama is a powerful way of communicating. It avoids teaching people by telling them what to do and what not to do. Instead, it raises awareness by covering different sides of an issue and allowing the listeners to make up their own minds. The messages are subtle: while it aims to teach, the programme does not sound like a classroom lecture. The characters talk and joke about their problems as would real people.

Different characters can voice different opinions, argue, and reach agreements, just like in real life. And the characters are complex and fascinating: Wanjiku is a clever younger wife; Nanjala is the older, more traditional wife who fears being upstaged by Wanjiku; Sipe is scheming and spiteful; Juma has a quick temper but cares deeply for his children; Moseti is a philandering chief who is chasing after Cheruto, the animal-health assistant, and so forth.

Above all, the story is entertaining. Carefully crafted storylines grip the listener, who must tune in next week to find out what happens next.

Paying for programmes

Tembea na Majira is self-sustaining: it pays for virtually all its costs. That means it can continue to be produced and broadcast as long as it continues to attract an audience.

How can it do this? The government pays staff salaries, but AIC must find funds to pay for production costs and airtime. AIC has semi-autonomous status: while it remains part of the Ministry of Agriculture, it is allowed to accept money from non-government sources. AIC

Radio and television

and the Mediae Trust find sponsors such as research institutions and donor-funded projects to pay for production costs – about €600 per episode. And they persuade commercial advertisers (currently Colgate and Cadbury) to pay the €1050 that KBC charges for 15 minutes of airtime.

Getting going

It's not possible to build a successful, sustainable radio programme up overnight. It requires careful planning, skilled staff and enough money to get it going. For *Tembea na Majira*, the initial funding came from the DFID (Department for International Development) in the United Kingdom, which provided equipment and training for AIC staff, and support for research and for a regional pilot programme in the Ki-Meru language.

Training and collaboration have also been vital. Radio and video specialists from the Mediae Trust worked closely with AIC staff to plan and script programmes, acquire recording equipment and computers, and persuade advertisers and sponsors to support the programming. They also negotiated with the government to allow AIC its current semi-autonomous status, without which it would be impossible to seek money from non-government sources. By 1996, when DFID withdrew its support, AIC had the skills and the track record to keep production going. The partnership continues: while AIC produces all the programmes, the Mediae Trust still helps with the storylines, and identifies advertisers and sponsors.

Audience research

Audience research is doubly important to the programme. It is vital to ensure that large numbers of people are listening, so as to attract advertisers. And just as important, research is needed to design the programmes and make sure they are addressing issues that people feel are important.

Studies conducted by an independent research firm have shown that about 5 million adult Kenyans – about 36 percent of the population – listen to *Tembea na Majira*. The numbers used to be even higher – 6.5 million – when the programme was broadcast immediately after the 9 o'clock evening news. It is now broadcast at 8 o'clock in the evening, when fewer listeners are tuned in. The move was made to save money, but at the cost of a drop in listenership. The programme producers are hoping to raise advertising revenues so they can revert to the original time slot.

The number of listeners also varies quite a bit from place to place. In Meru, 48 percent of people interviewed said they listened to the programme, while in Kitale the figure was 60 percent. In Nakuru, where *Tembea na Majira* competes with a popular local FM station, the figure is “only” 20 percent – though even that is a figure that many producers and advertisers in other countries would kill for.

Research was also key to the original design of the programme. In 1993, an AIC team studied the farming practices and listening habits of people in four districts in southern Kenya. The team found that 69 percent of all households owned a radio, and only 7 percent had no access to a radio at all. They also learned a great deal about the issues that people found important, the types of programmes they liked, and what times they listened to the radio.

This research resulted in a programme in the Ki-Meru language, called *Ndinga Nacio* (“Hit me with it”), a programme that is still broadcast on KBC’s Central Service. *Ndinga Nacio* became, in turn, a pilot for the nationally broadcast *Tembea na Majira*.

Video

AIC’s video unit is also aiming to be self-sufficient. The unit produces documentaries and training videos at the request of clients such as development agencies and NGOs. Recent titles have included stall-feeding of livestock, post-harvest handling of export crops, irrigation, and participatory research methods.

The videos are used in various ways. Some are designed for farmer-training courses held at centres throughout Kenya – indeed, all over Africa. Such videos are often designed to trigger discussion among the course participants. A typical programme begins with a case study of a particular farmer or a situation. The course facilitator then turns the video player off and invites the participants to analyse what they have seen and heard. After the discussion, the facilitator then turns the player on again and the programme continues, often with a description of the more technical aspects of the situation.

Other videos are shown on televisions located in marketplaces around the country. Studies have shown that these programmes attract large audiences: people who come to buy or sell at the market, but who stay to watch the video.

AIC and the Mediae Trust have also produced a series of training videos on communication skills for extension workers. This series, produced in collaboration with the University of Reading and the Open University in Britain, covers face-to-face communication, farm visits, demonstrations, public speaking, working with groups, and using visual aids. The full training package includes six videos and a handbook. It has been used to train thousands of extension workers and NGO staff in Kenya and other countries, and is also used by the University of Reading to introduce trainers to these techniques.

Professional productions

AIC’s videos are professionally made. The camera work is excellent, with tightly framed close-ups, smooth pans and zooms, and crisp editing. Unlike many video units around the world, AIC uses broadcast-quality equipment, meaning that its programmes can be shown on television as well as to small groups as video.

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Some clients know exactly what they want: they bring with them a completed script and storyboard. Others need more help. Because AIC's video staff are all qualified agriculturists as well as having training in video production, they can help develop the storyline, write the script, identify locations and set up interviews.

Given its success in video production, AIC is considering whether to follow the lead of the radio unit and produce a regular agricultural programme for broadcast. Television airtime is even more expensive than radio: about €2000 for 30 minutes. AIC hopes to produce a sample programme that it can use to attract potential advertisers, and so cover these costs.

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Radio and television

Community radio: Local information for local people



Jacques Sultan

“Radio Benso – it is our radio”

“The radio has changed our lives. It makes us feel part of Mali. Before, we listened to the radios of Côte d’Ivoire. Now, we can keep up-to-date on what is happening here. We get information on cotton farming, we can put announcements on the radio to tell our relatives about important events, we can listen to our village music. Radio Benso – it is our radio, it is the radio which speaks about the farmers.”

So says a listener in Kolondieba, one of four places in southern Mali’s cotton-growing zone to be served by a community radio since early 1999. These farmers do not have an easy life. Their incomes are very dependent on the capricious world cotton market, and their production activities are controlled by a powerful, omnipresent parastatal, CMDT (Compagnie malienne de développement des textiles).

So communication is a strategic tool to help them organize as groups, manage production jointly, exchange experiences, obtain technical and economic information, make choices, and defend their interests. There used to be many barriers to communication: the multiplicity of local languages, illiteracy, geographical isolation... until the community radio station arrived.

Meeting listeners’ needs

Four stations were born: in Kolondieba, Bougouni, Koutiala and Bla. Their birth was made possible by financial support from the Netherlands and technical expertise from FAO (Food and Agriculture Organization of the United Nations). Each station serves about half a million people within a radius of about 100 km.

Recording a programme in the studio of Radio Kafo Kan
in Bougouni, Mali
(Photo: Jacques Sultan)



BOX 2**Recipes for success**

Southern Mali's radio stations have involved the communities, farmers, village organizations and local partners in all stages of their development.

The radio project was designed together with local people. A public awareness and information campaign was organized in most of the districts covered by project. Public meetings allowed questions about the radio stations to be discussed.

The stations are independent. Their activities (staffing, programmes, resources) are managed by a board of directors and a programme committee, elected by the community: The staff is recruited locally, on the basis of precise criteria: firm roots in the area, ability in local languages, motivation and educational qualifications.

The community's contribution to building costs guarantees its involvement. The villagers themselves constructed the stations' buildings, drawing on their own resources and with the local partners' support. Interest in the communities was so strong that the buildings were ready only nine months after the project began.

Everyone was trained. The entire station staff (technicians, facilitators and producers) and all the board members attended a basic training course run by CIERRO (Centre interafricain d'études en radio rurale de Ouagadougou) (see p. 36). The course covered all aspects of the stations' operations: production methods, station management, sound-recording techniques, use of equipment, and administrative and financial management.

The requirements for sustainability are met. The station-operating costs were studied to ensure the stations would be able to survive on their own. Each station has two separate bank accounts: one of them is reserved for replacing equipment. Mechanisms for sustainability were established: listeners' clubs, citizens' groups in the broadcast area, service contracts with local partners, publicity materials and announcements.

Audience interaction was planned. A study of listeners' information needs was undertaken for each station with a consultant's help. This study used a participatory approach and gathered quantitative and qualitative data. It identified the various categories of listeners and measured their access to radio receivers, the number of hours they would spend listening, and the languages they used. It listed the topics and types of programmes people would prefer. It also identified potential partners for the stations, their needs, and their readiness to collaborate.

A system of monitoring and evaluation is under development. A method of contacting listeners is being designed, as are techniques to monitor and evaluate the stations' impacts. These will enable the stations to stimulate discussions about the broadcasts, collect comments and criticisms, and increase listeners' participation in the design, development, production and monitoring of the programmes.

FAO is to organize a special training course on monitoring and impact evaluation. Participants will learn simple techniques to determine who is listening to what programmes, whether they change their farming practices as a result, and what, if any, impact this has on farming, livestock rearing, health and natural resources.

Radio and television



Editing a radio programme at Radio Kafo Kan in Bougouni, Mali
(Photo: Jacques Sultan)

After less than a year of operation at the time of our visit, these stations were already much loved. Their programming was based on listener needs as identified in preliminary studies, and on ideas contributed by various actors involved in setting the stations up (see Box 2).

What do the listeners want to hear?

The most popular programmes are on social topics (children's education, juvenile delinquency and family problems; relations between men and women and between parents and their children; health and unplanned pregnancies); farming and livestock (especially cotton production, from sowing to marketing); and local culture (village history, local music and oral traditions).

The prime listening times are before 8 o'clock in the morning, and after 6 o'clock in the evening. Fewer people tune in during the day: they are all at work in the fields. The listeners clearly prefer broadcasts recorded in the villages, in which local people participate, which deal with burning issues or which emphasize the local cultural and musical identity.

"It would be nice if the radio would talk about things that can improve our lives, our health and education, and how we can do things better," says a woman who listens to Radio Benso. "Women's programmes should come when we are relaxing, at around 8 o'clock in the evening."

"On market days," says one of the staff of Radio Kafo Kan in Bougouni, "farmers from all over the district invade the station to see the station's equipment, meet the staff and bring in messages they want to have broadcast."

What do the partners want to say?

The stations' main partners include local government departments, public service agencies and NGOs. Parts of the timetable are reserved for them to use for educational or social broadcasts or for entertainment.

CMDT, the largest partner, has organized listeners' groups for its farming programmes (see Box 3). Extension workers use these groups to strengthen the listeners' understanding of technical messages, especially about cotton.

Planning the timetable is a hard task: all the partners must be given the chance to contribute, but at the same time the station must provide a public service.

BOX 3

An inseparable companion¹

“From CMDT’s regular broadcasts in southern Mali, people learn farming methods, especially the use of fertilizer. The radio also serves as a post office and telephone: people communicate with each other via messages and announcements. They use the radio to find things that have been lost or stolen, locate stray animals, or inform relatives and friends about important events. The radio has changed the way communities work. Local people use the weather forecasts when planning a trip, for example. Interest in the radio is growing. That is reflected in the rising ownership of radio sets, and in listeners’ loyalty to certain programmes. Nearly everyone interviewed said they had bought their FM receiver after community radio came to southern Mali. The radio has become peoples’ inseparable companion.”

1 Taken from a study on rural communities’ needs in areas in southern Mali served by community radio.

A social mediator

“The radio listens to its audience,” says Yaya Kone, director of Radio Kafo Kan in Bougouni. “We try to be at the forefront of our listeners’ concerns. Our reporters use their motorbikes to go into the field and talk with village associations, women, young people. Sometimes the listeners criticize CMDT heavily. We play their complaints to CMDT and tell them, ‘This is what our listeners think of you. How are you going to respond?’ ”

Tackling the problems of communities...

“In the village of Sido,” Yaya Kone continues, “there was a big problem because there was no maternity clinic. People were waiting for a mother to die so they could attract help from outside donors. They did not know that the solution was in their own hands. We did a programme in the village square; we organized a play, put on a public-speaking contest and discussions. The broadcast was very lively, and it brought out all aspects of the issue. The winner of the contest was a man who related a proverb, in wonderful Bambara: ‘If you want to be helped, you must first start to help yourself.’ We used this proverb to make a public service announcement on the radio. Now the people of Sido have started collecting contributions to build their own clinic.”

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...and of village associations

“One of the most serious problems here is the illicit sale of cotton,” says Fagotoma Sare, director of Radio Uyesu in Koutiala. “It causes a lot of conflict. Village associations asked us to use our programmes to denounce this antisocial practice.”

Certain farmers sell part of their crop directly to a trader, often at below market prices. They do this so they can get their money immediately, before the official sales. That means the village association has less cotton to sell to CMDT. But CMDT has provided inputs in advance, and deducts the cost of these from the sum it pays the association. That means less money for the association to distribute among its members. Farmers who have legally sold their whole crop have to pay the debts of their less scrupulous fellow farmers.

“These programmes were very interesting because they led to a collective realization of the problem. We aired interviews with producers who admitted selling part of their crop illegally and were sorry they had done so. We did a public service announcement on this topic: ‘If you sell your cotton illegally, you don’t get the CMDT price, you make your neighbours pay your debts, and you cause arguments in the village association.’ ”

Giving women a voice

“We particularly appreciate how women’s programmes are made,” says a representative from a women’s group in Kolondieba. “They reflect our problems very well. Even our bone-headed husbands can understand what they are saying.”

Oumar Sangare, coordinator of the radio project, says that the women of Koutiala are not satisfied with the weak position they have on the radio’s board of directors. “They plan to come out in force when the committee is reappointed to make sure the radio gives their problems higher priority,” he says.

A laboratory for local democracy

Only a year after they began, these four community radio stations had become a true laboratory for local democracy in Mali.

It has not always been an easy task. The various partners’ interests sometimes diverge; they may even contradict one another. The stations have to avoid being controlled by political interests, maintain a balance in the programming among listeners’ various demands, give airtime to each of the partner agencies, encourage expression by young people and women, mediate conflicts, and find programme formats that suit the way local people express themselves.

Day by day, southern Mali’s community radio stations are constructing democracy.

BOX 4

Mali's radio-development scheme

Mali has undergone massive changes in the past decade: the government is now democratically elected, authority has been decentralized, the State is disengaging from productive enterprises, and farmers' organizations have emerged.

The media have also changed. The voice of the people, long kept on a short leash, was freed in 1991 when the authoritarian regime fell and laws were passed to regulate the press and broadcast media. Since then, there has been a veritable explosion in media, especially in radio – a mode of communication that Malians hold in high regard.

More than one hundred local radio stations of all kinds – cooperative, community, commercial, religious – have been born throughout the country, in urban and rural areas. A ferment of activity, but in a regulatory vacuum.

The government wanted to take advantage of these initiatives, and ensure that stations promote democracy and serve the public good. It also wanted to spread radio services to the whole of Mali. So it designed a radio-development scheme to guide the industry for the period 1995–2014.

The scheme is based on the wish to serve as much of Mali as possible and reach the largest numbers of people. It also takes into account the broadcasting frequencies that could be allocated. It aims at the gradual establishment of about 40 community radio stations. These will provide programming that meets listeners' needs for information, education and entertainment; they will use the languages spoken in each area, and reflect local cultural values.

The national radio broadcasting service does not have the resources to take on this task. So the government has decided to delegate this public service to local stations: those run by community groups or on commercial lines, existing stations or ones that are planned. Stations affiliated to the scheme are obliged to broadcast on general-interest topics and reflect the range of opinions in the community.

In return, the affiliates are allowed to install more powerful transmitters. They can get assistance in purchasing and maintaining equipment and broadcasting networks, and they qualify for staff training and programme exchanges.

The four radio stations in southern Mali have signed up to the scheme, forming the nucleus of what may one day be a nationwide network of community radio stations.

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Citizenship information for rural people: Putting culture at the heart of development



The Jamana adventure

Hamidou Konaté, director of the Jamana cooperative, remembers how it began. It was way back in 1983.

“We were a group of academics, researchers, specialists in oral traditions, artists, craftsmen. We realized that development agencies neglected or ignored the cultural dimension of development: they concentrated on spreading packages of technical formation aimed at improving the productivity of agriculture, livestock or fishing.

“But culture is the main force keeping rural communities together. The feeling of belonging to a country, to a region, to the soil, is a powerful influence on agricultural production, on the protection of natural resources, community organization, and citizens’ participation in national development.

“Our objective was to promote Malian and African culture, to give the people the chance to read and write in their mother tongues, and to know their rights and their duties.”

The group founded the Jamana cooperative in order to put culture back at the heart of development activities. They launched a series of initiatives to preserve, develop and mobilize the cultures of Mali, and to enable its citizens to take part in debates on national issues.

Jamana gradually created a set of information, communication and extension tools to meet the needs of different parts of Malian society – whether they be French-speaking townsfolk or rural people in the country’s various cultural and linguistic zones.

Start in the cities

Jamana first aimed at the urban, French-speaking public, because back then in the early 1980s few Malians could read and write in their own languages.

- The monthly cultural magazine *Jamana*, launched in 1983, was the cooperative’s first venture. It provides a forum for opinions and debate on culture and development;

- The daily newspaper *Les Echos*, first appeared in 1989 and has become the newspaper of record in Mali;
- *Grin-Grin* is a monthly magazine aimed at teenagers;
- *Yeko* is a monthly community magazine, published at Ségou.

In addition, Jamana has established an enviable set of media production and educational facilities: a publishing house, desktop-publishing shop and printing unit; a bookshop which specializes in works written in local languages and books about Africa; a resource centre with information on Malian and African history, economics, sociology and culture; and a visual arts workshop and art gallery for young Malian artists.

Not just agricultural information

Mali is a country with strong traditions. Its rich cultural inheritance is to be found mainly among its rural people – more than 80 percent of the population.

Jamana has expanded its activities in rural areas. It uses the major local languages, supports literacy programmes in these languages, and responds to rural people's needs for information, expression and dialogue. Jamana's approach is based on three strategic assumptions:

- Farmers do not only want technical information on farming, livestock or fishing; their practical information needs also include health, education, nutrition and natural resource management;
- Rural people prize their knowledge and traditions; they value their cultural, musical and craft heritage;
- Rural communities want to take part in political debates; they have a strong demand for information on citizenship and on social issues such as decentralization and public affairs.

Jamana uses a combination of printed and audio media to respond to these demands. This combination supports efforts to spread literacy skills in local languages (some 70 percent of the population is illiterate). The cooperative designs the materials especially for rural people, and ensures that they are technically appropriate and cheap enough for people to afford.

A nightingale on cassette

Sorofe means "nightingale" in Bambara. It is also the title of an audio newspaper, on cassettes in several local languages, published by Jamana. This original idea is especially appropriate for people who cannot read and write.

Radio and television

Lively and informative, *Sorofe* includes interviews, success stories, games and debates. It discusses all the big issues that interest rural people: farming and herding, environment, health, culture, sustainable development, citizenship. Topics include women's issues such as female excision and the right to land; cultural themes such as the origin of musical instruments, the story of griots (traditional storytellers), the significance of first names, and the music and stories of districts in Mali; and citizenship and political issues such as decentralization, elections, citizens' rights and duties, and democracy.

For each topic, the *Sorofe* team tries to collect material that reflects all points of view. Each *Sorofe* cassette represents a lively, pluralistic support for village-level debates. The cassettes also make it possible to popularize in local languages basic information on decentralization, the platforms of political parties, and the constitution.

Listeners accepted *Sorofe* very quickly. Initially a quarterly, it now appears every month, and the number of copies has tripled from 500 to 1500. The number is probably much larger than this if the large number of pirated copies is taken into account.

Jamana is currently studying the possibility of linking *Sorofe* with the community radio stations that exist all over Mali.

“We want to know other things”

Jekabaara is a newspaper especially for people who have learned to read and write in the Bambara language. It is produced by Jamana in collaboration with several major institutions, in particular the cotton parastatal body, CMDT, and the Office du Niger (a parastatal dealing with rice).

Jekabaara is published once a month, with a print run of 16,000 copies. Of these, 11,000 are distributed by CMDT.

When it was launched, *Jekabaara* was intended mainly as a way to spread technical messages on cotton and rice farming. But the readers saw it otherwise:

“Why does *Jekabaara* only tell us how to use this or that cultivation method? Do you think that we live only for such things? We want to know other things. We live in a democracy; we want to learn what is happening in the country and to take part in the debate.”

An issue of *Jekabaara*, a Bambara language newspaper



That is what *Jekabaara's* readers said in 1991, when Mali was released from the previous dictatorial regime. They were not satisfied with the paper: it focused too much on agricultural extension. Even if they found the technical information useful, the readers did not want to be seen as mere producers, but as citizens able to take part in politics. As soon as the wind of democracy blew through the country, they began to demand a broader range of information.

So the paper's contents evolved. Today, some 70 percent is devoted to technical and organizational topics (manure, pesticides, new crop varieties, selling and marketing, group organization, village associations). The remaining 30 percent is devoted to general information, politics, opinion exchanges among readers, village descriptions, and so forth.

Jamana is negotiating an agreement with the Office du Niger to publish an edition specifically for the rice-growing zone. That could increase circulation to 30,000 or 40,000 copies. Inserts in Fulfuldé, Soninké and other languages could tackle questions such as pasture management and relationships between Peul herders and Soninké farmers. The newspaper could come to play an important role in resolving conflicts between these two communities.

So *Jekabaara* is in expansion mode. It is attempting to supply an ever-rising demand from neo-literates starved of other reading materials.

Distribution is the main obstacle. Relying on individual newsagents is risky because it is hard to make sure that the papers reach their destination, and harder to recover the income from sales. Jamana is studying several alternatives to this dilemma. One is to contract NGOs to distribute the paper in the areas where they operate, in return for services provided by other branches of Jamana. Another is to strengthen specific distribution points with the help of Jamana's field correspondents and community radios (see Box 5).

A platform for popular expression

Radio is still the best means of communicating information to rural people, and the Malians are very fond of it. When the airwaves were opened up in 1991, Jamana, which had been one of the founders of Radio Bamakan, the first independent station in Mali, established a series of local radio stations to extend and decentralize its field activities. It now has 10 community stations throughout the country, all run by young, unemployed local people. Each station's average operating range is a radius of 70 km.

Jamana's stations offer listeners a place where they can get information, express themselves, and engage in dialogue, especially on women's and children's rights. They report on development work by partner agencies, and they reinforce Jamana's efforts to generate appreciation for Mali's cultural heritage.

More than 80 percent of the broadcasts are in local languages, and 40 percent are on agriculture and rural development. Other major topics are health, hygiene, citizenship, environment, music, history and sustainable development. A generous amount of time is reserved for

BOX 5

Distribution is the biggest problem

Jamana's newspapers are not the only local-language papers in Mali. Several others emerged as a result of the spectacular rise in literacy in local languages, which began in the 1970s and was supported by Unesco. CMDT and other firms supported them through their mass literacy campaigns in the cotton zone.

The main local-language newspapers are published by AMAP (Agence malienne de presse et de publicité). The oldest is Kibaru, founded in 1972. Its 16,000 copies are distributed throughout the Bambara-speaking areas of the country. Two other newspapers began later: Kabaaru, printed in Fulfuldé, and Xibaare, in Soninké, each with a circulation of 2000.

All the papers face the same problem: how to get copies to their readers.

The readers are scattered, and traditional distribution methods such as the mail are seldom possible and are very expensive: the cost of mailing may be higher than the price of the paper itself.

In areas served by a firm such as CMDT, the firm can take care of distribution. CMDT distributes 10,000 copies of Kibaru and a similar number of copies of Jekabaara.

In other areas, the newspapers rely on individual newsagents who obtain their copies in various ways (mail, travelling merchants, trucking companies, and so on). These newsagents distribute the paper within their neighbourhoods in return for a percentage of the sales.

The number of papers that can be handled in this way is small: there may be only 20 regular readers in a village. And since the newsagents cannot pay for the papers in advance, transferring the small amounts of money involved is a problem.

All the rural newspapers try to overcome this hurdle by striking deals with organizations with field-level networks: firms such as CMDT and the Office du Niger, NGOs, farmers' organizations, development projects, literacy centres, public libraries. Or like Jamana, they establish their own networks based on distribution centres.

But the demand is enormous. If they can solve their distribution problems, Mali's local-language newspapers should easily be able to double or triple their circulation figures.



Top right: An issue of Kabaaru, a Fulfuldé language newspaper
Bottom right: Copies of Xibaare rolling off the AMAP press in Bamako
(Photo: Jacques Sultan)



women and development organizations. The stations organize debates with local experts and provide listeners with all kinds of useful advice.

Each station has partnership agreements with development organizations working in their districts. For example, Radio Kujakan, based in Koutiala, has agreed with CMDT to co-produce programmes not only on cotton, but also on health, literacy, drinking water, soil erosion, poultry raising, and so on. It also has agreements with SYCOV (a farmers' organization), public service agencies, national and international NGOs, development projects, women's associations and private firms.

Meeting the challenge

Jamana's communication efforts cover all of Mali, in its major languages. They address in an interactive way the main themes that interest Mali's people. They pay particular attention to questions of citizenship, cultural heritage and issues that concern women and young people.

The government's decentralization process will bring new demands and opportunities for information and communication. Jamana is taking up this challenge through a range of new projects:

- Resource centres will be established around the community radio stations. These will serve as places for education and discussions on the changes taking place in Malian society. They will act as distribution points for Jamana's newspapers and other media. They should also make it possible to feed back information to improve the contents of these various types of media;
- The audio newspaper *Sorofe* and the community radios will collaborate more closely. *Sorofe*'s productions will be broadcast by the radio stations, whose programmes will in turn enrich the audio newspaper;
- The radio stations will function as a network. They will be gradually equipped with computers so that they can communicate with each other and with the central office. Later, they will synchronize some of their programmes with Radio Bamakan in Bamako. This network will also be used for the production of local news bulletins;
- The newspaper production will be improved by increasing the number of local correspondents;



Radio Kené in Sikasso, Mali
(Photo: Jacques Sultan)

Radio and television

- Collaboration agreements are being negotiated with the Office du Niger and the government department in charge of natural resources. Such agreements promise to improve both the production and distribution of the local-language newspapers;
- More and more local newsletters will be produced, taking advantage of the radio stations' facilities, the resource centres and Jamana's local correspondents.



Radio programmes recorded in villages are crowd pullers in Mali. Here, people queue to express their opinions about local issues
(Photo: Jacques Sultan)

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Radio and television

Networking local radio stations: Local radio meeting rural people's needs



Jacques Sultan

"The radio helped us to solve a serious problem in this village," says a resident of Seriwala, a village in Mali. "When someone dies, it used to be almost impossible to inform all the relatives so they could come to the funeral: they might live up to 30 or 40 kilometres away. We would have to hire a bicycle or horse to spread the news. If for some reason we weren't able to let the relatives know on time, there would be serious consequences for the relationship between the villages. Sometimes even a rift between two families. Now, with the radio, all we have to do is pay 500 francs (€0.76) and everyone gets the news. Nobody has grudges any more, thank God."

"The radio has made a real change in our everyday lives," says a listener in Kodialanida, another village. "It helped us understand the importance of functional literacy in our work. That encouraged us women to devote more effort to learning to read and write. At first, we learned by ourselves. After listening to the radio, we came up with the idea of getting together as an association; we heard that other women had done so elsewhere, and had succeeded by listening to advice on the radio."

Since the mid-1980s, local rural radio stations have been playing an invaluable role in Africa. They have given isolated villages, many of which were not served by the public broadcasting system, a tool for local communication, education, dialogue, extension and popular expression. They have also made it possible to gather and promote the communities' spoken and musical legacy: the village history, its music, stories and oral traditions.

Easy and cheap to set up, radio stations have become a familiar feature in rural areas – one that is highly appreciated by development agencies such as local authorities, farmers' associations, women's and youth groups, NGOs and the private sector.

Communicative but cut off

The development of radio has not been without difficulties, though. Among the problems are a lack of transport (making it hard to do outside broadcasts), a shortage of portable equipment, and funding difficulties. Maintaining and repairing equipment can be a headache: if a transmitter breaks down, a station may have to wait several months for a spare part to arrive from Europe or Asia.

Different local stations deal with the same topics, use similar approaches, and often work in the same languages. But they have had little opportunity to exchange ideas. That is a pity, as such exchanges could bring many benefits: they could learn from each other, swap programmes, or co-produce broadcasts and split the costs.

CIERRO's digital audio centre in Ouagadougou, Burkina Faso
(Photo: Jacques Sultan)



Meetings, training courses and conferences to help break this isolation are organized by the Agence de la Francophonie, CIERRO (the rural radio centre in Ouagadougou), CTA, FAO, the Panos Institute and others. But these meetings are expensive and infrequent, and they are not always followed up adequately.

Digital technology to the rescue

The Agence de la Francophonie, one of the main backers of rural radio, has recognized this problem. Its response has been to establish a network of African local radio stations. This network is based on information and communication technologies: the Internet, a centre to produce programmes and provide training in digital audio, and a bank of programmes. For the radio stations, this network means radical changes and a new dimension to their work.

The digital-audio centre has been operational since April 1999. Hosted by CIERRO in Ouagadougou, it is the heart of the network. It includes a website, a programme bank, a training centre for new technologies, and a central facility to purchase equipment and supplies.

The centre has three staff: a coordinator with the job of building and motivating a network of 48 local stations in 10 countries, a technician specialized in digital production and training, and a computer specialist who handles the website and programme bank, and provides training in computer technologies.

The centre's main aim is to help the local stations diversify their programmes. It organizes training for station managers and technicians in digital production and computer technologies. It encourages stations to co-produce programmes on topics of common interest. The purchasing service enables the stations to buy at attractive prices.

Programme bank

The programme bank provides a stockpile of high-quality broadcasts that the stations can use to enrich their transmissions. The bank is supplied with programmes from the member stations themselves. Programmes fall into various categories: agricultural techniques,

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environment, health, economics, education, society, culture, and so on. Most are in one of the three most important local languages in the region: Dioula, Pular and Malinké.

By the end of 1999, after only a few months of operation, the bank contained 150 programmes. A script in French accompanies each one so it can be translated into other languages. A programme catalogue has been sent to member stations and is available on the website.

The stations can get the programmes in three ways: by downloading them from the network's website (www.radios-rurales.net), via CD-ROM, or on audiocassette.

Downloading is still difficult for most of the network's member stations because they do not have Internet-capable computers. Efforts to provide them with the right equipment are under way. At least one station in each country now has such equipment, and it coordinates the work of the others.

Training centre for new technology

The training centre trains the staff of member stations how to use their equipment. The courses include an introduction to computers, electronic mail, Internet searches, programme downloading, and digital-audio production. They are held in the training centre in Ouagadougou, or in the station itself if it has the right equipment.

Co-productions

The centre encourages member stations to co-produce programmes by organizing seminars on themes such as oral tradition, citizenship education, relationships among ethnic groups, and rural law (see Box 6). The stations can also suggest topics, and the centre supports them to make the programme.

Radio Palabre, a local radio station in
Koudougou, Mali
(Photo: Jacques Sultan)



All the co-produced programmes are made available to other network members. They can also be used by the centre's other partners. These include APIC (Appui à l'instruction civique, an organization that produces educational broadcasts), and ARTO (Archivage de la tradition orale) and CELTHO (Centre d'études linguistiques et historiques par tradition orale), two centres that document and study oral tradition.

BOX 6

A workshop on rural law kindles radio campaigns

Law is a crucial topic for rural people. Key questions concern inheritance, women's rights to land, and relationships between crop-raisers and herders.

The network organized a co-production workshop on law in Senegal in August 1999. Also involved were communicators, lawyers and language specialists from six countries: Benin, Burkina Faso, Cameroon, Guinea, Mali and Senegal.

Various magazines and programme segments were produced during the workshop on identity cards, marriage and birth certificates, women's rights in marriage and to land, and so on.

These programmes were broadcast in several languages in the six countries. They were a considerable success, since listeners discovered that legal problems similar to their own also occurred in other countries.

The programmes aroused such interest that they formed the starting point in each country of a whole series of broadcasts on related issues: round-table discussions and magazines on marriage (especially forced marriages and child marriage), divorce, inheritance, women's land rights, access to justice, conflict regulation, and so on. Local human-rights organizations, NGOs and magistrates participated in these programmes.

Some stations have begun a question-and-answer service about legal issues. They collect villagers' questions during their visits to the communities, and ask lawyers to answer the questions on the air.

A new title, "The Law and Us", has appeared in the stations' broadcast timetables, and the programmes have been translated into other local languages. Of course, the stations can exchange these programmes via the network's programme bank.

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Central purchasing service

The network's central purchasing service helps member stations acquire equipment, supplies and spare parts. It maintains a stock of the most useful items, which it buys in bulk, allowing it to offer competitive prices. A rotating fund provides capital to renew the stocks. Stations that contribute regularly to the service's funds qualify for a 50 percent discount on the purchase price, and get free shipping.

Other services

The network offers its members other services: a list of member and partner addresses; a calendar of workshops, training courses, co-productions, meetings and other activities; a list of search engines and navigation tools to make Internet surfing easier; and online documents of general interest.

Intriguing prospects

This network, along with the facilities offered by the digital-audio centre and programme bank, offers intriguing prospects for local radio stations in rural Africa.

Its services will soon be further enriched through ties with other networks, such as the audio banks maintained by the Anaïs women's network, CTA, the Panos Institute (see pp. 69–72) and Syfia. Forums to enable discussion and exchanges among the stations are also planned.

Co-productions offer a great deal of promise: they enable a topic to be dealt with in depth, and comparisons across countries to be made.

With these new tools, local radio stations will be able to come out of their isolation. They will be able to access far more programmes and find out what is happening elsewhere. They will be able to produce broadcasts that touch their audiences' lives and help them solve their daily problems. And they will have the opportunity to publicize their initiatives and their successes throughout Africa.

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Radio and television

Educational video: Video in service of development



Jacques Sultan

“How can we popularize agricultural credit?”

“That was the question which the managers of the national agricultural development bank of Mali (BNDA) asked us when they came to see us back in 1993,” says Cheikna Diarra, director of CESPA (Centre de services de production audiovisuelle) in Bamako, Mali.

“BNDA provides loans to rural people, but disputes are common because the farmers don’t understand the credit system. Recovering loans can be difficult, creating a climate of distrust and affecting agricultural production. BNDA called on us to help find a solution. CESPA already had a great deal of experience in audiovisual production and in training rural people. Together, we designed and ran an information and training campaign on agricultural credit.

“CESPA first conducted an in-depth investigation in the cotton-growing region to discover the cotton producers’ views of the bank, determine what they knew about the credit procedures, and study how they normally dealt with this subject.

“That was the basis for CESPA to produce a series of information and training modules consisting of videos and technical booklets.”

Speaking the same language

“The videos were based on real situations in the villages, with farmers and bankers depicting themselves,” says Cheikna Diarra. “They made it possible to highlight and analyse defects in the system, and to present a new vision of the relationship between the farmers and the bank. The technical booklets provided additional information and were used to support training courses for farmers on credit procedures and banking techniques, immediately after the videos were shown.”

Recording an interview with a farmer in Mali
(Photo: Jacques Sultan)



An evaluation study of the campaign continues the story: “The first campaign, conducted in the Bambara language in the cotton zone, was an immediate success. The farmers had integrated the role of the bank into their production activities, and they had learned to calculate the interest they were due. The farmers and the bank finally speak the same language.”

Profit is a sin?

Impressed, BNDA wanted to extend the campaign quickly to farmers growing rice for the Office du Niger (a parastatal involved in rice growing) and livestock herders in northern Mali.

“But they realized that it was necessary to adapt the campaign to the local circumstances, because the languages and traditions are not the same, and farmers do not necessarily pay attention to messages that are not specifically designed for them,” adds Cheikna Diarra. “For example, in Songhai, a language spoken in the north and influenced by Arabic culture, the word “profit” does not exist: the idea is regarded as a sin.

“So we had to find other words to explain to people that they would earn money if they saved. CESPA was given the task of designing new versions of the information and training modules.”

Today, more than 2000 farmers are trained each year on credit procedures, and the bank has become a true partner for them.

Reinforcing change

CESPA was established because of the Malian government’s wish for an information-and-training capability to reinforce changes under way in the rural sector: in farming and livestock production; water management, environmental protection, desertification and natural disasters; human nutrition, hygiene and health; and population control, education, and the conservation of cultural resources.

The government wanted to transfer a big part of its responsibilities to rural producers. To do that, it needed an overall solution to its rural training needs. It needed innovative, effective information, communication and training tools. This became CESPA’s mandate.

Video as an educational tool

CESPA’s work is based around an audiovisual centre that produces videos and community-level media, and a team of generalist staff with backgrounds in audiovisual production, training and extension.

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A CESPA cameraman on a village shoot
(Photo: Jacques Sultan)

These “audiovisual teachers” can contribute at any stage in the chain from design, through production, to distribution of training modules. They help diagnose problems, define the educational and communication strategies in collaboration with all the relevant actors, write scripts, produce videos, write materials to complement the videos, test the training approaches, and teach people how to use the training modules.

Once a topic has been defined, the CESPA team does a study of the communities involved, the relevant institutions, research organizations and resource centres. This study makes it possible to define the various aspects of the topic, ascertain existing knowledge and practices, and identify the cultural, economic and social characteristics of the target group.

The team then develops a “handbook” that summarizes what is known by the farmers and what is known by technical specialists. Juxtaposing these two lists makes it possible to formulate training objectives and to structure the contents in an appropriate way.

The video scripts are then written. The video footage is shot in a rural area, with farmers playing themselves.

When the programmes are complete, they are tested and modified as necessary.

Supporting roles

To support the videos, CESPA designs and creates a set of complementary materials:

- Participants’ guides, which repeat and summarize the contents of the video, and provide illustrations and brief texts in local languages. These guides are given to participants after the training session. The learners can read them to remind themselves of the content, and can use them in echo-training sessions for people unable to attend the first course;
- Trainers’ guides, which list the training objectives, outline the principal stages to be followed, and guide the trainer in running the training session: an initial test, a video showing, followed by discussions, practical exercises, and final evaluation.

Other supporting materials produced by CESPA include:

- Audiocassettes that repeat the main ideas covered in the training. The cassettes are given to participants afterwards;
- A flipchart containing a series of drawings that summarize the main ideas. The flipchart can substitute for the video if no television is available;
- Posters and photo displays. These can also complement the flipchart.

CESPA tests this teaching package as a whole to make sure it is effective.

CESPA staff run training courses in the villages, following a schedule they negotiate with the community. Splitting the training into several sessions allows everyone interested – men, women and children – to take part. That can mean the training team must stay in the same village for several days. Before each course, a test enables the trainers to gauge the participants' existing knowledge.

The training proceeds in several phases, with videos alternating with group discussions and practical exercises to allow participants to use their new knowledge. A final test makes it possible to measure the impact of the training on participants' knowledge.



A training course for farmers on audiovisual production
(Photo: CESPA)

Diversified productions

CESPA has produced and tested a whole series of rural training packages on a wide variety of topics; these include water hygiene, rice growing, compost making, horticulture, establishing and maintaining orchards, fish rearing, soil erosion, seed production and conservation,

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dune-fixation methods, health, nutrition, AIDS prevention, savings and credit, banking techniques, and the electoral code, to name just a few.

CESPA produces these packages in collaboration with partners engaged in rural development. The packages are field-tested and then handed over to teams of trainers and extension agents. They, in turn, run the courses with the help of battery-powered video equipment.

Apart from its training packages, CESPA can also produce institutional videos, documentaries, commercials and drama on request. It also produces general-interest programmes in collaboration with the national television station.

A contract to serve the public

Since 1992, CESPA's partners have gradually reduced their technical and financial support, and CESPA has become a public enterprise with commercial characteristics. It has now been granted financial autonomy, and must generate its own operating resources.

But serving the public remains CESPA's top priority, and this is not always compatible with the need to be financially solvent. At the end of 1999, the Malian government concluded an agreement with CESPA specifying its role and functions. This gives it the special task of coordinating communication activities and educational audiovisual production for all public development agencies, particularly those involved in rural development, environment, health and education.

Partnerships with farmer organizations

The CESPA management is well aware that CESPA can succeed only if it manages to involve farmers directly in its work. The government's policy of decentralization provides a favourable environment for local initiatives managed by community groups, producers' organizations, district administrations and NGOs.

Television is still rare in rural areas, and villagers are very eager to see this novelty. The only programmes they can normally see are pornographic or kung-fu films shown by mobile video units.

To fight this phenomenon and to provide an alternative that is more sensitive to local customs, CESPA has started a project to establish community cultural and video centres. This is a joint project with farmers' associations and a savings-and-credit network. The community associations themselves are to manage the centres. The video equipment will be financed by loans from the credit institutions, and CESPA and other sources will provide the educational, cultural and entertainment programmes.

The local radio station could also help. It could broadcast programmes about the topic currently being covered in the community centre. And it could also organize village broadcasts to gather local people's reactions and suggestions about the topic.

In each village with a video centre, community organizers would be trained to manage the centre, plan its activities and facilitate educational meetings.

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Rural newspapers: La Voix du Paysan: A platform for rural people

Information for globalization: A question of survival

Women communicating: Organizing to help ourselves

Reporting on the West African environment: Panos, the environment and democracy

Press-agency privatization: A news agency for Africa

Newspapers and newsletters

Unlike the fleeting images and sound bites of radio and television, printed information sticks around for a while. The newspaper may contain yesterday's news, but readers still pick it up, especially if there is no other source of credible information.

Newspapers and other printed materials have long had to contend with twin problems in rural areas: logistical and financial. How can you ship large amounts of paper out to many scattered villages? Distribution systems are poorly developed in the countryside. And how can you pay for the costs of producing, printing and distributing all those copies? Rural people cannot afford to pay the true cost of producing and delivering their newspaper, and collecting small amounts of money from lots of readers is a nightmare. Plus, advertisers, who pay a large proportion of the cost of urban newspapers, are few and far between in the countryside: rural people just aren't wealthy enough to buy very much.

Despite these problems, newspapers and newsletters are spreading in rural areas. Literacy and roads help. So do the donors, who continue to cover many of the costs.

Newspapers and newsletters vary vastly in scale. At one extreme are national papers, with sophisticated newsgathering operations, supported by press agencies and dedicated distribution services. At the other are local newsletters with a tiny, specialized readership. Despite their differences, the big dailies and the local minnows share many characteristics. Both depend on a flow of incoming information, a team of writers and editors, a distribution mechanism, and a group of readers they serve. And the paper is only as strong as the weakest link in this chain.

Like radio and television, newspapers carry a range of information: news, gossip, entertainment, cultural topics. It is important for rural readers – and for the research and extension organizations that serve them – for agricultural and environmental information to be part of that mix.

Having said that, newspapers are strangely neglected by development institutions. These institutions seem to prefer to publish booklets and brochures (which they then find hard to distribute), and fail to use the medium that so many people open at the start of the day: the newspaper. Newspapers have many advantages: large numbers of avid readers, up-to-date information, often high credibility, read by several readers, and so on. And once a story appears in a newspaper, the development agency doesn't have to worry about distributing it: the newspaper's sales force takes care of that.

Isn't it time that development agencies woke up to the potential of newspapers?

Newspapers and newsletters

La Voix du Paysan: A platform for rural people

Rural newspapers:



Pascal Airault

Nearly 30,000 copies printed every month in French, English and Arabic, distributed internationally – *La Voix du Paysan* ("The Farmer's Voice") is without doubt the most successful rural newspaper in French-speaking Africa. This achievement is underlined by the range of books and merchandise that *La Voix* produces, and by the requests its managers receive to expand into neighbouring countries.

How did La Voix achieve such success?

The idea to create a newspaper for rural people arose during a study visit by Cameroonian farmers to Burkina Faso in 1987. The group leaders wanted to share what they had learned with other farmers who had not been on the trip. So they designed an information bulletin to disseminate their stories. The farmers enthusiastically helped in the production work, and the bulletin was highly successful. As a result, it was continued, first as a newsletter and then from 1991 onwards as a monthly newspaper. *La Voix du Paysan* was born.

The subtitle of *La Voix* describes the paper as a "rural information, training and discussion monthly". It provides a real platform for rural areas, in particular through the three or four pages of readers' letters in each issue. It also allows technicians, researchers and extension agents to convey information through technical and scientific articles. These cover cropping techniques, methods to combat pests, diseases and weeds, and advice on rearing livestock and marketing farm produce.

"Working with agricultural experts is very important," says Martin Nzegang, the editor. "But journalists rewrite all the articles in order to put the technical information into popular language so farmers can read them. For example, we translate the names of plants and diseases into the local languages."

La Voix du Paysan journalists working on the next issue of the paper, in the offices in Douala, Cameroon
(Photo: Pascal Airault)





Bernard Njonga, publication director of La Voix du Paysan, in the paper's editorial office in Douala, Cameroon
(Photo: Pascal Airault)

Taking the pulse of the country

La Voix du Paysan rolls off the presses on the first Monday of each month. At the same time, the newspaper management organizes an editorial meeting in Yaoundé to plan the journalists' next field assignments. Each assignment lasts one or two weeks.

The reporters scatter to the various areas of Cameroon: the forest, the coast, the Sahelian zone, and the highlands. Going to the heart of the provinces enables them to take the pulse of the country and to hear the villagers' complaints.

"Very often, the journalists leave with no clear topic in mind, and no planned itinerary. Their discussions with the people allow them to determine the subjects they will ask about," explains Bernard Njonga, the paper's publication director.

Balancing acts

Nevertheless, each issue must be balanced. First, does it sufficiently reflect the voice of rural people?

Second, will readers in each of the major zones in Cameroon feel they are represented in the paper? Farmers in the dry, cotton lands of the north do not have the same interests and concerns as crop farmers in the south, or as market gardeners living around the cities. The management sometimes decides to produce different editions in order to serve these various groups of readers. For example, an insert on forest-zone crops, such as coffee and cocoa, may be included in copies of the newspapers delivered to the wetter, coastal south, while a "Sahel" insert accompanies the copies sent to the north and to Chad.

Third, each month's issue must have a balance between general articles, training and discussions.

Fourth, there should be enough pictures – a mix of photographs and illustrations – to satisfy the readers' tastes.

Last, the editors must ensure that official reports are balanced by stories about the legal and economic realities that farmers face.

Newspapers and newsletters

When they come back from their assignments, the journalists convene a second time. They report on their trips, the problems they encountered, the farmer initiatives they discovered, and the interviews they conducted. The team discusses and refines the subjects. "If we find that we're off balance, we can send someone on another fact-finding trip," explains Martin Nzegang.

This second meeting also provides an opportunity to evaluate the paper. During their travels, the journalists have been able to see the impact of the previous issue; they feed this information back to the management and their colleagues. The team then gets on with the task of writing.

Readers' letters

Another major source of information is readers' letters. The subjects they cover directly influence the content of the next issue. Bernard Njonga opens the letters himself. "The readers talk about their problems and pose questions. The editors take what they say into account and try to respond in various ways," he says.

One of those ways is by printing answers on the letters page itself. But the editors don't stop there. If the topic is a legal or administrative one, they may start an investigation. A technical question may result in printing a full-blown article or a separate booklet.

To respond to the demand for information, *La Voix* has developed new ways to disseminate information. Two series of booklets cover technical topics: 20,000 copies have been printed. A series of comic books cover coffee, cocoa, tomato, oil palm and water melon: 5000 copies have been produced. "Comics can convey technical information in a humorous way," says Bernard Njonga.

Another channel is the use of open days and demonstrations organized by the resource centre of SAILD (Service d'appui aux initiatives locales de développement), the NGO that provides the newspaper's organizational home. The most recent demonstration was on mushroom cultivation. Farmers and technicians choose the topics for the demonstrations, and specially selected people are invited.



Readers of *La Voix du Paysan* taking a break from work
(Photo: Pascal Airault)

Funding sources

Each copy of *La Voix* costs about 610 CFA francs (€0.93). That includes salaries, reporters' expenses (travel, board and lodging), overheads, personnel and printing expenses. Distribution costs a further 80 CFA francs (€0.12) a copy. The sale price is only 300 CFA francs (€0.46) – less than half the expenses.

A subscription for 12 issues costs 2000 or 3000 francs (€3.05–4.57). It varies according to the literacy rate and relative wealth of the place where the paper is sold: the lowest prices are charged in the Sahel zone, where living conditions are most difficult.

Overall, the newspaper itself covers between 25 and 50 percent of its costs. Some of the remainder comes from advertising and the sale of merchandise such as caps, T-shirts and comics. Subsidies from external donors such as the Swiss Agency for Development and Cooperation (DDC, Direction du développement et de la coopération), the European Union, SOS Faim (a Belgian NGO) and EZE (Evangelische Zentralstelle für Entwicklungshilfe; Protestant Association for Cooperation in Development), ensure *La Voix*'s financial survival. In 1999, the newspaper received an additional 9 million CFA francs (€13,720) from the Agence de la Francophonie.

"Pressure from the farmers ensures that the newspaper is not filled with advertising. And our donors do not look too kindly on this source of funding. So the space reserved for ads is quite modest," says Bernard Njonga. Only advertisements relevant to agriculture are accepted. "Because of the paper's success, certain politicians have tried to buy pages to circulate political messages, but we always refuse," explains Bernard Njonga: *La Voix* should stay non-political and non-tribal.

Having said that, the editorial policy is strongly committed. One example of this is the title of a recent article: "Imported foodstuffs: A catastrophe for farmers?"

Another is the publication of a letter written by farmers in Santchou complaining to Paul Biya, the president of Cameroon. In October 1997, the authorities had dissolved Soderim, a State-owned company growing rice in Santchou. The government wanted to sell the company as a complete unit, but the farmers wanted the chance to buy some of its equipment. After the letter was printed, the authorities changed their minds and made it possible for the farmers to bid for the equipment at the auction.

"Today, the newspaper's target is no longer just farmers. Because decisions that influence rural people are made in the cities, the newspaper has opened itself to townsfolk to create an exchange, which we hope will make it possible to sensitize decision-makers," explains Bernard Njonga. He thinks that the decision-makers' lack of information on what happens in the field is an important obstacle to development.



La Voix du Paysan won the 1999 award for the best newspaper in Cameroon (Photo: Pascal Airault)

Newspapers and newsletters

International expansion

The current print run for *La Voix* is 30,000. That includes 20,000 for the French edition in Cameroon, and 4000 for the English version. In Chad, 4000 copies appear in French and 2000 in Arabic. “We hope to print between 100,000 and 150,000 copies in Cameroon and Chad within three years. This goal is realizable, because we estimate the potential readership, just in Cameroon, is 2.5 million people,” say the editors.

Demand is increasing for additional editions in the Central African Republic, Congo (Brazzaville) and Gabon. Hundreds of NGOs have asked for permission to distribute the newspaper in the countries bordering Cameroon. Each month, 150 copies are sent to Gabon, 75 to the Central African Republic and 50 to Congo.

The team’s efforts were rewarded recently when a school examination question was taken from an article in *La Voix* about cocoa production and marketing. At the end of 1999, *La Voix du Paysan* received recognition from its peers when the association of print journalists of Cameroon voted it best newspaper of the year.

The circulation headache

Newspaper circulation in rural Africa is a thorny problem. Private firms deliver papers only in the big cities. Transport in rural areas is often chaotic, and the mail service is slow and unreliable. In response, *La Voix du Paysan* has tried several different strategies.

At first, the paper was distributed by Messapresse, a private firm that delivers all the national newspapers. “That was a failure because this firm delivers only in big cities, whereas our goal is to reach a rural audience. Plus, the firm does not provide any information on changes in the habits of readers,” says Bernard Njonga.

So *La Voix* tried to create its own distribution network using the rural correspondents who wrote for the paper. But writing and selling are two different skills, and the results were not convincing.

So they changed tack, and decided to professionalize the distribution. Distributors were trained in the various parts of the country. Their job was to distribute all the newspapers in their area. This experiment also failed because selling papers in rural areas was not profitable.

Newspapers through schools

In 1999 the managers implemented a new strategy. *La Voix* signed a contract with the head teachers of about 50 primary schools throughout the country. The schools receive several copies of each issue of the paper. In return, they provide rooms or reading times for

La Voix du Paysan in their weekly timetable. “Our objective is to interest young people in rural development, to get them used to reading, and to use them as conduits to their parents,” says Bernard Njonga. Preliminary results show that readership increased in the areas with such a school partnership.

At the same time, *La Voix* signed performance-based contracts with distributors in 17 areas in Cameroon. These distributors must provide kiosks in each of the districts they serve. They have a sales target, and are paid according to results. The newspapers are taken to the kiosks by bus, bush-taxi, motorbike – whatever it takes to get them to the most remote areas. The maximum time between publication date and the paper’s arrival in the bush is 15 days. In the kiosks in the big cities, it is available in one or two days. “All the same, the first people to be served are the subscribers. They should not see the newspaper on a newsstand before it arrives at their home,” says Bernard Njonga.

Responding to farmers’ needs

In May 1999, the tax authorities decided to close a feed mill belonging to a poultry-breeding cooperative in Bafoussam. This cut off the supply of feed to 100,000 chickens. Alerted by the cooperative, *La Voix du Paysan* did an investigation that showed authorities had charged the cooperative a punitively high level of tax – one that the law did not envisage for cooperatives. “Our report made the chief finance official of Bafoussam disappear for a month,” smiles Bernard Njonga. The feed mill was finally reopened, and the Ministers of Agriculture and Finance met the members of the cooperative and admitted their subordinates had made an error.

The newspaper also makes decision-makers aware of problems in trade and in food safety. For example, during a dioxin scandal in March 1999, *La Voix du Paysan* published an article on the dangers of importing frozen products from Europe. Members of Parliament produced copies of the paper in during a parliamentary debate and goaded the minister responsible into taking adequate measures.

A way of life

The editorial team now consists of 12 journalists: four each for the English and French editions in Cameroon, and two each for the French and Arabic editions in Chad. The team also includes two administrative staff, a translator, a health writer, three people to handle distribution, an editorial coordinator, and the publication director.

Economic pressures are tying most journalists more and more to their computers and telephones. Not so at *La Voix du Paysan*. The paper’s reporters are at the roots of their trade: they travel to interview people, gather stories and seek explanations.

“In the morning, we seldom know where we will sleep that evening,” says Jean Armstrong, a *La Voix* reporter. “You can travel by motorbike, taxi, in the back of a pick-up, it doesn’t matter, you get in whatever vehicle will take you where you want to go.”

Newspapers and newsletters

"I sometimes have to travel in the boot of a car," adds Martin Nzegang.

It may not be an easy life, but what counts is the satisfaction the job gives. "Even though you're tired from the journey, when you find yourself in the countryside or the forest in the evening, you can breathe in – it is like a rebirth," says Jean Armstrong. "Talks with the villagers continue by the fire late into the evening, and the next day you set out again with your head full of images."

This spirit pervades the whole team. "We don't distinguish between Sundays and Mondays," says Jean Armstrong. "Being a journalist with *La Voix du Paysan* is a way of life."

It is not a life for everyone. "Several people tried to work on the paper, but they realized that it wasn't their vocation," remembers Bernard Njonga. "Some others tried to smuggle in articles they had been paid for. We quickly found the stories and rejected them."

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Newspapers and newsletters

Information for globalization: A question of survival



Jacques Sultan

The deregulation of agriculture is leading to major changes for Côte d'Ivoire's farmers. Instead of receiving a guaranteed price from a government agency, they have to sell their cocoa, coffee and rice themselves on the open market. They must also buy fertilizers, seeds and other inputs from the market, and arrange for storage and transportation. And research and training services are being privatized too.

The farmers – over half the country's population – are ill-prepared for these changes. ANOPACI, a national association of agricultural organizations (Association nationale des organisations professionnelles agricoles de Côte d'Ivoire) is trying to help them adapt.

Sylvain Kouao, president of ANOPACI's communication commission, says that information and communication are key to helping producers face their new challenges. "Our strategy, our action plan, pays special attention to things that can strengthen the farmers' ability to negotiate. Our members are facing new situations and are involved in difficult negotiations with other players in the industry."

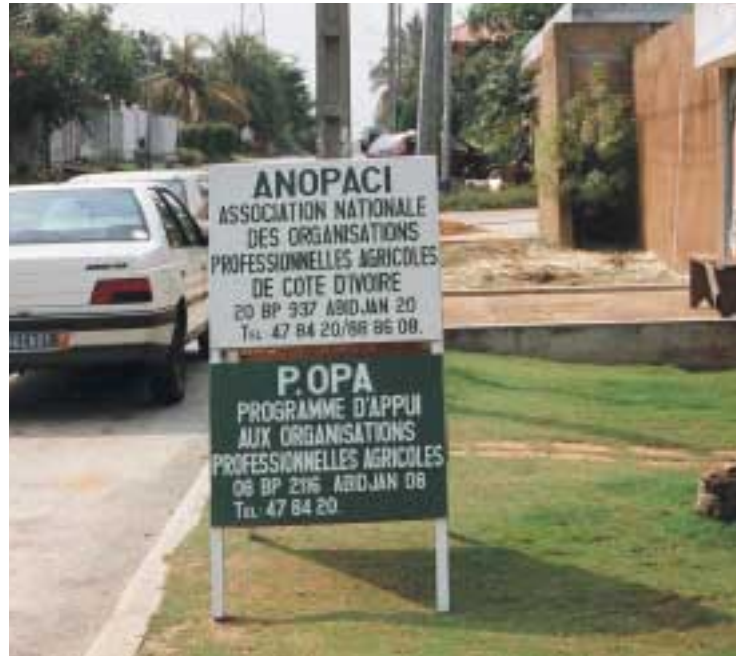
"Whether they grow cotton, coffee, cocoa, rubber or food, it is essential for them to have regular, up-to-date information on prices, on changes in the industry and market conditions, and on what others are doing. It is a question of survival."

This reasoning has led ANOPACI to design a communication approach that performs three major functions:

- Providing managers of professional agricultural organizations (farming groups, unions, cooperatives) with economic, technical and financial information to strengthen their negotiating position;
- Facilitating information flows among different producers' organizations, industry sub-sectors and regions within the country;
- Publicizing ANOPACI's positions on major agricultural issues, especially on land, agricultural finance, training, research, market organization and prices.

A magazine for agricultural professionals

Le Professionnel agricole ("The Agricultural Professional") is ANOPACI's main tool. This magazine began production at the start of 1999. Published once month with support from Coopération française, it has 24 full-colour pages and a circulation of 5000.



Outside the ANOPACI office in Abidjan,
Côte d'Ivoire
(Photo: Jacques Sultan)

The magazine is written in French because its main audience is the French-speaking senior staff of professional organizations. These managers distribute copies to their organization members.

"At the beginning," says Marie Josée Tafforeau, who coordinates the editorial team, "we wrote mainly about general topics, ANOPACI's organization and work, news about the government, and changes in the various sub-sectors. Plus, each issue featured a particular experience, an organization or a 'person of the month'.

"Then we started putting out special issues on each branch of the industry: coffee, cocoa, rubber, livestock, credit, fish culture. We treated each branch in depth: we described its economic and technical set-up, based on information we gathered from various parts of the country."

How can I start a pig farm?

"But very quickly," she added, "we were faced with requests from readers who wanted technical information on all kinds of subjects: How can I plant coffee trees? How should I care for a sick animal? How should pesticides be used? How can I start a pig farm? What do I have to do to set up an operating account? Is tobacco-growing more profitable than rice? How should I control maize diseases? How can I get a credit line?"

This deluge of requests is evidently because the producers have no other source of relevant information, and they do not get the answers they need from the ever-shrinking government extension services.

So *Le Professionnel agricole* has changed. It has begun including technical guides, written in simple language and illustrated so that readers can use them easily.

Newspapers and newsletters

These guides have proved popular. To make them even more useful, the magazine plans to publish them as detachable inserts. It may also produce a series of guides that could be sold separately.

The pages containing readers' letters and monthly economic indicators have also been bolstered to enable readers to voice their opinions and to keep them informed about market trends.

The distribution hurdle

"We have won the first part of our bet," says Séraphin Biatchon, ANOPACI's secretary-general. "In under a year, the newspaper has gained credibility; the articles are increasingly systematic. The mail we get from our readers is encouraging: they tell us that the newspaper is well written and that it accurately reflects the concerns of the rural people in Côte d'Ivoire. But we should not rest on our laurels. We still have some big hurdles to jump."

The first hurdle is distribution. This is handled by the eleven organizations that are members of ANOPACI. But sales through these channels generate less money than expected, suggesting that distribution is not as effective as it should be.

"With better distribution, we could print 50,000 copies," says Séraphin Biatchon. "There are 500,000 people in the coffee and cocoa sector alone. There are 200,000 in cotton, 25,000 in oil palm, and so on. We could be the most popular monthly in Côte d'Ivoire."

The magazine does indeed have a large potential audience. In every village there are people who can speak French, and who could read or pass on information to their neighbours.

But how to get the magazine to them? Places to sell the magazine are gradually being set up in Abidjan and other main towns. The Ministry of Agriculture's field offices could distribute copies, as could companies such as Nestlé. ANOPACI has concluded an agreement with Nestlé to sell copies to cocoa and coffee farmers through its stores and buying-posts.

In 2000, improved distribution will be the main focus for the management of *Le Professionnel agricole*.

Financial autonomy

The second big hurdle will be even harder to jump. Each issue of the magazine costs 3 million CFA francs (approximately €4600), but only one-fifth of this amount is generated from sales or advertisements. Coopération française covers the shortfall. The magazine would like to cut its reliance on this support to ensure its sustainability and independence.

Steps to achieve this goal include publishing at two-monthly intervals (instead of every month), attracting more advertisers, raising the sale price from 300 to 500 CFA francs (€0.45 to 0.70), improving sales, and publishing the technical inserts as separate booklets.

Information gathering

Finding information to fill the magazine is an uphill task. “It is a question of motivating our association members,” says Sylvain Kouao. “We have to stimulate the free, informal flow of information, because we have only one journalist and we cannot afford a network of field-based correspondents.

“For example, at the moment, the end-of-Ramadan festival is approaching. I have just found out that the sheep that I could have sold yesterday for 20,000 francs (€30) will now fetch 26,000 francs (€39). That’s interesting information for anyone who raises sheep.

“The leaders of ANOPACI’s member organizations should put more effort into collecting information from their local members, get used to sending us interesting tidbits quickly and informally, and take lots of photographs. It is a habit that has to be learned.”

Linking audiences

“Farmers need specific information, fast,” says Séraphin Biatchon. “The east of Côte d’Ivoire might be drowning in bananas, but the weather might have spoiled the harvest in the south. It should be possible to link the demand in one place with the supply in another. A producer with 1000 tons of yams in his field has to find a buyer quickly. He needs to be linked with other players in the industry.”

Séraphin Biatchon believes that the solution to this problem lies in other forms of communication: radio, for example, or new technologies.

To make a living you need information

“The producer who has a ton of coffee to sell should know how much it will fetch in Abidjan, and what direction the price is moving, so he can decide whether to sell or hold,” says Sylvain Kouao.

“The same producer must have the possibility of choosing among different fertilizer producers to get the best price and quality. Animal raisers should have access to a list of local processors, transport firms, and packing companies. That is especially important in areas such as pig production, where competition from subsidized products from the European Union is fierce. These days, in order to live from farming – to make a real living from it – you have to have access to information.”

Newspapers and newsletters

Internet on the farm?

"The information in *Le Professionnel agricole* is targeted," says Séraphin Biatchon, "but it is not fast. It comes out once a month. If I need information for tomorrow, I won't find it in the magazine. Shorter channels are needed, closer to home, at the cooperative or village level. Radio could be promising, but rural radio stations are not sufficiently developed in Côte d'Ivoire. The small stations that do exist here and there have too limited a range."

"Many villages are remote," he adds. "The farmers are subject to pressures from traders who come to buy their output by the side of the field. The farmers do not know the market prices. They can be 'had'. And this is a very bureaucratic country: they have to get photocopies of documents, identity cards, official letters, quotes, invoices. . . All these things cost money: they have to go to town, pay for transport and lodging, waste precious time."

ANOPACI is tackling this problem in collaboration with Winrock, a non-profit consultancy firm. Their initiative is called "Internet on the Farm". It aims to build a network of village telecentres offering a whole range of services: word processing, photocopying, fax and e-mail.

The telecentres will also allow users to access databases containing economic, technical and financial information on the major agricultural sub-sectors, marketing and supply channels. They could also get information and training on health, education and the environment. And lastly, the centres should make it possible to send local-level information to the editors of *Le Professionnel agricole*.

This idea is still in the preliminary design stage. ANOPACI does not want to skip steps, so it is studying all aspects of the situation, especially the lack of electricity in many rural areas, the need to maintain equipment, and the economic viability such investments. A questionnaire was sent to ANOPACI member organizations to check their interest in the idea. ANOPACI will assess the results.

Three village test-sites have been identified in the north, centre and south of the country. The African Development Bank may be interested: it wants to test alternative ways of supplying electricity for this new type of rural media.

What's the price of coffee today?

In 1998, the World Bank started an information system for coffee and cocoa prices. This uses computers and a website to display the current prices of these commodities and make them known to farmers via the daily press and the radio.

This system is called PRIMAC (Prix du marché du café et du cacao). It is currently managed by Caistab (a commodity price-stabilization agency), together with government agencies and farmers' organizations. But PRIMAC has not performed as well as was hoped, and

ANOPACI thinks it can help improve it. ANOPACI is negotiating with the World Bank to take over parts of PRIMAC and to expand it to cover commodities produced by ANOPACI members: cotton, palm oil, rubber, banana and pineapple.

With *Le Professionnel agricole*, the telecentres and this price-information system, Ivorian farmers will soon have powerful information and communication tools to help them face the challenges of globalization.

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Newspapers and newsletters

Women communicating: Organizing to help ourselves



Jacques Sultan

Women in rural Africa are socially and economically marginalized. It is hard for them to get land on which to grow crops. It is hard for them to access credit, seeds and technical advice. They have to overcome many obstacles if they are to establish their own enterprises and achieve recognition as farmers in their own right.

Yet women play a vital role in the rural economy. They head 30 percent of all households. They do much of the back-breaking field work, and are responsible for most post-harvest processing and produce marketing. Not to forget their roles as mothers, teachers, cooks, nurses and household managers.

Africa's women know that if they are to progress, they have to rely on their own energies. So increasing numbers of women are organizing themselves into groups and associations to tackle all kinds of social and economic problems: in agriculture, small-scale industry, marketing, literacy, nutrition, health, education and culture. Here are three examples, taken from the newsletter *Paysannes africaines*.

- In Mauritania, 40 women started a market-gardening cooperative. After a few years, thanks to their enthusiasm and hard work, their quarter-hectare plot had developed into a 3-hectare orchard, and the cooperative had grown to include 130 members. Their success enabled them to obtain outside support and to acquire a motor-driven pump, a machine to remove maize husks, three sewing machines, and a literacy-training room. These women can now read and write, and manage their cooperative themselves. They market their produce and have acquired fuel-efficient stoves, eliminating the need to collect firewood each day.
- A group of women in Benin processes groundnuts and makes cakes, soap, ointments and shampoo. Selling their output improves their standard of living and gives them independence.
- The women in a village in Chad were tired of carrying firewood and farm produce on their heads. They clubbed together for a loan to buy an oxcart. To help pay for the cart, they rented it out to other villagers. In three years, they had made enough money to refund the loan and to pay for repairs on the cart.

These initiatives remain fragile and isolated. They have not benefited from the technical and financial assistance that outsiders can bring. But perhaps because they are modest, they are encouraging. They seem do-able.

By making such success stories more widely known, it is possible to motivate other rural women to form similar self-help groups.

Swapping ideas

The *Paysannes africaines* ("African women farmers") network was founded in 1991 in Paris as a result of repeated requests by African women for information exchange.

The network publishes a newsletter, likewise called *Paysannes africaines*, three times a year. It is sent to about 370 women's groups in 15 French-speaking countries in Africa. It is very simple: just two A4 sheets, folded in the middle and stapled. The text is in French, and the drawings are by African artists.

The newsletter aims to promote information exchange among women's groups, expand their knowledge and experiences, help them develop their potential and make them heard outside. The newsletter itself is based on self-help. Although it is published in Paris, the entire contents come from African women: group leaders or extension workers who write about real village experiences.



Some pages of issues of the newsletter *Paysannes africaines*

Regular sections

Paysannes africaines contains several regular sections. The main one contains brief articles in which writers describe their organizations' experiences in group-managed fields, market gardening, micro-enterprises for processing produce, grain banks, village shops, craft cooperatives, mutual-credit funds, and so forth.

Another section covers technologies. It describes methods developed or adapted in the villages, recipes, gadgets, and ideas to solve daily problems. Examples include how to process cassava, make soap, dry fruit and vegetables, conserve tomatoes, make candles and cough syrup, dye cloth, make couscous from yams, control termites, and build mousetraps and stoves.

Readers are invited to send in descriptions of their own methods to the newsletter so that others can benefit from them. The most interesting ones are printed in separate brochures, which are sent out to readers.

The section containing readers' letters is always full. Letters allow readers to express various points of view, and enable the editors to gauge the newsletter's impact and to identify readers' needs.

Newspapers and newsletters

There is also a question-and-answer section. A reader's question is printed in one issue of the newsletter, and replies based on other readers' experiences appear in the next issue. In this way, *Paysannes africaines* fosters dialogue among readers based on their willingness to help each other.

A final section contains information on training courses, meetings and publications of relevance to the readers.

Positive results

Paysannes africaines has a positive impact, judging by the growing number of subscribers and reader feedback. The deliberate editorial choice to promote direct dialogue among women lends the newsletter a down-to-earth, practical flavour.

There is still the problem of language. Many rural women in Africa do not understand French, so must rely on others to translate the newsletter for them and to feed information back to the editor.

Partnerships with national organizations would allow local-language versions of the newsletter and technical brochures to be produced. This approach would also make it possible print more copies and distribute them more widely, and at the same time link up with organizations working with women's groups in the field.

In 2000, after being published in Paris for the last eight years, *Paysannes africaines* moved to a new home in Africa.

Women's turn to speak

New avenues are opening up for *Paysannes africaines*, thanks to a partnership with CESAO (Centre d'études économiques et sociales d'Afrique de l'Ouest). This is an NGO based in Bobo Dioulasso, Burkina Faso, which gives special emphasis to rural women's issues (see Box 7).

CESAO's main office in Bobo Dioulasso, Burkina Faso
(Photo: Jacques Sultan)



BOX 7**CESAO: A self-help tool for rural people**

CESAO is an international NGO, founded in 1960 and based in Bobo Dioulasso, Burkina Faso. It promotes self-help through training, support, exchanges, advice and publications. It works in partnership with the major organizations engaged in rural development: associations of farmers, women and youths, and field-level service agencies.

With each partner, CESAO discusses the types of activity that would best meet its needs. CESAO can organize various types of activity: workshops, meetings to share and reflect on experiences, training courses, field-level support activities, written or audiovisual materials, lobbying, etc.

Workshops and meetings

Workshops and meetings provide an opportunity for farmers' organizations to learn about and discuss hot topics: decentralization, privatisation, land reform, the legal and institutional frameworks for consortia of farmers' associations, and so on.

Training courses

CESAO offers ten courses a year in its training centre for two types of participants: managers of rural organizations, and staff of extension agencies and other rural support services.

Field-level support

Depending on the needs of each partner, CESAO's field-level support work can take several forms: specialized training courses, consultancies, evaluation, audits, study visits, information exchanges, or action-research projects.

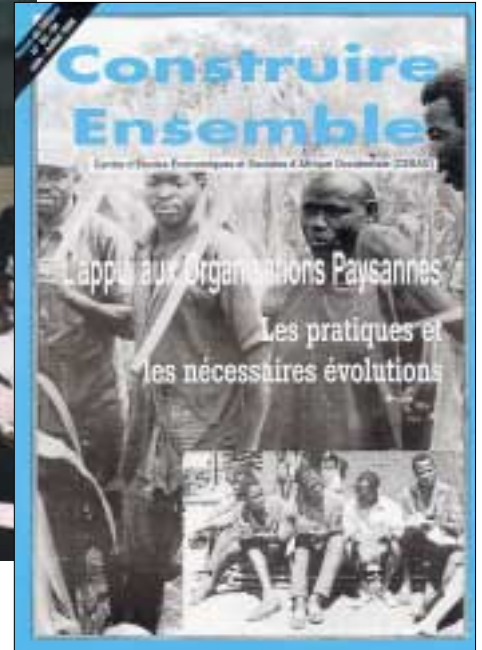
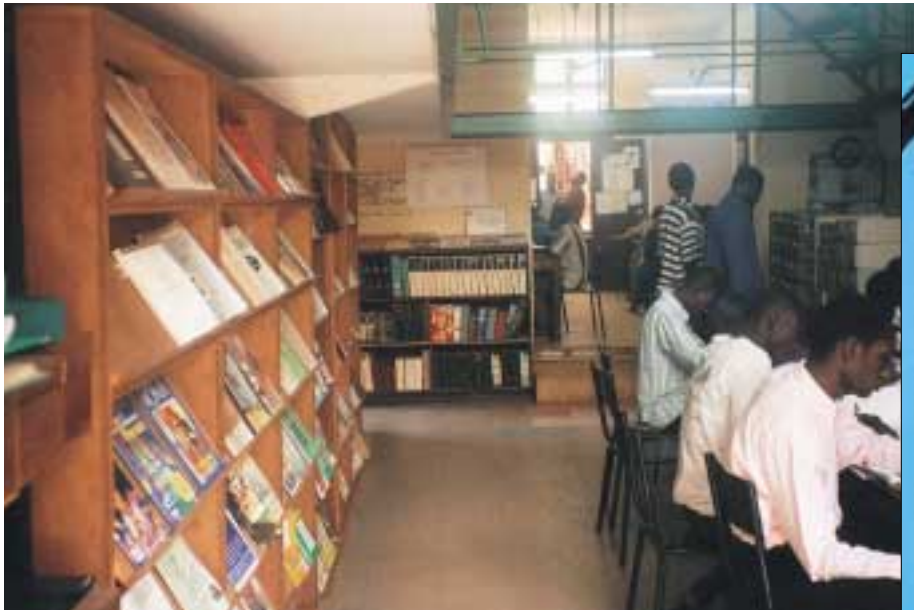
Documentation and publications

CESAO has one of West Africa's best resource centres on rural development. This centre subscribes to many national and international periodicals, and serves students, researchers, farmers and officials.

CESAO produces various publications:

- The periodical Construire ensemble ("Building together") appears three times a year and contains lengthy reports on rural activities;
- The newsletter Les nouvelles du CESAO ("CESAO News") is aimed at rural people. It is published in French, Mooré and Dioula;
- Échanges ("Exchanges") is a series that describes rural experiences. It is written in basic French; translations are planned in the main local languages;
- Les cahiers ruraux ("Rural notebooks") are French-language technical bulletins that serve trainers and extension agents.

Newspapers and newsletters



Above: CESAO's library is heavily used (Photo: Jacques Sultan)
Right: The June/July issue of the CESAO periodical, Construire Ensemble

In 1996, after the women's world summit in Beijing, CESAO organized an international meeting in Bobo Dioulasso entitled "La parole aux femmes" ("Women's turn to speak"). More than 150 women from eight countries in West Africa took part. They decided to develop a plan of action for rural women in each of their countries.

Subsequent meetings in six countries, supported by CESAO, brought together numerous women's associations that wanted to contribute to this effort. These meetings resulted in national action plans and established committees to implement them. A further meeting in March 2000 reviewed the national initiatives, translated them into a regional action plan, and began building the foundations of an organization to represent the interests of rural women in West Africa.

Paysannes africaines will become the communication tool for these networks. It will retain the spirit that led to its creation – the sharing of information and experiences among rural women – but will adapt itself to the needs and priorities set by the new networks.

FOR MORE INFORMATION

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Newspapers and newsletters

Reporting on the West African environment: Panos, the environment and democracy



Paul Mundy

A long list

Forests being chopped down. Eroded soils. Drought. Creeping desertification. Plants and animals on the verge of extinction. Oil spills. Traffic-clogged cities filled with rubbish, choking on foul air. The list of West Africa's environmental problems is long. Yet the public knows little about them. And without public pressure, governments ignore the environment. The list of problems grows longer by the day.

That was the situation in the late 1980s. It was clearly time to raise environmental issues in the public's mind, and to put them onto policy-makers' radar screens. But how?

Institut Panos, an NGO specializing in media, analysed the situation and identified two key constraints. Like the public, journalists in the region knew little about environmental issues, so they could not report on it accurately. And media bosses didn't think that the environment was an issue that would sell newspapers or attract listeners. The result: few stories on the environment, leading to little interest, leading to fewer stories.

Planting the seed

Alymana Bathily, coordinator of Panos West Africa in Dakar, Senegal, explains how Panos attacked these constraints. In 1990, it launched a project called "Afrique Envi". It made agreements with the managers of newspapers and radio stations throughout West Africa to support the production of information on the environment. The newspapers agreed to publish a page of environmental stories each week; radio stations were to produce one hour of programming each month. The agreements were initially for one year, but could be renewed for another year if desired.

In return, Panos provided the newspapers and radio stations with training, information and equipment. It trained more than 40 journalists in environmental issues. It published guides, in English and French, to environmental issues and how to report on them. It commissioned primers on the environment in several countries, including Niger and Chad – two of the countries worst affected by desertification.

Panos also subsidized the reports by providing recording equipment and travel costs to enable the journalists to get to environmental trouble spots. To ensure that the journalists who wrote the stories actually got the support, Panos split the funds between them and their



Some of Panos' materials on the environment and communication
(Photo: Paul Mundy)

was far greater. Media managers began to realize the value of environmental content: they saw that such stories would sell newspapers and entice listeners to tune in.

Panos did not find it necessary to renew the project when it ended in 1995: the newspapers and radio stations were by then covering environmental subjects by themselves. Afrique Envi had planted the seed, and the seed had grown. The environment had become mainstream.

Media, democracy and peace

Panos is currently using a similar approach to increase coverage of other neglected topics: human rights, democracy and women's issues. It trains journalists in the professional skills needed, introduces them to the issues, and supports coverage by newspapers and radio stations.

Several countries in West Africa are torn by civil war. In such situations, unscrupulous leaders can use the media to stifle dissent or to inflame passions. Panos is seeking ways to use the media to resolve these conflicts peacefully: by encouraging dialogue, reinforcing professional ethics, lobbying for media independence, and pressing for changes in laws to make it easier to set up newspapers and radio stations.

Sharing radio programmes

One way to increase dialogue is to share programmes. To do this, Panos has established an experimental electronic "bank" of radio programmes at its office in Bamako, Mali. All that is needed to use the bank is a phone line, a cassette recorder and a computer equipped with a modem. A radio producer connects to the bank via the Internet (www.oneworld.org/panos_audio). With a few clicks of the mouse, he or she can select a programme from the several hundred in the bank, and download it for broadcast. With another few clicks, the producer can also contribute to the bank programmes that his or her own station has produced.

management. As proof that the stories had been printed or broadcast, the journalists would send Panos newspaper clippings or audiocassettes containing the programmes.

The direct result of this effort was at least 12 one-hour radio programmes, plus 48 newspaper articles and features, throughout the year in each country. The indirect result

BOX 8

Decentralization and local development

Many governments in Africa are decentralizing, giving more and more power to provincial and district administrations. Local governments, it is argued, are closer to the people than are ministries in the distant capital: they are more flexible and more receptive to local needs. But effective decentralization depends on effective communication with local people. This is difficult because most local institutions lack the skills and facilities to disseminate information, and there are few local newspapers.

In Senegal, Panos is trying to overcome this problem through an initiative called Residel (Réseau d'informations internet sur la décentralisation et le développement local). The project began in May 1999 and is supported by CTA.

Residel is an unusual partnership linking the public sector, associations, NGOs and media organizations. The public-sector partners include a branch of the Ministry of Agriculture that is responsible for food security, and ISRA (Institut sénégalaise de recherches agricoles). They have agreed to feed the network with technical information.

The second type of partner consists of associations of regional presidents, mayors, and the leaders of rural communities. The third group is NGOs such as FRAO (Fondation rurale pour l'Afrique de l'Ouest) and CNCR (Conseil nationale de concertation et de coopération des ruraux). These organizations have agreed to feed the network with information about the life and activities of rural communities.

The media form the fourth group. Several newspapers and community radio stations have agreed to disseminate information from the network to their readers and listeners.

The Residel project supports the production of programmes and articles on decentralization and local development. The information provided to the network is converted into digital form and is available from the Residel coordinator.

After only a few months of operation, the network had gathered information on a wide range of topics, including decentralization, local development finance, credit, food processing, crop protection, bush fires, afforestation, management of rural roads, waste processing, sanitation, peri-urban market gardening, horticulture and fruit-tree production, soil fertility, savings banks, fishing codes, small-scale industry, rural taxation, and tourism.

Regularly supplied by the actors in local development, the network promises to be an invaluable resource for decentralization and local development in Senegal.

The service is free, as is the software, which can be downloaded from the Internet. The radio station saves time and money: in pre-Internet days, just about the only way to get programmes from outside was to wait for a cassette to arrive in the mail. The station can also share its own programmes with other broadcasters, also at zero cost.

Traditional “snail-mail” is still important, though: the programme bank uses it to receive news items from correspondents in 20 African countries and to send programmes to more than 100 radio stations throughout Africa and in Europe.

Financial independence = editorial independence

Minimizing costs is important for the media, Alymana Bathily explains. Many newspapers and broadcasters in West Africa struggle to make ends meet. Independent media are vital for democracy, but there can be no independence without economic viability.

To guarantee the independence of publishers in Burkina Faso, Côte d’Ivoire, Ghana and Mali, Panos has supported the creation of a central agency to buy paper for them. Panos also conducts research on media financing and searches for ways that the media can boost their incomes by selling their products and services.

Panos West Africa was established as a branch of Panos Paris, but became independent at the beginning of 2000. It has offices in Dakar, Bamako (which house the radio-programme bank) and Accra. Because of the importance of the media to democracy and development in West Africa, Panos attracts support from several donors, including CTA, DANIDA, DGIS (Netherlands), the Ford and Rockefeller Foundations, and Canada’s IDRC (International Development Research Centre).

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Newspapers and newsletters

Press-agency privatization: A news agency for Africa



Paul Mundy

Nelson Magombo edits a story: it happens to be about the privatization of the Agriculture Development and Marketing Corporation in his home country of Malawi. He adds a few finishing touches, then hits a key on his computer to send the story to his chief editor.

Gabu Amacha, the Ugandan who heads the English Desk, reads the Malawi story. He wonders whether it is interesting enough for French speakers to have it translated (he decides against) and considers whether to send it out immediately or to wait for Tuesday's economics bulletin (he thinks it can wait until Tuesday).

Quiet efficiency

Welcome to PANA, the Pan-African News Agency. This office in Dakar runs with quiet efficiency, sifting through stories, editing them and sending them out to newspapers, radio and TV stations.

The team of 10 editors – six working in English, four in French – works in shifts to process reports from the agency's 48 correspondents scattered across the continent. The stories fall into three main categories: hard news, sports items and special articles. Stories in this last category are sent out as weekly bulletins: on the environment and development (Mondays), economics (Tuesdays), science and health (Wednesdays), gender (Thursdays), and a review of the African press (Fridays). Each bulletin contains about a dozen stories and features, written by correspondents or by PANA staff themselves.



Peter Masebu, editor, outside the PANA office in
Dakar, Senegal
(Photo: Paul Mundy)

All the stories are sent out by e-mail on the Internet. They are picked up by newspapers and broadcasters throughout Africa, Europe and North America. Eager for news from Africa, newspapers for African-Americans in the United States are frequent users of PANA stories.

Despite the importance of agriculture to Africa, there's no special bulletin on this sector. Peter Masebu, an editor from Tanzania, explains that's because news on agriculture may fall into any of the other bulletins. News of frost affecting tea production in Kenya is likely to land in the economics bulletin, while one on DDT stockpiles in Tanzania will end up in the one on the environment. Overall, PANA deals with perhaps 60 stories on agriculture each week, out of a total of 350 stories on all subjects.

Responding to revolution

The story of PANA is a story of two revolutions: political and technological. Established in 1979 by the member States of the OAU (Organization of African Unity), PANA started news transmissions in May 1983. It originally obtained stories from its members' national news agencies; it edited these stories and redistributed them to the national agencies.

Then the first revolution happened. The end of communism in the Soviet Union and Eastern Europe in 1989 created a democratic tide that washed across Africa. Authoritarian governments and strict controls gave way to democratic governments committed to press freedom. A wave of structural adjustment swept the continent: in an effort to reduce their expenditures, governments privatized State-run monopolies and eliminated subsidies.

That meant the end for many of the national news agencies that had fed PANA with stories. It meant an end, too, of many governments' willingness to fund a pan-African news agency. PANA would have to be privatized. Instead of getting stories for free from the national agencies, it would have to buy them. Instead of relying on income from government contributions, it would have to start charging clients for its services.

In 1993, Unesco began helping PANA adjust to these new realities and prepare for a stepwise privatization. In October 1997, PANA was converted from an intergovernmental institution into a private firm called PANA Press, in which the governments held shares. This was to enable 75 percent of the shares to be sold to African media groups, banks, telecommunication companies, NGOs and private investors. The remaining 25 percent of the shares were to be transferred to the national news agencies of the member countries.

At the same time, PANA Press professionalized its operations, raising its output twentyfold, from 2000 words a day in 1992 to 40,000 words in 1996. It developed a network of correspondents and stringers (independent reporters) in most of the continent's capitals. There are now five regional bureaux, in Addis Ababa, Kinshasa, Lagos, Lusaka and Tripoli. As part of the privatization, PANA Press aims to establish more offices around Africa as well as bureaux in Brussels, London, Paris and New York.

Newspapers and newsletters

The second revolution

At the same time, a second revolution was taking place in computers and communications. Back in 1983, PANA relied on telex to receive and transmit stories. It began using computers in 1990, and has recently installed new equipment and sophisticated news-management software. It had planned to install its own satellite network, but before it could do so the Internet arrived, offering far easier and cheaper communications.

The PANA Press websites (<http://allafrica.com/panaenglish/> in English; <http://allafrica.com/panafrançais/> in French) provide news stories that are updated throughout the day.

Can PANA compete in the new marketplace for news? It competes against wealthy, sophisticated European and American news organizations. But it has advantages: a commitment to Africa, unique knowledge of the countries it serves, and the largest network of news-gatherers on the continent.

PANA must carve out its niche: providing high-quality, reliable, independent news about Africa. If it can find ways of generating a profit and attracting the investment it needs, PANA will be a key part of the information system in this vast, complex and rapidly changing continent.

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Teaching literacy: Literacy and livelihoods in Uganda

The Multi-Purpose Training and Employment Association: Demand-driven learning in Uganda

Local-language publications for neo-literates: What good is literacy if there is nothing to read?

Farmer-journalists in Burkina Faso: Speaking our language

Literacy and local languages

Literacy and local languages

Literacy and livelihoods in Uganda



Paul Mundy

Walk down the street in Cairo, Tokyo or Bangkok, and unless you speak Arabic, Japanese or Thai you will probably feel thoroughly lost. The shop signs are in a foreign language – one where you cannot even decipher the letters. Same with the newspapers, the road signs, the destinations on buses, the instructions on public telephones, the advertisements on billboards. Go into a supermarket and pick up a packet of soup, and the only way to tell whether it's tomato or chicken is from the picture on the packet. Got a headache from trying to work out the recipe? Take an Aspirin – but first make sure that it's not a sleeping tablet or a pill against constipation.

That's about as close as it's possible for an educated person to get to understand what it is like to be illiterate. Of all the skills we learn in school, perhaps the most important is the ability to read and write. It opens doors and windows onto the world. It enables us to learn. It allows us to communicate with others. It is indispensable to modern life.

But what if we hadn't learned to read and write in school? What if we had never been to school, because our parents were too poor, there was no school nearby, or the teachers had been killed in a war? And what if the only books and newspapers were in a language we couldn't understand? That's the situation that many people in the developing world find themselves in.

Literacy is so basic to development that it is amazing, and sad, that it gets so little attention from governments and development agencies. Worldwide, 876 million people, two-thirds of them women, are thought to be illiterate. Education attracts a fraction of the resources spent on the military. According to Unesco, adult literacy rates in sub-Saharan Africa range from under 10 percent for men and around 20 percent for women in Zimbabwe, to nearly 80 percent for men and a massive 94 percent for women in Niger.

Yet the evidence in favour of promoting literacy is overwhelming: literate people are more likely to be employed, and live longer, than those who cannot read and write. Literate women are likely to marry later, and to have fewer, but healthier, children. Countries with a literate population are generally better off than those where large numbers of people lack basic education.

Promoting literacy in Uganda

LABE (Literacy and Adult Basic Education) is one of the organizations trying to change things in Uganda. This Kampala-based NGO provides training and services in literacy to other organizations. It does not run its own projects; instead, it collaborates with other organizations already working in agricultural production, marketing and other themes.

An agricultural extension worker explaining how to grow sweet potatoes to literacy students in Kamuli District, eastern Uganda
(Photo: LABE)



LABE focuses on two main areas: teaching trainers how to teach people how to read and write, and teaching them how to create reading materials in local languages.

Teaching teachers...

There are no accurate figures for literacy in Uganda, but Patrick Kiirya, LABE's director, says that something like 56 percent of adult men are literate, and only 38 percent of women. With a small staff but a large number of potential learners, LABE uses a three-step method of reaching them. The first step is to find people who want to become "literacy-instructor trainers" (LITs). LABE works with 15 NGO associations in Uganda, each of which is made up of several community organizations such as women's clubs and youth groups (one of these associations is MTEA, see pp. 85–88).

The community groups identify aspiring LITs: a man and a woman from each community. LABE staff visit the NGO association and give these would-be trainers a week's course in the necessary skills: teaching methods, understanding how adults learn, writing materials to read, translating existing materials into the local language, and community organizing. The district agricultural officer and other local government staff also contribute to the course, ensuring their interest and involvement early on.

...to teach teachers

After the course, the new LITs go back to their communities to begin the second step: teaching other people to become teachers. The community groups select instructors, and the newly fledged trainers repeat the course they have just attended, teaching perhaps 20 or 25 people each.

It is these "literacy instructors" (LIs) who then do the third step: offering classes to village people. Classes typically meet twice a week for a couple of hours after farm work has finished for the day.

Literacy and local languages

This cascading approach – where LABE teaches LITs, who teach LIs, who in turn teach rural people – enables LABE to reach far larger numbers than would be possible if it relied on its own staff alone. In December 1999, there were 413 LITs (about half of them women) and 1296 LIs teaching 677 literacy classes in 46 districts throughout Uganda. Nearly 15,000 people attended the classes; over 80 percent of the learners were women.

Learning problems

The learners start off with very broad aims: they want to read newspapers or become village leaders. After the classes start, however, their goals tend to become narrower. Parents want to be able to read their children's schoolbooks, understand what they are learning in school, and perhaps help them with homework. Learners want to understand posters that have been put up around the village, fill in forms for a loan or for immunization at the local clinic, vote, or just write their own name. Farmers want to be able to read the instructions on pesticide containers (though these are almost always in English or Kiswahili), or work out how much they have made from selling crops. Wives want to be able to write to their husbands working in town; mothers want to keep in touch with their children at boarding school.



A learner practising her newly acquired reading skills, in Kamuli District, eastern Uganda
(Photo: LABE)

These are ambitious goals for a twice-weekly class. Understandably, learning is often slow and tedious. Motivation falls. The teacher, unpaid and with very limited training and support, finds it hard to stay enthusiastic. Many learners drop out.

But enough carry on to encourage LABE to continue its work. There's no easy solution to the twin problems of sagging motivation and poor instructor skills. Many learners are sufficiently motivated to want to pay for their lessons; this helps keep the instructors interested. Local councils could provide them with a modest salary. Community groups provide basics such as blackboards, simple silkscreen duplicators, and consumables such as paper and ink, and these groups lobby district authorities to fund the production of literacy materials.

LABE provides one-day refresher courses to boost the instructors' skills. It also organizes regular feedback sessions with learners, instructors and trainers to discuss and revise LABE's programme. The participants are not afraid to say what they think. "Those are stormy sessions," says Godfrey Sentumbwe, LABE's training manager. And LABE also produces a twice-yearly newsletter filled with news, ideas for literacy training, and visual aids.

But what will they read?

LABE's approach also is trying to overcome the other main problem with literacy in Uganda: the chronic lack of reading materials in the local languages that rural people speak. Most books and newspapers are in English or Kiswahili, but many people in rural areas do not understand these languages, or don't speak them well. Asking them to study another language at the same time as learning to read is a bit much.

There is yet another hurdle to overcome. Much of the information on subjects that rural people might find useful is not only in English: it's in scientific or technical English. So a double translation job is necessary: from English into the local language, and from jargon into simple language that normal mortals can understand.

LABE trains the LITs to do this translation and to write their own materials that they can use in classes. Some of the skills are covered in the first week of training. A second phase of training goes into more detail. This course is tailored to local needs: the LITs and NGO associations choose subjects and bring along existing materials. LABE staff walk the LITs through the process of designing, writing and producing materials in the local language.

Plenty to write about

The participants find there is a lot they can write about. There is a wealth of indigenous information, local stories, folk tales and songs. Some of these can be rewritten to give them a development angle: an agricultural technology or a health lesson. Participants may develop a calendar showing the timing of farming activities, write a newsletter, or design a wall display. LABE reproduces the best materials and sends multiple copies to the community for use in the literacy classes. It also adds them to "book boxes" that the LITs in each community group have to help them in their training work.

The training goes beyond the printed word. The instructors learn how to use radio as a potent tool for instruction. Classes listen to programmes together, then discuss the content and convert it into visual or written form. Learners are encouraged to write to the radio station – a valuable form of feedback for the programme producers.

Many of LABE's partner community groups are involved in other activities apart from literacy. They are in an ideal position to tie the literacy work in with practical problems in farming, health or employment. The Nakisene Literacy Association is also involved in agricultural production and theatre. During literacy classes, members study improved farming practices and prepare cards showing the key ideas. They devise songs and dances on the practices to perform to the whole community. They have even been invited to perform in other villages, and can charge a fee for their shows.

Literacy and local languages

The LIT kit

Trainers need materials to use. LABE provides each LIT with a box of ideas and resources to help with training. There's a guide book on how to do training, and envelopes containing handouts, cards, charts, photos, visual aids for teaching counting, a cardboard clock for telling the time, a guide to participatory-appraisal techniques, ideas for producing visual materials, pictures to stimulate people to tell and write stories, games, and forms to help monitor progress.

The whole thing is about the size of a file box: small enough to carry easily on a bicycle, but packed with useful materials for dozens of lessons.

Building capacities

District-level and local organizations call on LABE's help in areas apart from literacy education. LABE responds to their requests for training to improve their technical, managerial and organizational capabilities, and for material and logistical support. Where possible, LABE identifies relevant agencies within the district to help provide such training, which may cover fundraising, participatory appraisal, negotiation and advocacy skills. The training is structured in the same way as the literacy-skills courses: LABE trains district-level trainers, who in turn train community facilitators and local-government extension workers, who go on to train self-help associations, traditional clan-based groups, and ordinary villagers.

LABE is just one of many efforts to fight illiteracy in Uganda. Alone, it can reach only a small percentage of Uganda's people. But its training approaches mean it is able to reach a far larger number than its modest staff would seem to allow. Clearly an example to be emulated if the scourge of illiteracy is finally to be defeated.



Godfrey Sentumbwe, LABE's training manager, with the LIT kit, Kampala, Uganda
(Photo: Paul Mundy)

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Literacy and local languages

The Multi-Purpose Training and Employment Association: Demand-driven learning in Uganda



Paul Mundy

It's hard to find MTEA if you don't know Iganga, a dusty town in eastern Uganda. Drive along the main road from Kampala, turn right at the roundabout in the centre of town, then right again, then left, and carry on until the track is more of a sand-pile than a road. Turn right, and there it is: a signboard announcing the "Multi-Purpose Training and Employment Association" in front of a modest one-storey building.

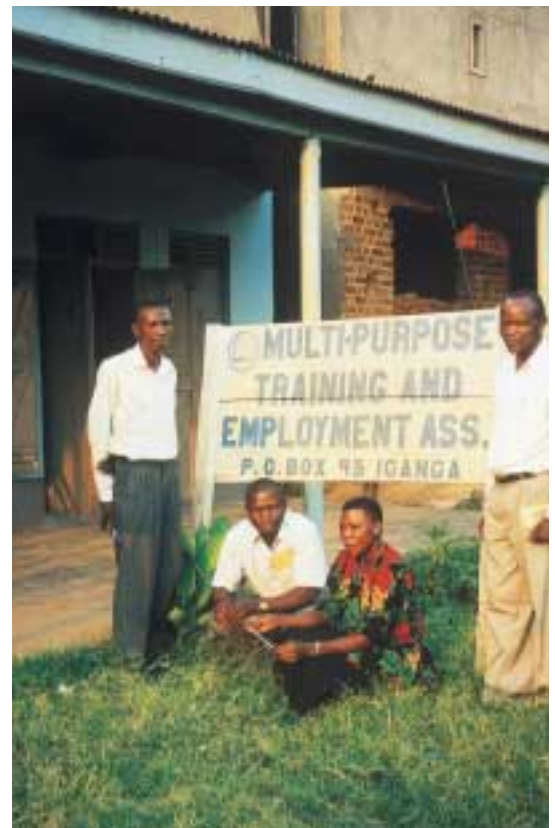
Originally founded in 1986 as a youth organization, this NGO aims to raise the standard of living in communities around Iganga. It has expanded to include older people, and is now composed of over 60 partner groups – women's groups, literacy circles, craft and farming organizations – scattered in the villages in the surrounding districts. Each group has an average of 25 members, so MTEA has a total membership of something like 1500 people in all.

As its name implies, MTEA is involved in a wide range of activities: from farming and environment, to marketing, networking and lobbying. There's a nutrition and child-care programme for mothers, literacy training for people who want to learn to read and write, and a resource centre where people can come to read or study.

Farmer-managed trials

The agricultural training programme is particularly active. MTEA organizes field tests and demonstrations of new farming techniques. The farmers themselves – who are members of MTEA's partner organizations – provide the land, decide what they would like to have demonstrated or tested, and provide the labour and manage the plots.

Of course, it's not quite as simple as it sounds. A lot of organization is needed – and that is where MTEA comes in. Its workers begin by discussing problems in detail with the farmers, and help them work out what causes the problems and how they might be solved. Together, they draw a "problem tree" (a diagram showing the problem and its causes and effects) to help them work out how the problem arose, and how to solve it.



Staff of MTEA outside their office in Iganga
(Photo: Paul Mundy)



A field day organized by MTEA for the Nawampendo farmers' group (Photo: Paul Mundy)

For example, the farmers may say that the lack of food is their main problem. They may reason that this is caused by a shortage of land and by infertile soil. It may not be possible to increase the amount of land available, so the obvious solution is to find ways of improving soil fertility. That in turn may lead to a discussion of the merits and prices of fertilizer, and to the idea of testing different forms of compost and manure that don't cost the farmer anything.

MTEA works closely with the district administration's agricultural extension workers and the community development office to organize demonstrations of the new technologies. "Extension workers like to work with us because we have experience with mobilization," says Ajab Waiswa, the secretary of MTEA. "The extension workers have the agricultural skills they learned in university. Our groups are together, and extension workers will find it easy to work with them, so they are interested in working with us."

The farmers are keen to have such a demonstration on their land, and the plots can be quite large: up to several hectares. MTEA sets some criteria, including that the plots must be on a road so that many people will be able to see them as they pass by. The farmers themselves contribute cash, labour, land and management; donors contribute the balance of the cost. Since the farmers have asked for the demonstrations and have helped decide what should be tested, they look after them carefully. MTEA sponsors between 25 and 30 such demonstrations each season for crops such as maize, plus another 50 or so plots of perennial crops such as coffee, banana and pineapple. Side-by-side plots may allow the farmers to compare different varieties of maize, or green manure with a liquid fertilizer made from dung.

MTEA workers visit each site at least three times during the season: at planting, when the crop is knee-high, and at harvest. They help the extension workers organize field days at these times: ideal opportunities not only to check on the plots, but also to discuss pests, diseases and other problems with the farmers. Typically 40 farmers take part: more women than men, because the women do the farm work, especially the planting and weeding. As one MTEA worker put it, "The woman bears the whole burden of feeding the family; she has to work hard to have food security in the house."

Literacy and local languages

Training the trainers

Training is another key part of MTEA's work. It provides training in many subjects, from literacy to reproductive health, farming to business management. MTEA offers about five one- or two-week courses each year, with up to 30 participants in each course. The trainers may be extension workers, specialists from the government health service, or MTEA workers themselves.

The site of the training is rotated among different locations to make it easier for people, especially women, to attend. The partner groups can nominate people to attend. Afterwards, these representatives must in turn train the other members of the group. As they gain skills and experience, the trainees can be promoted to become trainers in their own right. There are now more than 120 of them, specializing in different subjects. MTEA periodically offers them refresher courses to update their knowledge and skills.

MTEA itself has developed the skills of its workers. Many are "multi-purpose": they can answer questions on many aspects of farming and rural development. That gives them credibility in the eyes of the people they work with.



MTEA's activities include training of trainers, assisting local NGOs, and coordinating research and demonstrations with farmers
(Photo: Paul Mundy)

Every day is not a Sunday

MTEA is successful in large part because of the commitment of its staff. Actually, the word "staff" is probably wrong: all are volunteers; their expenses are covered, but no one receives a salary. They each have their own farm or other business. "Other groups come from up-down, but we come from bottom-up," was one worker's picturesque description of the MTEA approach.

There are always challenges and problems. "Every day is not a Sunday," says one worker: members of staff have to work hard to keep the programme going. Monitoring and supervising the partner groups is particularly difficult because of the time it takes and its cost.

MTEA charges its members a fee: 20,000 Ugandan shillings (about €13) a year for a group, or 1000 shillings (€0.67) for an individual member. It also charges for training notes and leaflets that it produces: 100 shillings a sheet, so readers attach a value to them, and don't just throw them away. Income from these sources isn't enough to keep the organization going, so it relies on well-wishers and support from Vredeseilanden Coopibo, a Belgian NGO.

Not just a library

MTEA's resource centre, next door to the office, is a small room lined with shelves and filled with chairs and reading tables. Books donated by LABE (see pp. 79–83) and BookAid (a British NGO) line the shelves. There are encyclopaedias and school- and college-level textbooks, as well as magazines such as *Footsteps*, a practical development newsletter published by the Tear Fund in the UK. Some of the books are not hugely relevant: bizarrely, there are several copies of *Principles of Oceanography* – hardly likely to be a winner in landlocked Uganda. But many do appear useful, and are well thumbed.

Michael Bazira, who runs the resource centre, explains that the room is not just a library. It's also where MTEA holds a lively series of training courses in practical subjects such as English letter-writing, grammar and business skills such as book-keeping and business administration. Michael Bazira is hoping to get accreditation for the courses from the Ugandan National Examinations Board so that learners can be awarded formal diplomas. He also hopes to offer computer training using MTEA's lone (and underpowered) computer.

The "E" in MTEA stands for "employment". Course participants have gone on to start schools or poultry farms: a fitting tribute to the success of this organization's grassroots development efforts.

FOR MORE INFORMATION

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Literacy and local languages

Local-language publications for neo-literates: What good is literacy if there is nothing to read?



Jacques Sultan

Creating a literate environment in villages

Newspapers are hard to find in Tanghin Dassouri. The village is only 30 km from Ouagadougou, on the main road to Bobo Dioulasso, but newspapers pass it by.

They are even rarer in villages away from the road; there, the radio provides the sole, tenuous tie to the outside world. And many villages in Burkina Faso are too far away from a transmitter to receive a radio signal at all.

For several years, literacy campaigns have taught many village people in Burkina Faso how to read and write in their own language, opening the door to information, culture, training and self-help. But the campaigns do not last long enough to ensure that the learners will keep their skills. Occasional training courses cover practical subjects, such as how to process shea butter or breed livestock. But they are not organized on a regular basis.

Without anything to read, neo-literates become disheartened and quickly forget their new skills.

“Those Willing to Arrange”

To respond to these problems, a group of literacy teachers in Tanghin Dassouri has formed an association they call Ratamanegré (“Those Willing to Arrange”). They have established a community information and training centre that collects and distributes materials in local languages.

The collection includes the major newspapers in the Mooré language, technical booklets on agriculture, small-business management and milling, and materials on health, family planning, female excision, sexually transmitted diseases and AIDS. It also has village narratives, local histories and humorous stories written by local people themselves.

The literacy teachers sell these materials to the villages. The resulting income goes into the association’s funds and pays for newspaper subscriptions. Ratamanegré also raises money by organizing shows and events during village fairs and market days.

The Ratamanegré trainers in Tanghin Dassouri, Burkina Faso, and some of the literacy materials they have produced
(Photo: Jacques Sultan)

Literacy and local languages

But do these newspapers really provide information to rural areas? asks Evariste Zongo. Do they bind society together, as one would expect a newspaper to do? Are they sustainable?

An AEPJLN study in 1993 provided some answers:

- Most of the local-language newspapers were created by NGOs, projects or local associations. They aimed to carry technical messages on farming or livestock, or to increase readers' awareness of health, hygiene or environmental issues. They did not play an interactive or social-bonding role;
- The volunteers who ran them lacked training in the necessary skills;
- They were dependent on their donors, and appeared irregularly because they lacked a business plan to promote reader loyalty, sales and sustainable partnerships;
- Distribution was a problem, except for those periodicals that were supported by organizations with a field-level network;
- They did not respond to readers' demands for social, political and cultural information.

Emancipating the press

AEPJLN decided to try to emancipate these newspapers to improve their service to readers. With support from the Swiss and Burkina Faso governments, it formed a small team with desktop-publishing and training capabilities. It tried to show the newspaper managers how they could better meet readers' wishes for information and self-expression, and how to deal more effectively with local and national issues as they affected rural areas.

The AEPJLN team ran a series of courses for newspaper managers and journalists to upgrade and refresh their skills in information-gathering, editing, design and newspaper management. This training resulted in a noticeable improvement in the newspapers' contents and appearance.

Most of the newspapers established editorial boards with literate farmer-members to assist in gathering information. These have brought the newspapers closer to their readers, and have ensured they include local experiences and deal with real problems.

"After we had built this base, we became more selective in recruiting members," says Evariste Zongo. "To belong to AEPJLN and receive its support, the newspapers must now satisfy certain professional criteria: they must have an active network of local correspondents, they must manage their distribution system, they must use management and administrative tools, and they must be published regularly."



Some local-language newspapers supported by AEPJLN

Improving distribution

In the long term, AEPJLN hopes to consolidate the professionalism of the local-language press in three areas: distribution, enterprise and partnerships.

The first of these, distributing the printed copies, is the main problem faced by most of the newspapers. To overcome it, they must work through organizations that have branches or representatives in each village, such as farmers' organizations, NGOs, cotton firms, banks, credit agencies and traders. Literacy teachers are especially important. Every village has one or two voluntary literacy teachers. As in Tanghin Dassouri, they can gather news as well as distribute newspapers and other reading materials.

Becoming a press enterprise

Many local-language newspapers are funded by larger organizations: an NGO, a cotton company, a credit agency or a development project. It can be difficult to transform them into autonomous press enterprises. Their "parents" are reluctant to let them go. They fear an independent editorial line: they want to restrict coverage to technical extension messages and avoid debate about their own activities. This is particularly the case where the parent is a large company in an industry such as cotton.

AEPJLN is negotiating with several of the parents. It is trying to persuade them that democratic debate is a basis for mutual respect among economic players. Independent newspapers can provide a forum for this. They can guarantee balance and transparency in a debate that is both desirable and inevitable. For this to happen, the newspapers must become more professional. They must be able to work with the many players in rural society, providing these players with the opportunity to express their views, at the same time maintaining the newspapers' independence. (See Box 9).

Developing media partnerships

Developing partnerships with other media is AEPJLN's third focus area. Community radio stations are multiplying, and they are a natural complement for the newspapers. The two media can help each other in important ways. Radio stations can promote the newspapers, for

Literacy and local languages

BOX 9

Cyberpriest

Everyone in Koudougou knows Maurice Oudet. He lives with his fellow priests of the Frères missionnaires d'Afrique order in this town 85 km west of Ouagadougou. Involved for many years in local-level development, Father Oudet bemoaned the lack of printed material in local languages, and the lack of information this represented for rural people in Burkina Faso.

Documents for farmers

So he decided to use his order's resources to set up a publishing service for the local languages. He has desktop-publishing equipment (computer, scanner, digital camera) and a digital duplicator. He works with a network of partners to collect and translate materials in various local languages, and to write original texts based on village experiences.

Father Oudet started out by founding a quarterly magazine on rural life in Mooré and Dioula. The French version, entitled *Les amis de la terre* ("Friends of the Soil"), aims to publicize the magazine among French speakers. The magazine is sold for 150 CFA francs (€0.22). It is in high demand from villagers, but distribution problems limit the print run to 2000 copies of the Mooré version and 1000 of the one in Dioula.

Father Oudet also offers translation, formatting and publishing services for outside organizations wishing to publish in local languages. CESAQ, an NGO based in Bobo Dioulasso (see p. 66), is one user of this service. Several of its "rural notebooks" have been translated and published in local languages through the service. Another user is Assistance écologique, also an NGO, which has published a rural almanac in cooperation with the priests.

Teaching computers the local language

The local languages in Burkina Faso use several characters and accents that cannot be produced on a standard computer keyboard. No problem for the cyberpriest: Father Oudet has written a programme that allows a user to type these characters on the computer. He is also a member of a group that promotes the use of African languages on the Internet.

Father Oudet's publishing service is growing rapidly. It has produced articles and books on a range of farming topics, including soil erosion, compost-making, the use of manure, village extension, post-harvesting management, and high-yielding crop varieties.

The young people of Koudougou and NGO managers visit the priests for training in computers, desktop publishing and e-mail.

(continued overleaf)



Above: Stapling booklets published by the Frères missionnaires d'Afrique in Koudougou, Burkina Faso
(Photo: Jacques Sultan)

Below: Maurice Oudet, the cyberpriest of Koudougou, Burkina Faso, editing a local-language publication
(Photo: Jacques Sultan)

Father Oudet is working with the Koudougou radio station to publish a bulletin that will reinforce and give further details about radio programmes. The bulletin is in the local language, of course.

Collaborating to solve distribution problems

To make their services more cost-effective and to reach more people, the priests are exploring partnerships with the rural organizations, especially FENOP (Fédération nationale des organisations paysannes du Burkina), a national federation of rural organizations. They are negotiating setting up a joint editorial board with FENOP. This would make it possible to plan a series of bulletins, handbooks and files containing information and training materials for farmers.

The publications would be produced in Koudougou using the priests' equipment; FENOP would handle the distribution through its network, which covers the whole country.



Literacy and local languages

example, by reporting on their contents and telling listeners where to find them. They can organize public forums and can broadcast debates about the issues aired in news articles, so reinforcing their impact and stimulating discussion.

For their part, the newspapers provide information in a more permanent form than a broadcast. They can offer radio listeners a printed discussion of subjects covered in a programme. They can provide longer, more complete information on subjects of interest to rural people, such as decentralization, land reform, land tenure, and the rules governing farmers' associations.

Technical booklets and extension manuals can complement both newspapers and radio. They contain more complex information and outline a range of options, in a format that eases training and extension work.

Evariste Zongo sums up AEPJLN's approach in this way: "We are convinced that printed and audio communication tools must be used in a complementary way, to give farmers the information to which they have a right, in their own languages, so they can control their lives and make their own decisions. That is our goal."

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Literacy and local languages

Farmer-journalists in Burkina Faso: Speaking our language



Jacques Sultan

“Is it really honest to go to farmers, collect information from them, process it and spread it around the world, but deprive them of it?” asks Souleymane Ouattara, the journalist in charge of Agence Syfia, an agricultural information network in Burkina Faso.

“All year long,” he adds, “we comb the villages to write reports, conduct studies and do interviews about local people’s activities, their problems, their questions, their lives. We often gather this information in the local language. We translate it into French and distribute it to over 100 newspapers that serve French-speaking readers. But what do the farmers, our sources in the field, what do they get out of it?”

He answers his own question: “Not much: they don’t speak French, and the newspapers don’t reach them. But it would be right if they could know what is being said, and if they could learn how farmers elsewhere solve problems like the ones they face. What can be done to make this feedback actually happen?”

Souleymane Ouattara is one of a group of African journalists working with Agence Syfia who founded JADE (Journalistes africains pour le développement) in 1994. JADE aims to answer these questions, analyse problems in the media, and redefine the relationship between the media and the rural people who are their main source of information.

Together with farmers and rural people, the JADE journalists in Burkina Faso explore ways to provide information to the villages, and to promote exchanges among villages, among regions within a country, and among countries.

Farmers producing and managing their own information: is this a dream?

A village debate

“We did the first experiment in Tanghin Dassouri, a village about 30 km from Ouagadougou. A group of literacy trainers had formed an association to spread information in local languages in the surrounding villages.” (See p. 89)

JADE gave the trainers a set of articles produced by Agence Syfia, and suggested that they choose the articles that most interested them. The trainers selected topics with the biggest impact on the everyday life of the community – although many of the articles had been

collected in another area, or even in another country, such as sexual abuse of girl pupils by teachers in schools in Benin, pig diseases in Chad, or female excision in Mali.

The selected articles were translated into the local language – carefully, to avoid misunderstandings due to poor translation. The translated articles were then given to groups of farmers.



Collecting farmers' opinions for a radio programme in Burkina Faso
(Photo: Souleymane Ouattara, JADE)

That stimulated some passionate debates. The articles covered issues that the local people faced, but which they were not used to discussing openly because of social and cultural taboos. If the starting point is somewhere else, it is easier to begin discussing subjects that are relevant to the village itself.

Broadcasting the debates

The discussions were recorded and broadcast as a series of programmes by the local radio stations. The listeners were enthusiastic. They asked that the programmes be continued because they covered crucial issues, and because people like themselves were involved.

West Africa has seen a marked increase in the number of rural radio stations. But it is not enough to establish new stations, says Souleymane Ouattara. It is also necessary to ensure that people participate in the programmes, and that the programmes serve their needs. "It's not about just creating radios or newspapers; it's also about the content that they carry," he points out. "This aspect is very often neglected."

"If there were people on the spot to do this, the radio would speak to people and they could recognize themselves in the programmes. That is what JADE wants to do. We are convinced that it is possible, using simple methods, to train farmers to make good radio, good newspapers. If they can read and write in their own language, they have an important asset. They only need the right tools, appropriate training, and enough backup."

Farmers on editorial boards

Two rural newspapers are trying to do something similar. *Venegda* (written in the Mooré language) and *Hakilifalen* (in Dioula) have been published for seven years with the support of INADES Formation–Burkina Faso (see p. 92).

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The production of these newspapers has undergone an important shift. The newspapers decided to involve their readers in their operations by organizing farmer-editorial boards and by stimulating the writing of articles by readers.

Forty such boards were set up in the areas where the newspapers were distributed. These boards analysed the contents and format of the papers and proposed changes to adapt the editorial content to their needs. The farmers on the boards were given training and technical support, and they began to contribute articles based on grassroots-level information. The various boards are being linked through a series of coordination workshops.

A rural press agency

Both the newspaper and radio experiments are encouraging, and there are many similar local initiatives throughout Africa. These initiatives open possibilities for developing the rural press and radio by involving their readers and listeners more actively. Rural areas are a rich source of information, and rural people feel attached to their newspapers and radio stations. With the right training and support, they can contribute to programmes and can write on subjects important to them.

Organizations in rural areas could form editorial boards, choose topics of local interest, collect information in the villages through interviews or debates, process this information and provide it to the media through a clearing house.



Using an improvised boom microphone to interview women farmers in Burkina Faso
(Photo: Souleymane Outtara, JADE)

The members of these groups could be seen as local media correspondents in rural areas. Such a system could be the beginning of a rural press agency that would disseminate this information to local-language newspapers and radio stations.

These local correspondents could become true professionals. They could be paid according to how much they produce. They could also distribute newspapers and other publications in remote areas. They could also use other media such as video, audiocassettes and posters.

A rural press agency, able to provide authentic local information, would be invaluable for local-language newspapers and radio stations. It would enable them to offer richer, more relevant local content and win new audiences. Indeed, such a vision is a basic element of the

communication strategy of many organizations focused on rural development, such as FENOP, the national federation of rural organizations in Burkina Faso (see Box 9).

Farmers producing and managing their own information? Not a dream: it is becoming a reality.

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Bringing the Internet to Africa: Africa Online and the e-touch initiative

Community information centres: The Nakaseke telecentre

Mobile phones in rural Africa: Plenty to talk about

Computers and telecommunications

They are the newest stars on the communication scene. Computers have changed how information is obtained, produced, managed and distributed. No longer do scriptwriters and editors have to labour over handwritten manuscripts, no longer do secretaries and typesetters have to type and retype page after page of text. The switch from the old technologies is not yet complete in the developing world, but it is happening.

The wedding of computers and telephones has produced e-mail and the Internet. These are revolutionizing communications and information access in the developing world. How far and how fast they will spread into remote rural areas remains unknown. But it is clear that they will have as yet unforeseen impacts on development.

A technology that is spreading even faster than the Internet (if that is possible) is mobile phones. These are ideal for rural areas: cheap to set up, easy to use, filling a vital need. Perhaps we are not that far away from the time when the shopkeeper, the farmer, the rural taxi driver, all have their mobile dangling from their belt.

Computers and telecommunications

Bringing the Internet to Africa: Africa Online and the e-touch initiative



Paul Mundy

Lagging behind

Africa has been lagging behind in the global Internet stakes. Only one out of every 9000 Africans outside South Africa has access to the Internet, compared to one in 38 in the rest of the world. According to Canada's International Development Research Centre (IDRC), the continent cannot afford to miss the information revolution and its implications for social and economic development.

Africa is woefully short of basic infrastructure. Electricity and telephones are rare in rural areas. Few people can afford computers, or know what they can do. In rural areas, educational levels are low and illiteracy is common. For the majority of people, computers and the Internet are still decades away.

But progress is being made. In 1996, only 19 countries had full Internet services. By 1999, it was 53: all of Africa except Congo, Eritrea and Somalia. Estimates vary, but by May 1999 there were 339 Internet service providers (ISPs) throughout the continent, with something like half a million user accounts (more than half of them in South Africa).

Several aid agencies have been important in establishing Internet services in Africa. They include the IDRC's Acacia programme, the USAID (United States Agency for International Development) Leland Initiative, France's IRD (Institut de recherche pour le développement), and NGOs such as VITA (Volunteers in Technical Assistance).

But donor money can only go so far. If it is to be sustainable, the information revolution in Africa has to pay for itself, and that means private businesses such as ISPs must see a commercial opportunity to invest in and to make a profit.

Africa online

Africa Online has seen just such an opportunity. This Nairobi-based firm operates in Kenya, as well as in Côte d'Ivoire, Ghana, Swaziland, Tanzania, Uganda and Zimbabwe. In January 2000 it acquired Net-2000, another large Kenyan provider, and became the largest ISP in the continent outside South Africa, with 20,000 subscribers in Kenya alone and expansion plans involving at least another five countries.

Three Kenyan students at the Massachusetts Institute of Technology founded Africa Online in 1994 as an e-mail news service. At the time, other students thought they were crazy: computers and e-mail were things for nerds and geeks. Only a few saw how important these new media would become – and how quickly.

In Kenya, Africa Online offers Internet services in the big cities of Nairobi and Mombasa, of course. But it has also expanded to smaller centres such as Kisumu, Eldoret, Nakuru and Kitale. About 40 percent of the firm's subscribers are outside Nairobi.



Subscribers are mainly businesses, because they can afford the charges: and indeed, many are finding that they cannot afford to be without Internet and e-mail services. “We need at least 300 subscribers in a place before it’s worth our while establishing a server there,” explains James Ochola, the firm’s marketing manager. And there has to be a reasonable phone service: Africa Online likes to have about one line for every 10 subscribers to ensure that users don’t have problems connecting.

E-mail: A vital tool

E-mail has quickly become a vital tool for development organizations. A scan through a list of NGOs and government agencies shows that many now have e-mail addresses. They use e-mail to send messages to other agencies and to head office, request information, set up meetings, negotiate contracts, submit reports, and keep in touch with people within the country and abroad.

E-mail and Internet services are still expensive in Kenya: about €50 per month for a subscription, compared to €20 or less in some countries in Europe and North America. Add to that the charges for time online. “That’s too much,” says James Ochola. “If e-mail and the Internet are to become a mass medium, people must be able to afford it.”

Prices are high because of the high cost of phone calls: the State-run telecom monopoly provides abysmal services and keeps prices high. James Ochola estimates that Africa Online could halve its charges if phone services were priced more reasonably. That may come, though: Africa Online has allied itself with other ISPs to lobby for changes, and the government is ready to deregulate the telecom market.

e-touch

Perhaps the most promising idea for rural areas is a service Africa Online calls “e-touch”. You don’t need your own computer or telephone: just walk into an “e-touch centre” and you can surf the Web or send and receive e-mails using your own e-mail address. Compared with the

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cost of a fax (or of buying your own computer and telephone), prices are reasonable: 60 shillings (less than €1) to send an e-mail, and only 10 shillings (about €0.15) to receive a message.

Surfing is more expensive: 10 shillings a minute. “If everyone is cruising the Net, it will tie up bandwidth,” James Ochola explains. That slows down surfing, and means that other people cannot log on. With fewer byte-hungry graphics, e-mail uses up less bandwidth, and allows more people to use the service. So Africa Online structures its prices to encourage e-mail rather than surfing.

A small business with just a computer and a phone line can sign a contract with Africa Online to set up one of these Internet cafes. There are now more than 200 of them, scattered all over Kenya, including in smaller towns such as Machakos, south-east of Nairobi. Many are in “communication shops,” which are common throughout Africa and provide phone, fax, photocopying and occasionally word-processing services. The owners split the profits with Africa Online, which provides the software and connections, and handles marketing.

After a successful launch in Ghana, Africa Online started its Kenya e-touch service in June 1999. Six months later, 30,000 people had registered as users. Three-quarters of them were what James Ochola calls “active users”, people who log on at least once a week. And their numbers were rising by 1000 people a week.



Signs like this one advertising an e-touch centre have been popping up all over Kenya
(Photo: IIRR)

Hard-nosed development

Africa Online isn't a donor, and it isn't a development agency. It's a hard-nosed business – one that seeks to make a profit. The Internet is critical for agriculture, says James Ochola. Kenya is an agricultural country, and farming problems are often really information problems. Better communication allows people to manage resources better. He thinks that Africa Online can play a key role in getting information to people in a form they can use.

Perhaps this is the future of the Internet in rural Africa. In small towns that have electricity and telephones, local entrepreneurs set up Internet cafes that provide vital communication services to local people. After all, North America and Europe – and tourist resorts all over the world – have gone through this phase. Why not rural Africa too?

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Computers and telecommunications

Community information centres: The Nakaseke telecentre



Paul Mundy

Come and read

How can outsiders help people in rural Africa gain access to information? One possibility is through “community information centres” like the one in Nakaseke, a small Ugandan town about 60 km from Kampala.

Established in 1998, the Nakaseke centre is a single-storey building containing a library, a meeting area, a photocopier and computers. The well-stocked library has 4000 books. There’s a children’s section with colourful storybooks as well as school textbooks. The adult section has fiction and non-fiction books and student texts.

Thirty or forty people a day may visit during the holidays, says Amina Nassolo, the librarian; on schooldays, as many as 60 children from the nearby school drop in during their free periods. Reading in the library itself is free, but if you want to take a book home, Amina Nassolo will charge you 2000 Ugandan shillings (about €1.30). That will allow you to borrow books for up to two weeks at a time, over a period of three months.

In an effort to reach children who cannot come into the library, Amina Nassolo is planning a “book-box” service. Teachers will be able to select books for their classes, and she will pack them into a box and send them to the school.

Don’t mention computers

But it is the computers that attract many visitors’ attention. There are eight of them in all: two in the library, one in the manager’s office, and the rest in a training room. The centre provides typesetting services and offers courses in basic computer use, word-processing and spreadsheets, as well as e-mail and internet services. And its e-mail and Internet services are fully operational.

In their work with the community, the centre staff have learned not to emphasize the role of computers. “The word ‘computer’ is intimidating: it’s too much wisdom,” says Augustine Bazaale, the centre manager. Instead, the staff start with helping people identify specific problems: say, a business calculation, a farming question, or a homework assignment. They can then show how computers can help provide answers. They hope that this will trigger interest, so users will want to learn more.

Serving the community

The centre is becoming an important information hub for local people. Farmers meet in the centre to discuss agricultural techniques and to question visiting scientists from the National Agricultural Research Organisation's Kawanda research station about problems in coffee and banana production. The centre works with agricultural extension workers to promote new technologies, and helps farmers to plan plots where they can demonstrate and test them.



Soccer games (here, an Africa Cup game) are popular evening viewing at the Nakaseke community centre
(Photo: Paul Mundy)

Makarere University's Institute of Adult and Continuing Education is planning to use the centre to offer secondary school certificate courses, as well as training in English for beginners and in project planning and management. An indigenous knowledge resource centre is being established to collect and document local people's traditional wisdom. Activities such as farm shows, free computer courses for talented youngsters, study tours and a newsletter are planned. The community is actively involved in the centre management: sub-committees of residents handle activities for young people, women, farmers and traders, and deal with leadership and education issues.

Experimental phase

The Nakaseke centre has attracted a large amount of outside support – from Uganda's Public Libraries Board as well as a brace of foreign donors, including the International Telecommunications Union, the British Council, Unesco and the Acacia programme run by IDRC.



People come to the Nakaseke community centre library to study, to borrow books or just to read the newspaper
(Photo: Paul Mundy)

Computers and telecommunications

BOX 10

Internet for development?

Open the newspaper, and news of the latest mega-merger leaps off the page: some upstart, 10-month-old company has taken over a venerable established giant. Turn on the television, and the news is as likely as not to feature yet another technological advance in information processing or digital communication. Walk along the road, and gaze at the Internet addresses that adorn billboards: very often they are the only text in the advertisement apart from the name and logo of the company.

We are bombarded with information about the Internet every day. It is hard to escape from reality: the Internet is changing our economy, our society, our lives.

This has not escaped the notice of the people who fund and run agricultural development efforts. New projects sprout up every day to introduce the Internet to remote villages, establish cybercafés in market centres, link buyers and sellers through electronic trading, make information available over the Internet, and what-have-you.

We are still in the infancy of the Internet, and while some of the many current attempts to use it for development may succeed, some will undoubtedly fail. It's worth taking a little time to list some of the problems.

- **Content:** The vast majority of Internet sites are irrelevant to local people. How does someone find the few sites that are useful – like technical information on agriculture, market prices or contact addresses? And most of the content is generated by Europeans and Americans, not by people from developing countries themselves.
- **Language:** Even if it is relevant, the content of most websites (and the menus in computer programmes) is in a language (English) that local people can understand with difficulty, if at all.
- **Location:** There aren't enough places (such as Internet cafés and community telecentres) where people can go and use computers. There are scarcely any in Africa's villages, most of which lack basics such as electricity and roads.
- **Critical mass:** Even if you have an e-mail account, whom do you call? As with telephones, there seems to be a critical mass above which it makes sense to have an e-mail account.
- **Connections:** Phone connections are too slow and unreliable – though that is changing as governments allow private investment in their national phone systems.



Right: This telecentre in Koudougou, Burkina Faso sells office supplies as well as computer and communication services
(Photo: Jacques Sultan)



Above: More sophisticated telecentres in the towns offer photocopying, word-processing, fax, scanning and Internet services
(Photo: Paul Mundy)

- **Cost:** Computers are expensive – far too expensive for the vast majority of individuals in developing countries. So are connection fees and online charges. It may be possible to get sponsors or donated equipment to set up a telecentre, but even then, supplies and maintenance are a problem. How do you get the computer fixed when it breaks down? Where can you buy ink cartridges for the printer? And there's the theft problem: since computers are expensive, they are tempting things to steal.
- **Skills:** Computers are still hard to use. You have to be able to type, use a mouse, navigate around a screen, understand obscure commands and error messages, and know what to do next. You have to know all the wonderful things that a computer can do, and then learn how to make it do what you want.
- **Management:** If you want to run a village telecentre, not only do you have to know scads of software, you must also be able to fix problems, and have the management and business skills to make your telecentre successful. People with those skills are few and far between, and they are unlikely to want to set up shop in a remote village: they probably already have a well-paying job with a computer firm in the capital city.

On the other had, the Internet and (especially) e-mail are a godsend for intermediary organizations, such as international NGOs and, increasingly, government institutions such as research institutes and universities.

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Plus, it may be that private, commercial Internet ventures (such as those in Senegal, see pp. 118–119) are likely to be more successful than those “imposed” by foreign projects, since they are forced to make a profit or go bust. Donor projects may have an important role in establishing the initial services and introducing the concepts and skills of electronic communication to the first providers and users. The private sector then takes over... which is surely as it should be, rather than donors or the public sector having to fund the service ad infinitum. Perhaps that's where the (immediate) future lies?

Can the Internet be used to serve directly the poorest people in rural areas? Perhaps through community centres like the one in Nakaseke? The answer is still unclear: the technology is still new, and it is changing rapidly. What was impossible yesterday is possible today, and commonplace tomorrow. It is likely, however, that with the range of experiments now under way an answer will be found, one way or the other.

What happens when the donor funds dry up? Some of the money needed will come from the telecommunications and computer services that the centre provides: telephones, fax, e-mail, Internet and word-processing. Training courses and photocopying should also generate some income, and fees can be charged for hosting workshops for outside groups. There's considerable potential demand for these services from the local government offices across the road, as well as from schools, a nearby teacher-training college, and the hospital.

Even so, it is clear that it will be impossible to sustain the centre's many activities without continued government or donor funding. The local council is enthusiastic about the centre. Augustine Bazaale hopes that this will translate into financial support.

How about the centre's impact on the surrounding area? It's too early to say whether the Nakaseke centre will be able to achieve its goal of reducing poverty by empowering the local community. It is vital that it do so in order to continue to attract outside funding. But even if it proves a failure, the centre will still bear fruit in the form of valuable lessons for future efforts to provide rural Africans with the information they need.

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Computers and telecommunications

Mobile phones in rural Africa: Plenty to talk about



Paul Mundy

Richard Seketa nurses his mobile phone as he settles down at the edge of the crowd watching the Togo vs Côte d'Ivoire soccer game on the open-air television. He knows that a ringing phone will not interrupt his evening's viewing: here at the community centre, the phone is out of range of the nearest transmitter.



Richard Seketa uses his mobile phone to call suppliers for his construction and agrochemicals business
(Photo: Paul Mundy)

Despite the poor reception, the phone is increasingly important for Richard Seketa, who runs a building-materials and farm-supply shop in Nakaseke, a small town in central Uganda. He uses it to call up suppliers in Kampala to order supplies: cement, metal sheets for roofing, and agricultural chemicals. The suppliers put the goods on a truck to deliver them to his shop, saving him time and the cost of the 120-km round trip to Kampala. He also sometimes lends the phone out to friends and neighbours, making a bit of extra money by charging them for the call.

Richard Seketa is one of a fast-growing number of people across rural Africa who use mobile phones to run their businesses and keep in touch with their families. Cocoa and coffee farmers in Côte d'Ivoire club together to buy a mobile phone so they can check commodity prices in London. Repair shops in Uganda keep motorbikes – a vital form of

transport in rural areas – on the road by calling wholesalers to order spare parts. NGO staff use their mobiles to verify important facts and to coordinate their work. In Rwanda, mobiles account for 58 percent of all telephone subscribers (though there are still only 0.23 mobiles for every 100 inhabitants).

Unwired connections

Telephones are one of those things that people in developed countries take for granted. Not so in the developing world: the phone service in many African countries is abysmal. The costs (especially for long-distance calls) are astronomical. Outside the big cities, telephones are few and far between. In 1998, there was only one phone for every 99 Kenyans; in Chad the figure was one for every 833 people. That compares with one phone for every 5.37 people in South Africa, and more than one for every person in Finland.

Poor telephone services are not just a minor inconvenience. Unable to reach clients, make deals or tap markets, businesses stagnate, the economy stutters.

In the absence of telephones, rural people have found ingenious ways to communicate. One widely used method is to give a small amount of money to the driver of a communal taxi or lorry, and ask him to drop a message or parcel off in town. Another is via the radio: for a small fee, radio stations will announce a death or illness, or broadcast a message for a particular person.

But things are changing – fast. Mobile phones now offer an alternative to fixed-line services. A mobile-phone operator does not have to erect thousands of telephone poles, dig holes in the ground and bury miles of cable, just to serve a few people in a remote area. It erects a transmitting mast, and presto! – anyone within a certain radius can make calls. That enables mobile-phone operators to establish services far more quickly than a fixed-line company, and to break even with far fewer customers. Many remote areas will probably never be served by fixed-line telephones. Mobile phones make it possible for the first time to serve them economically.

Kenya 0, Uganda 1

Government policy is key to the development of mobile phones. Kenya offers an interesting contrast to Uganda. Number-engaged signals tootle out across Nairobi offices, and harassed secretaries repeatedly dial numbers in the hope of getting through. They are the lucky ones: at least they have a phone. Getting one in Kenya can mean years of waiting... unless you are prepared to pay the right people the right amount of bribe money.

The Kenyan government has been slow to deregulate the country's telephone monopoly. State-owned Telecom Kenya runs an expensive and overloaded mobile service, which has only 10,000 subscribers and operates only within a 30 km radius of the capital. Most callers have to rely on Telecom Kenya's awful fixed-line service. Kenyans gleefully relate how one government minister had to borrow his Ugandan counterpart's mobile phone so he could get through to the director of the national phone company. "A better phone service in Kenya would be like the Second Coming," says one frustrated caller.

Fly to Entebbe in Uganda, though, and passengers pull out their phones as they descend the aircraft steps to the tarmac. Drive along the road to Kampala, and you pass people with mobiles glued to their ears. Shops and kiosks sell phone-cards and rent out handsets. Huge billboards advertise the country's two mobile operators: Celtel ("Now you're talking") and MTN ("The better connection").



Billboards advertising mobile phones line the main roads in Uganda
(Photo: Paul Mundy)

Computers and telecommunications

“Wow, this is a big market!”

MTN is a South Africa-based company that offers a range of telecommunications services, both fixed-line and mobile. Apart from its home country, it operates in Cameroon, Rwanda, Swaziland and Uganda, and is about to start up in Nigeria. “In 1997, we were looking for investment opportunities, and the markets in Europe and Asia were pretty crowded,” says Erik van Veen, marketing manager of MTN in Uganda. “Then we looked at Africa, and we said, ‘Wow, this is a big market!’ ”



The incumbent operators weren't doing a good job, he says: they were charging prices that people in Europe and South Africa wouldn't pay. “We believe that a customer is a customer, no matter where they are,” he says. “They want the same service at the same price.”

MTN started phone services in Uganda in early 1999. “We were laughed at by our investors. ‘Who can afford to take on mobile services?’ they asked,” remembers Erik van Veen. But demand was phenomenal: the firm sold 10,000 connections in Kampala in the first month. By January 2000, it had 70,000 subscribers and was the largest phone operator in Uganda.

MTN has established services in Kampala and in dozens of towns in Uganda. Demand has continued to be very strong. The firm has gone into a phase of “controlled growth”, selling only 2000 new connections a month. That's to avoid government concerns about the firm's market dominance, and to reassure Europeans who still regard Uganda as a high-risk place to invest.

Want a beer, or want to talk?

Despite Uganda's recent rapid economic growth, it is still a poor country. How can Ugandans pay for the “luxury” of a mobile phone?

Erik van Veen explains that Uganda is a cash-based economy: unlike the developed world, where most of people's income at the beginning of the month is already tied up in things like rent and pension contributions, people here work with cash. “They can always get hold of some cash for the things they think are important,” he says.

And Ugandans are a phone-operator's dream: they love to talk to each other. Once they have a mobile phone, they use it as much as ten times more than people in developed countries do. Nile Breweries, the country's largest beer producer, has blamed a dip in beer sales on the increased spending on mobile phones.

MTN's system is based on prepaid scratchcards. Once you have bought a mobile phone and a SIM chip (which gives you an MTN phone number), you pay for your calls by buying a plastic card. You scratch away an opaque layer to reveal a code number, and you punch this

MTN's latest way to provide telecommunication services – a container with payphones. A counter inside the container sells phone cards and has computers for Internet services
(Photo: Paul Mundy)



number into your phone, adding units to your account. You can use the phone until you've run out of units, and then you have to buy another scratchcard.

This system is good for phone customers, who pay only for the calls they actually make, rather than a monthly bill, which is often wrong. It's good for the phone operator, too, since it avoids the need for expensive-to-run subscriptions and billing systems, and eliminates the risk of customers not paying their bills.

Phone trade

Telecommunications do not just fill a social need, and are not just useful in the cities. They are particularly important for entrepreneurs and traders in small, farm-based towns. Monica Namaganda runs Butembe Vetcare, a wholesale veterinary supply store in Jinja, a town next to Lake Victoria famous as the source of the River Nile. She uses her shop's new (fixed-line) phone to order supplies, and takes orders from retailers in the surrounding area.

Down the road, Aggrey Wettaka, a veterinarian at the Superchic store, has given his mobile phone number to his clients: poultry farmers around town. They call him for advice, or to ask him to come out and check on their flocks.



Monica Namaganda, at the Butembe Agrovet store in Jinja, ordering supplies from Kampala
(Photo: Paul Mundy)

Computers and telecommunications

Erik van Veen tells a story about Busia and Melaba, two towns on Uganda's border with Kenya. MTN had established a base station to provide services to Busia. But a gap in the hills enabled people in some parts of nearby Melaba to get a weak phone signal. He said that Melaba phone-owners would sit on the top of a hill, where the feeble signal was strongest, and sell phone services to customers. When MTN opened a base station in Melaba, the firm sold 300 connections in the first day. Many people just across the border in Kenya have also bought a phone so they can take advantage of the Ugandan station's signal.

Broad customer base

MTN's subscribers are "very broad-based", says Erik van Veen: they range "from government ministers down to traders, people in formal and informal employment, grandfathers and students". Most calls are made for trade and business, especially in the huge informal sector. About 70 percent of phone owners are men, though many younger women, especially students, now also sport a phone.

In countries such as South Africa and Swaziland, people who could not afford a phone as individuals band together in groups to buy one. That doesn't happen in Uganda, says Erik van Veen. He thinks this is because Uganda's recent history of war has reduced the level of trust people have in each other.

Some people earn money by lending their phones to others and charging them for the calls made. But this is declining in Uganda because it is easy to buy a second-hand phone.

Phones are still too expensive for small-scale subsistence farmers to own. But increasingly, such farmers can borrow a phone to make important calls. And on a larger scale, phones make the economy more efficient: it's easier to find a market for farm produce; there are fewer misunderstandings and delays in the marketing chain; inputs such as seeds and fertilizer are available at the right time and place. All in all, there should be a substantial trickle-down effect that benefits even the poorest people.

Making a difference

There's clearly enormous scope for expanding services in Uganda and elsewhere. Gulu, the largest town in the north of the country, "probably has about 20 fixed-line phones", says Erik van Veen. Kisoro, at Uganda's south-eastern tip and next to politically volatile (but telephonically highly successful) Rwanda, has just one fixed line "which sometimes works".

Good communications can make a huge difference to the lives of people in rural Africa. And it looks like mobile telephones are about to make that difference.

BOX 11**Telecentres in Senegal**

The multicoloured sign above the door reads “Télécentre Mame Diana Boussa”. Brush aside the cloth hanging over the doorway, and peer into the gloom. Mame Diana’s son waves you towards the single phone booth in the corner of the room. You make your call, and pay the boy 300 CFA francs for the call.

In Europe, phone booths are a familiar sight along the streets and in shopping centres. Here in Senegal, there are many booths, but there are plenty of people like Mame Diana who provide the same service.

The village of Niaga is not far from Dakar. It’s perhaps an hour’s journey – a fare of 300 CFA francs (€0.46) – in one of the communal taxis that wait for passengers in the centre of the village. Before the phones arrived, villagers who wanted to send a message to the city would either give a letter (and a tip) to the driver of one of the taxis, or they would go themselves – 800 CFA francs (€1.22) for the round trip. Now all they do is head for Mame Diana’s.



Thousands of telecentres like this one in the village of Niaga, Senegal help rural people keep in touch
(Photo: Paul Mundy)

Telecentres – thousands of them – have sprouted up all over Senegal. Most, like Mame Diana’s, are just a telephone in the owner’s house. Others also offer fax, photocopying and typing. The more sophisticated also

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provide word processing, scanning, e-mail and Internet access. Many telecentres are side-ventures for businesses such as stationers and agricultural supply stores, in much the same way as pubs and service stations in Europe have payphones for their customers' use.

More and more telecentres are providing Internet and e-mail services. That is especially true in northern Senegal, a poor area with heavy emigration. Local people use e-mail to keep in touch with their relatives in France or the United States: it's a lot cheaper than a phone call or fax.

Senegal's private telecentres are a result of the national telephone company, Sonatel's, decision to promote rural telephony. Each would-be telecentre operator signs a contract with Sonatel and pays an initial deposit. Sonatel installs phones and meters, and bills the operator each month for the number of calls made.

Private telecentres are attractive to Sonatel for various reasons. They avoid the vandalism and maintenance problems associated with phone booths. They do not require a Sonatel employee to empty coin boxes or sell phone-cards. They are cheaper to install than phone booths. Callers like them: they are more comfortable than standing in a hot, stuffy, glass-walled phone box.

Sonatel first tested the idea in 1992, when it established the first four telecentres. Since then, the number has risen rapidly. There are now over 4500: about two-thirds in Dakar, and the remainder scattered all over Senegal. The telecentres create employment (at least two people are needed to run a telecentre from morning until evening). And they are profitable: in 1994, they accounted for 5.5 percent of Sonatel's turnover, even though they represented only 2.5 percent of the lines installed.

For more information

Observatoire Économique des Télécommunications d'Afrique, www.telecom-plus.sn/observatoire/Obtcp.htm

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Uganda National Farmers' Association: Giving farmers a Voice

Farmers' associations: FONGS – organizing Senegal's farmers

Improving farmers' management capabilities: Transparent money management

Learning and sharing about sustainable agriculture: The PELUM Association

Modernizing markets: The case of KACE

Farmers' groups and markets

Democracy, privatisation, restructuring, deregulation, decentralization: wave after wave of change has washed over the developing world in the past decade or so. These waves have given people new freedoms and new responsibilities. They have opened political space for rural people to organize themselves freely, often for the first time, and to lobby governments for change. They have freed them from the tyranny of the all-powerful government monopolies that would tell farmers what to plant, supplied all the inputs, instructed farmers what to do and when, and then forced them to sell their whole output at artificially low, “guaranteed” prices.

But with freedom comes responsibility. Farmers must now make new types of decisions, manage businesses, find markets for their produce, handle greater risks.

A new set of organizations is emerging to help them do this: farmers’ groups that do lobbying and training, NGOs, commodity exchanges, and cooperatives that serve farmers rather than the government.

These new organizations are structured in novel ways: bottom-up rather than top-down, or private companies that take over what used to be government functions. And they relate to existing institutions in new ways. Two examples: NGOs are forming networks with universities and government agencies; and farmers’ organizations are beginning to guide research, rather than merely acting as passive recipients of the new technologies put out by the research institutes.

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Uganda National Farmers' Association: Giving farmers a Voice



Paul Mundy

Take a look at an organizational chart in a typical Ministry of Agriculture. There's the minister at the top, followed by directors, departments, sections and units.

Where are the farmers? If they appear at all, it's likely that they're in a little box, right at the bottom of the chart, with all the arrows pointing down towards them. There are no upward-pointing arrows. The implication: government officials, researchers and extension staff tell farmers what to do – not the other way around. There is no way, through official channels at least, for farmers to tell the ministry what they want.

Building upward arrows

UNFA (Uganda National Farmers' Association) is trying to change that. This association, representing 90,000 farmers throughout Uganda, lobbies on their behalf, provides them with training and extension services, and keeps them informed through its magazine, *The Farmer's Voice*.

The association itself is structured to ensure that voices from the grassroots are heard. It was established in 1992 as a centralized body with district-level branches. But it found that it was beginning to lose touch with the farmers it was supposed to serve. So in 1997, with Danida's help, it transformed itself into an association of 60 legally independent, district-level organizations. A farm couple must pay an annual membership fee of 1500 Ugandan shillings (about €1) to join one of these local organizations.

Three bodies now govern UNFA. The Farmers' Council, made up of three delegates from each of the member organizations, is the supreme decision-making body. To ensure balanced representation, at least one of the delegates from each organization must be a woman. The council members are not afraid to express their opinions: they frequently reject or revise proposals put forward by UNFA's executive committee and secretariat. The 11-member National Executive Committee is elected by the Farmers' Council and led by a president. It acts as a board of directors to UNFA.

The Apex Secretariat in Kampala helps the committee implement UNFA's programmes. It has 34 staff in all, of whom 13 are in technical and management positions. They work in administration, information services, advisory services, training, gender, marketing, credit and marketing, and accounts.

The Farmer's Voice

UNFA's quarterly magazine, *The Farmer's Voice* is an important way of communicating with its members and with policy-makers and other organizations, says Jane Batte, an assistant editor and one of the magazine's two staff.

Each 32-page issue contains three main sections. The first, "News from the Apex", describes activities coordinated by UNFA's headquarters: news of a recent Farmers' Council meeting, for example, or a report of a Danida-sponsored course for 20 Ugandan extension staff in Denmark.

"News from Members" has articles from UNFA member organizations. The cover story of the December 1999 issue, for example, featured a farmer who uses a simple treadle pump to irrigate his 3-acre vegetable garden. In the same issue were articles on a training course in ox-drawn ploughing, an 87-year-old former priest who manages a successful dairy farm, farmers who grow coffee and vanilla, projects started by UNFA member organizations in Iganga and Bushenyi, and several others.

The third section – roughly half the magazine – has technical information. The December 1999 issue, for example, contained recommendations for pig breeding (in response to a reader's letter), information on the economics of raising poultry, ideas for drying fruit and vegetables to preserve them, hints on growing cassava and groundnuts, and a section on rabbit breeding.



The UNFA office in Kampala, Uganda
(Photo: Paul Mundy)



Cover of the December 1999 issue of The Farmer's Voice

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The articles are written by UNFA staff and by a freelance journalist. They ensure wide geographical coverage by selecting a different district to highlight in each issue, then going there to interview people and take photographs.

The magazine encourages readers to make their views known. Farmers also send in articles they have written: if they contribute to *The Farmer's Voice* they are also contributing to UNFA as a whole, says Jane Batte – though she adds that their articles sometimes need quite a lot of editing.

A selection of readers' letters appears on page 3, and some issues contain a survey form for readers to fill in and return. The editorial board pays a lot of attention to this feedback, says Jane Batte. The letters often contain requests for coverage of specific topics, and the editors do their best to oblige.

No longer free

Now in its ninth year, *The Farmer's Voice* was launched as a free magazine for UNFA members. Seven thousand copies were printed and sent to committees in every parish in Uganda. That stopped when support from Danida ended in 1998. Since then, UNFA has tried to make the magazine self-supporting.

One source of revenue is from sales. The magazine now has a cover price of 700 shillings (€0.46) per issue. That doesn't cover all the production costs (about 1000 shillings per issue), but at least it is a contribution. Charging for the magazine has a disadvantage: it limits the number of people who want to buy a copy. The print run has gone down from 7000 when it was given away, to 3000 today.

Selling the magazine has another advantage, apart from the money it generates: it forces the editors to produce a magazine that attracts and responds to its readers. "When you find a farmer willing to spend 700 shillings on this magazine, it's an encouragement, because it means they find it useful," says Jane Batte.

Another revenue stream

Advertising is a second source of income. A Kampala-based manufacturer of plastic water-pipes is a regular advertiser; others have included a gumboot manufacturer, suppliers of equipment such as pumps, grinding mills and coolers, a cotton-ginning company, and a firm seeking growers of chillies for export.

The amount of advertising has been erratic, though. Some issues of the magazine contain several pages – bringing in several thousand euros worth of revenue. Other issues contain very little. The rates charged for advertising have been erratic, too. Jane Batte explains that the

editors could generate a lot of advertising if they visited potential advertisers in person, but that this took too much time. They tried hiring an advertising agency, which recommended raising the rates, but then didn't manage to generate any ads.

Curing a headache

As with many publications aimed at rural audiences, distribution is a headache. You can't (yet) buy a copy of *The Farmer's Voice* at a newsagent: tracking down the vendors and managing the payments and receipts would be too difficult, says Jane Batte. The magazine is a good public relations tool, so UNFA gives some copies away for free. And some organizations have taken out a subscription.

But most of the print run is sold through UNFA member organizations. District coordinators visit Kampala regularly for meetings or training courses; they pick up a stack of copies at the UNFA office to take home with them. To encourage the local organizations to sell the magazines, they are allowed to keep 200 shillings (€0.13) from the 700 shillings sale price; they must remit the remainder to UNFA.

Who buys *The Farmer's Voice*? Many women farmers, and quite a lot of men too, are illiterate, says Jane Batte; it is mostly men who buy copies. Farmers who act as field-level trainers for UNFA frequently have a copy, as it gives them information they can use in their training work.

Local newsletters

Several of UNFA's member organizations produce newsletters in their local languages for their members. A typical newsletter consists of three or four mimeographed sheets, stapled in the middle. The member organizations sometimes translate stories from *The Farmer's Voice* to include in their own newsletter. In this way, information reaches more people than the readers of *The Farmer's Voice* alone.

In April 1999, UNFA's information department organized a training course on information management and dissemination for 74 staff of the UNFA member organizations. Only some have so far produced a newsletter, though. There is clearly a long way to go before all 90,000 farmers in the organization have access to regular printed materials.

Demand-driven training

So what do farmers who join an UNFA organization get for their 1500 shillings membership fee? One of the main benefits is free advice and training. Farmers can ask field-level trainers – neighbours known as "extension link farmers" – for advice on how to solve a particular problem.

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If the link farmer knows the subject well, he or she can provide the advice directly, arrange to teach a short course, or run a demonstration or experiment – to which non-UNFA members are also welcome. If the link farmer does not have the background, he or she can ask the UNFA district coordinator to give a course.

If that isn't possible, and if there is enough demand, the district coordinator can contact the advisory services manager in Kampala, who will arrange for a researcher or other specialist to do the training.

Every July, UNFA organizes an agricultural show at Jinja, in the centre of Uganda. The 1999 show featured over 30 commercial exhibitors, 23 farmers' organizations and 10 government institutions. It attracted more than 80,000 visitors. The show enjoys a high profile: President Museveni toured the 1998 show and gave a bull to the winner of a competition to find the best beef farmer.

Listening groups

UNFA used to produce its own radio programme, but stopped because it was too expensive and because many farmers complained that the programme was broadcast at the wrong time of day.

A new approach being tried is to encourage farmers to get together in groups to listen to radio programmes on farming and rural issues. After the programme, the listeners discuss what they have heard, write down their comments and send them in to the UNFA office.

The same approach can be used with cassettes produced by UNFA on specific subjects, such as coffee or banana production. Link farmers can borrow the cassettes from the district organization office, play it to the listeners group, and then coordinate feedback to UNFA.

Lobbying

Another, more indirect way that UNFA serves its members is through its lobbying efforts. Indeed, this was one of the original reasons for forming the association. This is the responsibility of the executive committee. The lobbying effort has brought fruit. One example is the effort to repeal the government's ban on the input of bull semen, imposed because of fears of importing mad-cow disease from Europe. The government partially lifted the ban in late 1999, enabling efforts to improve Uganda's cattle breeds to continue.

Farmers still have much to learn in lobbying, however: they are not yet as effective as the manufacturers' association or the Uganda Commercial Farmers' Association, which represents large-scale farmers who produce for export. But UNFA is potentially a very powerful voice: it represents small-scale farmers – by far the largest number of farmers and a vital part of the Ugandan economy.

Finance

Finance is probably UNFA's weak point: much of its funding still comes from Danida, and Danish advisors assist the association in its work. If it is to remain a strong representative and partner of farmers in Uganda, UNFA must find ways to wean itself from this over-dependence on outside resources.

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Farmers' groups and markets

Farmers' associations: FONGS – organizing Senegal's farmers



Paul Mundy

UNFA's equivalent in Senegal is called FONGS (Fédération des organisations non gouvernementales du Sénégal). Like UNFA (see pp. 123–128), it is an association of farmers' organizations: 29 of them throughout Senegal, with 150,000 members in nearly 3000 village groups. Counting the families of members, FONGS claims to reach some 900,000 rural people, or about 10 percent of Senegal's population. Nearly two-thirds (63 percent) of FONGS members are women.

Created in 1976 and based in Thiès, a market town and important communications centre east of Dakar, FONGS has a similar structure to UNFA. A general assembly is held once every three years; the general council meets every six months, the administrative council every two months, and the executive bureau once a month. The organization's managers and other staff are part-time officials, elected by the members. The managers receive no salary; instead, they are paid expenses and an allowance for each day they work. A small team of seven salaried staff handles administration, finance, gender affairs and training. If specialist skills are needed, FONGS hires consultants.

The FONGS managers are themselves practising farmers. For example, Demba Keita, the leader of the communications training team, is a farmer from a forested area in southern Senegal, where he grows mangoes and oranges for sale, and groundnuts, sweet potatoes and cassava for home consumption.

A refreshing change

Launched in 1996, *Action Paysanne* is the FONGS newspaper. Three thousand copies of this 8-page, French-language paper are printed each quarter, and are distributed throughout Senegal.

Action Paysanne has three aims: to inform readers on policies and issues; create exchanges among the various FONGS member groups; and introduce readers to technical innovations.

Informing members about policy issues is important, says Demba Keita, so they can develop opinions about them. That's a refreshing change from the conventional approach of simply informing rural people about decisions made on high. *Action Paysanne* contains analyses and articles on policies and problems, development programmes, government policies, and sources of support for farmers.

Action Paysanne is an essential vehicle for exchanges among the organizations that make up FONGS. "It's necessary for the journal to contain information on our members, because if not, the journal won't be interesting for those members," says Demba Keita.

Each of Senegal's 10 regions appoints one person to be responsible for communication. These representatives send in articles about activities in their regions to the FONGS headquarters. Demba Keita and a hired journalist edit the articles; layout and printing is done commercially. The regional representatives sit on the newspaper's management committee, ensuring strong local commitment to the paper.

The regional representatives are also responsible for distributing the paper. The cover price is 200 CFA francs (€0.30); the local organization is allowed to add 50–100 CFA francs to this. The organization can keep the revenue raised to support its own activities. They can also translate articles into their local language (there are seven in Senegal), but they do not often do this, according to Demba Keita, because it is too much effort.

The third main role of *Action Paysanne* is to keep readers abreast of technical innovations. Because many FONGS members are women, subjects such as food processing, nutrition and recipes receive a lot of attention.

Not just newspapers

The communication efforts of FONGS do not end with *Action Paysanne*. To foster the skills of local leaders, it produces technical manuals, typically 2 to 10 pages long, on subjects such as organizational management, negotiating, organizational development and information exchange. It also produces 2–4 page technical leaflets on topics such as milk processing, the use of neem as a pesticide, and how to preserve fruits and vegetables.

FONGS also produces videos. By the end of 1999 three had appeared: two on rice cultivation, and one on FONGS member activities. FONGS paid professionals to produce them and a television station to broadcast them.

Training is an important component of FONGS' work. From 1985 to 1990, FONGS ran a programme that trained hundreds of trainers in each of its member organizations in subjects such as cropping, livestock rearing and organizational management. But the trainers were not very effective in training farmers, an evaluation in 1991 found. So FONGS has now shifted to an approach that takes advantage of the different strengths of its member organizations. Through a programme known as PEFA (Programme d'échange de formation et d'appui), a member organization can request training from another member strong in a particular area.



A newsletter produced by a member organization of FONGS

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FONGS members also collaborate closely with government extension technicians; as with UNFA in Uganda, FONGS staff provide facilitation, while the extension agents provide the specialist technical skills needed.

To improve the availability of information throughout the country, FONGS is establishing 11 documentation centres: one in each of the 10 regions, plus a national one. It is also fostering the exchange of information via e-mail, taking advantage of the many computer-equipped telecentres now scattered across Senegal.

Turning research on its head

FONGS is part of an unusual but promising initiative to restructure agricultural research in Senegal. Normally it is researchers or policy-makers who decide what research should be done on what topics. The researchers do experiments to develop improved technologies, and then inform extension agents, who in turn tell farmers. Sometimes, the researchers may choose to do research on something that has scientific interest but is of little practical value to farmers.

CNCR (Conseil nationale de concertation et de coopération des ruraux), an umbrella organization that includes FONGS and eight other rural associations, is turning this on its head. Instead of the researchers deciding what to do, CNCR sponsors and pays for the research by scientists at the government agricultural research institute, ISRA (Institut sénégalaise de recherches agricoles). This gives FONGS and other farmers' organizations crucial leverage: their control over at least part of the research agenda ensures that their interests and problems are tackled.

This system is reminiscent of research in Europe and North America, where farmers' associations are relatively powerful. In the United States, for example, the Iowa Soybean Promotion Board, a farmers' group, sets aside a certain amount of its members' dues to sponsor research. University researchers submit research proposals to the board for funding.

CNCR is still ironing out the problems in setting up this system, but if it succeeds it promises to be a model for agricultural research in other countries in Africa.

Sustainable in the long term?

As with UNFA in Uganda, FONGS is heavily dependent on outside assistance. It generates about 20–25 million CFA francs (€30–40,000) each year from internal resources such as membership fees. But most of the funding comes from a consortium of European NGOs led by SOS Faim.

If FONGS is to be truly independent and sustainable, it must gradually reduce its dependence on these outside sources. It can do this by generating fees from services such as training, and by recruiting more members. But long-term financial independence can come only if its members get wealthier. That, it is to be hoped, will happen at least partly as a result of FONGS' own efforts to boost their incomes.

FOR MORE INFORMATION

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Farmers' groups and markets

Improving farmers' management capabilities: Transparent money management



Jacques Sultan

November in southern Mali is cotton-weighing time. Farmers heave bales of white fluff onto the village scales. The secretary calculates the price of the bales and deducts the cost of fertilizer and chemicals the farmer has received in advance.

That is when the arguments begin. Records in the secretary's ledger may not agree with the farmer's own figures. Someone may have noted down fertilizers that were never delivered, or the farmer may have underestimated the amount of chemicals in a consignment.

Throughout southern Mali, village associations manage farmers' cotton production collectively, obtain inputs and credit for them, and sell their output. These associations were created on the initiative of CMDT, the parastatal that manages cotton production in Mali.

Every year, the farmers receive from their association the inputs they need to grow cotton. The only management tool the association has is the ledger where the secretary records the quantities delivered to each farmer, and the notebook in which individual farmers note the same information. Mistakes and conflicts are inevitable.

The association earns money from other sources, too: by bulking up the cotton harvested by the villagers, storing and selling grain, or managing credit. But this income is managed neither effectively nor transparently. The result: misuse and fraud.

Another source of conflict is that farmers may take out loans from the association without knowing their ability to repay. All too often, they are unable to do so.

Poor management of the village associations creates a climate of suspicion, discourages producers' initiatives, and may reduce output.

Who is to blame?

The blame for this should not all be laid at the door of the association leaders. Rather, the fault lies with the lack of appropriate management tools, and the low levels of literacy that lead to farmers being unable to handle the few tools they do have.

But special rural management centres are now helping to change this state of affairs.

BOX 12

“Ina cogo nyena”(You came in time)¹

This is the name of the rural management centre in Kignan. In 1994, when the centre was set up, cotton output in the village had dropped by more than half. The farmers had not been paid for two years because their association was heavily in debt. Many other associations were in a similar position.

Establishing the management centre enabled the local village associations' accounts to be taken in hand. Cotton production recovered, debts were reduced, and in 1999 output reached a new record of 973 tons. The centre now helps manage 60 of the 100 or so associations in the area. It has invested 5 million CFA francs (about €7600) in building and in equipping its own buildings.

Confidence is restored. From now on, the producers are in charge of managing their own activities and can turn their thoughts to educational, social and medical investments.

1 Based on an article in the rural management centre's newsletter, Ina cogo nyena, No. 1, October 1999.

Serving village associations

The rural management centres were set up in 1992 at the initiative of a rural savings-and-credit organization (Kafo Jiginew) and CMDT, and with French government support.

The project involved the village associations in all aspects of the centres: design, management, monitoring and funding. This involvement was important: it ensured the centres responded to the farmers' real needs; it helped them become accepted by the villagers; and it increased the chances that they will be sustainable in the long run.

Another important feature of the centres is that they charge a fee for their services. Using a centre is voluntary: each village association must decide by itself whether to apply for the services, and each must fulfil certain criteria to be eligible.

Simple, transparent, appropriate

The centres offer the associations the services of a management adviser. This specialist helps them set up an accounting system that is adapted to their needs and guarantees transparency. He or she monitors the association's accounts and helps prepare an end-of-year financial statement. This is reported to the annual general meeting of the association's farmer members.

The association's secretaries and accountants also receive training so they carry on this work by themselves. Each management centre serves about 40 village associations, each of which is represented on the centre's board of directors.

Using the centre's services is voluntary. It is subject to two conditions: the association must allow a full audit of its accounts, and it must pay a fee that varies according to the amount of cotton it has sold. CMDT makes the centre's services more attractive by paying associations

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that use a centre's services a bonus for each ton of cotton they produce. The fee goes to pay the management adviser's salary, transport, office supplies and other operating expenses.

Suspicious at first

At first, the farmers were suspicious. Might the management centre just be another way to control their lives? Some association leaders also resisted the centres: perhaps they were afraid of opening their accounts to outsiders. A public-awareness campaign was implemented, and centres were introduced gradually to overcome these fears.

Greater transparency and improved management have had many important impacts. Mutual suspicion and conflicts have declined, and accounting irregularities have disappeared. The number of bad debts has fallen, and credit is managed better. The associations have a choice of where to invest their money, and they can control their overheads. Their stronger financial situation gives them greater bargaining power. Cotton output has risen, and the farmers are better off.

National federation

The number of centres continues to rise. By the end of 1999 there were 23 centres serving about 1000 of the 4500 associations in five CMDT districts. The aim is to serve 1900 associations by the end of 2001, and 2500 by 2003.

Several measures are planned to ensure the centres are sustainable. Regional groupings of centres are being formed; each will be backstopped by a regional support-centre. A federation of these regional groupings will plan further centres, maintain links with partner organizations, mobilize outside skills, and establish a monitoring-and-evaluation system. Partner organizations such as CMDT, farmers' organizations, agricultural chambers of commerce, banks and credit institutions will be involved at all stages.

Communication tools

The centres will improve their communication capabilities to allow them to work together in this way. Better communication tools will also enable them to organize public-awareness campaigns, report on field activities, and give the opportunity to farmers and associations to state their views. The project leaders realized that even if the association staff are well informed about the centres' work, that does not necessarily mean that the message has reached the association members. Plus, adding new centres faster would require a more systematic communication effort.



An issue of Yeelen, a local newspaper in the Bambara language

Two main channels were identified, internal and external: a newsletter to serve the various centres' staff and members, and community radio to serve the wider population.

Entitled *Yeelen* ("Light" in Bambara), the newsletter first appeared in October 1999 and is published four times a year. The print run is 3000 copies in Bambara and a few hundred in French. Associations affiliated with the management centres receive free copies. The newsletter is also useful as a public-awareness tool in villages whose associations have not yet signed up for a centre's services.

The newsletter is written mainly by staff of the centres themselves. The first issue described the management centres: how they were created, the main problems encountered, and the early results. Most articles were based on interviews with the centre managers, the advisers and association leaders. One page was reserved for training activities. Issue number two dealt with the new regional support-centres.

The many community radios in Mali's cotton belt are an ideal medium to inform people directly about the centres' work. All the standard broadcasting formats can be used: live public broadcasts, reports on how the centres have improved farmers' outputs and incomes, interviews, discussions, and so on. The interactive nature of community radio will also enable staff to listen to listeners' opinions about the centres. The project management is currently negotiating with several stations in the region for regular coverage of financial management themes (see the story on community radio, "Local information for local people", pp. 21–26).

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Farmers' groups and markets

Learning and sharing about sustainable agriculture:
The PELUM Association



John Wilson

Keep the log fire burning

June 1992: winter in Zimbabwe. The air outside was icy, the accommodation simple. The 14 workshop participants took turns to sit near the log fire. The participants, from five countries in Eastern and Southern Africa, were discussing ways to improve the training of NGO staff who work with rural communities in sustainable agriculture.

This was the beginning of the Participatory Ecological Land-Use Management Association – the PELUM Association, for short. Although it now has over 100 member organizations from 10 countries in Eastern and Southern Africa, the association still operates in the same way as when it began. The log fire has kept burning.

Roots

The group around the log fire were trying to decide what skills, knowledge and attitudes a community facilitator would need to work with rural people in agriculture and natural resource management. In answering this question, they developed a curriculum for training such facilitators.

What had prompted the question? During the 1970s and 80s the standard approach to agricultural development was to teach “modern” farming methods to as many farmers as possible. These methods emphasised the use of purchased seed, fertilizers and pesticides to maximize yields.

That worked reasonably well as long as the inputs were subsidized or free. But then governments began “structural adjustment” policies that eliminated such handouts. Suddenly, many farmers found they could no longer afford the inputs they had come to depend on.

Another problem was that the standard development approach ignored, or denigrated, the knowledge and skills that the farmers already had. Farmers who have for years grown crops and raised livestock in a difficult environment have built up a rich knowledge about the local soils and climate, what works and what doesn't. They have different amounts of land, attitudes towards risk and levels of wealth; they have intricate business relationships, friendships and mutual obligations.

The conventional, top-down approach ignored all this. Extension workers told farmers what to do, and then complained that they did not accept their “advice”.

As the 1980s progressed, more and more development organizations realized this, so changed the way they worked. First, they started using “participatory” approaches, where farmers (rather than the development organization) assess their own needs, and plan changes based on their own knowledge and skills. The role of the development organization is that of facilitator rather than teacher: instead of telling the farmers what to do, it helps them plan and introduces them to new ideas that they can consider. A range of participatory methods was developed to help farmers identify problems, design solutions, and monitor their progress.

Second, the development organizations began promoting sustainable agriculture based on local resources: traditional varieties, compost and manure available nearby, and so forth. This has several advantages: it reduces the amount of inputs that farmers have to buy, and it avoids the health and environmental problems that pesticides and artificial fertilizers may cause.

But there was a shortage of community facilitators who could promote the new farming methods using the participatory techniques. Most extensionists had gone through agricultural colleges, where they had learned input-intensive farming and the old, top-down education methods. So it was necessary both to link together the various new ideas in participation and agriculture, and to train NGO staff how to use them.

Nine months after their first meeting, the same group that had planned the original curriculum met again. The draft had been circulated, discussed and mulled over. It was time to take it another step. The group explored an idea that had emerged at the previous workshop: that it would make sense to do more than just design a curriculum. It was an opportunity to link together the efforts of local NGOs in sustainable agriculture so they could learn from one another.

Why share?

NGOs work largely in isolation. Their work is intense, and they learn a tremendous amount in carrying it out. Unfortunately, they often share this experience somewhat haphazardly. This became clear to the group as they debated.

They decided to plan an association to link the various NGOs together. A steering committee was chosen, with one person from each country. This committee, aided by a coordination team equivalent to one-and-a-half people, guided the emergence of the PELUM Association.

It took a further two years of careful planning. In October 1995, 30 people from NGOs in the region launched the PELUM Association, with the motto “facilitating learning and networking in participatory ecological land-use management in Eastern and Southern Africa”.

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Network before you network

The strength and potential of the association lies in its country working-groups, made up of all the members in a country. The chairperson of the group is that country's representative on the PELUM board. Through board meetings, biennial general meetings and the quarterly PELUM bulletin, members learn what is happening elsewhere. Activities differ from country to country. Some countries have been slow to get going: initially it depends on one or two individuals, then the base broadens.

The association has learned that a formal network can work only if information is already being exchanged informally. The process of low-key networking must begin before it makes sense to build a more formal structure and establish a country-level secretariat.

Local NGOs often depend largely on funding from donors. It can be hard to survive, so sharing information with others sometimes does not get the attention it deserves. And young organizations must often work out how to manage themselves before they can focus attention on networking with their peers. That often means that only older, more established organizations have the time to contribute to a network.

Workshops programme

The PELUM Association's workshops are an important, and much appreciated, part of its networking activities. Every year, the association surveys its members to find out what they want to learn. Based on the findings, it then puts together a programme of workshops for the year. There are four to seven workshops a year, each lasting one to three weeks. The workshops take place in different countries, wherever possible hosted by a member organization. There have, for example, been workshops on participatory monitoring, information management, facilitation skills and the development of training materials, and integrated land-use design.

Participants bring to the workshop their experience on the topic and share it with others. Outside resource people add knowledge and ideas, and the participants can put what they have learned into practice during the workshop itself.

As it is the association that organizes the workshops, they are not just one-off events. They also help build the association itself: stepping-stones towards an ever-more cohesive network. A challenge being addressed is to make follow-up and monitoring more effective.



Participants in a PELUM-organised workshop on soil conservation and land-use planning learning how to use an A-frame, a simple device for marking contours on a slope (Photo: PELUM)

Broadening the market for information

The PELUM Association also distributes books and other training materials, especially those produced in Eastern and Southern Africa. When it started out, the idea was for the association to produce its own training materials. It quickly became apparent that there was already quite a lot available, and that distribution was the problem.

The longer-term aim is to encourage more people to produce materials to serve the bigger market that PELUM is helping create. For example, someone producing a publication in Uganda on participatory monitoring will be able to see it distributed throughout the region, not just in Uganda.

PELUM's member magazine, *Ground Up*, has grown out of its in-house bulletin. First issued in 1999, *Ground Up* contains articles on sustainable agriculture and publicizes training courses and new books.



An issue of PELUM's member magazine, *Ground Up*

The PELUM College–Zimbabwe

In November 1995, PELUM Association members in Zimbabwe met to discuss how to use the curriculum. They invited representatives from two universities and from the government's extension-training branch.

"How will any one organization manage to teach this syllabus?" wondered one of the participants out loud. "We could each do parts of it, but none of us could tackle the whole thing."

"That's it!" exclaimed another. "That's exactly it. If we each do a part, the part we know, then we can cover the whole syllabus."

And so the idea of a "college without walls" was born. As with the formation of the association itself, the idea of the college – the idea to work together – was followed up with careful planning and lots of discussion. Training managers from the participating organizations refined the syllabus. Someone visited all the organizations to assess their strengths and to decide who could cover which part of the syllabus. The organizations' directors developed a strategic plan and a constitution for the college. Catering staff met to discuss food and accommodation.

By the time it was launched in August 1997, the PELUM College–Zimbabwe included national NGOs, community-based NGOs, departments from the two universities and the extension-training branch. The first students started on a two-year sandwich programme in 1998. Nearly all came from organizations that make up the college – a pioneering group to help iron out start-up difficulties. The second group started in early 2000.

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The students learn agro-ecology, natural resource management, organizational management, and facilitation skills. They do this through the different organizations that are members of the college, so they learn about the organizations at the same time. And they learn in a very practical way: they see how the member deals with community organizing, facilitation or agro-ecology in real life.

Another advantage of this approach is that staff with years of experience in development work are able to share their wisdom with the next generation of development workers. Normally such experience is lost.

It is not only the students who gain, though. A tremendous amount of information has been exchanged amongst the participating organizations. For example, while the college was being established, the members all visited each other, giving them an opportunity to learn about others' work and to give feedback to the host.

The Zimbabwe college has been a pilot programme for the region. Its development has been carefully documented and shared with PELUM members in other countries.

Seed security

Seeds are the basis for food security. Farmers must have enough seed, of the right kind, at the right time. If they do not, they risk planting too late for the rains, or growing a variety which is susceptible to pests or which no one wants to buy.

One can address seed security at different levels: national, community or household. At the national level, a country must have a sufficient stock of seed to fulfil its needs. But that does not guarantee that the seeds will be available to the farmers who will plant them. So the best general approach is to strengthen seed security at the community and household levels: ensuring that seeds are reproduced and stored locally so there will always be enough, at the right time, for farmers to plant.

The issue of seed security has been of growing concern for PELUM members. In mid-1997 a network of NGOs in the UK asked the PELUM Association to host a seed security programme. The association explained that it was interested but that it would have to develop the programme jointly instead of merely adopting someone else's plan.

This delayed the start, but this did not matter as far as the association was concerned. A needs survey of PELUM members was carried out, and some members did a similar needs assessment with farmers. The findings were fed into a joint planning workshop with the UK network.

During this time the PELUM bulletin carried articles about the programme, and the board discussed it at their meetings. The seed security programme has slowly and cautiously become part of the association's fabric. It is now moving ahead with a training programme and the production of a seed security manual. In 1999 the programme won an award for the way in which it was planned.

Looking ahead

It is nearly ten years since a handful of people took the first steps that led to the formation of the PELUM Association. Yet it is still a very young organization. It has achieved a fair amount in information exchange. Perhaps more importantly, though, it has gradually strengthened the network so that this exchange of information will get better and better. As this happens, the association will be able to play a greater role in lobbying and advocacy. There is a lot of pressure to move in this direction, especially from donors. The association has resisted such pressure and will only take on this role when it has the base from which to do so.

The main lessons

In its short history, the PELUM Association has learned a number of lessons – many of them the hard way. Here are some:

- Having a focus, such as a joint programme, is a good way to build the commitment that a network needs;
- Proceeding cautiously makes it possible to involve the membership as much as possible. Of course, at the same time, things must happen, so as to maintain interest. It's a question of balancing the need to keep moving with the longer-term need for a strong association;
- Members need short-term benefits to stimulate and maintain their interest in the network. This is true of both new and old members. PELUM provides such benefits through its workshops, its book distribution and its magazine;
- Networking (i.e., the informal exchange) should happen before a structure is established;
- A secretariat is useful, but must be kept lean. There is always the danger of the secretariat dominating a network. It may be necessary to change staff to ensure this does not happen. In the case of PELUM, when the first coordinator left, his replacement was able to reduce the tendency of the secretariat to play too central a role;
- Good ideas come forward when the time is ripe. It's necessary to create the environment for them to come out. PELUM started out as a curriculum-development process and is now an association.

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Farmers' groups and markets

Modernizing markets: The case of KACE



Paul Mundy

Adrian Mukhebi's dream

It was 1976, and the young Kenyan student was attending a course on agricultural economics at Kansas State University in the USA. The students were learning about the Chicago Board of Trade, one of the world's main commodity trading centres. They had to "invest" some fictitious money in the market, buy and sell pork bellies – and try to make a profit.

Adrian Mukhebi was fascinated. Every day he scanned the pages of the *Wall Street Journal*, decided what, where and how much to buy, and of course, where and when to sell it again. By the end of the course, he had made quite a profit – unfortunately only in hypothetical money.

"This should be possible in Kenya," he thought. But when he got back to his job in the Kenyan Ministry of Agriculture, he realized that it wasn't. Government commodity marketing boards controlled all the prices: they told the farmers what to grow, they bought the produce, they determined the prices they would pay, and they controlled the transport and warehousing. The farmers were getting a bad deal, but there was no way they could legally sell to anyone else – except perhaps at the local market.

Wait for the lorry

In 1992, things began to change. The government began lifting the restrictions and liberalizing the markets for agricultural produce. It abolished most of the commodity boards, and farmers for the first time had the freedom to bargain for a better price.

But whom could they sell to? The demise of the commodity boards has left a huge gap in the market for commodities. Farmers can still take their produce to the local market, where hundreds of other farmers who have harvested the same thing may also be trying to sell their crops. About their only other option is to wait for a lorry from the local processing plant to come along, load their bags of grain on the back, and take the price that is offered.

Want to buy some wheat?

Adrian Mukhebi visited Zimbabwe and saw how ZIMACE, a new agricultural commodity exchange there, was working. He came away impressed – and convinced that the time was ripe for such an exchange in Kenya too.

He formally launched KACE, the Kenya Agricultural Commodity Exchange, in 1997. The firm is the only privately run commodity exchange in Eastern Africa that operates a trading floor linking farmers and traders with commodity buyers in the region and in global markets. It also provides exchange participants a source of reliable commodity-market information.



Adrian Mukhebi explaining how KACE's trading board works
(Photo: Paul Mundy)

For a fee of 500 Kenyan shillings (about €7), someone with a commodity to sell – say, 2000 bags of wheat – can advertise details (quantity, quality, asking price, and so forth) on a large noticeboard at the KACE trading floor, located at the Nairobi International Show Ground at Jamhuri Park. There are also trays where sellers can display samples of the types of produce they have to offer. Buyers can then see what's on offer, and KACE assists the buyer to negotiate a deal. Similarly, someone who wants to buy a commodity can put a bid on the board, where potential sellers can see it.

Buyers and sellers do not have to come to the trading floor to deal on the exchange. They can phone or fax in their offers and bids, and KACE staff will try to match buyers and sellers. They can trade in virtually any agricultural commodity, from maize, wheat, livestock and cashew nuts, to inputs such as seeds and farm chemicals. KACE can also help find forwarding and clearing agents, trucking and transport firms, and firms willing to offer financial credit to help a deal go through.

When the exchange is fully developed, buyers and sellers will trade transparently, with market forces of supply and demand setting prices through an open-outcry system on the trading floor. As it becomes more sophisticated, the exchange will allow forward contracting and futures trading.

The exchange earns money by charging a small percentage of the value of each deal it processes: a maximum of 2 percent for small trades, and less for bigger deals. And there's the fee of 500 shillings to advertise a trade. Early offers were by people who did not really have any commodities to sell; the fee discourages such speculation.

Growing pains

KACE is still in its infancy: 1999 saw trade worth only 1.5 million shillings (about €20,000). But that was a 50 percent rise on the 1998 figure, and three times the volume in 1997. Adrian Mukhebi is not worried: he knew the first few years would be tough, and similar exchanges in Zambia and Zimbabwe took four or five years before they took off. He forecasts trades of about 5 million shillings (€70,000) in 2000, and hopes to achieve ten times that the year after.

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The biggest challenge is in finding reliable sellers of commodities. Unlike Zimbabwe and South Africa, with their many large, commercial farmers, 80 percent of the grain in Kenya is produced by poorly educated smallholders, each of whom grows very small quantities of produce, of different qualities, and at different times. That makes it difficult to bulk up commodities, maintain quality standards, and guarantee quantities.

"You need a lot of patience and trust," says Adrian Mukhebi. "For farmers, it's a totally different way of buying and selling. People are used to the old commodity boards, and to buy and sell to someone who is not there, and to buy and sell a commodity that isn't physically there, needs a lot of education."

Banding together

KACE's answer is to help the smallholder farmers band together in marketing associations. Together with Germany's Hanns Seidel Foundation, and ACDI/VOCA, a US-based development organization, the exchange is trying to educate farmers how to form such associations and to manage them to increase their bargaining power.

There are problems: cooperatives have a bad name in Kenya because they were imposed from above, by the government, rather than growing from below. Many commodities have no established quality standards. Government data on prices are unreliable. And there are not enough warehouses to store grain.

Even so, farmers who attend KACE's seminars are enthusiastic. Two associations have formed already – in Trans Nzoia and Bungoma districts – and two more in Uasin Gishu and Kiambu districts are in the process of forming. These associations have a potential membership of hundreds of thousands of farmers.

KACE hopes to work with the associations to establish warehouses where produce can be graded, labelled, consolidated into larger amounts, and stored safely. Improved quality and larger quantities will translate into more bargaining power, better markets, and higher prices. KACE is also establishing regional market linkages within Kenya to monitor prices and gather market information.

A big boost may come if the government ends the monopolies of the only two remaining commodity boards, which deal in Kenya's two main export crops, tea and coffee. Both tea and coffee are high-value commodities, easy to store, with a long trade tradition and well-established quality standards.

"Farmers are fighting to break out of the restrictions imposed by the boards," says Adrian Mukhebi. If that happens, KACE could be the place where buyers and sellers of these two commodities meet.

Trade, not aid

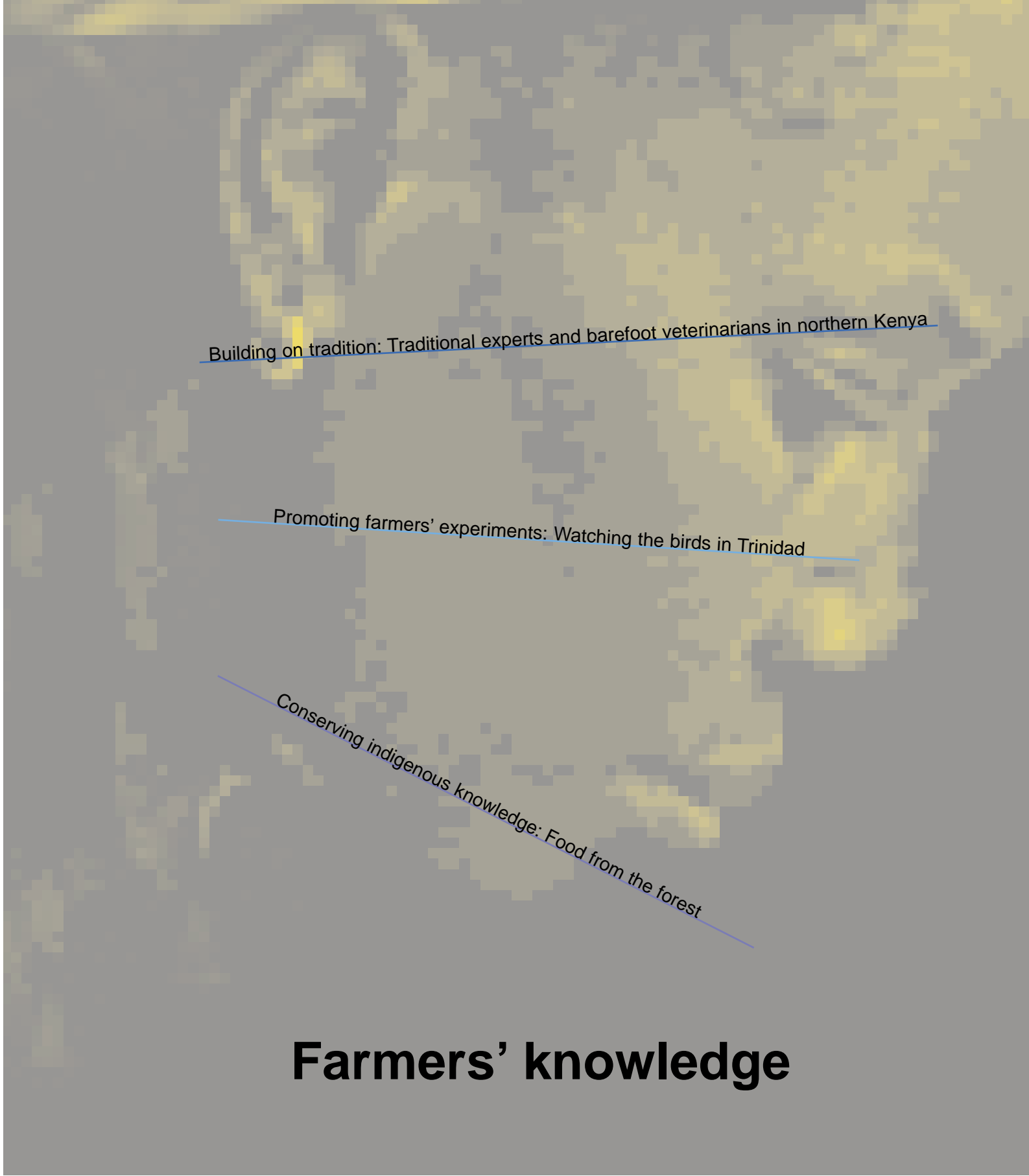
In the 1996–97 crop year, a severe drought in Kenya led to a slump in maize production. At the same time, there was a surplus in neighbouring Ethiopia. In 1998–99, Kenya produced a surplus, while there was famine to the south in Tanzania. A functioning agricultural commodities market could have helped avert these crises, says Adrian Mukhebi. Price signals would have told buyers and sellers about the shortages and surpluses. Grain could have been brought from surplus countries nearby, avoiding the need for food-aid shipments from outside the region.

Adrian Mukhebi is convinced of the benefits to smallholder farmers. “Better markets mean better prices for them,” he says. “Better prices mean more money in their pockets. Right now, farmers have limited choices: they can only access the small market around them. The exchange system helps them access wider markets and better prices.”

“If this works,” he adds, “it is going to add tremendous value to smallholder farm produce – thereby really putting more money into their pockets. We talk of poverty alleviation: you need to put money into their pockets, and here’s an opportunity to do that in a sustainable way.”

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Building on tradition: Traditional experts and barefoot veterinarians in northern Kenya

Promoting farmers' experiments: Watching the birds in Trinidad

Conserving indigenous knowledge: Food from the forest

Farmers' knowledge

Farmers' knowledge

Traditional experts and barefoot veterinarians in northern Kenya



Paul Mundy

Your best cow has a problem...

Imagine you are a Turkana, a nomadic herder in the arid scrubland of northern Kenya. One of your best cows has given birth to a fine, healthy calf. But the afterbirth doesn't want to come out. A small piece is hanging out from the cow's vulva, and it smells bad and looks rotten. You've waited 12 hours, and it's clear that the cow will die if you don't do something. But what?

The nearest veterinarian is over 200 kilometres away. There's no way you can get there in time to fetch him, and you have no money to pay him, even if he were to walk into your hut right now.

What do you do?

You ask Alice Lorot for help. The old woman is well known as a healer of livestock diseases, and is especially renowned for her ability to deal with calving problems. She owns 10 camels and six cows herself, so she knows what she is talking about. She treats pregnant women, too: she helped out with the birth of your own son last year, so you have an especially high regard for her skills.

Alice Lorot takes a long root from a plant she calls *sokotei*, scrapes the skin of the root into a calabash of water, and soaks it for several hours. When the water has turned yellow and tastes bitter, she forces the cow to drink it. After a few hours, the afterbirth has come out, and the cow is contentedly chewing the cud while the new calf suckles.

Moving around

Somewhere around 30 or 40 million people in the world are nomadic pastoralists. Half of them – about 20 million people – live in Africa. They travel in small groups with their herds of cattle, goats, sheep and camels throughout the parched areas of the Sahel and the Horn of Africa in search of water and grazing.



Interviewing traditional healers about the medicinal herbs they use
(Photo: ITDG)

From an economic and environmental point of view, nomadism makes a lot of sense. There isn't enough water to grow crops. Keep the livestock in one place, and they quickly graze down the vegetation and trample the ground nearby. The soil erodes, and without trees, the land turns into desert.

Nomads who move with their animals can take advantage of the rains – when they occur – and can move somewhere else if there is drought. They play a vital role in the economy: they sell meat and milk to town-dwellers, and settled farmers use the animals' dung to fertilize their land.

People who live permanently in villages and towns take certain things for granted. Their children can go to a school nearby. There is a clinic to help people who are ill, and there is a veterinarian to treat sick livestock. There may even be the luxury of roads, electricity, telephones and clean water.

But it is hard for a government to provide such services to nomadic peoples. The areas they live in are vast and sparsely populated. The

pastoralists move frequently, covering huge distances and often crossing international frontiers. They are poor, so cannot afford to pay for services. And they are hardy and independent, suspicious of outsiders – often with good reason.

Illiterate, but an expert

Pastoralists rely on their animals – they have to, or they will starve. Over the years, they have built up an enormous storehouse of knowledge about them: how to manage them, what they eat, what makes them ill, how to cure them. This knowledge is passed down from generation to generation, by word of mouth.

Some, like Alice Lorot, have become especially skilled in treating certain problems. Though she cannot read or write, Alice is truly an expert, in the same way as a doctor, dentist or lawyer is an expert in his or her own field.

But there are some diseases that Alice Lorot admits she cannot treat. Faced with an outbreak of trypanosomiasis or contagious pleuropneumonia, her herbal remedies are useless. Without modern medicines, the animals will die. And without enough animals to support them, the pastoralists become dependent on food aid and donor handouts.

Farmers' knowledge

Building on local knowledge

ITDG-Kenya, an international NGO based in Nairobi, is building on the knowledge of Alice Lorot, and of people like her, to fill a gap in the government's veterinary services. ITDG stands for Intermediate Technology Development Group. Its veterinarians train indigenous healers in basic western medicine: how to diagnose diseases, how to select the right medicine and calculate dosages, and how to inject the sick animal.

But the training does not stop there. ITDG encourages Alice Lorot to share her experience with other healers. She and her colleagues are generous with their knowledge and skills: they freely give advice to others on how to prepare medicines or treat particular diseases.

With the help of the healers, ITDG staff have compiled a list of the plants they use, and are checking the ingredients of each plant. If they find one that is effective, they will be able to recommend the plant to others as a legitimate treatment. And they will be able to ensure that the community that first used the plant gets the credit for discovering it.

Alice Lorot and several other healers attended a workshop and helped compile a manual on traditional veterinary medicine. (This workshop, managed by ITDG and the IIRR, is described on pp. 177–182). Thousands of copies of this manual have been sold, helping to spread the idea of building on local knowledge to others throughout Africa and the world.

Supporting government services

ITDG's work with pastoralists is not confined to the traditional healers. It also works closely with the government veterinarians working in Marsabit and Turkana districts in northern Kenya. The veterinarians have a very limited budget: not nearly enough to pay for transport, drugs or other supplies they need to serve their districts adequately. ITDG helps them by providing transport and assisting with campaigns to vaccinate livestock against deadly diseases such as rinderpest.

ITDG staff also train barefoot veterinarians, or paraveterinarians, known in Kiswahili as "*wasaidizi*". These workers are given training in how to identify and diagnose major diseases, use basic medicines, and when to refer difficult cases to a qualified veterinarian. They live in the community, earning their living partly from a small salary paid by the government, and partly from the sale of medicines to their clients. Since 1986, when ITDG began its animal-health work,



A Turkana woman treating a camel against trypanosomiasis
(Photo: Alphonse Emuria, ITDG)

it has trained several hundred paraveterinarians, as well as hundreds of pastoralists. Other organizations, such as Farm Africa and the Participatory Community-Based Vaccination and Animal Health Project, have similar training schemes.

The “tree of men”

Some development projects organize local people into self-help groups – for example, for training or so they can get credit. But these new organizations often do not work well: when the project funding ends and the staff withdraw, the organization quickly breaks up, and many of the benefits are lost.

Rather than create new groups, ITDG instead works closely with traditional organizations, known as *adakhars* in Turkana and *yaa* in Marsabit. These are groups of elders and community leaders, who meet under a sacred tree, known as the “tree of men”, to discuss important issues and to make decisions that affect the whole community.

Working with these community leaders has several advantages. The *adakhars* and *yaa* decide whether they wish to collaborate with the ITDG veterinarians. They select who will attend the training offered by ITDG, and they nominate members of the committees who run community drugstores. Because the training and other activities have received the elders’ seal of approval, they are far more likely to

continue to be used after ITDG eventually withdraws from the area.



A Kamba healer showing the herb he uses to treat retained placenta
(Photo: ITDG)

The *adakhars* and *yaa* are composed entirely of men. Women are not permitted to sit under the “tree of men”, so their opinions are not heard. That is particularly a problem in livestock health, since it is often the women who are responsible for looking after the sheep and goats, and it is often they who buy drugs to treat sick animals.

ITDG is trying to change this. It tries to make sure that women are invited to attend training, and that there are women on the key decision-making bodies. In 1998–99, two-fifths of the more than 200 trainees were women, and women now sit together with men on the drugstore committees. Slowly but surely, the status of women is being

raised, and they are becoming more involved in planning community affairs.


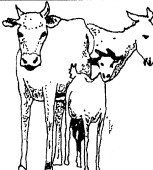
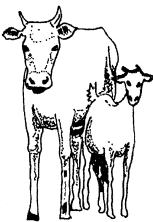

Standing on four legs

It's important to monitor a development project so you know whether it is effective, and so you can change direction if necessary. But how do you monitor it when the people you are working with cannot read or write? ITDG has come up with an innovative method in keeping with its approach of building on local knowledge.

The Turkana keep four types of livestock: camels, cattle, sheep and goats, and donkeys. They say that if they are doing well, they are “standing on four legs”, where each leg represents one type of animal. But things don't always go as well as this. The Turkana then say that they are “standing on three legs”. If the situation is worse – say, because of a drought or an outbreak of disease – they say they are “standing on two legs”. If there is a major crisis, and people die of hunger or disease, they say they are “standing on one leg” – or even on “no legs”.

The Gabbra people in Marsabit district use a different system, based on colours. White is the best situation, equivalent to “four legs” among the Turkana. Blue (or grey) is less than satisfactory, equivalent to “three legs”. Red means an impending crisis (“two legs”), and black is an actual crisis (“one or no legs”).

ITDG uses these traditional measurement systems to monitor things such as disease outbreaks, drought and the security situation (cattle raids are frequent). Project staff combine the number of “legs” (or the colour) with other information such as rainfall data, malnutrition as measured in health clinics, and disease outbreaks reported to the government veterinary services, to build up an overall picture of the situation in the district. The staff can then decide what actions to take – for example, whether to undertake an emergency vaccination campaign or to try to resolve conflicts among rival groups.

Turkana Participatory Impact Monitoring Report		January 2000	
Turkana indicator levels			
Symbol	Indicator level and description.	Meaning	Colour coding - Marsabit
	4 Legs: four livestock types: Camels, cattle, goats and donkeys.	Represents food security or a wealthy pastoralist. Having four livestock types is the desired state. It also represents a mobile animal - an animal with four is the most mobile	White colour. Similar in Turkana. White stands for milk which the pastoralists say it stands for purity, for life, for survival.
	3 Legs: 3 livestock types	1 livestock type is lost. It is like an animal, which has lost 1 leg.	Blue colour. Turkana do not relate with blue. Instead they chose a mixture of white and black. This is the colour they called Engorog.
	2 legs: 2 livestock types	2 livestock types have been lost. The family is surviving on only 2. Similar with an animal having 2 legs.	Red colour in Marsabit. The same colour in Turkana. Red (Erang - Turkana) stands for blood or danger.
	0 - 1 leg: Situation of total loss. Having very few or no livestock at all	All livestock types have been lost- a situation of total loss.	Black in Marsabit. The same in Turkana (Lokirion).

Using traditional monitoring systems to assess community welfare in northern Kenya

Making the law more realistic

Kenya has strict laws about who is allowed to use certain types of drugs. Only qualified veterinarians, for example, are allowed to use “part-one poisons”, a category that includes injectable antibiotics. But there are few veterinarians around, and the drugs are readily available: Kenya’s northern boundaries are porous, with people and medicines moving freely into and out of Ethiopia, Somalia, Sudan and Uganda. The owners of the small shops that sell drugs often do not know how to use the medicines properly. They may sell the wrong medicine, or the wrong amount, wasting money and leading to under-dosing and the development of resistant disease strains.

A decade-and-a-half of experience has shown that when suitably trained, paravets and herders can apply medicines safely and correctly. The government veterinary services and the ministry are coming to realize that allowing these people to treat animals – and training them so they can do it correctly – is the only realistic way of controlling livestock diseases in northern Kenya. Thanks to the work of ITDG and other NGOs, there is now hope that the pastoralists in these remote areas will, for the first time, have access to effective animal health services.

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Farmers' knowledge

Promoting farmers' experiments: Watching the birds in Trinidad



Cheryl Lans

1988 – and Trinidad and Tobago's chicken farmers faced a problem. The prices of imports were unpredictable because of IMF-mandated structural adjustments: a serious concern in an industry where almost everything, from the soybean and corn used as feed, to equipment and drugs, and even most of the baby chicks, are imported from the USA.

Some farmers thought about using medicinal plants to treat their flocks. They could grow these plants – aloe, bitter gourd and citrus – on their farms, saving the cost of buying expensive imported drugs. They had heard about these folk medicines from other farmers, neighbours and relatives.

But were the plants effective? The farmers started some informal experiments to find out. They squeezed out the juice and put it in the chickens' drinking water, or just put the plant in the water whole. They checked their flocks for health problems common in chickens: lack of appetite, heat stress, colds and other respiratory problems, and the number of chicks that died.

BOX 13

Filling dinner plates

As in many developing countries, chickens are an important source of protein for Trinidad and Tobago's population. Filling the dinner plates are two main types of broiler operations.

First, there are contract farmers who work for two big poultry-processing plants, who raise between 5000 and 90,000 birds each a year. These processing plants supply government institutions, supermarkets and hotels.

Then there are small, independent broiler operations that supply live birds to small-scale roadside shops. There, the birds are kept in a shed until they are slaughtered, plucked and dressed for customers.

How about that boiled egg for breakfast? As in most countries, egg production is separate from the broiler industry. There are fewer egg producers than broiler raisers.

Spreading the word

The animal health assistants of the government's Poultry Surveillance Unit (see Box 14) noticed the farmers were doing these experiments. The health assistants would help the farmers conduct the tests, monitor progress and keep their colleagues informed at the surveillance unit's regular weekly meetings.

Information also flowed in the opposite direction, from the unit to the farmers. The unit staff kept the farmers informed of research being done outside the Caribbean on medicinal plants that might be useful in Trinidad.

The staff of the unit spread news about the tests to 100 other poultry farmers. They used three criteria to decide which information they should disseminate:

- Did the plant improve production?
- Did it have any harmful effects?
- Did the farmers who tested the plant use it again and again?

How much of each medicinal plant should go in the chickens' water? The unit staff worked out dosages for each plant, but they gave this as a guideline for farmers to work with, not as a fixed standard.

BOX 14

Poultry Surveillance Unit

The Poultry Surveillance Unit is unique within the Ministry of Agriculture, Land and Marine Resources in Trinidad and Tobago. Started in 1981 to provide veterinary and technical services, by 1995 the unit had eight animal health assistants, including two women, who were assigned to different districts in Trinidad. The unit head was a veterinarian.

The statistics are impressive: in 1994, the unit staff made a total of 544 visits to 55 layer farms, with a capacity of over 450,000 laying hens and a total production of over 43 million eggs a year. They also made over 2000 visits to 165 broiler farms, which produced nearly 6 million broilers. On top of that, the unit also deals with a small number of ducks, guinea fowls and turkeys.

Farmers' knowledge

Most chicken farmers in Trinidad keep chickens in sheds with wire-netting sides, on a floor covered with bagasse (the stalks left over from crushing sugarcane to extract the sugar). The birds drink from automatic drinkers, fed from an overhead storage tank. That makes it easy to apply medicine to the whole flock: all you do is put it in the water tank, and each bird is treated when it drinks.

Because all the farmers used the same system, they were all able to adopt the medicinal plants that the unit staff told them about. Other factors were important, too. The plants were hardy and easy to grow, the farmers were familiar with them, and the medicines were easy to prepare. Plus, healthy-looking chickens – and fewer dead chickens – are easy to see, directly in the poultry shed, and indirectly in the farmer's wallet.

Another service provided by the unit also contributed to the spread of the medicinal plants. Dr Gabriel Brown, the unit head, was responsible for doing post-mortems on diseased birds to find out why they had died. So he had inside information on the diseases on each farm, and could advise the farmers accordingly. The farmers in turn could press the unit staff to find solutions to their flock's problems. Healthy flocks would reduce Dr Brown's workload of examining dead chickens: a strong incentive for success!

Lessons from the chicken shed?

The Poultry Surveillance Unit takes great care to distinguish between useful and non-useful knowledge. Surprisingly, many research and extension agencies fail to do this, giving farmers advice they cannot use, or promoting technologies that don't work in the particular set of circumstances.

The unit carefully nurtured relationships with key poultry farmers, and helped them test medicinal plants. It then took these findings and spread them to other farmers who could benefit immediately from cheap, local solutions to their problems.

Finally, rather than trying to promote some outside technology to address a researcher-identified problem, it helped farmers to answer farmers' problems. The farmers contributed their expertise, and so did the unit. This sharing of knowledge is a key feature of the new extension approaches now being implemented throughout the developing world.

FOR MORE INFORMATION

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Farmers' knowledge

Conserving indigenous knowledge: Food from the forest



Tony Jansen

The thatched building by the sea houses Sasamunga Hospital's primary health-care unit. Inside sits a small group of men and women from nearby villages in Lauru, an island in the Solomons.

The group is discussing which sorts of wild yam are found in *piara pūu* areas. Local people harvest the yams and other wild plants for food from these and other areas. *Piara pūu* is just one of 14 different types of local vegetation, covering original forest and forest regrowth on abandoned shifting-cultivation garden sites.

The group questions the most senior person, Reggie Pitisopa, and other elderly participants, and after some discussion, comes to a conclusion. Someone carefully writes down notes in the Babatana language.

Gwendlyn Pitavavini, the project coordinator and a resident of the village, guides the discussion. She shows the group some drawings by an artist in the nearby village of Papara. Some of the drawings depict traditional stories about the plants. The group discusses their accuracy and composes captions for each one.

Poverty amid plenty

Babatana is just one of the seven languages spoken by the 16,000 people of Lauru. Also known as Choiseul, Lauru is a large, mountainous, forested island in the north-east of the Solomon Island archipelago in the south-west Pacific. Isolated from itself and the outside world for centuries by the sea, mountains and forests, the Solomons are biologically, linguistically and culturally very diverse.

This richness doesn't translate into economic prosperity. Eighty percent of the people of Lauru live in remote rural communities, where each family grows most of its own food. Farmers clear a patch of forest, grow crops for a few years, then move on to another patch when the soil fertility declines and weeds become too hard to control. Malnutrition is common, especially among small children.

Recognizing this, the hospital's primary health-care unit decided to look at the types of food that local people grow and eat. It teamed up with an Australian NGO called APACE (Appropriate Technology for Community and Environment) to promote small kitchen gardens close to people's houses. Eventually, interest spread to another, rapidly disappearing, source of food: forest food plants.

Forest foods

In the past, forest foods provided security in times of drought, war or unrest, cyclones and crop failure. They are also an important part of Lauru culture, and of people's relationship to the land and the forest. But imported, processed foods – white flour, white rice, noodles – have been growing in popularity, and forest foods have been disappearing from Lauru kitchens.

Changing diets are leading to increasing health problems in Lauru, such as near-epidemic diabetes and heart disease. Knowledge of some forest food plants and how to cook them is being forgotten.

The group in the thatched building is adding to what is now the sixth draft of a book being produced by the people of Babatana. Called *Petanigaki ta siniga ni Lauru* ("Food of the forest of Lauru"), the book is being written by over 60 local people, through a series of workshops and working groups held over a period of three years. The book will be an educational resource for the young people of the area about food from the forest: where it is found, how to manage and harvest it, and how to cook it.

Less than half of the people of Lauru can read and write, and most people speak English as a second or third language. So the book is being written in the local language as well as English, and has abundant illustrations by a village artist, leaf-prints by local schoolchildren to help readers identify plants, and keys to help uneducated readers.

The book has separate sections on the edible nuts, fruits, yams, mushrooms and greens found in the forest. It doesn't cover just the food plants: it also documents the vegetation and land types, seasons and plant types.

Immediately behind the coastal villages of Lauru, steep ridges clad in tropical rainforest rise abruptly to the island's central range. It is in these rugged mountains that the project's field staff work, under the guidance of villagers, to collect specimens of bush foods and other useful plants.

In the village, the collected specimens are laid out and villagers with knowledge of the plants, usually older people, identify and name them. Workshops are then organized to demonstrate how to prepare and cook the plants.

The process of producing the book has been as much of an awareness and educational exercise as the final product will be. Schoolchildren, chiefs and women's groups have all been involved in the collection and recording process.

The writing process has sparked a revival in the use of the plants. Villagers have started trying to cultivate the plants, and primary-school teachers are beginning to discuss the plants in their lessons.

Forest for food security

In late 1997 and early 1998 the El Niño phenomenon produced drought in the normally wet Solomons. Crop failures and water shortages hit an area that is used to rainfall of over 3500 mm spread over most of the year.

The work of recording and revitalizing the use of forest food plants took on a new meaning for local people. While sweet potato and taro crops were failing, there was abundant food to be had in the forest (the manual documents 87 species) that could sustain people – as long as they knew which plants were which, and how to use them.

The forest foods also provide an important reason to manage the forest in a sustainable way. In recent times the Solomons' forests have been decimated by commercial logging. Villagers needed to be reminded that the forest is useful in many other ways – not only as a source of timber.

Collaboration

The project is a collaborative effort between the Solomons National Herbarium, APACE and the Sasamunga hospital's community-based primary health-care programme.

Myknee Sirikolo works in the National Herbarium in Honiara, labelling and documenting plant specimens collected in distant Laurus. He is the botanist and the main community facilitator in the project. He labels the plants carefully and checks the description in Babatana – his mother tongue – with the English-language documentation available in the herbarium. He jots down some questions to ask the community elders on his next visit to Laurus.

On the other side of town is a small, thatched house, the APACE coordinating office. Solar power provides electricity to run a computer, where Florence Nodoro, a young woman from Laurus employed by APACE, enters the Babatana and English text and pictures and prepares the layout of the manual.

APACE and the National Herbarium combined their expertise – ethnobotany and grassroots development – to establish the Laurus Forest Food Project that is working with the people of Laurus to produce the manual. The project is supported by the People and Plants Initiative (a joint project of WWF, Unesco and the Royal Botanic Gardens, Kew) and AusAID.

The manual will be distributed to communities where it will provide a permanent record of their forest food heritage, and can be used for nutrition training for adults and school lessons for children. At the same time, it will be a record of the past and a basis for the future.

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Agricultural research that pays: How ENDA combines research, training and extension

Beating a famine through research and extension: Controlling cassava mosaic virus in Uganda

Information campaigns: Fighting the hibiscus mealy bug

Translating science into everyday language: Workshops to produce information materials

Extension leaflets: Pacific pests

Communicating science to scientists: The African Crop Science Journal

Research and extension links

Traditional agricultural research and extension are changing. The old model, still all too common in the developing world, is for researchers to beaver away in their laboratories and experiment farms, occasionally emerging to announce a new breakthrough. It is then the job of agricultural extension to carry the good news to the farmers.

That model has its problems. Who makes sure that the researchers are studying the right things? Often, it seems, research is done for the sake of research – another scientific paper published, another seminar presented – rather than to solve farmers' problems.

And how do extension workers get the research findings? Extensionists don't read research journals, and probably couldn't understand the jargon if they did. Without this vital link, agricultural research is simply a waste of time and money.

Various institutions are finding ways to bridge the gap between research and extension. Sometimes, a crisis such as a disease outbreak or a new pest forces them to rethink their procedures and relationships and to use new approaches. In other situations, a new organization, often an NGO, has the flexibility to bring together researchers, field workers and farmers to write materials that would be difficult or impossible to produce otherwise.

Let's not forget scientists themselves as an audience. Scientists need to publish: one of the few rewards for a researcher toiling away in a laboratory is the peer recognition that published articles bring. But publication is much more than that: it is the way that science advances, it is how a researcher learns about work done in a distant land, and builds on it. Without research journals, scientific conferences, and (the newest development) publication on the Internet, many technological advances simply wouldn't happen.

Research and extension links

How ENDA combines research, training and extension

Agricultural research that pays:



Paul Mundy

A clutch of problems

Take a look at a clutch of rural problems, common throughout the developing world. Problem number one: villagers want to learn better farming techniques so they can grow more crops. But getting the information they need is difficult: research institutions are too remote, and much of the research they do is not directly relevant to farmers.

Problem number two: in order to do field experiments, research institutes need land and cooperating farmers. But stuck in their laboratories, scientists lack the contacts they need with farmers.

Problem number three: extension agencies have the task of teaching farmers new technologies. But that is difficult: demonstrations require land, and setting them up is an expensive, time-consuming business.

And a solution?

ENDA, a Senegal-based NGO, thinks it has found a solution to all three problems. The solution is based on a deal between ENDA (Environment, Development and Action) and the people in a village. The villagers donate some spare land (say, 5–10 hectares) to ENDA, and the NGO establishes a training centre there for the local community.

ENDA extension staff and four trainees from the village live in the centre's dormitory and work the land, growing crops and raising livestock like any other farmer. They also run experiments and arrange demonstrations of new farming methods. For example, they may plant rows of new varieties of maize alongside a plot of traditional varieties; they then invite the villagers in to compare the results for themselves. Some 50 or 60 visitors can be expected at any one such field day.

The training centres make ideal sites for researchers to conduct field experiments, says Chierro Bal Seck of ENDA's action-research team. The centres are located on village land, have staff to plant and weed the crops, and there is a ready-made audience of local people to view to results and adopt practices they like. Scientists from ISRA (Institut sénégalaise de recherches agricoles, the government agricultural research institute) and the University of Dakar can ask ENDA for help in doing research at the centres. And ENDA has signed an agreement with the University of Minnesota for American students to conduct research in Senegal using centre facilities.



ENDA's library offers readers a wide range of information on development topics
(Photo: Paul Mundy)

Of course, the local farmers themselves may also suggest topics for research, says Chierro Bal Seck.

Examples of research being conducted include the rapid multiplication of planting materials that grow from cuttings, such as potatoes, cassava and strawberries; experiments to control nematodes in tomato and okra; and a study to find ways of best using the large amount of biomass produced by leucaena (a nitrogen-fixing tree widely planted to improve soil fertility).

There are four such centres already: one at Sébikotane, near Dakar, and others at Sandiara (in the west of the country), Mérina Diop (east-central), and Nguénienne (west-central), established with support from the UNDP (United Nations Development Programme) and Caisse française de développement. Established in 1998–99, they have already played host to top-level policy-makers, including the heads of the World Bank and FAO.

The centre in Mérina Diop is particularly interesting. Central Senegal is a particularly poor area, subject to desertification. Large numbers of people are unemployed, and many young people move to Dakar or emigrate to the United States, where some become involved in drugs and prostitution. ENDA and UNDP, which supports the training centre, hope that it will contribute to solving all of these problems.

Ten more centres are planned in the immediate future. Chierro Bal Seck says that if these are successful, ENDA hopes to establish a total of 640 centres: two for each rural community in Senegal.

ENDA's goal is for the centres to be able to support themselves financially. That means growing and selling enough produce to pay for the running costs, including the salaries of the staff and the trainees. So far, the centres raise 70 percent of their costs by selling produce; this percentage is expected to rise as their livestock enterprises reach full production. The centres can also sign production agreements with local traders and exporters.

About ENDA

ENDA is an international NGO that focuses on environmental and development problems throughout the developing world. Headquartered in Dakar, Senegal, it has offices in 21 developing countries: 14 in Africa, five in Latin America, and two in Asia.

Research and extension links

ENDA was founded 1972 after an international conference in Stockholm on the environment. It operates as a federation of 24 semi-autonomous teams, each focusing on a specific area of development, including health, energy, gender, urban affairs and publishing. It receives most of its funding from bilateral aid agencies and NGOs in Europe, and from the European Union.

“You can’t take [the press] out just to see the cabbages you’ve planted”

ENDA works closely with the media in Senegal to ensure that its work reaches a wide audience, says Simon Meledge, who handles ENDA’s public relations. He produces press releases, holds press conferences, and prepares kits for reporters containing information that reporters can adapt for their stories.

Each year, he organizes several visits for journalists to sites where ENDA has been working with local people. He spends quite a lot of time identifying the most interesting stories to tell. It is important to choose the right time and place. “You can’t take them out just to see the cabbages you’ve planted,” he smiles.

Unlike in some countries, it’s not necessary to pay journalists in Senegal to ensure they report on a story. If Simon Meledge organizes a press visit, he makes sure he covers the journalists’ transport costs. But it’s up to the journalists to decide whether to write anything. Conferences and book launches are good “hooks” for news stories. Simon Meledge has a list of journalists he invites to such events.

ENDA gets quite a lot of coverage on the radio. It produces two or three programmes a month, and pays to have them broadcast. Plus, Simon Meledge and his colleagues are often invited to participate in round-table discussions on the radio.

ENDA was one of the pioneers of the Internet in Senegal, and it has an extensive and informative website (www.enda.sn).

900,000 books in 25 years

One of ENDA’s 24 teams is a publishing unit known as “ENDA Edition”. This publishes about 10 books a year in English and French, on all the subjects covered by ENDA itself.

Between 1974 and 1997, ENDA distributed nearly 900,000 copies of books. An estimated 70 percent of these were sent to Africa, and 20 percent to Europe. The most successful title? A French edition of the health guide *Where There is No Doctor* (*Là où il n’y a pas de docteur*) by David Werner, which has sold more than 134,000 copies. A more typical book has a print run of between 1500 and 6000.

ENDA co-publishes many of its titles in collaboration with United Nations agencies such as Unicef, and with CTA.

The prices are intentionally low; they are intended to cover the publication costs rather than make a profit. There is a two-tier pricing structure for books: *Where There is No Doctor* is sold for 5000 CFA francs (€7.62) in the developing world but three times that (€22.87) in the “North”.

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Research and extension links

Beating a famine through research and extension: Controlling cassava mosaic virus in Uganda



Paul Mundy

A mystery disease

Farmers in Luwero, north of Kampala, first noticed the mysterious disease in 1988. Yellow blotches appeared on the leaves of their cassava plants, stunting their growth. The leaves eventually fell off, and when the farmers dug up the starchy roots of the plants, they found nothing to eat.

Local extension staff at first blamed cassava green mite, but researchers later identified the true culprit: cassava mosaic, a disease caused by a virus. This virus is common throughout Africa, but before then had not caused serious problems.

This time, though, the problem was bad. About 2000 hectares of cassava plantings were wiped out by the disease in 1988. Carried by whiteflies, the virus spread steadily south by about 20 kilometres a year, decimating Uganda's second most important food crop. By 1999 it had covered the whole country and had spread into neighbouring countries as well.

Second only to bananas

Cassava accounts for some 30 percent of the food eaten by Ugandans – second only to bananas. Farmers learned that there was nothing they could do to fight the virus: all native varieties were susceptible to it. They abandoned cassava and switched to other crops, such as sweet potato. In Kumi district in the east of the country, farmers planted more than 30,000 hectares of cassava a year in 1986–88; by 1992, they were growing less than 5000 hectares. At the height of the epidemic in 1996, Uganda's total cassava production had fallen by 90 percent, from 4 million tons to under 500,000 tons a year.

Plummeting cassava production brought famine in its wake. In 1994, an estimated 3000 people died of starvation in eastern and northern Uganda. Girls were forced into early marriage because their parents needed the dowry money to buy food. Cases were reported where young girls were exchanged for cassava.

Partnership pays off

Uganda's National Agricultural Research Organization (NARO) was on the spot. It had to find a solution, and fast. Dr William Otim-Nape, a virologist who headed NARO's cassava team, and scientists at the NRI (Natural Resources Institute) in the UK began an aggressive research

Healthy cassava plants and (far right) plant showing symptoms of cassava mosaic virus
(Photo: CTA)



programme. They marshalled support from various donors, including Canada's IDRC, the Gatsby Charitable Foundation, Britain's DFID, USAID and the World Bank. Gradually, the scientists came to understand the disease and how to control it.

The government first attempted to prevent the disease from spreading by destroying infected plants. That didn't work: in one research trial, 4 hectares of the main variety were decimated by the disease, despite the strictest sanitation measures. Clearly, another answer was needed, one based on cassava varieties that were resistant to the disease.

None was found in Uganda. So William Otim-Nape and his team went further afield – to IITA (International Institute of Tropical Agriculture) in Nigeria. They produced hybrids by crossing resistant varieties from IITA with local cassava varieties. They tested these hybrids in the field, and found that they were resistant to the disease. Finally, there was hope.

Another breakthrough came in 1996, when William Otim-Nape and researchers at the Scottish Crops Research Institute were studying the genetic make-up of the virus. They found it was a hybrid of two existing viruses that had previously caused little harm – the first time such a hybridization had been seen in this family of viruses.

Involving farmers in research

Normally, breeding a new crop variety takes up to 10 years because of the careful testing, selection and re-testing that is needed. But faced with the looming famine, the researchers had to cut corners. They invited farmers to help evaluate the new varieties. The farmers carefully evaluated each one, and cooked and tasted the tubers. They took cuttings from the ones they liked home with them to plant on their own farms. At the end of the season, the researchers visited the villages to discuss the merits and de-merits of each variety with the farmers. In this way, it was possible to halve the time needed to develop and release a new variety to 4–5 years instead of 8–10 years.

Cassava is an unusual food crop in that it is not grown from seeds. Instead, farmers cut the long, knobbly cassava stems into short stakes, each with several knobs or "nodes", and plant these cuttings in the soil. The nodes on the cuttings sprout and put down roots, forming new cassava plants.

This has both advantages and disadvantages. The advantage is that each cassava plant is genetically identical to its parent: it is a clone. That means that once the researchers had found resistant varieties that farmers liked, they did not have to worry about making sure the variety

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was pure (as is necessary with sexually reproduced crops such as rice and wheat). The disadvantage is that one cassava stem can produce only six or so cuttings, instead of the hundreds of seeds on a rice or wheat plant. That means it takes a long time to multiply enough cuttings to plant a field of cassava.

Fortunately, scientists at CIAT (Centro Internacional de Agricultura Tropical) in Colombia had developed a way of growing cassava plants from a very short section of stem containing just a single node, instead of the several nodes on a standard cutting. Using a special humidity chamber, it was possible to grow far more plants from a single stem, greatly speeding up the multiplication of resistant varieties.

Working with farmers

It was clear that the new varieties could succumb to the disease if they were planted in isolated patches: the virus would simply spread from the surrounding susceptible varieties, swamping the new varieties despite their resistance. Large areas were needed where only resistant varieties were planted. But for that, a massive campaign to inform farmers and to multiply cuttings would be required.

The NARO researchers called on the extension service for help. The District Agricultural Officer appointed staff to coordinate the cassava programme in each district, county and sub-county. With support from the Gatsby Charitable Foundation, the researchers trained the extension staff and provided them with transport and allowances, creating a National Network of Cassava Workers, or “NANEC” for short.

NANEC workers in each district began an ambitious training programme for farmers. This covered information about the cassava mosaic disease itself: how it spreads and how to control it. It also discussed the resistant varieties, the need to destroy infected plants and use only healthy plants, and how to make and use a cheap humidity chamber. In all, more than 35,000 farmers were trained directly; these went on to train other farmers, reaching 200,000 farmers in all.

The NANEC workers collaborated closely with community organizations such as women’s groups and young farmers’ associations. These groups multiplied and distributed cuttings, ran on-farm trials of new varieties (some 600 trials in six years), and managed demonstration plots that could be used to train their members. More cuttings were produced on government land and prison farms.

When they realized how important it was to get rid of the source of the disease, villagers took it on themselves to punish farmers who grew susceptible varieties. They fined offenders or subjected them to social pressure. Traditional “community police” destroyed the infected crops. The most effective community groups were those that already existed – 20 or 30 farmers who would get together to dig and weed each other’s fields in turn. Such groups could easily add the cassava training to their activities. NANEC also helped form new groups, but these did not prove as durable as the existing groups.

The mass media were used as well. NARO hired journalists to write newspaper and radio stories, and paid for airtime for a radio programme on cassava.

The results of success

The success of this approach is reflected in the statistics. By 1998, Uganda's cassava production had recovered to pre-epidemic levels. By 1999, output was 16 percent above levels in 1989, the peak year before the epidemic hit. Instead of famine, the country now has the opposite problem: a glut of cassava, pushing prices down. Uganda has begun exporting fresh roots and cassava chips to its neighbours, and is establishing factories to process the surplus yield.

Success in the fight against cassava mosaic has also led to changes in the research and extension system. NARO has been restructured, and regional research stations have been established in each of 12 agro-ecological zones, so as to bring research closer to the farmers. To ensure still closer links between researchers and farmers, responsibility for the transfer of new technologies to farmers has been moved from the Ministry of Agriculture to the semi-autonomous NARO. Coordination with extension has improved, and NARO scientists now use participatory research approaches much more readily. Partly as a result of the epidemic, the previously centralized extension service has been devolved to district governments. Many NGOs involved in agricultural development have adapted the NANEC approach for their own uses.

NARO is trying to copy the approach for other crops, too. William Otim-Nape, now NARO's Deputy Director-General responsible for outreach, says that a coffee wilt disease is the next target. Like cassava, coffee is an important crop in Uganda, and it is propagated in the same way, by cuttings, so the same approach may work.

The fight against the cassava mosaic epidemic has left a permanent mark. "It has changed the way everybody thinks in agricultural research and extension," says William Otim-Nape. And it shows how scientific expertise, organization and a modest amount of funds can be brought to bear in a relatively short time to overcome a crisis. These are lessons that other countries, growing other crops, can learn too.

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Information campaigns: Fighting the hibiscus mealy bug



Joseph Seepersad
Wayne Ganpat

The majestic samaan tree with its huge, sprawling branches had been a landmark in the city of Port-of-Spain, Trinidad, for over 150 years. It had withstood the elements during all that time, and seemed destined to last for several generations to come. But it was slowly dying. It had fallen prey to the pink hibiscus mealy bug, an insect pest that had made a rather inauspicious entry into the island just a few months earlier, in mid-1995.

The story began two to three years before that, when the mealy bug caused considerable damage to crops and other plants in neighbouring Grenada. But nothing more was heard for a while, and it seemed that the threat to other countries had passed.

Then a few localized outbreaks were reported in Port-of-Spain, where the harbour was located. The authorities thought that traders had brought the pest to Trinidad, so they imposed restrictions on them. At the same time, they tried to eradicate the pests in the isolated pockets where they were identified, using the “spray, cut and burn” system. However, reports of the mealy bugs quickly multiplied: they were spreading fast.

The mealy bug seemed to prefer hibiscus, a pretty flower found in many gardens. As the pest spread, it became clear that the public had to be alerted via the mass media. So the Ministry of Agriculture began an information campaign in earnest, appealing to the public to “spray, cut and burn”. Since without control, the mealy bugs could spread very easily, the ministry hired teams to carry out the job if necessary. But officials had to rely on reports from the public – reinforcing the need for a national thrust.

Love your enemies

Despite all these efforts, the bugs did not seem to notice: they spread to crops, trees and other plants. Sorrel, used to make a traditional Christmas drink, was severely affected. Mealy bugs became media stars.

It was clear that “spray, cut and burn” wasn’t working. New ideas were needed.

The new approach was based on integrated pest management, with biological control as the core. Biological control relies on natural enemies: spiders, dragonflies, lacewings, parasitic wasps and other insects that kill pests. Two of the mealy bug’s natural enemies were introduced into Trinidad, and they eventually managed to control the mealy bugs.

Anatomy of the campaign

How did the lowly mealy bug come to loom so large in the public eye?

Not surprisingly, a lot of planning and attention went into the effort. Two committees were established – a technical advisory scientific committee, and a task force implementation committee. The same person chaired both: Cynthra Persad of the Ministry of Agriculture. The technical committee was made up of representatives of the ministry's Extension Division and all the major agricultural research organizations operating in Trinidad – local, regional and international. It made technical recommendations and devised strategies for dealing with the problem. The implementation committee consisted mainly of representatives of the various divisions of the Ministry of Agriculture. Its main role was to coordinate the implementation of strategies and to provide feedback to the other committee.

The committees recognized that public awareness and extension programmes were essential to alert people to the mealy bug and the devastation it could cause. The Extension Division used different types of media, particularly radio and television, to inform people and to tell them to report the bug to the authorities if they saw it. Even later, when the control efforts shifted from “spray, cut and burn” to biological control, it was still important to reach the public to know where the predators should be released, and to monitor the level of control.

Three- and five-minute radio programmes were broadcast on various stations. To enable people to identify the insect, detailed descriptions and pictures had to be widely distributed. Colour posters and handbills were distributed to the public. At the height of the campaign, short television programmes were also produced.

Since messages had to get out to as many people as possible very quickly, the ministry's limited facilities for producing mass media materials could not handle the job. Cable television has made Trinidad's viewers a sophisticated lot, so the television programmes had to meet

BOX 15

Jingle bug

A radio jingle was produced for the campaign. It went like this:

If you see the mealy bug
Report it right away
Don't delay...
Stop its destruction

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demanding broadcast criteria. Extension Division staff drafted the technical content and the scripts; the production was contracted out to commercial media houses. Similarly, since the posters aimed to show the symptoms as realistically as possible, printing was also contracted out. The factsheets and leaflets were developed and produced in-house.

Timely and appropriate dissemination of the message was key. Normally, commercial radio and television stations broadcast the government's educational materials outside the peak viewing and listening times. But media surveys showed that those times were not suitable. The same surveys suggested which stations were best to reach specific audiences. For example, certain radio programmes were geared to commuters, young people, people with certain cultural backgrounds, and so on. For television, programmes on the mealy bug were shown at prime time, or at other times when many people would be watching.

Money well spent

It didn't come cheap: the commercial stations did not broadcast these programmes for free. But it proved to be money well spent. Surveys later showed that most people had heard about the mealy bug through the mass media.

How was it possible to get such resources from the government relatively quickly? Perhaps it was the very visible destruction caused by the pest in other countries, and the realization that the same could happen in Trinidad.

The information and education strategy did not depend only on the mass media. The extension field staff were mobilized to deal with the threat, particularly in areas where outbreaks had occurred. They visited households, held programmes in schools, gave talks at Rotary Club meetings and community organizations, and came armed with lots of materials to give away. They set up exhibits in shopping malls and outdoor markets. Very importantly, too, they responded to numerous telephone calls by the public: the publicity materials advertised numbers that people could call to report the bug or to ask questions.

The reasons for success

The programme was successful: only a small amount of damage eventually occurred. The samaan tree in Port-of-Spain was saved, and is flourishing today. Newspaper editorials acclaimed the Ministry of Agriculture and its staff. With FAO's help, the experience has been shared widely, both within and outside the Caribbean.

The reasons for success? The matter of appropriate technology and the way it was handled perhaps stand out. The biological control methods were introduced at the right stage, and this was possible only because the national committees had been put in place as soon as

the problem appeared to be a difficult one. Having one person chair both committees ensured a built-in link between research and extension.

The communication effort was also crucial in arousing concern in various quarters and in mobilizing resources. In some ways the communication effort broke new ground – by contracting out certain aspects of production and dissemination. But in other ways it stuck to certain basic principles – relying on its foot soldiers, the much-maligned extension field staff, to bring the message home to the people.

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Workshops to produce information materials

Translating science into everyday language:



Paul Mundy

Translating science

All over the world, agricultural scientists in research institutes and universities are working to solve farmers' problems. They develop new crop varieties, test the use of fertilizers on different soil types, and look for ways to control the pests, diseases and weeds that can dramatically reduce the amount of food a farmer can harvest.

Once the scientists have found a new technology, they typically write it up as an article describing their experiments, and publish it in a scientific journal. But translating the scientific language in the article into something that farmers (and extension workers) can understand is very difficult. Here's a typical sentence:

Results of the experiment showed that a high phenol content in organic residue from various species resulted in slow decomposition rates and inhibited the release of nutrients.

It is hard for a farmer or extension worker to understand this, let alone put the information to use. It's necessary to translate it first into something like:

If you want to know if a particular type of plant will make good compost, bite one of the leaves and taste it. If it makes your tongue curl up, it probably won't rot very quickly. That means it will not make good compost.

Translating scientists' language into something normal people can understand is a major challenge. It's hard for the scientists to do: they are used to scientific terminology and often see no other way of expressing their ideas. Indeed, they often deliberately use technical language because they want to make sure that their statements are accurate and are suitably hedged with enough *ifs* and *buts*.

Translating science into everyday words and concepts is hard for extension workers and farmers, too: very few have enough scientific background to do it. All too often, the science does not get translated: it gathers dust on library shelves.

Participatory workshops

How to get this translation done? One method, used by IIRR (International Institute of Rural Reconstruction) in Nairobi, Kenya, is to run workshops that bring scientists, extension workers, NGO staff and farmers together to develop information materials jointly. A team of



Above: Participants in a workshop in Bogoria, Kenya, run by ITDG (using IIRR's approach but without IIRR involvement) studying a manuscript on paraveterinary medicine
(Photo: Paul Mundy)



Right: Ethnoveterinary specialist Dr Jacob Wanyama (standing) discussing the formatting of a manuscript with computer staff at a workshop in Bogoria, Kenya
(Photo: Paul Mundy)

facilitators, editors, artists and desktop publishing staff helps the participants present, edit, illustrate and revise the manuscripts. A 2-week workshop can result in a set of extension booklets or a 200-page, easy-to-read manual.

IIRR's workshops are very different from the scientific conferences familiar to many participants (see Box 16). It is an extremely flexible process. Each manuscript is presented, critiqued and revised at least twice during the workshop. This gives the opportunity for participants to revise them substantially, drop a manuscript if it is unsuitable, split it into two or more parts, or combine two manuscripts into one.

All the workshop participants – farmers as well as senior scientists – contribute to what goes into the final book. The scientists ensure that the information is scientifically accurate. The extension workers and NGO personnel make sure that it is easy to communicate. The farmers present make sure that the text and illustrations are easy to understand and the information is relevant to their needs.

Early in the workshop, the participants brainstorm ideas for new topics (other than those already prepared) that should be part of the publication. Individuals, or groups of participants, can write completely new manuscripts, and present and revise them during the workshop itself.

Even the format of the resulting book can be decided on during the workshop itself. In one workshop, for example, participants considered three possible formats: a set of booklets, a single book, or loose-leaf pages. They chose the single book because they felt it would be most useful and convenient for extension workers to use.

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BOX 16

How a workshop works

Preparation

Before the workshop, a steering committee lists potential topics and invites resource persons to develop first drafts on each topic, using guidelines provided. These participants bring the drafts and various reference materials with them to the workshop.

Draft 1

During the workshop itself, each participant presents his or her draft paper, using overhead transparencies of each page. Copies of each draft are also given to all other participants, who critique the draft and suggest revisions.

After the presentation, an editor helps the author revise and edit the draft. An artist draws illustrations to accompany the text. The edited draft and artwork are then desktop-published to produce a second draft. Meanwhile, other participants also present papers they have prepared. Each, in turn, works with the team of editors and artists to revise and illustrate the materials.

Draft 2

Each participant then presents his or her revised second draft to the group a second time, also using transparencies. Again, the audience critiques it and suggests revisions. After the presentation, the editor and artist again help revise it and develop a third draft.

Draft 3

Towards the end of the workshop, the third draft is made available to participants for final comments and revisions.

Finalizing

The final version can be completed, printed and distributed soon after the workshop.

Fast, efficient

Producing information materials using conventional methods can take a long time: you have to write the drafts, edit the text, prepare illustrations and lay out the publication. The resulting prototype is then reviewed by specialists in the subject matter, before final revisions are made. Manuscripts get lost, authors and reviewers may disagree, and people cannot be contacted easily. The process can seem never-ending.

Ideally, information materials intended for farmers should be pre-tested to make sure that they are relevant and easily understood. But this extra step rarely happens: the publication deadline is looming, or there are no funds left to do a pre-test.

The workshop process overcomes these problems because everyone is working on the manuscript at the same time. They can exchange ideas, argue, collaborate, and check on each other's work. The farmers and extension workers in effect pre-test the materials as they are being produced. The whole process of writing, pre-testing and revising is telescoped into an intensive workshop period.

Beating writer's block

Many people find it hard to write. The workshop helps them to put their knowledge down on paper. It helps development organizations to document what they have done and what they have learned, enabling them to share valuable experiences with others.

When the book is produced, everyone who participated in the workshop feels he or she contributed to it. They tell their colleagues and other organizations about the book, helping to make sure it is distributed widely.

During the workshop, the participants are all working on a common product. They create the book together. Everyone contributes: there are no passive participants. This builds a sense of common purpose and common understanding, greatly improving the chances that they will continue to work together after the workshop is over.

Farmers as experts

The farmers play another, vital, role. All too often, scientists and extension workers forget that farmers have a deep and detailed knowledge of the crops they grow, the animals they keep and the soils they till. The technology recommendations that scientists produce sometimes ignore this "indigenous knowledge". Involving farmers in producing information materials is an excellent way of making sure that their voice is heard: scientists are able to listen to farmers' opinions, and the farmers are able to contribute information that goes into the book.

A good example of this was a workshop to produce a book on traditional veterinary medicine in Kenya. IIRR organized this workshop in 1996 jointly with ITDG (Intermediate Technology Development Group), an NGO that coordinates a strong network of livestock health specialists throughout northern and central Kenya (see p. 151). Participants included scientists from the University of Nairobi, the livestock department and the National Museums of Kenya, field veterinarians, paravets, and herders and animal healers from 12 ethnic groups from all over Kenya. These healers use medicinal herbs to treat sick livestock. They are widely respected in their communities: other livestock owners often turn to them for help. In places far from the nearest trained veterinarian, these healers are often the only source of health care for livestock.

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During the workshop, the scientists presented manuscripts on each disease in turn. During the discussion that followed each presentation, the healers were able to match the disease with the symptoms that they recognized – what a scientist sees as a single disease does not necessarily correspond to the local people's understanding, leading to frequent misunderstandings in the field. The healers then described the methods that they used to treat the disease. The scientists were able to say whether they felt a particular treatment would work: tobacco, for example, contains nicotine, which is highly poisonous to ticks and mites. Several treatments used by healers ended up being dropped from the book because the participants as a whole were doubtful whether they would work.

But many treatments passed the test, and the resulting book is a unique blend of scientific and indigenous knowledge. Entitled *Ethnoveterinary Medicine in Kenya: A Field Manual of Traditional Animal Health Care Practices*, it was published in 1996 by IIRR and ITDG, with support from CTA. It covers more than 60 common diseases and problems in cattle, goats, camels and other livestock species. Take as an example the section on mange, a disease caused by minute mites that burrow under an animal's skin, causing intense itching and resulting in skin infections that can kill the animal. This section gives 11 names in seven local languages, a list of symptoms and causes of the disease, several prevention methods, and a range of 11 herbal treatments involving nine plant species and three non-herbal treatments to use if the farmer cannot get modern medicines.



Lokuriana Lokuwa (left), an IIRR Turkana leader, and Alice Lorot (right) a traditional birth-attendant and livestock healer from Samburu, taking time out from the ethnoveterinary workshop in Machakos, Kenya to pose with a waiter from the hotel where the workshop was held (Photo: IIRR)

Helping hands

The workshop staff are vital for the smooth functioning of the workshop. IIRR works with a skilled team of editors, artists and desktop publishers to get the materials into the right format quickly and professionally. Each manuscript is assigned to an editor, who works with the authors to revise it, and makes sure that the draft conforms to the guidelines that have been decided on.

Many information and extension materials in the developing world consist of straight text. No pictures. That makes them hard to understand and uninteresting. Not so IIRR's publications. A group of three or four artists attends the workshop; their line drawings are one of the most distinctive features of IIRR's books. The author, editor and artist together plan each picture; the author or editor makes a quick sketch – often no more than stick figures – showing the key features, and the artist assigned to that manuscript turns this into a professional drawing.

Because the artists are in the workshop itself, they can see and hear the presentations, discuss the illustrations with the authors, and revise them if need be. Participants check each drawing for accuracy and ease of understanding, and each picture may go through three or four

revisions before it is finally accepted. The artists have a keen sense of humour. They often draw cartoons of participants and hang them on the wall – to everyone's amusement. This has become something of a tradition in the workshops.

The desktop publishing team brings text and pictures together into the final form. Their equipment includes a photocopier, several computers, a scanner, a laser printer and (very important for places with frequent power cuts) an uninterruptible power supply and backup disks.

Proof of the pudding

IIRR's Nairobi office has produced several such books since 1994, including the how-to book on traditional veterinary medicine in Kenya described above, a manual on sustainable agriculture in Eastern and Southern Africa (*Sustainable Agriculture Extension Manual for Eastern and Southern Africa*, published in 1998, with support from CTA) and a loose-leaf guide to agroforestry methods in Ghana (*Agroforestry in Ghana: A Technology Information Kit*, co-published with the Ghana Rural Reconstruction Movement in 1994).

These books have proved very popular. All 2000 copies of the veterinary manual have been sold, and a reprint is being considered. Copies were distributed to ITDG's network of barefoot veterinarians, and various development organizations bought bulk copies to distribute to their staff and clients. The book is surprisingly popular among professional veterinarians, who are coming to admit that nomadic herders who live with, and live from, their animals, have over the centuries gained deep knowledge about them and their health problems. The manual has also helped renew interest in traditional knowledge at the University of Kenya and at the Kenya Agricultural Research Institute, which has strengthened its ethnoveterinary research programme.

The sustainable agriculture book has also sold well – more than 2200 copies in two years. Alemaya Agricultural University in Ethiopia is using it as a textbook in its extension training courses. The manual is being translated into Kiswahili, the lingua franca of Eastern Africa. This is expected to increase the usefulness of the manual in Tanzania, where extension staff are often more comfortable with Kiswahili than with English. IIRR is adapting stories in the book into audiocassette format for broadcast on the radio and for use by farmers' listener groups. It is also planning a website so people throughout the world with Internet access can download information.

The success of these books has encouraged IIRR to plan more workshops. Books are planned on community-based health care, dryland agriculture, and communications for development organisations.

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Extension leaflets: Pacific pests



Peter Walton

Pests and diseases threaten not just crops, but livelihoods too. We are not just talking about a few euros, but about attacks that may make the difference between life and death for subsistence farmers. The story about cassava mosaic virus (see pp. 169–172) shows how a disease caused widespread famine in Uganda.

If their crops are under attack, farmers rely on accurate and timely advice from extension agents. The agents themselves need this same information so they can advise the farmers. But all too often, this information is hard to find, is not up to date, and may not even be relevant.

In the Pacific in the 1970s, Ivor Firman, the Plant Protection Officer of what was then known as the South Pacific Commission (now called the Secretariat of the Pacific Community) tried to do something about this. He developed a set of publications called *Pest Advisory Leaflets*. (Actually, he just called them *Advisory Leaflets*; the “Pest” bit was added later to clarify what they were really advising on.)

It is well worth looking at how these leaflets were produced and what lessons have been learnt after 25 years of publishing them.

Who was being advised?

The readers for the *Pest Advisory Leaflets* were “technical officers” in departments of agriculture in the 22 island territories and administrations across the Pacific region.

Who were these “technical officers”? They included extension agents, quarantine officers, researchers and agriculture teachers who had some form of tertiary qualification: a degree, diploma or certificate of agriculture.

It is essential to have a clear idea of just whom the leaflets are for. Without knowing this, you might just as well be writing in the dark for a blind person speaking another language. Knowing the audience’s educational level and where they were located meant that it was possible to write for that audience. For example, it was known that every technical officer could speak either English or French, so the leaflets were produced in those languages.

“Writing for an audience” means taking care to use words and phrases that are familiar. The officers had all studied agriculture, so they should know phrases such as “varietal resistance” and “infestation”. But if you wanted to present the same information to farmers, you would not use these terms; instead, you might say something like “some varieties are less likely to be damaged” or “if only a small number

of weevils are found on the crop, there is not a problem. But when a large number of weevils attack the sweet potatoes, then you have to do something.”

Who did the advising?

All the pest leaflets were written by experts. The word “experts” has become a much-abused term, but in the case of these leaflets, the writers truly were experts in their respective areas. This is important because it meant they were able to decide what information to include, and bring it all together. They didn’t need to confer with others to write the leaflet (although they usually did). And they knew from their experience just what the main points were. The leaflets quickly became recognized as authoritative; they contained up-to-date information on particular pests and diseases. And they were designed especially for a particular region: the Pacific islands.

Since the authors were experts, they were usually scientists, which meant that they were not always used to “writing to” an audience of extension agents. So during the editing process, the editor would have to rewrite the text so it would be more appropriate for the intended audience.

Choice of topics

What subjects – which pests or diseases – did the leaflets cover? The subjects were chosen in two main ways. The first way was to ask participants at regional plant protection meetings (held every two years) to list pests and diseases in order of importance. New leaflets could then be written to cover the most important problems identified. This did not always happen. So other sources of information were also used in some cases (for instance, if a new pest was beginning to threaten crops in the region, one that many plant protection staff might not have heard of because it had not reached their area yet).

There was a third way, one that is not very advisable but is worth mentioning. That is when an expert volunteered to write a leaflet on his or her favourite pest or disease. This happened only a few times, and the drafts were not accepted unless their subjects were suitable anyway. The advantage of an author suggesting a subject is that the author usually has the words at his or her fingertips, and a whole file of photographs – which, as we will see, is very helpful.

Presentation

Extension materials, for extension officers as well as farmers, must be attractive. Whatever is being presented – a radio show, a video programme or a leaflet – must be presented in such a way as to enhance the communication. In other words, does the way a message is packaged help people understand it? If it doesn’t, then it is not attractive.

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The *Pest Advisory Leaflets* were very attractive, in all senses. They looked good. Each one contained colour photographs and was printed on quality art paper, in an A5 format (A5 is half the size of regular A4 photocopy paper).

Of all factors, it was the leaflets' size that contributed most to their being attractive. A5 is just the right size, small but not too small – manageable. When the size was recently increased to A4 – for no good reason – the leaflets lost something. It can't be explained, but the smaller size had a greater impact.

And at just 4–6 pages long, they were the right length too. The length imposed amazing constraints on the authors (and designers!), but that was part of the impact. Being able to present information in just a few pages, with photographs, meant that only what was essential was written. It is very difficult to write with a constraint like this. But it is an effective constraint that can produce good writing.

When the series was started, a specially designed ring-binder was produced so that each recipient could keep the leaflets safe and well organized. Sort of like a loose-leaf encyclopaedia. Unfortunately, as the number of copies of the leaflets quickly exceeded the number of folders available, many recipients were unaware of this option.

The other major factor that contributed to the success of the leaflets was the photographs. Each leaflet had at least one photograph, plus a caption, on the front cover; some had three photographs, with accompanying captions. And inside were often more photographs, usually with shots taken through microscopes, or close-ups. Nearly all the photographs were excellent. A favourite is a photo of a giant African snail, complete with a droplet of water sliding slowly down its shell. Superb.

But with the need for excellent photographs came one of the production constraints: how to get photographs of this quality, quickly enough? In extreme cases, photographs were commissioned. The lack of a suitable photograph could often hold up publication for months – even years. So when an author came along with text *and* photographs, it was an attractive proposition.

After 25 years, what has been learned?

The main thing that has been learned is that the need for *Pest Advisory Leaflets* today is as great as 25 years ago. The leaflets are as popular today, and as needed, as they were when they first came out.

In some ways, this is disappointing. During this period one might have thought that national ministries of agriculture would have done something similar to the SPC's leaflets. A few have, but by no means all. Some leaflets have been translated into local languages and published jointly with ministries. But translating the leaflets also meant changing the audience from extension agents (who can speak English or French) to farmers (many of whom speak only their local languages). But this change has not been allowed for either in the level of language used, nor in the presentation format – except in one case, a leaflet for farmers on taro leaf blight.

There is a need for more effective ways of prioritizing topics and updating existing leaflets. A good example is the leaflet on taro leaf blight, mentioned earlier. This was first published in 1977. After it was published, both the understanding of taro leaf blight and the possible control measures changed. Then in 1993, an outbreak of the blight hit American Samoa and Samoa, destroying taro as both a domestic and an export crop. This was a severe blow. An initial thought was to update and reprint the leaflet on taro leaf blight. But no one could agree on the state of knowledge, or on appropriate control measures, limited though they were. A new edition of this leaflet was published only in 1999, six years after the outbreak began. Obviously, this was not good enough.

Staying with the same example, the farmer leaflet that was developed (based on the outdated leaflet and some more recent information) was used as part of a campaign to educate farmers on the blight: how to recognize it; what it is; how to cope with it. A huge number of farmer training days, combined with radio and television broadcasts, constituted a massive information campaign. This cross-linking of media, presenting similar information in different ways, is a useful and effective way to communicate, and reinforces messages. But it takes planning and the involvement of stakeholders to be successful. The farmer leaflets were developed by extension agents and farmers working together, and were tested by farmers before they were printed (similar to the approach taken in the IIRR workshops, pp. 177–182).

And the future?

As already stated, there is still a need for these leaflets, in their traditional printed form. They could be converted into electronic format, on the Internet or CD-ROM, but these new media are no substitute for print: most of the audience does not have computers, let alone access to the Internet. But that should not stop efforts to explore new media.

Without doubt, putting the leaflets on the Internet could reduce the cost of updating information. But this still cannot be done unless improved procedures are in place for revising existing leaflets and producing new ones.

One suggestion is to take further the idea of “shell books” used so effectively in Papua New Guinea. A leaflet template, with all the photographs but without the text, enables people to translate the text into local languages (there are over 770 in Papua New Guinea alone), and to print new leaflets in that language. In this way, the resource is used to best effect and for least cost.

FOR MORE INFORMATION

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Research and extension links

Communicating science to scientists: The *African Crop Science Journal*



Paul Mundy

We wind our way through the courtyard, past knots of students swotting for their exams, up the stairs, and past laboratories where technicians peer into microscopes. The small office on the second floor of the agriculture building in Kampala's Makerere University is crammed with files and papers. Behind a pile of manuscripts, Margaret Ssonko sits at a computer, entering corrections into a document. Paul Nampala and Moses Osiru scratch their heads over another manuscript: what did the author mean here?

Welcome to the secretariat of the *African Crop Science Journal*. Margaret Ssonko and her colleagues are hard at work on the next issue of this publication, one of the few international scientific journals focusing on the continent's agriculture. They gladly take a few minutes to explain to us how the journal works.

Filling a gap

African scientists face a major problem in getting their research published. Journals based in North America and Europe lack a focus on tropical agriculture. Most journals published in Africa are restricted to their home countries or regions, so lack a continent-wide coverage.

Without a suitable outlet, research goes unpublished, leading to wasteful duplication of effort and stultifying science and agricultural development.

The ACSJ fills this gap. It provides a forum for publishing the work of African scientists, and of foreign researchers working in Africa. It covers the gamut of crop sciences, from agronomy and genetics to post-harvest processing and weed science. Published four times a year since 1993, the journal contains a dozen articles and between 80 and 160 pages in each issue.



Margaret Ssonko working on the latest issue of the *African Crop Science Journal*
(Photo: Paul Mundy)

BOX 17

Why are journals important?

Researchers rely on scientific journals for three key things. First, they are the main method of preserving and communicating information about discoveries to other scientists. Found a way of fighting cassava mosaic virus? Discovered how farmers in a parched area can conserve water? Invented a better plough? Write up your findings in a journal article, and other scientists can learn from, and build on, your work.

Second, journals help keep scientists honest. An article describing a piece of research should provide enough information so that another scientist can repeat the experiment. The journal's editors and reviewers carefully check each manuscript to make sure that the methodology is sound, the results valid, and the text error-free. The rigorous checking ensures that the results reported are of the highest quality.

Third, journals are also an important part of scientists' reward system. Highly qualified yet poorly paid, working with limited funds and often in isolation, scientists require special reserves of commitment to continue their work. An article published in a prestigious journal brings a scientist the professional kudos and recognition from peers that are needed to maintain this dedication. And scientists' salaries and promotion are often tied to the numbers and quality of the articles they publish.

That does not mean that journals are the be-all and end-all of agricultural science. Too often, scientists feel their work is done if their article has appeared in a journal's pages. Much more effort is needed to take it one stage further: to translate the scientific language into a form that extension workers and farmers can understand. The story on "Workshops to produce information materials" (see pp. 177–182) describes one way to do this.

The *African Crop Science Journal* is a high-quality, professionally produced journal serving the whole of Africa
(Photo: Paul Mundy)



Research and extension links

Who writes articles for the *ACSJ*? Most authors are based in Africa: at universities, national research institutions and international research centres such as IITA (International Institute of Tropical Agriculture), based in Nigeria and focusing on cassava and other crops, WARDA (West Africa Rice Development Association) based in Côte d'Ivoire, and the Nairobi-based ICRAF (International Centre for Research in Agroforestry). Some authors work outside Africa but have strong links with the continent.

Articles from Eastern Africa dominate, perhaps because the secretariat is located in this region and finds it easiest to publicize the journal there. Coverage of francophone Africa is limited, although the journal accepts articles in French as well as English (and all abstracts appear in both languages).

Rigorous review

The journal calls on the services of an international editorial advisory board of nearly 40 senior scientists, based in more than 20 countries in Africa, Asia, Europe and North America. Each manuscript is checked by three reviewers drawn from the advisory board or from a wider group of scientists throughout the world. The reviewers can recommend that a paper be accepted, accepted subject to certain revisions, or rejected. To help ensure objectivity and in line with standard practice in scientific journals, the author is not told who the reviewers are.

Some journals pride themselves on the number of manuscripts they reject: the more rejections, the better the quality of the journal. Not so the *ACSJ*: remembering that many African authors speak English or French as their second, third or even fourth language, the editorial staff do their best to help polish an article's grammar and syntax.

That does not mean that all papers submitted automatically get published. About 200 articles are submitted to the journal each year; about a quarter are rejected because of technical defects. Data from a single season's experiment are not very convincing: factors such as the weather and the numbers of pests may vary from year to year. And the lack of access to libraries means that the references cited by many authors are hopelessly out of date. The *ACSJ* staff return papers with such shortcomings to their authors with suggested improvements.

Recruiting readers

Given the journal's high quality and wide range of subjects, one might expect it to have more subscribers than current the 120 or so. But libraries' budgets for acquisitions are declining throughout the world, and few individual African scientists can afford the \$80 a year subscription fee. The *ACSJ* is countering this by a vigorous marketing effort to expand readership – for example, by giving away complimentary copies, promoting the journal in francophone countries, and publishing abstracts on the Internet. The staff raise funds to support the journal by providing editorial services and producing conference proceedings. They are trying to cut costs by using e-mail rather than postal services to distribute manuscripts and to contact authors.



Students like these in the Faculty of Agriculture at Makerere University in Kampala represent the future of Africa's agricultural research
(Photo: Paul Mundy)

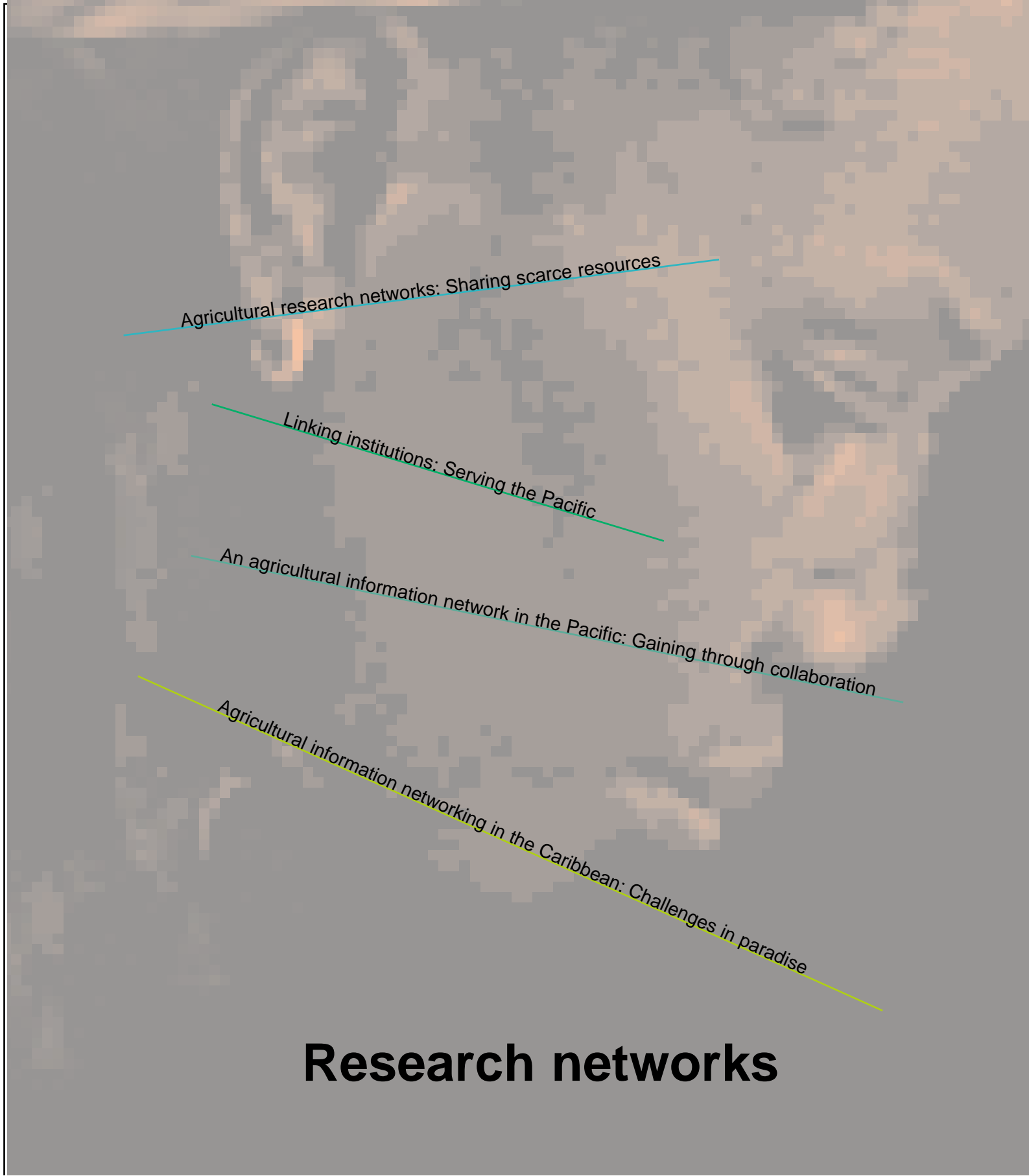
The students in the courtyard are still buried in their books when we leave the ACSJ office. To graduate and to contribute to their countries' development, they must rely on the research findings of others. ACSJ is doing its share to make sure that those findings are documented and made available to them.

FOR MORE INFORMATION

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Tenywa, J.S., Adipala, E., Latigo, O.M., Joubert, G.D., Okuri, P. and Sseguya, H. (in press). *African Crop Science Journal*: A survival kit for African scientists. *African Crop Science Journal*.

African Crop Science Journal website www.bdt.org.br/bioline



Agricultural research networks: Sharing scarce resources

Linking institutions: Serving the Pacific

An agricultural information network in the Pacific: Gaining through collaboration

Agricultural information networking in the Caribbean: Challenges in paradise

Research networks

The purpose of a network is to share information and resources for the common good. It's ideal for research, where resources are tight but the benefits from sharing are tremendous.

Institutions and countries that join networks can see their problems solved faster: many hands make light work. A country can borrow research findings from its neighbours: a new rice variety, perhaps, or a technique for controlling a pest. That reduces the amount of investment needed in research, and means that small, or poor, countries can draw on a larger pool of expertise.

A researcher who joins a network may benefit from formal and informal contacts with distant colleagues, opportunities to collaborate on common problems, and perhaps the chance to travel to study or to present findings.

Donors like networks because they are an efficient way of using a limited amount of research funding.

Small wonder, then, that research networks are popular in the developing world. Setting them up and keeping them running can be difficult, though: it requires commitment and the willingness to compromise on everyone's part. But computers, e-mail and the Internet offer promising avenues for improved communication and coordination.

Research networks

Agricultural research networks: Sharing scarce resources



Paul Mundy

One thing that most developing countries have in common is their reliance on agriculture. Another is the complexity of the problems their farmers face. A legion of pests and diseases thrive in tropical climates; few high-yielding crop varieties are available that yield well despite drought and poor soils; livestock breeds produce pitifully little meat and milk. Droughts, floods, erosion, deforestation and desertification all threaten production. A lack of capital, credit, roads and markets makes it difficult for farmers to invest in their enterprises and sell their produce.

Clear pointers for more investment in agricultural research? Yes, especially since studies have shown that investment in such research yields enormous gains – in terms of increased output and farmers' incomes.

But that doesn't mean that there is enough money available. Agricultural research is an expensive activity, and unfortunately it attracts only modest levels of investment in most developing countries. Governments cannot afford to – or choose not to – put more money into it.

Pooling resources

One solution to this conundrum is to pool resources. Despite their differences, countries in the same region share many similarities. The swathe of countries in the Sahel, from Senegal and Mauritania to Niger and Chad, grow similar crops, raise the same types of livestock, have similar ecosystems, and share similar problems of disease, drought and desertification. The same is true of the countries of Eastern Africa, Southern Africa, the Pacific Islands and the Caribbean.

Sharing resources makes particular sense for the small island countries of the Caribbean and the Pacific. A country with just a few hundred thousand citizens cannot aspire to its own fully equipped research institute and highly qualified professional staff. But by banding together, a dozen such countries can support such an institution.

IRETA (Institute for Research, Extension and Training in Agriculture) in Samoa is a collaborative institution that serves 12 countries in the Pacific. Established as a department of the University of the South Pacific, it organizes workshops and training courses, conducts research, facilitates information exchanges, and publishes a newsletter, *South Pacific Agricultural News* (see p. 200).

The English-speaking Caribbean's equivalent is CARDI (Caribbean Agricultural Research and Development Institute). Based in Trinidad, it has staff in all 13 of the countries it serves. It enjoys close links with another regional institution, the University of the West Indies, and acts



Cattle are vital to the economy of the Sahel, and constitute an important part of CORAF's work
(Photo: CORAF)

as the secretariat of yet another regional institution – PROCICARIBE, an agricultural research network covering nearly all the countries and territories in the Caribbean (see pp. 213–214).

African networks

Paradoxically, many countries in Africa face similar problems to the tiny island nations of the Caribbean and the Pacific. Though some are huge, they have relatively small, widely scattered populations. Their transport and communication systems must overcome similar distances – only over land, not sea.

Africa's answer has been to build associations linking its research institutions. Three such associations span the continent south of the Sahara: ASARECA (Association for Strengthening Agricultural Research in Eastern and Central Africa, based in Uganda) links 10 countries in Eastern and Central Africa. In West Africa, the West and Central African Council for Agricultural Research and Development (more usually known by its French acronym, CORAF) covers 21 countries from its headquarters in Senegal. The countries of the southern cone are served by SACCAR (Southern African Centre for Cooperation in Agricultural and Natural Resources Research and Training), based in Botswana.



These associations typically have a small headquarters secretariat that coordinates work and facilitates information exchange. Much of the research is carried out through networks of researchers in the various countries in the association. These networks include not only scientists at the national research institutes that are members of the association, but also researchers at universities and international research centres, and even staff of producers' associations and NGOs. CORAF has 11 such networks: banana and plantain, cassava, cotton,

Research networks

drought resistance, forests, genetic resources, groundnuts, horticulture, livestock, maize and rice. Each network coordinates the efforts of up to 200 scientists in the various national research institutes.

Research programmes may be implemented by groups of national institutes, by consultancy firms such as GTZ, a German development agency, or by international research centres. AVRDC (Asian Vegetable Research and Development Center) implements SACCAR's vegetable research programme in Tanzania, while IITA (International Institute of Tropical Agriculture) manages the association's research on cassava and sweet potato in Malawi.



Information exchange

Information exchange is a key function of all the associations. Mechanisms include newsletters (such as ASARECA's *Agriforum* and CORAF's *Coraf Action*), scientific journals (SACCAR sponsors the *Zimbabwe Journal of Agricultural Research*), publications and reports.

Websites are the most recent addition to this stable. CORAF and SACCAR have the most extensive websites, containing information about the association, addresses of networks, and issues of the association's newsletter. There's clearly a lot more that could be done via the Internet, though: e-mail lists for exchanges among network members, "walled gardens" to allow data analysis, the publication of datasets for joint scrutiny, the provision of links to other relevant sites, the posting of research articles to gather comments before publication, and e-mail conferences to discuss key problems. Both CORAF and SACCAR have initiated projects to develop some of these activities.

Does sharing pay?

These networks are not just a way of coordinating science. They also perform two other useful functions. First, they enable research policy-makers to get together to discuss common problems and to compare notes. They can provide expert advice to help redesign research,

Field days such as this one organised by CORAF in Senegal enable researchers to show officials and farmers the latest agricultural technologies
(Photo: CORAF)

BOX 18**Country coverage**

Most of the countries of sub-Saharan Africa, the Caribbean and the Pacific are members of one or more of six regional research networks.

Region	Caribbean	Caribbean	Eastern and Central Africa	West and Central Africa	Southern Africa	Pacific
Institution	CARDI	PROCICARIBE	ASARECA	CORAF	SACCAR	IRETA
Parent organization	Caribbean Community (Caricom)	Ministers of Agriculture of Caribbean member countries	National research institutes of member countries	National research institutes of member countries	Southern African Development Community (SADC)	University of the South Pacific
Headquarters	St Augustine, Trinidad and Tobago	St Augustine, Trinidad and Tobago (CARDI)	Entebbe, Uganda	Dakar, Senegal	Gaborone, Botswana	Apia, Samoa
No. of member countries	13	22	10	21	11	12
Member countries	Antigua and Barbuda Bahamas Belize British Virgin Islands Dominica Grenada Guyana Jamaica Montserrat St Christopher and Nevis St Lucia St Vincent and the Grenadines Trinidad and Tobago	Antigua and Barbuda Bahamas Barbados Belize British Virgin Islands Cuba Curaçao Dominica Dominican Republic French Guiana Grenada Guadeloupe Guyana Haïti Jamaica Martinique Montserrat St Christopher and Nevis St Lucia St Vincent and the Grenadines Suriname Trinidad and Tobago	Burundi Democratic Republic of Congo Eritrea Ethiopia Kenya Madagascar Rwanda Sudan Tanzania Uganda	Benin Burkina Faso Cameroon Cape Verde Central African Republic Chad Congo Côte d'Ivoire Democratic Republic of Congo Gabon Gambia Ghana Guinea Bissau Guinea Mali Mauritania Niger Nigeria Senegal Sierra Leone Togo	Angola Botswana Lesotho Malawi Mauritius Mozambique Namibia South Africa Swaziland Zambia Zimbabwe	Cook Islands Fiji Kiribati Marshall Islands Nauru Niue Solomon Islands Tokelau Tonga Tuvalu Vanuatu Samoa

management and communication systems. Staff from one country can be seconded to another to help find ways around both technical and administrative barriers.

The associations bring advantages for donors and partner agencies too. Financing parallel research in neighbouring countries is wasteful and inefficient. By channelling funding through a regional research association, donors, governments and research agencies can be assured that the best brains and facilities will be brought to bear on the problem, and that the findings will be available to all members of the association. Partner research institutions (international agricultural research centres, United Nations agencies and research organizations in the developed world) also find it more efficient to work with the multinational associations.

That doesn't mean that coordination is easy, though. It can be hard enough to get scientists in the same laboratory to work together, let alone those separated by half a continent or an ocean. Different priorities, inflexible timetables, reluctance to reassign scarce staff and resources, squabbles over funds – all may take their toll. Some networks are highly effective, earning praise from their members and outsiders alike. Others are less active.

Despite their limitations, research associations are a promising way to stretch scarce resources further, for the benefit of all. Strengthened and facilitated through the Internet, we can expect them to become more important in the future.

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Caribbean Agricultural Research and Development Institute (CARDI), University of the West Indies Campus, St Augustine, Trinidad and Tobago. Tel. (1 809) 645 1205 to 7; fax (1 809) 645 1208; e-mail infocentre@cardi.org; website www.cardi.org

Conference des responsables de recherche agronomique africains (CORAF), BP 8237, Dakar-Yoff, Senegal. Tel. (221) 825 9618; fax (221) 825 5569; e-mail secoraf@telecomplus.sn; website www.coraf.org

Institute for Research, Extension and Training in Agriculture (IRETA), Alafua Campus, University of the South Pacific, Private Bag, Apia, Samoa. Tel. (685) 21671; fax (685) 22933; e-mail uspireta@samoa.usp.ac.fj

PROCICARIBE Secretariat, CARDI, University of the West Indies Campus, St Augustine, Trinidad and Tobago. Tel. (1 868) 645 1205; fax (1 868) 645 1208; e-mail procicaribe@cardi.org; website www.procaribe.org

Southern African Centre for Cooperation in Agricultural and Natural Resources Research and Training (SACCAR), Private Bag 00108, Gaborone, Botswana. Tel. (267) 328847–8; fax (267) 328806; e-mail bndunguru@saccar.info.bw; website www.ibis.bw~saccar

Research networks

Linking institutions: Serving the Pacific



Paul Mundy

Pieces of a jigsaw

An agricultural information system is like a jigsaw. It consists of a lot of different pieces: research institutions, extension agencies, ministries of agriculture, NGOs, farmers, universities, international research agencies, radio stations and many others. Each of these pieces has its own particular role to play: doing research, producing radio programmes, and so on. For the picture to be more or less complete, each piece has to be in the right place, and linked with the other pieces around it.

But what holds the jigsaw together? How do the individual pieces relate to each other? How does an extension worker in one place hear about research done somewhere else? How can a ministry official get the information stored in a database or on the Internet?

Providing such glue is the job of a small team of agricultural liaison officers (ALOs) scattered around nine countries in the South Pacific. Working in each country's Ministry of Agriculture, it is their job to link with IRETA at the University of the South Pacific in Samoa (see Box 19).

Wearing many hats

The ALOs are one-person information departments. Want to know the latest research findings on taro leaf blight, a disease attacking the starchy tuber that is the staple food for much of the Pacific? Go and see the ALO. Want to attend a course being offered at IRETA's training unit in Alafua? Ask your ALO. Have an idea for a radio programme on coral reefs? You've guessed it: the ALO is the person to talk to.

The ALO system began in 1983 as part of the South Pacific Regional Agricultural Development Program run by USAID. The newly appointed ALOs' tasks were to disseminate agricultural technologies produced by the University of the South Pacific's School of Agriculture. They quickly became a major link between the school and IRETA on one hand, and the national ministries of agriculture on the other.

A useful function – so useful, that when the USAID project ended after 10 years, the national ministries took over the staff and gave them permanent appointments as information officers, extension workers, agricultural radio presenters or training officers.

ALOs can wear many hats: librarian, information officer, radio programme producer, newsletter editor, trainer and extension worker. They maintain collections of agricultural information and publications. They search for information on CD-ROMs and the Internet. They write

BOX 19**IRETA**

The Institute for Research, Extension and Training in Agriculture was established as a department of the University of the South Pacific, a collaborative institution that serves 12 countries in the Pacific, from the Solomons and Vanuatu in the west to the Cook Islands in the east, from the Marshall Islands in the north to Tonga in the south. IRETA's three main functions are research, extension and training.

Research

IRETA conducts applied agricultural research to increase food production and productivity. Its main research areas cover root-crop breeding, tissue culture, atoll agriculture, Polynesian agriculture, the use of local feeds for livestock, agroforestry and post-harvest techniques.

Extension

The extension programme includes the ALO network, electronic media services, library services and publications. The print media unit has desktop publishing and printing equipment; it produces technical manuals, extension leaflets and brochures, the newsletter *South Pacific Agricultural News*, the *Journal of South Pacific Agriculture*, and other publications such as annual reports and workshop proceedings.

Training

IRETA's training centre has facilities for short, non-formal training courses and workshops. Facilities include accommodation, a training hall (a traditional Samoan *fale* accommodating 50 people), catering facilities and offices.

IRETA hosts CTA's Pacific Regional Branch Office.



An issue of the IRETA newsletter, *South Pacific Agricultural News*

and record radio programmes for farmers. They produce newsletters for their own countries, and submit articles to IRETA's newsletter, *South Pacific Agricultural News*. They give training for extension workers and government staff, and they provide advice on farming techniques.

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Ups and downs

There have been ups and downs, of course. Funding has become tighter. The ALOs used to meet twice a year. The first meeting was devoted to training and refresher courses, and was held in a different country to expose the ALOs to new ideas and farming situations. The second meeting was held in Alafua – the Samoa campus of the University where the School of Agriculture and IRETA are located – and was devoted to administrative and budgetary matters. Now, there is only one meeting a year, and the time has to be divided between training and bureaucracy.

Changes within national ministries have also affected the ALOs. Reforms in several countries have led to staff cuts and institutional restructuring. Noo Tokari, the ALO in the Cook Islands, says the number of agricultural staff has been slashed from 100 to 26, and the ministry's extension service has been abolished. In Tonga, the ALO position has been shifted from unit to unit within the ministry, disrupting the flow of work and production of the newsletter that the ALO, Sione Hausia, used to produce. In the Solomons, Alfred Maesulia's only other colleague in the Agricultural Information Unit has been made redundant, leaving him to hold the fort alone. In Vanuatu, the ALO position was eliminated altogether in 1999. And in Tuvalu, the ALO, Uatea Vave, was moved along with the agricultural headquarters from Funafuti, the capital island, to remote Vaitupu, where a lack of communication facilities handicapped his work.



Logo of the University of the South Pacific

Uncertain future

The ALO network is currently the subject of considerable debate in the region. Is it effective? Does it really do what it is supposed to? Considerable reform may be needed to improve its usefulness. In this, real political support from the various national governments is vital. A network cannot function and provide useful services unless it has this support, and unless it changes with its environment.

And the ALOs' role is changing, not least because of new technologies. The ALOs must learn new skills: desktop publishing, e-mail, Internet use, computer-based information searches, and so on. And old skills need to be refreshed. The 1999 annual meeting included a week's practical training in which the ALOs put together a short video programme, practised writing and editing extension materials, studied publication layout and design, and conducted research using CD-ROM databases. They also learned how to use e-mail and search the Internet for information.

As electronic media spread (for example, through facilities such as USPNet), further changes in the ALOs' role can be expected. And as computers and Internet access become more common, it will become easier for anyone to obtain information from overseas, without having to go through the ALO. That may not eliminate the need for ALOs, but it will change what they do: they may become more of a guide than a gatekeeper to information resources.

BOX 20**Polyvalent personnel**

Information and communication is an increasingly specialized business. A skilled video camera operator normally does just one job: shooting videos. He or she doesn't usually get into video scriptwriting, editing or production – let alone produce websites or record radio programmes. Similarly, a librarian is a librarian: he or she isn't expected to write a newsletter or explain agricultural techniques to farmers.

But in small institutions, isolated places and small countries, there isn't enough money to pay for lots of specialists. Communication departments often have limited facilities and only one or two staff.

One solution to this problem is to contract out specialized or expensive items such as video production and printing. This is typically the solution preferred by short-term, donor-funded development projects, which often have a fair amount of funding for information services, but see no point in establishing a specialized unit to handle them.

More permanent institutions, such as ministries of agriculture or extension agencies, have to budget their limited resources carefully. So their communication staff have to be polyvalent: they have to be good at a wide range of tasks.

That in turn means they have to have training in these skills: video production, editing and desktop publishing, information search and retrieval, computer operation, and so forth. It also means that they have to have support from specialists: people who can provide training, feed them with information, and respond to requests for advice.

IRETA's ALO system is an example of how this works. The ALOs are generalists: they do a little bit of everything. But they should also be able to call on specialist teams such as IRETA's electronic media unit for help. And IRETA must be able to provide them with training to keep their skills up to date.

Video for the Pacific

Video is a hugely effective medium – if it is used correctly. But agricultural research and development institutions that want to use video have a problem. Audiences are used to television programmes produced in the developed world: they have come to expect top-quality

Research networks

lighting and sound, good camera work, professional actors and narrators, tight editing, and lots of special effects. How can an agricultural institute compete?

A common mistake is to buy a set of video equipment – cameras and editing decks – and give staff some minimal training, and then expect them somehow to produce award-winning programmes. All too often, little thought goes into the details:

- *How much will it cost?* After including salaries, transport, equipment, maintenance and supplies, a single video programme can cost many thousands of euros.
- *What types of training will be required?* Professional productions need professional staff.
- *What type of equipment is needed?* Television stations are fussy about the video formats they will accept.
- *How will the videos be distributed?* It may be necessary to pay for broadcast time, or arrange for videocassettes to be reproduced, distributed and shown to groups of farmers attending training courses.

The result? Some poor-quality programmes, perhaps merely a series of wobbly shots of some dignitary visiting an experiment station. Such footage cannot be used in broadcasts (except possibly in the evening news programme) and is useless for educational videos.

IRETA's electronic media unit

Clearly, producing broadcast-quality videos requires a fair amount of planning and investment. This is a good example of the type of service that can be provided by a regional research organization such as IRETA. It would not be cost-effective to set up an agricultural video production unit in each country in the Pacific: to produce the required quality programmes, such units need fairly sophisticated cameras and editing equipment, and they need highly skilled personnel.

But many programmes are highly “transportable”: a programme on coral reefs or on livestock diseases in one Pacific country can probably be used with little or no adaptation in other countries too. It makes sense to have a central production team with all the recording and editing facilities. Such a team can bring together the skills and resources needed to produce top-notch programmes, and can send out camera teams to shoot footage when needed.

IRETA's electronic media unit is such a team. It supports the agricultural extension, education and training activities of national ministries of agriculture in the Pacific, as well as the University of the South Pacific's School of Agriculture and NGOs. Aside from video, it also has radio and satellite media facilities.

Video services

The unit has excellent equipment that can produce broadcast-quality programmes, with special effects and graphics capabilities. It currently produces short, instructional, educational and training video programmes, which it distributes through IRETA's network of ALOs in national ministries of agriculture. It also updates existing programmes as research uncovers new information.

The unit has a video library with over 400 titles on agriculture, including some 80 of its own productions. It loans these videos out to countries served by IRETA. The unit also offers audiovisual services such as public-address systems and projection facilities for conferences, training courses and exhibitions.

New facilities, new possibilities

The unit's radio-production facilities have recently been upgraded. This will allow the production of radio programmes to resume: they have been neglected for several years because of staff and funding constraints.

The University of the South Pacific is currently establishing a satellite-based communications system to link its various sites in the 12 countries. This university-owned network, called USPNet, will enable lectures held at one of the university's campuses in Vanuatu, Fiji and Samoa to be broadcast live to USP centres in the other countries. It will be used for video-conferences for university administrators and research groups, and will provide e-mail, fax and telephone facilities independent of the local telecommunications providers.

USPNet will complement the production and dissemination of the IRETA unit's video programmes. It will also greatly ease IRETA's ability to communicate with the ALOs, its clients and information sources, and will enable the electronic media unit to obtain information for programmes more readily.

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Research networks

An agricultural information network in the Pacific: Gaining through collaboration



Peter Walton

Back in the late 1980s, several institutions and projects were all working towards the common goal of developing agriculture in the Pacific. It seemed that each institution and each project had some kind of information activity or service as a key feature.

Not surprisingly, many people started to think that maybe information activities had begun to fall over themselves: services duplicated, institutions developing products and tools by themselves that could more easily be done together.

In 1987 and 1988, the directors of agriculture in the region met, and said that enough was enough: the interested parties should meet to pull all these various strands together, to collaborate on information-related activities and cooperate in providing information services.

This meeting happened in late 1988. It brought together the two main regional agricultural institutions: the University of the South Pacific (including the School of Agriculture and IRETA) and the South Pacific Commission (now the Secretariat for the Pacific Community). It also brought together representatives from the University of Guam, the ADAP (Agricultural Development in the American Pacific) Project, and Papua New Guinea. The meeting gave birth to the Standing Committee on Agricultural Information Networking in the Pacific, or SCAINIP. (When thinking of a name for a new network, think of the acronym first – otherwise it could end up looking and sounding like a fearful disease.)

Why was SCAINIP established?

As suggested, SCAINIP was established to collaborate and cooperate. What does this mean? Does it mean that the work of each institution continues as normal, but that you talk to each other? Or does it mean something more fundamental? Well, the latter of course.

“Collaborate” means working with others. “Cooperate” means working with others with a single vision – a common purpose. It means overcoming rivalries between institutions or projects (which are not as uncommon as you might think). It means having a good idea what the region needs, as opposed to what you can do, but then seeing who is able to fill that need best. It means working strategically, to a common plan.

It wasn't easy to get started. All the participants felt that they had something to gain *and* something to lose. Everybody wanted to be in the driving seat; nobody wanted to be an anonymous passenger. But, after a week in which current situations (and frustrations) were described

BOX 21

The Pacific Index to Agricultural Journals

PIAJ – the Pacific Index to Agricultural Journals – contains over 3150 references to articles that have appeared in 11 agricultural journals published in the Pacific, journals such as the *Fiji Agricultural Journal*, first published in 1920, or the *Papua New Guinea Journal of Agriculture, Forestry And Fisheries* (from 1935), the *Alafua Agricultural Bulletin* and its successor, and the *Journal of South Pacific Agriculture* (from 1976).

Each record contains full bibliographic details with, in some cases, original abstracts, as well as comprehensive indexing using keywords and descriptors. There are some gaps, and some titles have not yet been indexed apart from one or two issues. But without PIAJ, agricultural researchers in the region would be even more isolated than they are already.

and opportunities explored, the eight information professionals at the meetings were able to come up with a blueprint for how institutions and projects could collaborate. Their idea of cooperation has stood the test of time.

What was done

At the very first SCAINIP meeting it was decided that success would mean achieving solid results – that is, something practical and useful. In the first instance, what was needed was better bibliographic control of agricultural documents in the Pacific region. This is librarian-speak for knowing what documents are available, whether they are published (or perhaps remain in the form of “grey literature” such as seminar papers or research reports), where they can be found, and how to get a copy. That’s bibliographic control.

It was decided to focus on Pacific documents and, in particular, to index all agricultural journals published in the region. This sounds like a big task, but really only eight titles (initially) were identified (see Box 21). But some of these titles did start publishing in the 1920s!

This was made a priority because no comprehensive index of articles in these journals existed. That meant that a scientist in one country could repeat an expensive and time-consuming piece of research that had already been done somewhere else – and even been written up in a journal article – simply because the researcher had no way of knowing the article existed.

The journals focused exclusively on the Pacific, so they were very relevant to scientists in the region. And people had become tired of searching through issue after issue of the journals in the hope of finding a relevant article!

Recognizing that the task would be too big for one person, the SCAINIP group chose a task leader (i.e., an institution), and allocated the journals to the various SCAINIP members. Common sense was important: for example, the institution with a journal would naturally be given the job of indexing it.

Common standards and compromise

In order to make this work, the group had to agree on common standards. What software should they use? (This was before databases could be transferred easily from one software package to another, or from one computer system to another.) How about entering data: full first names or initials? Lower case or upper case for titles? Most important, what set of keywords should be used?

These things may sound trivial for the layperson, but for librarians (and for library users), they are vital. Imagine what would happen if two different people indexed a set of publications but followed different sets of rules. One person might classify an article on cassava (an important root crop in parts of the Pacific) under the keyword “cassava”. Another person might call it by its other name, “manioc”. When the results of their work are put together in a single index, a researcher searching for articles about “cassava” would miss all of the articles about “manioc”.

Immediately, you can see that being in a network is about compromise as much as it is about meeting on a regular basis. Once the standards were established, timelines and targets were easy to agree on (though harder to achieve).

Training

The other major activity agreed to at that first SCAINIP meeting was to train para-professional staff. In fact, there were hardly any trained para-professionals at that time; most of the staff in agricultural libraries were school-leavers with no formal training.

But librarianship is a skilled profession, a key service to scientists and information users. Without a skilled librarian, a library is just a collection of books guarded by someone bearing the title of “librarian”.

In 1991, a series of training workshops began, most with CTA funding. Some were regional in scope, but many were national, so were better at dealing with local circumstances. A set of training materials specific to the region was developed for the first workshop; they were used in all subsequent workshops. This resulted in a shared understanding of how to improve access to agricultural information in the region, and how to make better use of this information.

Three more SCAINIP meetings were held (in 1990, 1993 and 1996). Each one reinforced previous agreements and sought to tackle problems. More tasks were added to the list: a Pacific union list of agricultural serials, a database of agricultural research in the Pacific (Pacific CARIS), a directory of agricultural information centres in the Pacific (published in 1996) and an index to annual research reports (this remains a dream). And more training workshops were held.

So was SCAINIP successful?

It is all too easy to say that SCAINIP was successful. Or not. But the truth is that it depends on how success is measured.

If it is measured in terms of output – people trained, databases finished and distributed – then SCAINIP was successful. Somewhere between 80 and 120 people have been trained over the past 10 years. The index to agricultural journals (and other institutional and project databases) was distributed to over 30 sites.

But if success is measured in terms of impact – people being able to apply their training, databases being used for better agricultural research and development – then SCAINIP was not so successful. And this goes to the heart of the matter.

SCAINIP was set up as a result of a recommendation by the directors of agriculture. And reports were presented to the same directors at their annual or biannual meetings. But SCAINIP was, essentially, a merry band of individuals working at different institutions with different strengths and weaknesses, who saw a common vision and shared a common purpose. The network was never formalized.

Attempts to formalize the network ran into just those difficulties that led to its establishment, which could best be described as “institutional barriers”. While there were enthusiastic individuals prepared to commit to shared tasks and activities, then SCAINIP functioned well as a proto-grassroots organization. Unfortunately, most of these individuals have now moved on.

What of the future?

SCAINIP's time seems to be over – but it does not have to be so. A new network of some kind might evolve, centred around better access to communication technology. After all, the monthly SCAINIP meetings using the University of the Hawaii's PEACESAT satellite system were excellent. Maybe the new USPNET (see p. 204) will help further.

Some of the problems apparent in the 1980s are still there. There is still a need for training library and information professionals. There is still a role for common information tools and shared information resources. And at heart, there is still a need for collaboration and cooperation among agencies and institutions. A lot of good work has been done. But there is still much work to do.

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Research networks

Agricultural information networking in the Caribbean: Challenges in paradise



Paul Mundy

The Caribbean – the name conjures up images of hundreds of sun-soaked islands, idyllic beaches, energetic music, coconuts and rum. But what the tourist sees from the deck of a cruise ship is only part of reality. Behind the coconut fronds, the Caribbean is also home to pressing problems of poverty and environmental degradation, low farm productivity and over-dependence on a few crops.

This has got to be one of the most diverse and interesting places on the planet. Since the arrival of the first Europeans five centuries ago, the tides of history have left their mark here: waves of European, African, Indian, and Indonesian immigrants have left a fascinating ethnic mix. Four European languages – English, French, Spanish and Dutch – have given birth to numerous Creole dialects. The islands and the nearby mainland are home to over a dozen independent countries as well as several territories that still retain their dependent status.

The mainland countries (Belize, French Guiana, Guyana, Suriname) are large but sparsely populated. There are a few larger islands – Cuba, and Hispaniola (split into Haiti and the Dominican Republic) – but most of the countries are tiny. Some of the islands are flat; others are mountainous, with fields clinging to steep hillsides. Hurricanes sweep the islands (outside the tourist season, of course). Farmers grow hundreds of crops, including sugarcane, bananas and tobacco, which continue to be vital export commodities.

A challenge, then, for agricultural research and for the information services that link them and that keep farmers informed about research results. Most of the region's countries are too small to support a fully fledged research institute or university. And the number of crops, livestock types, pests and diseases is overwhelming.

Together we stand

As in the Pacific (see pp. 199–204) and in much of Africa (see pp. 194–197) the answer is to share resources. The governments of the English-speaking Caribbean recognized this 70 years ago, when they established the precursor to what was to become the Regional Research Centre at the University of the West Indies (UWI). And they reaffirmed it in 1975 when they converted the centre into CARDI (Caribbean Agricultural Research and Development Institute).

CARDI had a strong foundation. The Regional Research Centre had done excellent research on traditional food crops such as pigeonpea, root crops and vegetables, and was well known for its soil maps. Although it is now an autonomous institution, CARDI's headquarters is still



located on the UWI campus in St Augustine, Trinidad and Tobago. CARDI inherited the Centre's facilities and a professional staff of 25, most of whom were located in Trinidad and Tobago, though five were in Jamaica and one was in Barbados.

One of CARDI's first tasks was to decentralize so it could better serve its clientele – the countries' farmers. By 1981, it had scientific teams in all 12 countries served, and the number of professionals had grown to 57.

Several continuing challenges have faced CARDI in its 25 years of existence. These include coordinating and managing a research team scattered across a dozen countries, improving services to farmers, and maintaining funding for research – and all the while maintaining the flow of relevant research to solve farmers' problems.

Focus on farmers

The organizational structure and management have undergone periodic changes. An important shift was made in 1987, when the Caribbean Agricultural Rural Development and Advisory Training Service was merged with CARDI. This service had been established in 1978 to help solve some of the chronic problems of rural small farmers in the eastern Caribbean. It aimed to help transform small farmers from subsistence growers to commercial operators.

Instead of targeting a geographical area, CARDI's Technology Adaptation and Transfer Programme focuses on increasing the production of specific commodities. Task forces of researchers, extension workers, farmers, marketing and credit organizations, and end-users have been established to ensure a reliable supply of high-quality products. A task force organized farmers in Nevis to produce fruits and vegetables for a five-star hotel; another team helped farmers in St Vincent export root crops and ginger to the UK. The task forces were effective because they could organize planting, harvesting and marketing of crops to meet a specific demand.

CARDI retains this focus on farmers. Unlike many research institutes around the world, which focus on science and perhaps tend to forget their clients, CARDI emphasizes the business aspects of agriculture: it aims to help farmers adapt to the rapidly changing economic environment, and to help them make money.

Outreach

A related shift has been improvements in the planning and management of research. In the late 1980s, a programme-management system was introduced that allowed CARDI to manage its activities better. This involved CARDI's clients – extension staff in the ministries of agriculture, farmers and farmers' organizations – in the planning process. Individual researchers became more aware that research could

be considered successful only if farmers adopted it. They began to work on outreach programmes with farmers and farmers' groups, in collaboration with national ministries of agriculture. These efforts have helped to bridge the gap between research and extension. They also ensure that CARDI's research accords with the ministries' policies and strategies.

The economic and political environment continues to change rapidly. Trade is being liberalized worldwide through the World Trade Organization, and large regional trading blocs have been established in the Caribbean's traditional export markets – North America and Europe. These require fundamental changes to agriculture in the countries CARDI serves, and hence in the types of research that CARDI does.

CARDI's links with CTA help promote the transfer, exchange and use of information in the Caribbean. Since 1986, CARDI has housed CTA's Regional Branch Office. CARDI collects and disseminates information on agricultural research and development in the Caribbean. CTA and CARDI hold joint seminars, conferences and workshops, making important contributions to the region's agriculture.

BOX 22

CARDI's areas of expertise

- Business development and consultancy
- Crop production, integrated pest management, and farming systems
- Environmental and soils management
- Livestock and forages
- Market research and statistical services
- Marketing and information services
- Project development
- Technology services

The PROCICARIBE research network

CARDI is a relatively small organization: it currently has only about 30 professional staff, working in different scientific disciplines, and scattered around many countries. To achieve the "critical mass" to be effective, CARDI must collaborate with others.

PROCICARIBE, the Agricultural Science and Technology System of the Caribbean, is an attempt to do this. It is a "network of networks", like CORAF, ASARECA and SACCAR in Africa (see pp. 194–197).

Jointly sponsored by CARDI and the Costa Rica-based IICA (Inter-American Institute for Cooperation



on Agriculture), PROCICARIBE covers almost all of the Caribbean's countries and territories – not just the English-speaking ones that CARDI serves. CARDI acts as the executing agency for PROCICARIBE and is the home of its three-person secretariat.

What does PROCICARIBE do? It facilitates a set of regional research networks, each focusing on a specific commodity or subject. For example, the CARIFruit network concentrates on fruit, while CIPMNet focuses on integrated pest management (a way of controlling pests without using too many chemicals).

There are other networks on rice, banana and plantain, plant genetic resources, and biosystematics (the description and classification of plants and animal species). Additional networks on land and water resources and on sheep and goats were due to be established in 1999. Each network links government and university researchers, extension personnel and private companies to tackle problems of common interest.

Managing all this can get rather complicated. Within each country, national network committees meet to coordinate work on their particular topic (fruit, rice, etc.). A regional coordinator for each network makes sure that the national groups share information. And there is also a national coordination committee in each country, whose chairperson represents that country on the PROCICARIBE executive committee.

Newsletters and bulletin boards

It's complicated: so smooth communication is vital to make it all work. One channel is the PROCICARIBE newsletter, which is also available on the Internet (at www.procicaribe.org/news). This has discussions on policy issues (the June 1999 issue, for example, covered the effect of World Trade Organisation rulings on the Caribbean's banana industry), announcements, brief articles about factors affecting research, news of workshops and seminars, and items from the various networks.

How about using the Internet to communicate? This would seem ideal, and indeed many of the scientists and officials on the network have their own e-mail addresses. The PROCICARIBE secretariat has set up an admirable set of Internet-based bulletin boards for each network. But these remain unused. There could be several reasons for this. Perhaps the bulletin boards are still new? Perhaps the networks themselves are new, so the members do not yet have very much to say to each other, or they are too busy with their own work and fail to see the benefits of networking? Perhaps the technology is unfamiliar, so training and publicity are needed? Or maybe there is no reason to use the bulletin boards since e-mails and face-to-face meetings can handle all the necessary traffic?

Whatever the reason, time will tell whether the networks will work. Probably, some will take off, powered by some energetic individuals or a pressing need that can be overcome only through collaboration. Other networks may wither and die, perhaps to be replaced by more vigorous groups.

Research networks

A strength and a weakness

PROCICARIBE's breadth may be at the same time both a strength and a weakness. One strength is that its networks include members from government, university and private sector institutions. Another is that it bridges all three major language groups in the Caribbean – English, French and Spanish-speaking countries. PROCICARIBE's scope also makes it an attractive way for donors and foreign research organizations to focus their support: they get more bang from their buck, franc, pound or guilder.

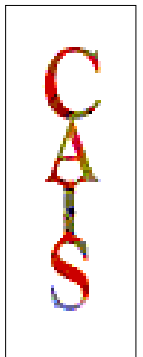
But at the same time, coordinating such a large and diverse group is fraught with difficulties. The PROCICARIBE newsletter, for instance, is published only in English. And it can be hard for part-time national coordinators to find the time to do the large amount of local management and communication work needed if the networks are to function.

CAIS study

A separate but related initiative within CARDI is the newly established CAIS (Caribbean Agricultural Information Service). While PROCICARIBE coordinates the research, CAIS will handle the information side: it will provide information to the researchers (and to lots of other people besides) on agricultural technologies, marketing and other data that these users need to improve the productivity of farming in the Caribbean.

Like PROCICARIBE, CAIS is still in the teething stages. It plans to link together agricultural institutions in the various countries so they can provide information in various forms to their users. CAIS has an ambitious to-do list: a news service, a question-and-answer service, extension publications and factsheets, training, specialized services such as market research and trend reports, video presentations and radio programmes. Some of these will be produced by CAIS itself; others will be existing materials or services that the various members of the network will make available through CAIS. Much of this information will be made available via the Internet.

Will CAIS succeed? That depends on two things: the usefulness of its services, and the commitment of the various network members and funding agencies to make it work. CAIS is wisely starting off with some pilot projects to test several of the approaches before rolling them out on a regional scale. That will allow any problems to be ironed out, and for the duds to be dropped before they consume an inordinate amount of resources.

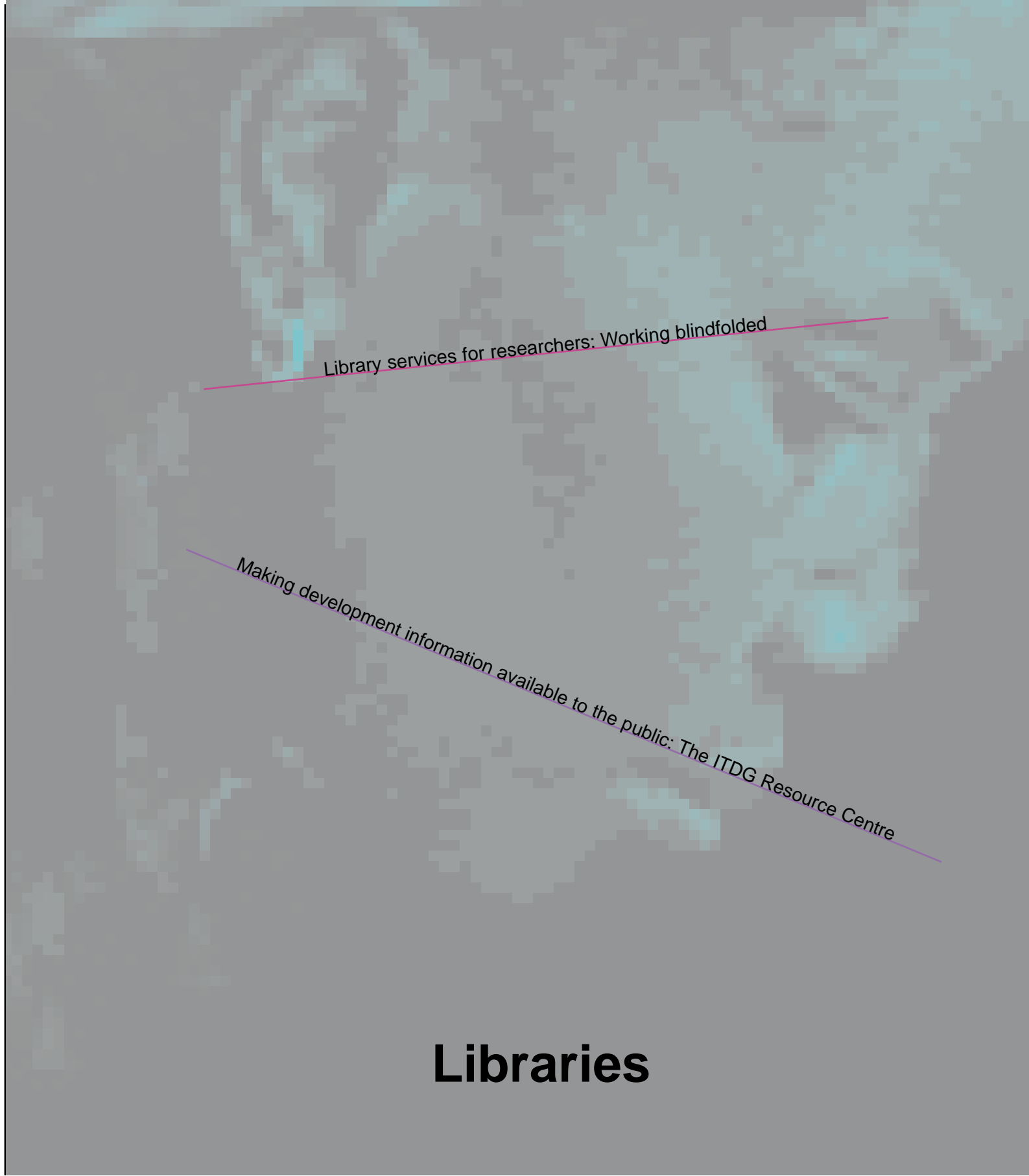


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PROCICARIBE website: www.procicaribe.org



Library services for researchers: Working blindfolded

Making development information available to the public: The ITDG Resource Centre

Libraries

Go into the average library in the developing world, and weep. Piles of books, bundles of papers: dusty and termite-ridden. Locked cabinets (where's the key?) contain the only useful books. A catalogue? Are you joking?

That's a tragedy for the many people who would use libraries if they were properly funded and cared for. It's especially a tragedy for researchers and development workers, who rely on (reasonably) up-to-date information in order to develop and spread new technologies.

Fortunately, digital technology is coming to the rescue. With the Internet and CD-ROM, it's becoming less and less important to have a printed copy of a book on the library shelves. Instead, it's a few seconds' work to find the electronic copy, and another few minutes to print it out.

The facilities and skills needed by librarians (they now like to be called "information specialists") are changing. Computers, databases, the Internet are now the coin of the realm. That implies funding, training and support (such as Internet connections).

It doesn't eliminate the need for the traditional librarianship skills, though: acquiring the right books, careful cataloguing and shelving, helpful service to visitors. As with many aspects of the digital revolution, the job is changing, but the objective – satisfied clients – is still the same.

Library services for researchers: Working blindfolded



Paul Mundy

A researcher without a library is a researcher who works blindfolded. Bereft of the journals that contain the latest findings, lacking the books that describe standard techniques, a scientist is condemned to repeating experiments that may already have been done by others, to reinventing the wheel. It is the scientific equivalent of solitary confinement.

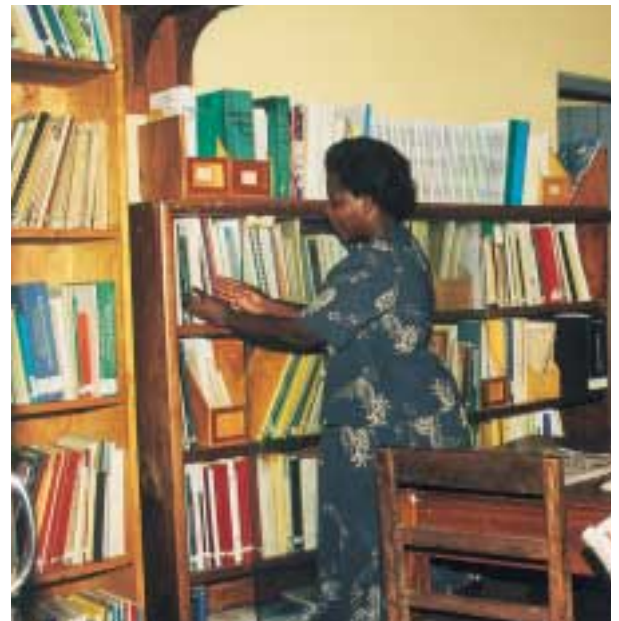
As with all prisons, this punishment does not only cost the prisoner dearly. It is also expensive for society at large. An isolated scientist works more slowly, less effectively, than one with access to information. Scientific progress is slowed. Investment in education and training, equipment and institutions goes to waste.

But building a state-of-the-art library is expensive. It would have to subscribe to dozens of journals, buy hundreds of books, just to serve a single discipline such as marine biology or plant breeding. Add together the dozens of disciplines that make up a typical research institute, and a ministry or university would have to fork out hundred of thousands of dollars just for scientific literature.

And there's another paradox: because scientific information is so specialized, most of the books in a library, and most of the articles in a journal, are of little use to any single researcher. An institute library must subscribe to an expensive journal in the hope that an article in it happens to be of interest to one of the institute's researchers or students.

Inter-library loans

Libraries' traditional method of overcoming these problems is through inter-library loans. If a visitor to one library cannot find the book she wants there, she can ask the librarian to borrow it from somewhere else. The librarian checks through a database to locate the desired book, and then sends a request to the library that owns it. A couple of weeks later, the book arrives in the mail.



The lack of adequate libraries is a major constraint to agricultural research. Here, a librarian tidies the shelves of the library of the Forestry Research Institute in Uganda
(Photo: Paul Mundy)

But inter-library loans have their snags. The would-be borrower may have to wait months before a current reader sees fit to return a book to the library. Mailing may add another two weeks. Books are expensive to ship around the globe. They tend to get damaged or lost.

Internet: the solution?

The Internet might seem to be the obvious solution. Surely, one might think, it should be possible for users to search for and download the information they need with just a few mouse clicks?

That's possible for some types of information: specialized databases such as FAO's World Agricultural Information Centre contain large amounts of data. Many libraries have put their catalogues online. But when it comes to detailed scientific information, the Internet has two major handicaps: copyright and connectivity.

Publishers of books and journals are understandably reluctant to put them online. That is tantamount to renouncing copyright. Sales of the printed version would slump. No income, no publication.

Restricting access to those who pay a subscription fee doesn't really work either. Credit cards are often used to buy goods online, but computer users are strangely reluctant to pay for downloaded information. There are concerns about the security of credit cards in cyberspace. Credit cards not an efficient way of transferring the fairly small amounts of money that publishers would charge for a peek at a research paper or a dataset. In any case, how many scientists in developing countries have a credit card – or would want to use their personal credit card to pay for information for their institute?

The second major hurdle that the Internet must overcome is the problem of connectivity – or rather, the lack of it. Even if a research institute has computers, modems, software and staff familiar with the Internet (and many still do not), it must still have a cheap, reliable service with which to connect to the Internet.

But try getting online in many countries, and you condemn yourself to repeated attempts to connect, interminable waits for files to download, and frequent disconnections that force you to start all over again. The Internet may hold glittering promise for the future of scientific communications in developing countries... but we're not there yet.

Disks that capture a rainbow

But that doesn't mean that information and communication technologies should be written off. Two show particular promise: e-mail and CD-ROMs.

Unlike the World Wide Web, e-mail does not rely on high-quality, reliable connections. It can make do with more crackly phone lines and slower modems because far fewer data are transmitted than in the graphics-rich web. Surf the web, and you may easily be online for an hour or more. Download your e-mail, and you are probably connected for a couple of minutes at most.

CD-ROMs – those small, shiny disks that reflect a rainbow of colours – have a host of advantages when it comes to storing and transmitting information. One CD-ROM can hold thousands of pictures, or the text of hundreds of books. Unlike books, CD-ROMs are light, easy to transport, and virtually unbreakable. They contain far more information than a magnetic floppy disk, and they cannot be deleted accidentally.

The dust or fungus that makes floppies unreadable can easily be wiped off the plastic surface of a CD-ROM. The drives needed to read CD-ROMs are now standard equipment on computers, and the software needed to read the data can be included on the disk itself.

Perhaps most importantly, though, CD-ROMs are cheap to produce, and cheap to distribute. The biggest cost is not (as with books) in the printing and mailing, but in putting information in the right format to be saved onto the disk. Once this investment is made, hundreds or thousands of CD-ROMs can be reproduced very cheaply.

Answers for Eastern Africa

Taken together, e-mail and CD-ROMs make it possible for ARIS (Agricultural Research Information Service) at Uganda's National Agricultural Research Organization to provide question-and-answer services for users in Ethiopia, Kenya and Uganda.

A user e-mails a request to ARIS for information on, say, how to control cassava mealy bug. The ARIS librarian searches the library's collections, including the 130 journals on its TEEAL CD-ROMs (see Box 23), and e-mails back a list of possible articles or books to the user.

Often the question is too broad: the librarian must check back with the user in order to narrow it down to a more specific query. That would take ages by mail, and be prohibitively expensive by telephone. By e-mail, it is simple, quick and cheap.

Once the user is satisfied the information is available, he or she can pay a visit to the library in person, or ask the librarian to send off photocopies of the relevant articles in the mail. If the article is already in electronic form (for example, if it comes from a CD-ROM), it is easy to send it as an e-mail to the user.

Usage of this service is still limited: an average of 10 requests per week came in during the last five months of 1999. But the service is still new; once it is widely known, the ARIS information specialists are likely to be kept very busy answering queries.

BOX 23

Library in a box

Cornell University's Mann Library (one of the largest agricultural libraries in the world) and the Rockefeller Foundation have found one way around the copyright problem. Scientific publishers recognize that they do not sell many copies of their journals in developing countries. So when the Mann Library approached the publishers, they agreed that their journals could be included on CD-ROMs, providing they would not be available in the developed world.

The result is TEEAL – The Essential Electronic Agricultural Library. This is a set of 172 CD-ROMs, containing the full text of 130 journals since 1993: 730,000 pages in all. The price? \$10,000 (about €10,000). That seems a lot until you consider the cost of the printed versions: \$370,000 (€370,000).

For most aid donors, though, \$10,000 is small beer. Research institutions in developing countries can often find a donor to cover the cost of the disks, the computer equipment needed to use them, and the staff training required. Among donors willing to consider supporting the purchase of TEEAL are CTA (for sub-Saharan Africa, the Caribbean and the Pacific), Cornell University's International Institute for Food, Agriculture and Development, the Ford Foundation, SIDA, Unesco, USAID and the World Bank.

For more information, see www.teeal.cornell.edu

Information for the Pacific

Providing a service similar to Eastern Africa's ARIS in the Pacific islands is PIMRIS (Pacific Islands Marine Resources Information System). This is an information network that collects, stores, retrieves and disseminates information on fisheries and other living and non-living marine resources in the tropical Pacific.

The people of the Pacific don't see a distinction between land and water resources that others do, so that even though the Pacific is a vast ocean speckled with tiny islands, it is seen more as a huge, watery continent. Fish, shellfish and corals are vital to the livelihoods of the people who live here. So it is important to conserve these resources and use them wisely.

Based at the University of the South Pacific, the PIMRIS Coordination Unit has four other regional cooperating partners: the Forum Fisheries Agency, the Secretariat of the Pacific Community, the South Pacific Regional Environment Programme and the South Pacific Applied Geoscience Commission. Although each of the cooperating partners has its specific mandate and information resource base, PIMRIS is a formal network (guided by a steering committee) that facilitates the sharing and dissemination of information for the benefit of the Pacific island countries.

PIMRIS serves a wide range of users, from government officials and research institutes to students and fisherfolk. It can provide users with bibliographies, search for literature using computers, and keep researchers up to date through its current-awareness services. It also prepares packages of information on tropical marine subjects, and arranges inter-library loans.

In view of the lack of trained librarians in many Pacific countries, PIMRIS offers consultancies, technical assistance and training to the staff of marine and fisheries libraries in the Pacific islands.

BOX 24

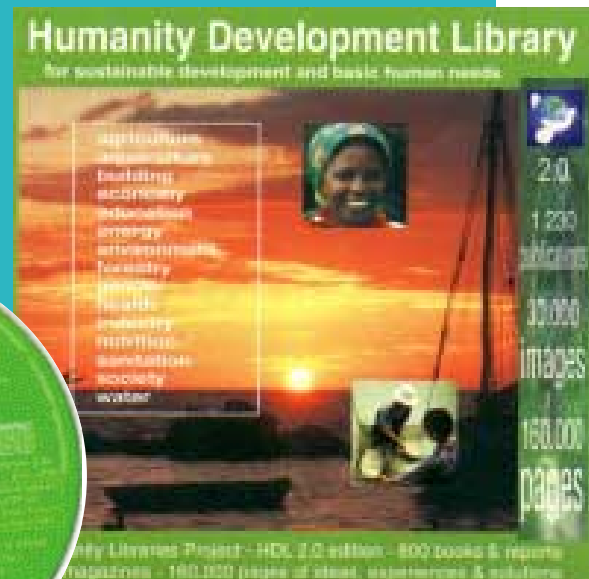
1230 books for just €6

The Humanity Libraries Project, a Belgium-based private organization, produces CD-ROMs that contain the full text of hundreds of books on development. The "Humanity Development Library" is a single disk containing 1230 publications, including 30,000 line drawings and 160,000 pages, all in a very easy-to-use format. The original publications would weigh 340 kg and cost \$20,000. The disk and its protective envelope weigh just 25 g. The cost? €6.

Other English-language disks in the series cover medicine and health, the environment, and food and nutrition. In French, there's the *Bibliothèque pour le développement durable et les besoins essentiels* (600 publications) and an anthology of development in the Sahel (*Sahel point doc*).

Most of the original publishers of the publications are NGOs, UN organizations or development agencies, who want to ensure the information they produce is spread widely, and who don't have to cover their costs like a commercial publisher would. Michel Loots, who runs the Humanity Libraries Project, asks them for permission to copy the materials. A computer-equipped centre in Romania (where costs are low) scans the text and pictures and indexes them. This enables the project to produce and sell disks at what seems a ridiculously low price.

For more information, see www.humanitycdrom.org



FOR MORE INFORMATION

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Food and Agriculture Organization of the United Nations (FAO), World Agricultural Information Centre website
www.fao.org/waicent/search/default.htm



“I want to know about fuel briquettes”

The walls of the small room are lined with shelves, groaning with books, papers and filing boxes, each one neatly catalogued. The few remaining square inches of wall space are taken up with bulletin boards, with brochures and posters pinned to them. Magazines and newspapers are scattered on the two tables in the centre of the room. Readers occupy three of the six chairs, and there is a constant stream of visitors coming through the door.

“Margaret, can you help this gentleman? He wants to know about fuel briquettes.”

“Hello, can you help me? I need some information on food processing.”

“Margaret, what do we have on bicycles?”

Margaret Kenyaggia, the librarian, takes it all in her stride. She quizzes each visitor. “Which organization are you from? What sort of food processing? What do you need the information for?” When she has a better idea of what the visitor wants, she pulls out a book from one of the shelves. Or she turns to her computer in the corner of the room, taps in a few keywords on the keyboard, locates the books in the catalogue, and pulls out the most useful ones for the visitor.

Nerve centre

Libraries in the developing world are all too often poorly run, under-used, dusty mausoleums for books. Not so ITDG’s Resource Centre in Nairobi. It is the nerve centre for this NGO, and is reputed to be among the best libraries in town.

ITDG, or “I.T.” as the Intermediate Technology Development Group is better known in Kenya, is one of many NGOs working to promote development and eliminate poverty in Eastern Africa. But it is one of the few that maintains a library of books and other materials on development. Begun in 1994, it now has about 3000 books and perhaps 2500 newsletters, journals and reports, all crammed into a room measuring no more than 4.5 m by 6 m.

The centre is also unusual in that it is open to the public. There is a small fee for users: someone who just wants to read in the library is charged 30 Kenyan shillings (about €0.45) a day. Or they can pay 500 shillings (a little more than €7) for a whole year, and can borrow



Margaret Kenyaggia (right) in the ITDG Resource Centre
(Photo: Paul Mundy)

two books at a time for up to two weeks. Margaret Kenyaggia also offers a corporate membership: 1500 shillings (about €22) for four staff members for a whole year.

“Before we started charging, people were flocking in here,” she explains. But the main reason to start charging was so that the library could lend books out. “If they didn’t have to pay, people wouldn’t look after the books,” she says. “Now we can be sure they will take care of them, and that they will bring them back.”

Keeping up to date

Margaret Kenyaggia works hard to keep the library collection up to date. She’s constantly on the lookout for new books: she finds them by browsing through publishers’ catalogues, reading book reviews in newsletters, and by attending book-launching ceremonies. Technical specialists on the ITDG staff identify books to buy. Margaret Kenyaggia’s own computer isn’t connected to the Internet yet, but she borrows someone else’s a couple of times a week so she can search for information. And she listens to her visitors’ needs. If people ask for a book she doesn’t yet have, she tries to find a copy.

“You’ll find things here that you won’t find in other libraries in Nairobi,” she says with a smile. The collection attracts over 2000 visitors a year, many who have heard of it by word-of-mouth. And that doesn’t include a constant stream of ITDG staff coming in search of information, or just to catch up on the day’s news in the newspapers lying on the table. Many of the visitors are students or researchers from local universities. “The university has its own library, of course,” says Margaret Kenyaggia, “but the students tell me that the books there are not up to date.”

Paying for the service

The fees that the library charges cover repairs, but are not enough to buy new books. So how can IT-Kenya afford to run a library, when so many other organizations are strapped for cash? ITDG runs a range of development projects, and the costs of buying books and running

the library is built into the budget of each project. Because ITDG's work covers a broad range of topics – energy, transport, building, farming and livestock – so does the library. That makes it even more attractive to visitors from outside.

The library gets a few free copies of books from IT-Kenya's parent organization in the UK. "They give us a free copy of some books, but if we want more than one, we have to pay, like anyone else," says Margaret Kenyaggia.

She does get some help running the library. Students studying librarianship at the local university are required to get practical experience as part of their diploma requirements. She puts them to work for three months. "It's a good way of training people," she says, "but the problem is, after three months, just when they are starting to be useful, they are gone, and then I have to start all over again, training someone else."

She is looking forward to a few months' time, when ITDG will move to larger offices. But meanwhile, she's run out of space. Stacked against the wall are some boxes full of books that she is going to throw out. "There's no room here to keep them," she says. "And why should we keep something that no one reads?"

FOR MORE INFORMATION

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FURTHER READING

There is a wide range of books on agricultural information and communication in developing countries, and in Africa, the Caribbean and Pacific in particular. Here is a list of some recent ones.

References and contacts for information on the individual organizations described in this book follow each chapter. They are not included here.

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ACRONYMS

ACCT	Agence de coopération culturelle et technique (France)
ADAP	Agricultural Development in the American Pacific
AEPJLN	Association des éditeurs et promoteurs des journaux et revues en langues nationales (Burkina Faso)
AIC	Agricultural Information Centre (Kenya)
ALIN	Arid Land Information Network
ALO	Agricultural Liaison Officer (Pacific)
AMAP	Agence malienne de presse et de publicité
ANOPACI	Association nationale des organisations professionnelles agricoles de Côte d'Ivoire
APACE	Appropriate Technology for Community and Environment (Australia)
APIC	Appui à l'instruction civique (Mali)
ARTO	Archivage de la tradition orale (Mali)
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AVRDC	Asian Vegetable Research and Development Center
BNDA	Banque nationale de développement agricole (Mali)
CARDI	Caribbean Agricultural Research and Development Institute
CARIS	Current Agricultural Research Information System (Caribbean)
CELTHO	Centre d'études linguistiques et historiques par tradition orale (Mali)
CESAO	Centre d'études économiques et sociales d'Afrique de l'Ouest (Burkina Faso)
CESO	Centre for the Study of Education in Developing Countries (Netherlands)
CESPA	Centre de services de production audiovisuelle (Mali)
CIAT	Centro Internacional de Agricultura Tropical
CIERRO	Centre interafricain d'études en radio rurale de Ouagadougou (Burkina Faso)
CMDT	Compagnie malienne de développement des textiles (Côte d'Ivoire)
CNCR	Conseil nationale de concertation et de coopération des ruraux (Senegal)
CORAF	Conference des responsables de recherche agronomique africains
CTA	Technical Centre for Agricultural and Rural Cooperation
DANIDA	Danish International Development Assistance
DDC	Direction du développement et de la coopération (Switzerland)
DFID	Department for International Development (UK)
DGIS	Directoraat-Generaal Internationale Samenwerking (Netherlands)
ENDA	Environment, Development and Action (Senegal)
EZE	Evangelische Zentralstelle für Entwicklungshilfe (Germany)
FAO	Food and Agriculture Organization of the United Nations
FENOP	Fédération nationale des organisations paysannes du Burkina
FONGS	Fédération des organisations non gouvernementales du Sénégal
FRAO	Fondation rurale pour l'Afrique de l'Ouest
GhRRM	Ghana Rural Reconstruction Movement
GRAD	Groupe de réalisations audiovisuelles pour le développement
GRET	Groupe de recherche et d'échanges technologiques (France)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (Germany)
ICIPE	International Centre for Insect Physiology and Ecology

ICRAF	International Centre for Research in Agroforestry
IDRC	International Development Research Centre (Canada)
IICA	Inter-American Institute for Cooperation on Agriculture
IIED	International Institute for Environment and Development
IIRR	International Institute of Rural Reconstruction
IITA	International Institute of Tropical Agriculture
IMF	International Monetary Fund
INADES	Institut africain pour le développement économique et social (Burkina Faso)
IRETA	Institute for Research, Extension and Training in Agriculture (Pacific)
ISNAR	International Service for National Agricultural Research
ISRA	Institut sénégalaise de recherches agricoles
ITDG	Intermediate Technology Development Group (UK)
JADE	Journalistes africains pour le développement (Burkina Faso)
KACE	Kenya Agricultural Commodity Exchange
LABE	Literacy and Adult Basic Education (Uganda)
MTEA	Multi-Purpose Training and Employment Association (Uganda)
MTN	Mobile Telephone Networks (Uganda)
NANEC	National Network of Cassava Workers (Uganda)
NARO	National Agricultural Research Organization (Uganda)
NGO	non-governmental organization
NRI	Natural Resources Institute (UK)
OAU	Organization of African Unity
PANA	Pan-African News Agency
PEFA	Programme d'échange de formation et d'appui (Senegal)
PELUM	Participatory Ecological Land-Use Management Association (Zimbabwe)
PIAJ	Pacific Index to Agricultural Journals
PIMRIS	Pacific Islands Marine Resources Information System
PRIMAC	Prix du marché du café et du cacao (Côte d'Ivoire)
PROCICARIBE	Agricultural Science and Technology System of the Caribbean
Residel	Réseau d'informations internet sur la décentralisation et le développement local (Senegal)
SACCAR	Southern African Centre for Cooperation in Agricultural and Natural Resources Research and Training
SAILD	Service d'appui aux initiatives locales de développement (Cameroon)
SCAINIP	Standing Committee on Agricultural Information Networking in the Pacific
SIDA	Swedish International Development Agency
SKAT	Swiss Centre for Development Cooperation in Technology and Management
SPC	Secretariat for the South Pacific
SYCOV	Syndicat des producteurs cotonniers et vivriers (Mali)
SYFIA	Système francophone d'information agricole
TEEAL	The Essential Electronic Agricultural Library
UNDP	United Nations Development Programme
Unesco	United Nations Educational, Scientific and Cultural Organization

UNFA	Uganda National Farmers' Association
USAID	United States Agency for International Development
VITA	Volunteers in Technical Assistance (USA)
WARDA	West Africa Rice Development Association
WWF	World Wide Fund for Nature
ZIMACE	Zimbabwe Agricultural Commodity Exchange