

# **Bridging information gaps between farmers, policy- makers, researchers and development agents**

Paper presented at the regional conference on *Agroforestry  
impacts on livelihoods in Southern Africa: Putting research into  
practice*

Aventura Warmbaths, South Africa, 20–24 May 2002

**Dr. Gesa Wesseler (CTA)**

**Ir. Willemine Brinkman (ETFRN)**

---

**CTA's working document series** consists of material that, in view of its immediate relevance and practical utility to specific readerships, the Centre wishes to make available without the delays inherent in the formal publication process. These working documents have not yet undergone technical editing by CTA and should be cited accordingly. Comments on matters of substance are welcome, and should be addressed directly to CTA.

## **Authors**

**Dr. Gesa Wesseler (CTA)** is a project planning officer within Planning and Corporate Services, with responsibility for cross-cutting issues.

Technical Centre for Agricultural and Rural Cooperation ACP-EU, Postbus 380, 6700 AJ Wageningen, The Netherlands. E-mail: [wesseler@cta.int](mailto:wesseler@cta.int); tel.: +31-317-467135; fax: +31-317-460067

**Ir. Willemine Brinkman** is coordinator for the European Tropical Forestry Research Network (ETFRN) Coordination Unit.

ETFRN, c/o The Tropenbos Foundation, P.O. Box 232, 6700 AE Wageningen, The Netherlands. E-mail: [w.j.brinkman@iac.agro.nl](mailto:w.j.brinkman@iac.agro.nl); tel. +31-317-495516; fax +31-317-495521

**The views and opinions expressed in this paper are those of the authors and do not necessarily reflect the positions of CTA or ETFRN.**

## **Acknowledgements**

This paper leans heavily on two recent publications on the subject:

- Mundy, P. and J. Sultan. 2001. *Information revolutions. How information and communication management is changing the lives of rural people*. Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, The Netherlands.
- CTA. 2001. *Information for agricultural and rural development in ACP countries: New stakeholders, new media and priority themes*. Synthesis of the CTA Seminar, Paris, June 2000. Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, The Netherlands.

The authors of, and contributors to, these volumes are gratefully acknowledged.

Published and printed by:  
CTA, July 2003

---

# Contents

	<b>Page</b>
Abstract .....	iv
1 Introduction.....	1
2 The role of information and communication in agricultural and rural development.....	3
2.1 Three tasks .....	3
2.2 A changing environment .....	4
2.3 Stakeholders and their information needs .....	5
2.4 Technological changes .....	8
2.5 Typology of the media and their uses.....	9
2.6 Intellectual property rights (IPRs) – not sharing but protecting? .....	13
2.7 Information overload? .....	14
3 Recent or ongoing examples for successfully bridged information gaps.....	15
3.1 Radio-based initiatives.....	15
3.2 Websites, portals and electronic discussions .....	17
3.3 Publications.....	19
3.4 Study visits .....	21
3.5 Translating science into everyday language .....	21
3.6 Networking initiatives .....	22
3.7 Public awareness initiatives .....	26
4 Conclusions.....	29
References.....	31
Acronyms and abbreviations.....	32

## **Abstract**

Information is a prerequisite for development. Without the exchange of information, no innovation would be able to spread. If we accept this hypothesis, then information gaps are direct impediments to development and need to be overcome. This may sound simple and straightforward. In reality, it is one of the hardest challenges that anyone involved in development processes has to face.

On the other hand, it is not just any kind of information that is required. Information overload is quickly becoming a problem not only for policy-makers and researchers in the North, but to anyone with access to the Internet. To be useful, information has to be relevant, reliable, timely, and delivered via an appropriate medium.

Information gaps can be everywhere – between policy-makers, researchers, development agents and farmers, but also among policy-makers (just think of members of different political parties, different ministries, different levels of government), among researchers (bio-physical scientists, social scientists, economists), between rich and poor, young and old, men and women. Why do they exist and why are they so difficult to overcome? This can be due to a whole range of factors – language, literacy, education, physical location (including access to information and communication technologies such as telephones or Internet), economic factors (no money to buy a newspaper, a radio, a TV, a computer), and socio-cultural norms (e.g., information that is traditionally meant for men or women only; male extensionists not being able to talk to female farmers), to name just a few.

Given this intimidating array of constraints, what can be done to bridge information gaps between farmers, policy-makers, researchers and development agents in a constructive, appropriate and efficient way? In agricultural research in general, and agroforestry research in particular, a number of promising initiatives have been developed, and examples have been given for successful bridges across the various information divides. However, none of these examples can be taken as a blueprint to be copied elsewhere. The key to successful bridges appears to be a tailor-made approach, combining different, and locally appropriate means of communication. Obviously, this will only work if stakeholders' interests are addressed – collaboration and communication between different stakeholder groups will only work if there is something to be gained by all concerned.

# 1 Introduction

Agroforestry research has been going on for more than a decade in the Southern African region, and some promising technologies have been developed. Research has moved from the stations out into farmers' fields, and efforts are intensifying to disseminate the technologies on a large-scale to small-scale farmers in the region.

Adoption, or adaptation, of technologies by farmers to improve their livelihoods is the ultimate objective of most agricultural research. However, it also poses the biggest challenge in the research – development – adoption continuum.

One of the main factors hindering the spread of technologies is lack of information. People in one village might not know what people in another village are doing, why they are doing it, and whether it would work in their village as well. They might also not know what alternative technologies would be available for their particular conditions. In addition, they might not know where to get credit and inputs such as seeds, seedlings, fertilizers, etc. They might not know how to care for the seedlings of trees and shrubs that they have not planted before, or how to propagate them.

Researchers might not be aware of experiments conducted in other countries, regions or institutes. Agronomists or forestry experts might not be conscious of the socio-economic conditions that prevent the uptake of their technologies, and social scientists might not be able to propose solutions to the technical problems people face.

Development agents, whether state (extension agents) or non-state (non-governmental organisations – NGOs) actors, might have a limited understanding of how to obtain political and financial support, and little knowledge of what goes on beyond their area of activity.

Policy-makers might not be aware of the impact that agroforestry technologies can have on income, livelihoods and the environment. They therefore might ignore the potential of these technologies for rural development, focusing their support in other areas.

These are just some examples of information gaps between the various stakeholders in agroforestry in sub-Saharan Africa.

After more than a decade of research on agroforestry, technologies are now available for scaling up and scaling out to the millions of small-scale farmers in the Southern African region. This paper attempts to highlight the importance of information and communication in this process and show some promising examples of how information gaps between different actors in agroforestry can be closed.



## **2 The role of information and communication in agricultural and rural development**

Paul Mundy and Jacques Sultan in a recent publication (2001) put it as follows:

*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 (this includes information and education as well) is extremely diverse, covering a range from the simplest conversation between two people to the most sophisticated mass medium. Without communication, progress would be unimaginable. Why, then, is it so neglected in development efforts? Mundy and Sultan assert that huge research organisations, 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 are being downsized and closed. Institutions sometimes seem more concerned with self-advancement than with serving their clients (an indication that evaluation criteria for researchers and institutions need to be changed). The potential of media (such as radio, market traders, churches and mosques) that do reach people in remote rural areas is ignored.

### **2.1 Three tasks<sup>1</sup>**

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

- provide information to audiences;
- help audiences find information;
- facilitate dialogue among audiences.

The first of these three tasks is the traditional role of communication. In the field of agricultural research, scientists who have developed a new technology (e.g., a new crop variety that is resistant to a pest) need to communicate their findings in such a way that farmers will hear about them, and possibly decide to try this new technology. They must make sure that farmers know about it, and they must also train extension staff, promote the technology on the radio, provide technical information in the form of brochures and

---

<sup>1</sup> Adapted from Mundy and Sultan (2001)

plant demonstration plots so that farmers can see the variety growing. Scientists also need to expose policy-makers to their findings and persuade them of the urgency of the matter so that the highest priority can be given to avert disasters such as famine.

Of course, not all of these tasks fall to the researchers themselves. Specialised institutions such as extension agencies, printers, radio stations, and many others, assist in the process. However, 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.

Information acquisition is the opposite side of the coin. Farmers whose crops are being eaten by pests cannot wait for the research organisation to release a new variety, or for the extension worker to make his next visit. They need information, fast.

Helping farmers find an answer to a problem they face is rather different from supplying them with information about a problem identified by the researcher.

Finally, therefore, communication is about facilitating dialogue. 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 and the poorly organised library all eliminate the possibility that users will be able to get the information they need.

## **2.2 A changing environment<sup>2</sup>**

Fortunately, many 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.

Three sweeping economic and institutional changes have marked developing countries over the past ten years (Technical Centre for Agricultural and Rural Cooperation (CTA), 2001):

- Economic globalisation that modifies the relationships between the international, national and local scales, as well presenting challenges for production and commercialisation, and access to markets, capital and information.
- Economic liberalization, which has led to a marked reduction in the state’s hold on the management of rural development. Planning logic is progressively giving way to

---

<sup>2</sup> Adapted from Mundy and Sultan (2001)



market steering of development. The role of the private sector is thus considerably strengthened.

- Political democratisation, seen in the possibility for different civil society stakeholders to participate in the debate on the orientation of rural development.

These changes correspond to a major transformation in the environments of rural development stakeholders in African countries, which is only partly positive. Particularly the liberalization of international agricultural product markets carries the risk of marginalization for small-scale producers of agricultural commodities in developing countries, as cheap, imported products flood national markets to the detriment of lower-performance national products. At the same time, the expected increase in the export of developing countries' products has not taken place, in part due to the difficulties producers and entrepreneurs have in conforming to the quality norms required by the world market. Without access to technologies and, above all, to information on technological and commercial opportunities, developing countries risk falling further and further behind.

## **2.3 Stakeholders and their information needs<sup>3</sup>**

### **Farmers**

The main key stakeholders in rural development are farmers. Rural women are essential in the production and commercialisation of goods, yet their role is still too often neglected. This category includes the agricultural businesses that sell farm products or initially process them, and cooperatives and farmers' organisations that bring together small rural producers.

*Information needs:* The information sought pertains to the production and initial processing of farm products, and to the market (prices, quantity, quality, mandatory norms, etc.). This technical information is tied to production systems, and priorities change with the functions of the region.

*Limitations:* Many limitations must still be lifted in order begin to meet these needs efficiently – illiteracy, poor communication networks (deficient or non-existent infrastructure), and inappropriate support from service providers. Furthermore, farmers' abilities to evaluate their own information needs; and turn them into communication strategies and activities need to be strengthened. Information on natural resources and their management is not sufficiently available. Finally, producers and their professional organisations should not be forgotten as partners.

---

<sup>3</sup> Adapted from CTA (2001)

## **Decision-makers: The public sector**

The public sector is principally represented by Ministries of Agriculture and Ministries of the Environment. They must contribute to the formulation of agricultural and rural development policies, provide guidance, and define a favourable working environment for stakeholders.

The withdrawal of the state from production activities and its retreat from direct support to producers calls into question its role as direct manager of development activities. However, its political role in the definition of strategies for development and for the improvement of the institutional environment should be strengthened. Democratisation imposes the debate and negotiation of policy and strategy choices with development stakeholders.

Local governments and decentralized state services are taking on greater importance due to national decentralization policies. The latter are in charge of organising local economic and social development.

Regional and sub-regional organisations must also rethink their role, by strengthening regional cooperation activities without taking the place of those at the national level, and by more fully involving grassroots stakeholders from the private and associated sectors in their activities.

Today it is up to the public sector along with the other stakeholders, to define rural development and information strategies and policies. It is up to the public sector to collect as much reliable data as possible, and to analyse and disseminate it. The public sector must be attentive to the needs of rural populations in order to promote the development of the communication infrastructures that they need, and to establish appropriate legal frameworks. It has an information duty with respect to the ensemble of rural development stakeholders.

*Information needs:* Ministries of Agriculture and Ministries of the Environment and their local offices must acquire a good understanding of their role in information – this requires appropriate institutional structures and the skills to ensure proper information management and effective decision-making. The public sector needs information that facilitates the definition of new development policies and the monitoring of schemes so as to evaluate the measures taken, and to predict and manage difficulties.

## **Other decision-makers**

The public sector is no longer the only decision-maker playing a key role in the decision-making process. The private sector, NGOs, and service providers in general, take part in decisions on rural development orientations. The newcomers among these decision-makers, now taking on increasing importance, are the farmers' and producers' associations, and their federations and unions.

*Information needs:* They have the same kinds of information needs as all those who participate in decision-making. In general, they need synthesized, up-to-date information – simple and dynamic indicators of changing trends and of policy impacts. They often lack information that would enable them to establish alternative scenarios.

*Limitations:* Many limitations remain in the area of defining and efficiently implementing coherent and operational information strategies:

- analysing needs;
- gathering information;
- assessing information quality;
- knowing how to translate the information into terms that can be understood by each category of stakeholders;
- choosing the tools and media with which to communicate and exchange information.

### **Development agents/ support organisations**

They are either local state services (such as extension services or administrators) or NGOs. The former are seeing their activities lessen and change due to state withdrawal, which benefits local authorities and, above all, NGOs.

The role of NGOs has been considerably strengthened. They are entrusted with the implementation of numerous projects. However, a large number of NGOs still lack expertise, independence with respect to donors, and sometimes even professional ethics. In addition, NGOs need to take account of the political dimension of their activities, and they are not always prepared for this.

NGOs play a support role in highly diverse fields: technology, economics, commerce, institutions, society, etc. They have a strong influence on the economic, social and cultural structures of the rural world, and in some ways take the place of deficient public services.

*Information needs:* NGOs and support organisations need information relative to their activities in support of grassroots producers. They all need to acquire the expertise necessary to know how to find information, analyse it, and present it without imposing it. Local information centres might be a good starting point to respond to this need.

Finally, NGOs and support organisations must learn to capitalize on the experiences and results of development work, and direct this information back to the field.

## **Researchers**

Researchers are beginning to work in closer collaboration with other development partners in the framework of national agricultural research systems, in which research centres, universities, NGOs and farmers' organisations have joined forces. Agricultural research has organised itself on a global scale, with a system for work carried out through regional and international networks, and with the creation of a global forum on agricultural research for development.

There is a need for researchers to be able to respond to demands from the field, as well as to the methodological preoccupations of grassroots stakeholders and support organisations. They must help these stakeholders improve their technical production systems, so as to take better account of the economic dimensions of sectors, and of institutional aspects.

*Information needs:* Researchers in many parts of sub-Saharan Africa are still poorly equipped with scientific reference documents, and often lack the tools to respond to the needs of rural populations and their associations. They need information on work undertaken in their fields of expertise, both internationally and sub-regionally. They need better access to the results obtained and innovations perfected in other developing countries.

## **2.4 Technological changes**

Along with the democratic revolution has come the revolution in technology. Thanks to computers and CD-ROMs, managing and structuring information is now much easier. Telephones, e-mail and the Internet are beginning to make their mark in rural areas. Some new technologies have been developed that allow Internet access even without telephone lines.

However, this is not just a high-tech revolution. The media have become closer to the citizens, more interactive. This is especially so for community radio stations and for newspapers in local languages, which have developed rapidly in rural areas. These new media are organised as networks, allowing rich information flows and greater access to end-users.

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 be used to make sure that the development activities truly serve their needs.

## **2.5 Typology of the media and their uses<sup>4</sup>**

### **Traditional media**

Traditional media include some of the following:

- theatre;
- sketches;
- drums;
- exchange visits.

*Users:* These include development support organisations, farmers' organisations. The messages' addressees are rural village communities. These tools are very close to people and are culturally appropriate to the context – they use languages and approaches that are familiar to the audience, and are low-cost. These tools are well adapted to social information.

*Advantages:* These means are generally affordable. NGOs and farmers' associations can master them with training. They match rural populations' listening or reading habits, and are culturally appropriate. They suit the audience's limited financial capacities, and use languages and approaches with which they are familiar. Innovative and free use of these conventional tools increases their attractiveness for users.

*Disadvantages:* Traditional tools have a limited range and field of action. Oral messages may be forgotten. They are excellent for raising awareness, but cannot be used as a support for highly specific information, such as technical information.

New experiments that make use of conventional media often depend on external funds and are thus not very sustainable, despite recent public willingness to pay for information.

### **Written supports**

Newspapers, books, posters and magazines are examples of written supports.

*Users:* Farmers' associations, development organisations, extension and research services, other support structures and decision-makers.

*Advantages:* Information is permanent and sustainable, easily accessible, and easily duplicated and distributed. The results obtained (even when modest), allow rural producers to become aware that reliable, accessible and updated information tools that live up to their expectations do exist.

---

<sup>4</sup> Adapted from CTA (2001)

*Disadvantages:* These include the lack of literacy among rural populations, the rapid deterioration of paper supports, high transportation costs, and poor diffusion and distribution networks.

## **Community media**

These are mostly rural radio stations and magazines used by villagers.

*Characteristics:* The numbers of community media have increased considerably over the past ten years. Magazines, newspapers and associated radio stations have multiplied. They often use local languages and address subjects of local interest. They further rural groups' feelings of cultural identity and belonging.

*Advantages:* These media give themselves the role of contributing to rural development via information. They are not commercial organisations and occasionally find it difficult to survive. Their success shows that they meet a need. They treat diverse themes pertaining not only to technical or economic questions, but also to social issues, the progress of women, democracy, etc.

*Disadvantages:* These media need better-targeted information and better knowledge of the public they wish to reach. Furthermore, their staff often lack skills and training.

Legal and regulatory frameworks are not always favourable to grassroots communication initiatives.

## **Audiovisual media: radio and television**

*Advantages:* Many rural households have a radio, and television ownership is spreading in rural areas after having conquered the cities. Information can be repeated frequently. Radio can be used to support field workers. The credibility of broadcast information is generally good. Radio is a good way of reaching rural women, who do not have to leave the house or village to access the information.

*Disadvantages:* Radio cannot transmit all types of messages. It can be used for stories, documentaries, debates or short, factual information. Listeners often lack concentration. Complex information or long periods of unbroken speech often lead listeners to tune out. The production of television programmes is still costly. Information is not permanent. Radio is normally used for one-way communication flows. Possibilities for feedback and dialogue are limited.

## **Internet**

*Users:* Users of Internet are mainly urban research and training centres, but it is also used by agronomic centres, farmers' associations, local radio stations and newspapers.

*Advantages:* It allows access to databases. Large quantities of information circulate rapidly. International communication costs are relatively low. The Internet allows near-instantaneous communication worldwide. If the user knows how to search well, the amount of information available on the Internet is considerable.

*Disadvantages:* The cost of the infrastructure needed for this means of communication is prohibitive for a large majority of rural development stakeholders in developing countries. The lack of telephone lines and high-power cables limits Internet use to a few villages, and does not allow for acceptable transmission times. The Internet relies on the use of international languages, and is inaccessible for the majority of rural villages.

*New developments:* Wireless technologies for two-way access to the Internet via satellite<sup>5</sup>

The appearance of wireless information communication technology (ICT) applications for two-way access to the Internet via satellite might present a very real opportunity to overcome the existing poor connectivity in developing countries in the long run. At present, however, most of these technologies are either still too expensive or have limited bandwidth, which makes access to the Internet difficult.

Examples of such technologies are:

- **Cellular /Global System for Mobile telecommunications (GSM):** Mobile telephones have multiplied considerably in recent years. They fill the gaps in national telephone networks. They are easy to use and greatly facilitate direct communication between individuals and, possibly, institutions. However, coverage is restricted to urban (densely populated) areas. Costs of use are high; moreover they currently have limited bandwidth. However, Short Message Service (SMS) in view of its popularity, may well become a “killer application” comparable with e-mail. For adequate access to the Internet, data cellular telephony is not really a feasible option.
- **Global Mobile Personal Communication Systems (GMPCS via satellites):** The high hopes that these systems would provide an ‘Internet in the sky’ have been shattered after the financial difficulties of Iridium, Intermediate Circular Orbit (ICO), GlobalStar and comparable operators. GMPCS offers very limited bandwidth and its operational costs are high. Consequently, it is not currently a feasible option for Internet access.
- **High Frequency (HF) radio:** This is a technology that is in use for data communication in situations where large distances have to be spanned and where no other alternatives are available – in spite of very low bandwidth and expensive equipment (\$5,000 per station). HF radio provides an option for “store and forward” email services but for adequate online access to the Internet, it is not really a feasible option.
- **“Little Leo” Data Satellites:** These have limited bandwidth and are only available for 11–15 minutes, 5–7 times per day. They have low costs and are appropriate for

---

<sup>5</sup> Adapted from Engelhard (2001)

transferring small amounts of data. Service providers are mainly international development NGOs such as Volunteers in Technical Assistance, VITA (VitaSat) or HealthNet (SatelLife). As with HF Radio, Little Leos provide an option for store and forward e-mail services, but for adequate access to the Internet, they are not a feasible option.

**Table 1: Data on media coverage for selected African countries**

Selected country	Per 1,000 people						Internet hosts per 10,000 people (Jan. 2000)
	Daily Newspapers (1997)	Radios (1997)	Television Sets (1998)	Telephone mainlines (1998)	Mobile telephones (1998)	Personal computers (1998)	
<b>Southern Africa</b>							
Angola	11	54	14	6	1	0.8	0
Botswana	27	156	20	65	15	25.5	13.9
Lesotho	8	49	25	10	5	n.a.	0.23
Malawi	3	249	2	3	1	n.a.	0
Mozambique	3	40	5	4	0	1.6	0.09
Namibia	19	144	37	69	12	18.6	11.74
South Africa	32	317	125	115	56	47.4	39.17
Zambia	12	121	137	9	1	n.a.	0.53
Zimbabwe	19	93	30	17	4	9	1.71
<b>East Africa</b>							
Ethiopia	1	195	5	3	0	n.a.	0.01
Kenya	9	104	21	9	0	2.5	0.20
Madagascar	5	192	21	3	1	1.3	0.22
Tanzania	4	279	21	4	1	1.6	0.06
Uganda	2	128	27	3	1	1.5	0.06
<b>Sub-Saharan Africa</b>	12	198	52	14	5	7.5	2.73
<b>World</b>	n.a.	418	247	146	55	70.6	120.02

n.a. – information not available; data include urban and rural media coverage

**Source:** World Development Report 2000/2001

- **Data broadcasting (e.g., World Space):** These are one-way satellite data communication systems that are often used in combination with terrestrial telecom



links (uploading via a terrestrial telecom link – downloading via a satellite link). In this hybrid form, data broadcasting certainly deserves a proper assessment of its feasibility for downloading of large volumes of data within the context of new information and communication management frameworks.

- **Very Small Aperture Technology (VSAT):** VSAT provides broad bandwidth, two-way data communication systems via satellites, including access to the Internet. In developing countries, these systems are widely used by embassies and branch offices of international corporations, banks and by United Nations (UN) organisations. Until recently, these systems were complex, expensive and difficult to install and operate. Recent developments have resulted in small, ‘off-the-shelf’ equipment, which represents a technically feasible and affordable solution to the current connectivity restrictions that affect most developing countries (*see* Table 1). These systems are ‘stand-alone’ and are therefore particularly promising for organisations in developing countries because they can be operated independently of the national telecom systems. For this reason alone, current telecom regulatory frameworks of many developing countries discourage VSAT systems through the high price of permits and complicated, lengthy application procedures.

## **2.6 Intellectual property rights (IPRs) – not sharing but protecting?**

A development that seems to go into the opposite direction of information sharing is the recent promotion and strengthening of IPRs, prompted amongst others by the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) under the World Trade Organization (WTO). Member countries will have to implement IPR regulations to allow for the patenting or other protection of any type of invention. In the area of agricultural research, this has led to a lot of dispute.

One reason agricultural IPRs attract such debate is that agricultural development, including the release of improved planting materials, has benefited from a long history of public sector “public good” investment. At the core of this system has been the free availability of plant genetic resources. Increased IPR protection of agricultural research does not always seem consistent with either the long-standing tradition of public-sector investment or with innovations contributed by international agricultural research or by informal or indigenous communities. Many observers fear that invoking such protection destroys the “public good” nature of agriculture, especially as it relates to the needs of the rural poor (Cohen et al., 2000).

“While the possibility to patent new crop varieties and other research outputs aimed at commercialisation allows research institutions to capture at least some of the benefits of their innovations, it also threatens the freedom to operate<sup>6</sup> for other researchers, including the public-sector agricultural research systems. The threat originates from the

---

<sup>6</sup> Freedom to operate = the ability to experiment and commercialise products without an impermissible use of someone else’s protected technology

ability to obtain exclusive rights not only to research outputs for commercialisation, but also for research procedures, gene sequences and other components of the research process itself. To perform its function, the public-sector agricultural research system must now obtain permission to use such intermediate research processes from various patent-holders. Frequently, developing a crop variety with new desirable traits utilizes 20–30 patented processes and research components, the owners of which would have to agree to the commercialisation of the particular variety. When one or more such patent-holders refuse to give permission at a reasonable cost, the final product cannot be legally commercialised and research investments may be lost. In other cases, the payments to the holders of the exclusive rights may exceed the expected value of the final product.” (Pinstrup-Andersen, 2000).

## **2.7 Information overload?**

A recent seminar organised by CTA on *Information for agricultural and rural development in ACP countries* (June 2000), concludes that the information offered, and its accessibility for many stakeholders in sub-Saharan Africa, have been greatly improved in recent years. The quantity of information available and the speed at which it circulates have increased considerably.

Satellites have multiplied, and broadcasting has increased a great deal in African countries. The number of radios and television sets is growing exponentially. Telephone communication networks have also developed quickly in some African countries, even in small rural centres, notably with the opening of numerous private telephone services and stores (standard and mobile telephones).

Furthermore, Internet communication networks have greatly grown in many African countries, even if they remain far behind northern countries. At the same time, private and associated media (press, radio, television) have multiplied. Finally, users have much more direct access to information from available sources such as electronic databases, e-mail, foreign radio and television stations, etc.

Yet in global terms, the production of information by ACP countries remains a small proportion of the whole, and in these countries the production of information is still far from sufficient to meet the need. Furthermore, the production of rural information is very often a small segment within national productions. Users are often obliged to seek information from the North, which is often not appropriate to their needs. (CTA 2001)

Information overload is becoming an issue with increasing access to mass communications. However, in terms of relevant, timely, well-adapted and adequately delivered information for agricultural and rural development, there is certainly a big gap in most developing countries.

## **3 Recent or ongoing examples for successfully bridged information gaps**

The good news is that there are all kinds of initiatives that attempt to bridge various information gaps. Some gaps receive more attention than others, for example, most international organisations seem to be most concerned with the researcher-farmer and farmer-researcher gaps, while others are rather neglected. In this section, we present a rather eclectic mix of approaches, projects and initiatives that have come to our attention. The following is by no means an exhaustive treatment of the subject.

### **3.1 Radio-based initiatives**

#### **Using rural radio to link agricultural research with rural communities**

The International Service for National Agricultural Research (ISNAR) has initiated a project to support researchers working together with radio broadcasters and rural societies. The project aims to link agricultural researchers with radio broadcasters in an effort to strengthen the institutional capacity of both groups to collaborate, identify needs, and address these needs through training and subsequently, the application of new or improved knowledge, attitudes and skills. More information can be found at <http://www.isnar.cgiar.org/activities/radio.htm>.

#### **Developing Countries Farm Radio Network (DCFRN)**

DCFRN is a Canadian NGO. One of its longstanding activities is the production of radio scripts, which are distributed to partners for use in radio broadcasts, extension services, classrooms and even community theatre. Approximately 500 scripts have been produced on topics such as crop production; post-harvest techniques; nutrition; tree-planting and farm forestry; natural resource management; and women and youth in agriculture. Their website can be found at <http://www.farmradio.org>.

#### **CTA's rural radio resource packs**

CTA launched its rural radio support programme in 1990, to strengthen ties between researchers, extension agents, farmers and managers of information and communication services, and to improve the dissemination of information for the benefit of farmers by improved adoption of new technologies. Under the programme, an information package consisting of taped interviews accompanied by a complete transcript and radio talks is

distributed. The material is backed up by technical information and printed material (photocopies of relevant articles from magazines and one or two books) on the subject of the information package.

The topics of the information packages are selected according to suggestions from programme beneficiaries and priority themes, as indicated by CTA partners. Topics that have so far been covered (more than 40) include agroforestry, diversified and integrated farming, small-scale fruit growing, soil conservation, sustainable soil fertility, and woodlots. The information packages can be downloaded via the CTA website at <http://www.agricta.org/icdd/radio.htm>.

### **Radio listening groups**

The PANOS Institute Southern Africa, as well as other NGOs in the region, is facilitating radio listening clubs to provide rural women with access to national radio, through active participation in the preparation of development-oriented programmes. The emphasis is on rural women, whose voices are often the least heard in society. It is hoped that through radio listening clubs women are free to express their concerns. By using the three-stage process developed by PANOS outlined below, the programmes provide a platform for debate, exchange of ideas and reactions to plans and projects that affect people's lives:

- **Stage one:** The listening groups of a particular community gather at their weekly meeting to listen to a programme based on issues that are relevant to them – topics such as the lack of drinking water in the village, income-generating programmes for women, etc. After listening, groups of women discuss the programme and their remarks are recorded by the group leader from the local community. They may also raise any other issues of concern to them, which are recorded in the same manner. It is the club members themselves who set the agenda and the coordinator is merely a facilitator.
- **Stage two:** The recorded tapes are collected by the facilitator who ensures that the tapes are transferred to national broadcasters weekly. In consultation with group leaders and having listened to the tapes, the project producer/coordinator arranges to record responses to the problems and issues of interest expressed by the clubs from relevant outside actors. These may include government officials, health professionals, businesses, local NGOs or international organisations. For example, a concern about lack of availability of drinking water would invite a comment from the Water Board and so on.
- **Stage three:** The project producer edits these responses, together with the original recordings from the three clubs, to produce a weekly 30-minute programme to be broadcast through the local radio. The broadcast programme forms the starting point of a future club meeting convened around its scheduled broadcast. This meeting is in turn recorded and fed back into the production cycle to further the process of debate.

This process leads to a balanced reporting of issues, and deepens the discussion and debate generated by the group.

The radio listening club methodology has several advantages:

- radio as a communication medium offers far greater outreach than any other medium;
- the high cost of radio sets makes listening clubs a cost-effective way of gaining radio access (this is especially true in the context of new, digital media such as WorldSpace that require special radio receivers);
- it involves partnerships with the national broadcasting medium and development NGOs;
- it involves people listening in groups, interacting, discussing and debating on everyday issues, seen from their unique perspectives;
- it empowers, creating awareness of how to exercise one's rights;
- it breaks the sense of isolation often felt by rural people in many countries;
- it demystifies the media;
- it provides functional literacy.

While not directly linked to agroforestry at the moment, there is no reason why this and related topics cannot be covered under this approach, provided that the listening groups express an interest in this topic.

## **3.2 Websites, portals and electronic discussions**

An immense number of Internet-based initiatives have been developed in recent years to facilitate communication amongst actors in agriculture and rural development. The following are some examples with direct relevance to agroforestry. Due to the nature of the medium and the prevailing connectivity restrictions in most developing countries, these services and initiatives are mostly aimed at and used by researchers, although many of them are open-access and could in principle also be used by other stakeholders.

### **EcoPort**

EcoPort, an Internet-based information service ([www.ecoport.org](http://www.ecoport.org)), provides database services to manage biodiversity to the public. It is both multi-disciplinary and multi-functional, that is, in addition to biology information; the database makes provision for data sets from many other disciplines (including economics, sociology, anthropology, geography and geographical information systems). It offers a variety of decision-support procedures and knowledge management services.

All the information in the EcoPort is the sum of the individual contributions of many authors, and as such, the data are collectively owned and maintained by a global community including scientists, extension workers, farmers and other people who share their personal and professional expertise and experience. As stated above, however, the site will be of the greatest use to researchers.

The aim of EcoPort is to create a standard user interface and a complete, underlying set of database tools and procedures, to create a system and service that will be applicable to almost any aspect of ecology knowledge management. Users can create a virtual database from information in EcoPort that could be run on a CD-ROM and be distributed as a thematic, stand-alone product. And since EcoPort is not limited to biology alone, the same approach can be used to produce CD-ROM products with titles such as *Agroforestry systems in Southern Africa*. The one drawback at the moment is the difficulty in navigating the site and finding the content one might be looking for.

## **BioNET INTERNATIONAL**

BioNET INTERNATIONAL, the Global Network for Taxonomy ([www.bionet-intl.org](http://www.bionet-intl.org)) is a member of the International Union for the Conservation of Nature. It is dedicated to supporting sustainable development by helping developing countries to overcome the taxonomic impediment by becoming self-reliant in taxonomy, i.e. self-reliant in the skills, infrastructure and technologies needed to discover, identify, name, classify and to understand the relationships of all organisms. It works in collaboration with EcoPort, but has a much more communication-oriented design. Again, it is aimed mainly at researchers, with very specific, taxonomy-related information.

## **European Tropical Forest Research Network (ETFRN) web-based workshop**

ETFRN recently organised a web-based workshop on participatory monitoring and evaluation of biodiversity (see <http://www.etfrn.org/etfrn/workshop/biodiversity/index.html>).

Participatory biodiversity assessment (PBA) provides a way of reconciling the need for national assessment, monitoring and reporting; with the increasing focus on involvement of all relevant stakeholders and particularly indigenous / local communities. PBA, i.e. biodiversity assessment by and with non-scientists can provide short-cuts to scientific assessments; provide data useful to local resource managers in a way which scientific assessment is not; link in to scientific information which is relevant to local needs; enhance inclusivity of decision-making.

The workshop sought to elucidate the following:

- the ways in which values affect the assessment process;
- approaches and methods in relation to objectives and information needs;

- the costs and benefits;
- priorities for institutional / policy change to create an enabling environment.

People could participate in the discussions both by e-mail and by logging on to the website. Three hundred participants from 55 countries including the Convention on Biological Diversity secretariat, international donors, NGOs, universities, and grassroots organisations (no farmers) participated in the discussions.

### **The International Centre for Research and Agroforestry (ICRAF) website**

ICRAF has a wealth of agroforestry-related information on its website ([www.cgiar.org/icraf](http://www.cgiar.org/icraf)). In addition to institutional information and downloadable ICRAF publications, the site contains an information centre that provides some downloadable slide series and training materials, online databases (*see below*), bibliographies (on indigenous fruit trees and on improved fallows and soil fertility), and links to other agroforestry resources on the Internet. While this last service is extremely important and useful, the links provided cover a whole range of issues, from agricultural information in general to participatory natural resource management in the Lower Mekong Basin (but nothing on CTA!). Information overload?

ICRAF's Tree Domestication Programme has developed a number of databases to promote the better use of trees in agroforestry systems. The Agroforestree Database provides information on the management, use and ecology of a wide range of tree species, which can be used in agroforestry. The Tree Seed Suppliers Directory lists suppliers of seeds and microsymbionts for over 5,939 tree species. The Botanical Nomenclature Database provides information on the correct taxonomy of trees, including synonyms and common names.

## **3.3 Publications**

There are many publications that attempt to directly close information gaps in the field of agroforestry by describing systems, technologies or research findings. They are well known and documented, for example, at the ICRAF website. In this section, we will take a step backwards and briefly review some recent books that deal with the topic of closing information gaps (and thereby closing some gaps themselves).

### **Farmer innovation in Africa**

This book edited by Chris Reij and Ann Waters-Bayer (2001), collects and describes a wide range of innovations in African agriculture. These innovations were not introduced by “experts” or by field agents, but rather by the farmers themselves. Teams of African scientists and field agents in eight countries managed to identify farmers (both men and women) who, on their own initiative, but based on shared community knowledge and

technologies, have tried to improve their practices of managing land and water resources in order to overcome the immediate difficulties they were facing. Almost 1,000 innovators were identified within only two years, and the contributors to this book argue that these innovators constitute just the tip of the iceberg.

Two programmes have been documented as successful in promoting farmer innovation in land husbandry – Indigenous Soil and Water Conservation in Africa and Promoting Farmer Innovation in Rainfed Agriculture. They took the process several steps onward by involving scientists, field agents and other farmers in joint experimentation to improve the innovations still further, following a research agenda set by farmers. The farmer innovators were given opportunities to visit other innovators, and this gave them new ideas that they could try out on their own fields. The programmes show how processes of innovation can be stimulated, with one new idea spawning the next. And they show how scientists, field agents, local authorities and development planners can give the support and create the conditions that encourage farmers to accelerate innovation.

The book argues that the conventional “transfer-of-technology” paradigm, in which scientists develop technologies on research stations and extension workers pass these technologies on to farmers, is producing disappointing results. The working hypothesis of the authors is that one should first look at what farmers themselves are experimenting with and then use this as a starting point for joint research and development by farmers and scientists.

### **RAAKS resource box**

A somewhat older but nonetheless still very topical publication is the RAAKS resource box *Facilitating innovation for development* (Engel and Salomon, 1997). RAAKS is a participatory action-research methodology that can help diverse stakeholders work and learn together, enhancing communication and information exchange and planning for action that will support innovation. The RAAKS resource box contains:

- a book – The social organization of innovation;
- a manual – Networking for innovation;
- a set of cards – Windows and tools.

This resource box can be used by decision-makers and others to become familiar with the methodology or to acquire a deeper understanding of its foundations; for facilitators and team members, it also provides a field-tested methodology for building a team and how to start the process.



## **Developing technology with farmers**

This *Trainer's guide for participatory learning* (Van Veldhuizen et al., 1997) is written for governmental and non-governmental development organisations engaged in preparing their staff to work together with farmers in developing technologies appropriate to ecological agriculture and using few external inputs. The training is designed to stimulate active learning by participants who draw on their own experience – an approach that mirrors the type of interaction between facilitator and farmers in Participatory Technology Development (PTD).

### **3.4 Study visits**

Study visits can bring together a wide range of stakeholders for discussions in the field. They provide an excellent opportunity for formal as well as for informal discussions and first-hand experiences, and are therefore highly effective in closing information gaps for participants. They might even lead to the formation of new networks. However, if they are conducted at the international level, they are expensive. Participants therefore need to be selected on the basis of the potential multiplier effect that they can have.

CTA has attempted to contribute to closing information gaps in agroforestry between researchers, policy-makers, development agents and farmers through the organisation of three study visits on agroforestry. The first one took place in 1994 in Burkina Faso, the second was held in 1996 in Côte d' Ivoire, and the third was organised in January of 2002 in Malawi and Zambia. Each visit was attended by about 20 participants from various countries in the different regions. Reports of the first two study visits have been published by CTA (in French).

Participants in the study visits comprise experienced researchers, extension and development workers, seed experts and trainers from public and private sectors. Travelling together in mostly remote rural areas for around ten days provides lots of opportunities for informal interaction, discussions and networking, sometimes complemented by hands-on experiences (e.g., outlining contours with an A-frame and digging terraces).

### **3.5 Translating science into everyday language<sup>7</sup>**

It almost goes without saying that workshops and conferences such as this one are a direct way of bridging information gaps, especially if they bring together different stakeholders and provide opportunities for interaction. However, most of the information exchanged during this conference is highly technical and difficult to understand by outsiders. There are other workshops which take this as a starting point. They operate in a different way and aim to produce information materials to bridge information gaps between researchers, development agents and farmers.

---

<sup>7</sup> Adapted from Mundy and Sultan (2001)

Once agricultural scientists have found a new technology, they typically write it up as an article describing their experiments, and publish it in a scientific journal. Translating the scientific language in the article into something that farmers (and extension workers) can understand is very difficult. Here is 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 is 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 is hard for the scientists to do – they are so used to scientific terminology and often see no other way of expressing their ideas. Translating science into everyday words and concepts is also difficult for extension workers and farmers – very few have enough scientific background to do it. So how should this translation be done? One method, used by the International Institute for Rural Reconstruction, is to run workshops that bring scientists, extension workers, NGO staff and farmers together to develop information materials jointly. A team of facilitators, editors, artists and desktop publishing staff helps the participants present, edit, illustrate and revise the manuscripts. A two-week workshop can result in a set of extension booklets of a 200-page, easy-to-read manual.

### **3.6 Networking initiatives<sup>8</sup>**

The purpose of a network is to share information and resources for the common good. Networks come in many different shapes and colours. The following provides examples of a farmers' association, an NGO network and agricultural research networks in Africa, all of which have a track record of success working at the local or national level in a context of constrained resources.

#### **Uganda National Farmers' Association (UNFA) – building upward arrows**

The organisational chart in a typical Ministry of Agriculture shows the minister at the top, followed by directors, departments, sections and units. Farmers, if they appear at all, are 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 is that government officials, researchers and extension staff tell farmers what to do – not the other way

---

<sup>8</sup> Adapted from Mundy and Sultan (2001)

around. There is no way, through official channels at least, for farmers to tell the ministry what they want. UNFA is however, trying to change this.

The association, represents 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*. UNFA was established in 1992 as a centralized body with district-level branches, structured in such a way to ensure that voices from the grassroots are heard. However, it found that it was beginning to lose touch with the farmers it was supposed to serve and in response to this, in 1997, it transformed itself into an association of 60 legally independent, district-level organisations. A farm couple must pay an annual membership fee of around one Euro to join one of these local organisations.

UNFA's quarterly magazine, *The farmer's voice*, is an important way of communicating with its members and with policy-makers and other organisations. Each issue contains three main sections:

- *News from the apex* describes activities coordinated by UNFA's headquarters;
- *News from members* has articles from UNFA member organisations;
- the third section (roughly half the magazine) has technical information.

The magazine encourages readers to make their views known. Farmers send in articles they have written and a selection of readers' letters appears in every issue.

Several of UNFA's member organisations produce newsletters in their local languages for their members, for which they sometimes translate stories from *The farmer's voice*. In this way, information reaches more people than the readers of *The farmer's voice*.

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. Lobbying is the responsibility of the executive committee. The lobbying effort has borne fruit. One example is the effort to repeal the government's ban on the import 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.

### **The Participatory Ecological Land-Use Management (PELUM) Association – bridging information gaps among NGOs**

In 1995, 30 people from NGOs in the southern African region launched the PELUM Association with the motto:

*Facilitating learning and networking in participatory ecological land-use management in Eastern and Southern Africa.*

It originated from an attempt to train community facilitators to work with rural people in agriculture and natural resource management, using participatory approaches and promoting sustainable agriculture based on local resources. This initiative was intended to fill the gap in capacity building for extension workers who had gone through agricultural colleges, where they had learned input-intensive farming and the old, top-down education methods. The idea was to link together the various new ideas in participation and agriculture, and to train NGO staff on how to use them. Taking this initiative a step further, the opportunity was explored to link together the efforts of local NGOs in sustainable agriculture so they could learn from one another. 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. The plan of an association to link the various NGOs together resulted in the launch of the PELUM Association.

The strength and potential of the association lies in its country working groups, made up of all the members in a country. Through board meetings, biennial general meetings and the quarterly PELUM bulletin, *Ground up*, members learn what is happening elsewhere. Activities differ from country to country. 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.

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 four to seven workshops for the year. They take place in different countries, on topics such as participatory monitoring, information management, facilitation skills and the development of training materials, and integrated land use design.

The PELUM Association also distributes books and other training materials, especially those produced in Eastern and Southern Africa.

The original idea of training community facilitators led to the launch of the PELUM "college without walls" in 1997 in Zimbabwe. It includes national NGOs, community-based NGOs, departments from two universities and the extension-training branch. Students learn agro-ecology, natural resource management, organisational management, and facilitation skills. They do this through the different organisations that are members of the college, so they learn about the organisations at the same time. It is not only the students who gain, though. A tremendous amount of information has been exchanged amongst the participating organisations, and staff members with years of experience in development work are able to share their wisdom with the next generation of development workers – experience that is normally lost.

## **Agricultural research networks in Africa**

Three associations of research institutes span the continent south of the Sahara: Association for Strengthening Agricultural Research in Eastern and Central Africa, based in Uganda links ten 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 Southern African Center for Cooperation in Agricultural and Natural Resources Research and Training (SACCAR), based in Botswana.

These associations typically have a small headquarter 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.

Research programmes may be implemented by groups of national institutes, consultancy firms, or international research centres.

Information exchange is a key function of all the associations. Mechanisms include newsletters, scientific journals, publications and reports.

Websites are the most recent addition to this list. CORAF and SACCAR have extensive websites, containing information about the association, addresses of networks, and issues of the association's newsletter. There is clearly a lot more that could be done via the Internet, though:

- e-mail lists for exchanges among network members;
- 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;
- e-mail conferences to discuss key problems.

Both CORAF and SACCAR have initiated projects to develop some of these activities.

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, 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, UN agencies and research organisations in the developed world) also find it more efficient to work with the multinational associations.

### **3.7 Public awareness initiatives**

Public awareness initiatives aim to bridge information gaps mainly between researchers and the general public. This is important because public opinion has an influence on policy-makers, and therefore on the allocation of public funds to certain fields of research.

One big advantage of agroforestry is that it is not a controversial topic, like say for example, biotechnology. Of course, one can use biotechnology for agroforestry species, but that is not the issue here. Agroforestry as such does not face any significant public opposition, and as such it should be relatively easy to communicate information on it. However, as with all technical subjects, researchers use a certain jargon and technical terms that are not easily understood by non-experts. The challenge here is for:

- researchers, to communicate their research findings in easily understandable terms when talking to a non-expert audience;
- the media to familiarise themselves with the topic and, if necessary, translate technical messages into something that is easily understandable.

To facilitate this, research institutions could hold media workshops (including field visits, of course).

There seems to be a general problem of communicating success stories. Nobody is good at that, neither the national research organisations nor the Consultative Group on International Agricultural Research (CGIAR). To remedy this situation, the CGIAR has created an initiative to make its successes more visible, the Future Harvest campaign. Future Harvest is a global initiative, incorporated in June 1998 as a charitable and educational organisation to advance debate and catalyse action for a world with less poverty, a healthier human family, and a better environment. In 2001, Future Harvest UK was established in the United Kingdom.

Future Harvest works to:

- promote awareness and educate the general public and decision-makers about the importance of food production and the role of agricultural science in meeting the human and environmental challenges of today and tomorrow;

- build financial support for scientific research and charitable projects that bring the results of this research to rural communities, farmers, and their families in the developing countries.

To carry out its work, Future Harvest:

- commissions highly respected experts to explore the links between food and agriculture and important universal issues including environmental renewal, peace, economic growth, health, and population concerns;
- enlists influential public figures, world leaders, Nobel laureates, media personalities, and entertainers to become advocates for world agricultural research;
- engages in a range of partnerships to communicate its messages, build financial support, and promote action that addresses global food and environmental challenges.





## 4 Conclusions

This paper could go on for much longer. Obviously, the examples presented here offer only a glimpse of the large number and variety of projects and initiatives that have been launched to bridge information gaps between the various stakeholders in agriculture and rural development. Some already cover the topic of agroforestry; others have been designed in different fields but could easily be applied to agroforestry issues as well.

There can be no doubt about the crucial role of information and communication in agriculture and rural development in general and in agroforestry, in particular.

The purpose of this paper is to show possibilities. It is probably fair to say that the old ideas of working in isolation, in a top-down manner, have more or less gone out of the window. However, it is also fair to say that agroforestry could have a much larger impact on the lives and livelihoods of rural communities in Southern Africa if more effort and thought went into the information and communication aspects of technology development.

It is relatively easy to reach certain audiences: officials, decision-makers, and 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.

However, the story is very different for community organisers, craftspeople, extension workers, farmers, livestock owners, local and grassroots actors, villagers and 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 basic principles must be respected for networks and partnerships to function efficiently:

- each partner must be interested in them and benefit from them;
- networks or partnerships must be founded on specific goals and a clear vision shared by all members;
- a transparent programme of activities accepted by all, and which specifies the roles of each, must be established;
- relationships between members must be based on mutual respect and trust;
- relationships between national, regional and international scales must be based on the principle of subsidiarity and decentralization of responsibilities and activities;
- operating modes must be easy and flexible;

- information must not circulate according to a top-down (vertical) model, but must circulate in all directions and among all members.

For the research community, it seems that in order to encourage efforts aimed at bridging information gaps among stakeholders, a change in the incentives and evaluation criteria for researchers and scientists is needed. “Publish or perish” is still very prevalent. At a first glance, this seems to be a way of sharing information. It does not, however, go beyond scientific journals read by the established research community. The same is true for grey literature, meetings held with rural communities or formation of networks and stakeholder groups. Innovative ways of encouraging and acknowledging the networkers and communicators amongst scientists are therefore called for.

There have been attempts at making research teams more inclusive. For example, competitive grants programs (CGPs) are increasingly used today to finance and manage agricultural research. Research providers are selected on a competitive basis, using calls for proposals and scientific peer review to allocate funding. CGPs can be tailored to accomplish numerous objectives, including:

- promoting research partnerships and collaboration by researchers from different institutions, disciplines, or countries;
- introducing more demand-driven research that specifically involves clients in setting research priorities, providing funding, and executing and evaluating research;
- drawing a wide range of participants into the research system, including NGOs and the private sector (George, 1999).

Another avenue taken in some regions (e.g., Colombia, Honduras, Nicaragua, Bolivia, Brazil, Ecuador, El Salvador – (see <http://www.capri.cgiar.org/projects/27.htm>) is the establishment of local research committees. These committees represent a farmer-based research service answerable to the local community. They test agricultural technology, report on their findings and disseminate those that are useful to the community’s farmers. Whereas formal research tends to be dominated by scientists, ownership of the local research committee lies entirely with the local farming community. The community elects the committee members, decides on the topics to be researched and feeds its reactions and results back into the research process. It also evaluates the performance of its committee, which can only continue its activities with the community’s goodwill. Ownership of the process by the community ensures that research is relevant to its needs, making the results more likely to be adopted.

For policy-makers, information sharing is all about transparency and accountability. Thus, the current trend towards decentralization and democratisation will hopefully lead to a better two-way flow of information to and from this stakeholder group, making it more receptive to the voices from rural areas, and providing mechanisms for these voices to be heard.

## References

- Cohen, J.I., Falconi, C. and Komen, J. 2000. Perspectives from international agricultural research centers – ISNAR. p. 22–28. *In*: U. Lele, W. Lesser and G. Horstkotte-Wesseler (eds) *Intellectual property rights in agriculture – The World Bank's role in assisting borrower and member countries*. The World Bank, Washington, D.C.
- CTA. 2001. *Information for agricultural and rural development in ACP countries: New stakeholders, new media and priority themes*. Synthesis of the CTA Seminar, Paris, June 2000. Technical Centre for Agricultural and Rural Cooperation, Wageningen, The Netherlands.
- George, P. 1999. Competitive research grant programs – Good practice for design and management. *Agricultural Knowledge & Information Systems (AKIS) Good Practice Note 03/99*. The World Bank Rural Development Family, Washington.
- Engel, P. and Salomon, M. 1997. *Facilitating innovation for development*. A RAAKS resource box. Royal Tropical Institute, Amsterdam, The Netherlands.
- Engelhard, R. 2001. Wireless: A help line for agricultural development? Report of the 4<sup>th</sup> Consultative Expert Meeting of CTA's Observatory on ICTs. CTA Working Document 8024. Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, The Netherlands.
- Mundy, P. and J. Sultan. 2001. *Information revolutions. How information and communication management is changing the lives of rural people*. Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, The Netherlands.
- Pinstруп-Andersen, P. 2000. Overview – Intellectual property rights. p. 255–257. *In*: M. Qaim, A.F. Krattiger and J. von Braun (eds) *Agricultural biotechnology in developing countries: Towards optimizing the benefits for the poor*. Kluwer Academic Publishers, Boston/Dordrecht/London.
- Reij, C. and Waters-Bayer, A. 2001. *Farmer innovation in Africa*. Earthscan Publications Ltd., London.
- Van Veldhuizen, L., Waters-Bayer, A. and De Zeeuw, H. 1997. *Developing technologies with farmers: A trainer's guide for participatory learning*. ETC Netherlands, Leusden, The Netherlands.



## **Acronyms and abbreviations**

ACP	African, Caribbean and Pacific Group of States
CGIAR	Consultative Group on International Agricultural Research
CGP	competitive grants programme
CORAF	Conférence des responsables de recherche agronomique africains
CTA	Technical Centre for Agricultural and Rural Cooperation
DCFRN	Developing Countries Farm Radio Network
ETFRN	European Tropical Forestry Research Network
ICO	Intermediate Circular Orbit
ICRAF	International Centre for Research in Agroforestry
ICT	information communication technology
IPRs	intellectual property rights
ISNAR	International Service for National Agricultural Research
IUCN	International Union for the Conservation of Nature
GMPCS	Global Mobile Personal Communication Systems
GSM	Global System for Mobile telecommunications
HF	high frequency
NGO	non-governmental organisation
PBA	participatory biodiversity assessment
PELUM	Participatory Ecological Land-Use Management Association (Zimbabwe)
PTD	Participatory Technology Development
SACCAR	Southern African Centre for Cooperation in Agricultural and Natural Resources Research and Training
SMS	Short Message Service

TRIPS	Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
UNFA	Uganda National Farmers' Association
VITA	Volunteers in Technical Assistance (USA)
VSAT	very small aperture technology
WTO	World Trade Organization

## **Other Working Documents available from CTA / Autres Documents de travail disponibles auprès du CTA**

### **Guide sélectif de revues scientifiques dans le domaine du développement agricole et rural / Selective guide to scientific journals in the field of agricultural and rural development**

Préparé par le CIRAD et CABI pour le CTA / Prepared by CIRAD and CABI for CTA. 1999  
CTA No. 8001. 0 unité de crédit / 0 credit point

### **Resource guide on urban agriculture**

Prepared by ETC for CTA. 1999.  
CTA No. 8002. 0 credit point

### **The role of international organisations and non-governmental organisations in information support for agricultural policy formulation in Kenya**

Study report prepared by Frederick Owino for CTA. 1999  
CTA No. 8003. 0 credit point

### **Information support for agricultural policy formulation in Africa: Role of non-governmental organisations and research institutes**

Study report prepared by David Heydon for CTA. 1999  
CTA No. 8004. 0 credit point

### **Information support for agricultural policy formulation Africa: Role of international organisations**

Study report prepared by David Heydon for CTA. 1999  
CTA No. 8005. 0 credit point

### **The role of international and non-governmental organisations in information support for agricultural policy formulation in Ghana**

Study report prepared by John Villars for CTA. 1999  
CTA No. 8006. 0 credit point

### **Review of the impact of globalisation on the agricultural sectors and rural communities of ACP countries**

Study report prepared by Peter Robbins for CTA. 1999  
CTA No. 8007. 0 credit point

### **Effets de la mondialisation sur le secteur agricole et les communautés rurales des pays ACP**

Préparé par Peter Robbins par le CTA. 1999  
CTA No. 8008. 0 unité de crédit

### **Etude documentaire sur la gestion de l'eau en Afrique sub-saharienne et région Caraïbes**

Préparé par Jean-Louis Couture pour le CTA. 1999  
CTA No. 8009. 5 unités de crédit

### **Desk study on water management in sub-Saharan Africa and the Caribbean**

Prepared by Jean-Louis Couture for CTA. 1999  
CTA No. 8010. 5 credit points

**Etude documentaire sur la gestion des terroirs en Afrique sub-saharienne**

Préparé par Martina van de Sand pour le CTA. 1999.

CTA No. 8011. 5 unités de crédit

**Desk study on land-use management in sub-Saharan Africa**

Prepared by Martina van de Sand. 1999

CTA No. 8012. 5 credit points

**Small-scale food processing sector in Mozambique**

Prepared by Imani development (pvt) limited in collaboration with M.J. Cardoso, Austral. 2000

CTA No. 8013. 5 credit points

**Small-scale food processing sector in South Africa**

Prepared by Imani development (pvt) limited in collaboration with N. Hill, ICAP. 2000

CTA No. 8014. 5 credit points

**Small-scale food processing sector in Zambia**

Prepared by Imanu development (pvt) limited in collaboration with O. Saasa. 2000

CTA No. 8015. 5 credit points

**Soutien informel aux politiques de gestion des ressources naturelles à Madagascar**

Préparé par Bruno Salomon Ramamonjisoa pour le CTA. 2000

CTA No. 8016. 5 unités de crédit

**De l'usage de l'information à l'appui aux politiques de gestion des ressources naturelles au Cameroun**

Préparé par Dr Jean-Claude Nguinguiri pour le CTA. 2000

CTA No. 8017. 5 unités de crédit

**Case study on information support to natural resource management policy in Namibia**

Prepared by Brian Jones for CTA. 2000

CTA No. 8018. 5 credit points

**Design of a market information system for small scale producers and traders in three districts of Uganda**

Prepared by Peter Robbins, CMIS and Shaun Ferris, IITA/Foodnet Project. 2000

CTA No. 8019. 5 credit points

**Study on functional literacy programmes for agricultural and rural development in Ethiopia**

Prepared by Zelleke W. Meskel 2000

CTA No. 8020. 5 credit points

**Approaches to impact evaluation (assessment) in agricultural information management: selective review of the issues, the relevant literature and some illustrative case studies**

Prepared by Margot Bellamy. 2000

CTA No. 8021. 5 credit points



**Savoir-faire et réseaux de petites entreprises agroalimentaires en Afrique: Deux études de cas: La transformation du manioc au Congo; la transformation du maïs au Cameroun**

Prepared by Bazabana, J.M., Bom Konde, P.C., Muchnik, J. 2001

CTA No. 8022. 5 unités de crédit

**Technical consultation on the development of market information services (MIS) for small operators in the agricultural sectors of ACP countries**

Proceedings of a CTA workshop, Wageningen, The Netherlands, 30-31 October 2000. 2001

CTA No. 8023. 5 credit points

**Wireless: a help line for agricultural development?**

Prepared by Engelhard, R. 2001

CTA No. 8024. 5 credit points

**Evaluating information: a letter to a project manager**

Prepared by Mook, B. 2001

CTA No. 8025. 5 credit points

**Technical consultation on the integration of statistical and agricultural market information services**

Proceedings of a CTA workshop, Wageningen, The Netherlands, 21-23 November 2001.

CTA No. 8026. 5 credit points

**Technical consultation on assessing the performance and impact of agricultural information products and services**

Proceedings of a CTA/IICD/LEAP-IMPACT workshop, Bonn, Germany, 9-12 October 2001

CTA No. 8027. 5 credit points

**Agroforestry study visit to Malawi and Zambia**

Prepared by Ngugi, D.N. 2002

CTA No. 8028. 5 credit points

**Smart tools for evaluating the performance of information products and services**

Proceedings of a KIT/CTA/ IICD LEAP-IMPACT technical consultation, Amsterdam, The Netherlands, 19-22 November, 2002

CTA No. 8029. 5 credit points