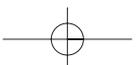
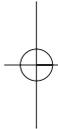
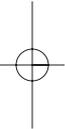
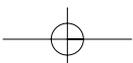
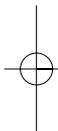
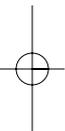
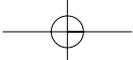
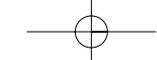


## **FARMERS' ORGANIZATIONS AND AGRICULTURAL INNOVATION**

Case studies from Benin, Rwanda and Tanzania





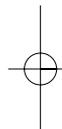
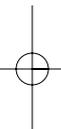


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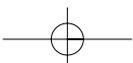
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Bulletin 374



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## Executive summary

### Context and background

Since the 1990s Sub-Saharan African countries have embarked on major agricultural sector reforms, which led to changing and innovative roles for the public and private sectors as well as civil society organizations. Farmers' organizations (FOs) now increasingly voice the needs of their members in various fora on policy-making and orienting service provision. They are solicited by the private sector to enhance chain development, including those for new markets, and they play a role in local development planning. FOs are now, more than ever, actively involved in agricultural development, which requires institutional, organizational and technological innovation in order to be successful. Providing user-oriented research, extension, and training services is therefore a prerequisite for technological innovation. Institutionalizing participatory methods, decentralizing services, creating multi-actor platforms and multi-stakeholder driven funding mechanisms all enhance demand-driven agricultural services. The private-sector and/or public-private arrangements currently play an increasing role in research and extension. FOs are thus evolving in an environment where stakeholders' interests diverge and/or converge. However, the effective use of new technologies to become innovations is often defined by conditions other than simple access to knowledge and information; it often requires appropriate, innovative institutional and organizational settings. The agricultural innovation systems concept therefore considers links between actors, interactive learning processes, and the policy and institutional contexts that govern the system in order to better understand the generation, dissemination and application of knowledge. The agricultural innovation systems concept also emphasizes the need for all stakeholders to work together towards innovation for development.

Research and extension organizations have moved from working with individual farmers to collaboration with groups and, increasingly, with farmers' organizations. At the grass-roots level, farmers' associations, producers' groups and cooperatives, as well as specially created farmers' groups, are all involved in research and extension activities. At higher levels, unions, federations and syndicates are implicated in multi-stakeholder platforms for planning research and extension services. Nowadays FOs present a highly diverse picture: from the former, state-managed, cooperative societies and unions to the new, farmer-initiated federations and syndicates, as well as market-driven farmers' groups. As a consequence, links with public and private knowledge-for-innovation

service providers are encountered at all levels, with various status, aims and function modalities. But the role of FOs in agricultural innovation goes much further than simply participating in, and contributing to, research and extension. Support functions, such as guiding innovation processes (e.g. information on norms, regulations and markets), sharing experiences for learning purposes, providing complementary services (e.g. credit facilities) are equally important. FOs can therefore fulfil several roles, contribute to various functions that enhance successful innovation and increasingly provide services themselves.

### **Case studies**

This bulletin analyzes the roles played by FOs in agricultural innovation using the innovation systems concept and investigates the constraints that hamper them from playing their role to the fullest extent. Case studies were therefore conducted, in partnership with farmers' organizations, as well as research, extension and training institutions in Benin, Rwanda and Tanzania. The case study approach also highlighted a number of best practices and lessons learned. Finally, research findings allowed the teams to identify the main issues for strengthening the role of FOs in agricultural innovation systems.

The first Benin case study focuses on FUPRO, the national federation of village farmers' groups and associations, district and provincial unions. These are key actors in the Benin cotton sector and were created with assistance from the public sector services, which previously managed this strategic sector. Cotton-sector reforms resulted in a more prominent role for FUPRO in orienting agricultural research and development (AR&D) services within the cotton sector. FUPRO participates in a national private-sector platform that allocates resources to public-sector cotton research and agricultural extension through a central fund, which is derived from cotton levies. Both producers and ginners agree on the percentage of the market cotton price that is donated to this fund. At the provincial and district levels FUPRO member organizations have strong, historical relationships with public-sector services and are developing relationships with the private sector, but without any functional multi-actor platforms. These relationships still focus on receiving knowledge-for-innovation services rather than orienting these services around members' needs. The knowledge services provided are mainly oriented towards inputs such as cottonseeds, fertilizers and pesticides, with an increasing role for the private sector. Cotton producers therefore consider innovation to be driven by the national cotton research institute and the private sector, both of which have up-to-date information on international trends and markets. The fact that cotton levies (to which producers indirectly contribute) are used to fund research and extension is insufficiently exploited by FUPRO and its member organizations to make their members' point of view weigh more heavily in decisions taken. More content-oriented, decentralized platforms are required in order to prepare the decision-making on funding by the national platform.

The second case study in Benin concerns two FUPRO member district unions (UCPs): one in Kalalé district (in an important cotton-producing region of

northern Benin), another in Boukoumbé district (in the northwest), and a cashew growers' district union (ACooBéPA) in central Benin. The two cotton producers' unions receive management support from FUPRO, while the cashew growers' union is assisted by a national NGO, which is paid for the support services it provides by a donor-funded agricultural diversification project.

Cotton producers' unions have strong relationships with the district extension services, which provide management assistance, despite the official policy of transferring this assistance to FUPRO. Extension focuses on new cotton inputs (especially pesticides), which are provided by the private sector. Working relationships with the district extension service depend on the financial resources of the cotton producers' union. The Kalalé union contributes financially to the extension services but without actually orienting these services, even now that the majority of district extension agents are paid through centrally collected cotton levies. Both the Boukoumbé union and the extension service are much 'poorer'; the latter hardly benefits from newly recruited extension agents since the region produces much less cotton. They therefore cooperate on a more 'closed purse' basis. In both the northern/north-western and central regions of Benin, the cotton producers' provincial unions (of which these district unions are members) participate in regional platforms for planning agricultural research, but representation and accountability are poorly organized and information rarely circulates at the district level.

With respect to the cashew growers' union (ACooBéPA), research and extension services are managed by the project itself. The project management unit has a research contract with the national agricultural research institute to develop technologies that are then disseminated by agents from the NGO. Research issues are identified during the project formulation phase and are updated without institutionalized participation by the cashew growers' union. NGO extension agents provide training-of-trainers services to selected union members. Contrary to cotton producers, indigenous knowledge remains a source of innovation for cashew growers; it is only over the past few years that formal research (with financial support from the project) has received a new impulse for dealing with cashew-growing issues. Technological innovations have spread rapidly, with the help of trained cashew growers and their local networks.

In all three district unions, members feel that relationships with service providers should evolve and be based on a more client/user service-provider relationship, which also has implications for the mission and skills of the technical staff. However, both cotton and cashew producers emphasize that their unions were created to improve access to markets, which remains according to them a prerequisite for actual innovation.

The Rwandan case study covers the potato production and marketing chain in the northwest region of the country in investigating the role of IMBARAGA, a national farmers' syndicate, and ROPARWA, a national network of FOs and NGOs. In the post-conflict period FOs and NGOs took the lead for improving input supply, research and extension services for potato production, and by

organizing the marketing of potatoes. Farmers operate in cooperative structures, and storage facilities were built to organize multiplication of improved (registered) seed potatoes, to improve access to other inputs and to facilitate the marketing of potatoes. Building on the rich Rwandan tradition of farmers' associations, IMBARAGA assisted potato-producing associations to form federations that lobby for their interests and negotiate with the private sector. In cooperation with public-sector services and local NGOs, IMBARAGA facilitated farmer participation in research and extension. Researchers are encouraged to conduct on-farm research, while extension agents train farmers to conduct farmer-to-farmer extension. In its approach to AR&D IMBARAGA combines the chain and community approach when organizing knowledge-for-innovation services: through their participation in platforms with other chain actors, federations are informed about market demands, and farmer extensionists embed knowledge transfer into a local community context. However, funding remains the main challenge to sustain these initiatives. Another challenge concerns lobbying for laws and regulations that allow producers to participate fully in multiplication of improved and registered seed potatoes, since the supply through public services remains a problem.

A DRT (Department of Research and Training) paper on the agricultural sector policies for empowering farmers and their organizations precedes the Tanzanian case studies. Building on recent experiences, the paper presents the main orientations for real farmer empowerment, and focuses on agricultural innovation. Farmer fora are being established at ward, district and national level and are empowered to procure and contract services. Existing FOs play a role in innovation by linking community-based farmers' groups into larger networks (i.e. MVIWATA and MVIWAMO experiences) and by representing their members in decision-making platforms on agricultural service provision. Tanzania has a wide variety of farmers' groups at the community level, through both farmer-led initiatives and development projects. However, not all these groups are genuine, or registered, and are not sustainable without external assistance, while service providers increasingly seek collaboration with farmers' groups but do not have sufficient background information about them. Networking capacities allow these farmers' groups to be strengthened and thus become key partners for innovation. Although farmers are represented in local research and extension committees, farmers' representatives have little influence and often merely represent themselves. Farmers' representatives need to be replaced by representatives from FOs in order to enhance downward accountability. Appropriate information and funding mechanisms, for example, will strengthen FOs to better articulate their problems and needs. In line with the bottom-up approach for strengthening farmers' groups and networks, participatory planning, monitoring and evaluation will also be organized, initially from the village, then the ward and district levels.

The first Tanzanian case study concerns MVIWATA, which is the first farmer-led network with a national coverage. MVIWATA links local farmers' groups in networks at different levels to enhance farmer representation and advocacy. Community-based farmers' groups, whether organized via MVIWATA (or other)

assistance, form the building blocks and focus on self-reliance and collective action. Through training on leadership and communication they are now capable of defending their members' interests and building partnerships with service providers supplying a wide range of services. MVIWATA is increasingly involved in representative bodies and, to some extent, in service provision. MVIWATA considers (technological) innovation to be successful only when farmers have access to services such as input supply, credit facilities and marketing. The local farmers' groups also form the main element for managing knowledge and information for innovation: they are trained to network with community members and other farmers' groups and to include indigenous knowledge when participating in (formal) research activities. Furthermore, in cooperation with other institutes, MVIWATA actively disseminates information on best practices in technological (agricultural practices), institutional (relations with service providers) and organizational (group dynamics) innovations by publishing information and broadcasting via radio programmes. Farmers' institutions are now being increasingly recognized as a 'capital' for agricultural innovation. Despite MVIWATA's efforts in knowledge and information services to its members, the overall poor quality of the communication infrastructure remains a major constraint. The lack of market opportunities for farmers remains another significant obstacle to agricultural innovation.

The second Tanzanian case study focuses on MVIWAMO, a relatively young, member district network under MVIWATA that aims to assist farmers' groups in networking activities. Farmers' groups are community-based and their joint activities therefore have an out-scaling effect on the community. These groups are also trained in participatory assessment of problems and identifying solutions that lead to a wide range of services being provided to members. Promoting agricultural (technological) innovation is achieved by organizing thematic workshops, visiting community farmers who are successful innovators, and by organizing exchange visits both inside and outside Tanzania. The effectiveness of these visits for the community is monitored through a learning approach, with the farmers' groups involved and their network meeting on a regular basis to discuss their successes and failures. Although farmers' groups play an important role in agricultural innovation, the extension services provided to members, access to input supply and credit facilities, and marketable crops and livestock products are all conditions for successful innovation. Therefore MVIWAMO encourages networks to organize complementary services to their member farmer groups. Openness of (public and private sector) services for collaboration and functional district-planning and communication fora are therefore required.

### **Research findings**

The case studies show that FOs operate in the changing context of an increasingly pluralist service provision sector, in which the public-sector research and extension institutions are being deconcentrated and the private-sector service providers (e.g. enterprises, NGOs, and farmers' organizations)

are developing a market share. FOs are also increasingly valued for representing social capital that is crucial for the necessary transformation of the African agricultural sector. However, the way in which FOs seize these newly created opportunities are determined by their origin and history. According to the nature of the investments used to build the organizations and the types of links that are being pursued by the FOs, three types of farmers' organizations can be distinguished:<sup>1</sup>

- i 'Old' commodity-based FOs (i.e. FUPRO Benin and its member unions, but also out-growers associations) have been created through the initiative of (and with assistance from) parastatals or private enterprises. They have established contract-type relationships with private enterprises for input supply and marketing of produce. Innovation is mainly technological and oriented by the commodity market and the private sector.
- ii 'New' market-oriented FOs with 'collaborative' relationships (i.e. ACooBéPA Benin and IMBARAGA-affiliated potato producers' federations) seek to develop collaboration with chain actors, using assistance from externally funded projects and/or NGOs (which often initiated the creation of the FO). Innovation remains technological if the project and NGO manage relationships (i.e. Benin case) but becomes institutional (i.e. Rwanda case) when both NGO and FO clearly aim to build sustainable institutions.
- iii Service-system-oriented and network FOs (i.e. MVIWATA and MVIWAMO in Tanzania, but also IMBARAGA in Rwanda) emphasize self-reliance by promoting community-based farmers' groups that are also part of larger networks. Through collective action (social capital) and participating in local fora, they establish partnerships with other actors for service provision in various areas (information and training on technologies, credit and savings schemes, etc.). Innovation has a rather organizational and institutional character as a prerequisite for technological innovation.

The case studies demonstrate that FOs currently access various sources to gain knowledge and information from both the public and private sectors, and use those that are most appropriate to them. However, new links are not always formalized. In all cases, 'private goods' and related knowledge and information, such as agricultural inputs (seeds, fertilizers, pesticides, etc.), are increasingly seen as private-sector business. This compels public organizations to redefine their role in relation to the private sector; the latter often only serves part of the farming community. All FOs contribute to the so-called support functions within the agricultural innovation system, e.g. input supply, credit and savings schemes, and marketing of products. Farmers consider these services to be crucial for (technological) innovation. FO contributions to the so-called basic functions (research and extension) vary according to the type of organization involved. Commodity-based and market-oriented organizations studied consider research and extension as belonging to other institutes and organizations from both the public and private sectors. These are the main drivers behind innovation, despite the fact that the resource base, particularly of the commodity-based organizations, allows services to be oriented according to

<sup>1</sup> Adapted from Bingen and Rouse (2002) and Bingen et al. (2003).

their membership's needs. However, service-system-oriented organizations play a much more active role in knowledge and information services, but in turn lack resources (and thus power) to set the agendas of these service providers.

The case studies allowed researchers to identify best practices and lesson learned in several areas, e.g.:

- farmer experience-based and evidence-based policy-making;
- sharing knowledge-for-innovation;
- guiding the innovation process by integrating production and marketing chain-oriented and community-based approaches; and
- coordinating complementary (support) services at the local level.

Experiences indicate that FOs can play an important role in sharing knowledge-for-innovation by initiating multi-actor platforms for interactive learning and by implementing joint activity programmes (including use of the media) with extension services on a cost-sharing basis. A major challenge facing FOs is to develop sustainable funding mechanisms for these (farmer-led) initiatives.

### **Strengthening the role of FOs**

The following key elements need to be considered when attempting to strengthen the role of FOs in agricultural innovation, i.e. the:

- policy environment and institutional context (notably the integration level of farmers and their organizations into markets);
- assets and needs of the organization's membership base; and
- type of FOs involved.

Agricultural innovation is an interactive, multi-actor process that cannot be achieved by farmers alone. It requires not only links but also alliances between FOs and other institutions. Knowledge of these key elements therefore allows:

- defining the roles of public and private sector knowledge-for-innovation service providers;
- designing appropriate funding mechanisms to underpin these links and enhance the farmer-led and demand-driven services; and
- determining the innovation perspective (technological, institutional and/or organizational).

Several challenges emerged from the case studies with respect to empowering farmers and their organizations in general, and agricultural innovation in particular. AR&D issues, which are usually limited to technological constraints and priorities, should be seen in the wider context and accepted as such by other actors in the innovation system. This allows FOs to identify key services and service providers, besides research and extension, necessary to achieve successful innovation. FOs are increasingly being solicited to participate in planning (priority-setting and resource allocation) for service provision, but the mission statements formulated by many FOs and the specific skills of their representatives need to be developed further in order to increase effective participation. Furthermore, participation in services needs to go beyond

planning and include monitoring and assessment of services provided, particularly since FOs themselves are starting to provide these services to their members and other farmers.

Appropriate funding mechanisms that enhance effective participation in decision-making processes remain crucial when designing service systems. This also evokes the challenge of enlarging the resource and power base of FOs to make them less dependant on external funding and more sustainable. More important than identifying AR&D issues is the orientation of the innovation process itself: the final objective, the drivers and the innovation triggers, plus the key actors that need to be involved. This also calls for developing capacities and skills of FOs in areas such as:

- participatory and evidence-based policy-making;
- formulating comprehensive strategies for (technological) innovation; and
- designing multi-actor institutions for interactive learning.

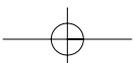
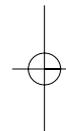
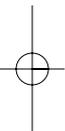
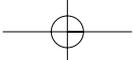
Operational communication and knowledge/information management within FOs remain major challenges to enhancing organizational learning. Finally, equitable representation, social inclusion, upward participation and downward accountability within FOs are recurring issues for which strong community-based farmers' groups remain an essential prerequisite.

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Bertus Wennink  
Willem Heemskerk

## Foreword

Since the 1980s, farmer participation in agricultural knowledge services such as research, extension and training has been a key issue. From about 1980 onwards the Royal Tropical Institute (KIT) has been involved in developing methodologies for enhancing farmer participation (e.g. the farming systems approach and village participation in rural development), together with national agricultural research and extension organizations, particularly in Sub-Saharan Africa. In the late 1980s KIT gradually started supporting programmes for institutional development and capacity building of national agricultural services organizations. These programmes helped change these organizations to become more competitive and introduce both quality-based and result-based management methods to respond more effectively to what service users and farmers needed, for example through the 'Client-Oriented Research Management Approach' (Heemskerk et al., 2003). In these programmes, empowering farmers' organizations (FOs), which represent a major user group of research and extension services, proved to be crucial in realizing the shift from research (essentially generating knowledge) to innovation (developing as well as applying new knowledge).

The aforementioned approaches were underpinned by the 'social organization of innovation' rather than a sole 'transfer of technologies' concept. Instead of knowledge originating mostly from researchers directly, both supply and demand for knowledge are now originating from a variety of sources and have made innovation a much more dynamic and complex process. Under the influence of democratization, liberalization and privatization, the demands on research and extension services have been opened up to the private sector as well as to FOs. Effective Agricultural Innovation Systems (AIS), with their main functions of generating, disseminating and applying knowledge, require important roles to be paid by the public and private sector, as well as by FOs. However, the specific roles of these players can evolve under changing conditions (e.g. improved access to markets for farming households). FOs can play a key role in innovation by representing the main rural actors, i.e. they can voice farmers' constraints, problems and needs; orient knowledge services towards the requirements of their members (or even provide services themselves); provide an information and communication network; and claim favourable policies for innovation and the broader development of the rural sector.

In 2003 KIT started systematizing and deepening its knowledge concerning the role that FOs play in AIS; this comprised a literature review as well as

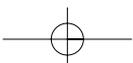
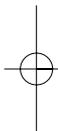
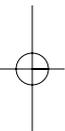
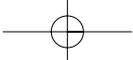
exploratory surveys together with partner FOs in Tanzania and Benin (Heemskerk and Wennink, 2004a). A review of KIT experiences, as well as those of partner agricultural research and extension organizations with private-sector participation in public agricultural research and extension, allowed key issues for future research on this subject to be identified (Wennink et al., 2004). The results of these two studies contributed to the formulation of a four-year action-research programme that focuses on multi-stakeholder management of agricultural innovation and, more particularly, on the role of FOs. This action-research programme aims to contribute to developing demand-driven services for agricultural innovation in rural and peri-urban areas as part of poverty-reduction strategies. The overall approach is to conduct research in partnership with local organizations (FOs, research and extension services, knowledge institutes, etc.) that support these partners in finding appropriate solutions to improve their roles and contribution to agricultural innovation. This bulletin presents the results of a series of case studies conducted in Benin, Rwanda and Tanzania on the role of FOs in AIS as a basis for identifying best practices and lessons learned. By publishing this bulletin KIT aims to nurture the ongoing debate among policy makers about more effective and efficient AIS and to provide practitioners with guidelines. The outcome of this study, in terms of more effective approaches to agricultural innovation, will also be used to prepare a set of guidelines that will be made available through KIT training manuals and modules.

## Acronyms and abreviations

ACooBéPA	<i>Association des Coopératives Béninoises de Planteurs d'Anacardier</i>
AFD	<i>Agence Française de Développement</i>
AIC	<i>Association Interprofessionnelle du Coton</i>
AIS	Agricultural Innovation System
AKIS	Agricultural Knowledge and Information System
AKSCG	Association of Kilimanjaro Speciality Coffee Growers
APVC	Agricultural production-value chain
AR&D	Agricultural research and development
ASDP	Agriculture Sector Development Programme
ASDS	Agriculture Sector Development Strategy
ASLM	Agriculture Sector Lead Ministries
AMSDP	Agricultural Marketing Systems Improvement Programme
ASP	Agricultural service provider
BAIR	<i>Bureau d'Appui aux Initiatives Rurales</i>
BOAD	<i>Banque Ouest Africaine de Développement</i>
CDD	Community Development Department
CDTI	Community and Development Training Institute
CeCPA	<i>Centre Communal pour la Promotion Agricole</i>
CeRPA	<i>Centre Régional pour la Promotion Agricole</i>
CG	Contact group
CIRAD	<i>Centre de coopération Internationale en Recherche Agronomique pour le Développement</i>
CPE	<i>Centre Permanent d'Expérimentation</i>
CRA	<i>Centre de Recherche Agricole</i>
CRA-CF	<i>Centre de Recherche Agricole – Coton et Fibres</i>
DAC	District Advisory Committee
DADP	District Agricultural Development Plans
DEDRAS	<i>Organisation pour le Développement Durable, le Renforcement et l'Auto-promotion des Structures communautaires</i>
DRD	Department of Research and Development
DRT	Department of Research and Training
EAFF	East African Farmers Federation
EZCORE	Eastern Zone Client-Oriented Research and Extension
FEG	Farmer extension group
FFS	Farmer field school
FG	Farmer group
FO	Farmer organization

FOR	<i>Forum des Organisations Rurales</i>
FRG	Farmer research group
FUPRO	<i>Fédération des Unions des Producteurs du Bénin</i>
GDP	Gross Domestic Product
GoB	Government of Benin
GoR	Government of Rwanda
GoT	Government of Tanzania
GV	<i>Groupement Villageois</i>
ICRA	International Centre for development oriented Research in Agriculture
IFAD	International Fund for Agricultural Development
IFAP	International Federation of Agricultural Producers
INADES	<i>Institut Africain pour le Développement Economique et Social</i>
INRAB	<i>Institut National des Recherches Agricole du Bénin</i>
IPR	Internal Programme Review
ISAR	<i>Institut des Sciences Agronomiques du Rwanda</i>
KIT	Royal Tropical Institute
KNCU	Kilimanjaro Native Cooperative Union
LADP	Local Agricultural Development Plan
LGA	Local government authorities
LTI	Livestock Training Institute
MAFS	Ministry of Agriculture and Food Security
MCM	Ministry of Cooperatives and Marketing
M&E	Monitoring and Evaluation
MVIWATA	<i>Mtandao wa Vikundi vya Wakulima Tanzania</i>
MVIWAMO	<i>Mtandao wa Vikundi vya Wakulima wa Wilaya ya Monduli</i>
MWLD	Ministry of Water and Livestock Development
NAADS	National Agricultural Advisory and Development Services
NAEP	National Agricultural Extension Project
NARF	National Agricultural Research Fund
NARS	National Agricultural Research System
NGO	Non-Governmental Organization
NIS	National Innovation System
PADEP	Participatory Agricultural Development Programme
PARCOB	<i>Projet d'Appui à la Recherche Cotonnière du Bénin</i>
PELUM	Participatory Ecological Land Use Management
PNAP	<i>Programme National d'Amélioration de la Pomme de terre</i>
PO	Producer organization
PPP	Public-private partnerships
R-D	Research-Development
RDS	Rural Development Strategy
ROPARWA	<i>Réseau des Organisations Paysannes au Rwanda</i>
ROPRA	<i>Réseau des Organisations Paysannes et des Producteurs Agricoles de l'Afrique de l'Ouest</i>
RSAD	<i>Responsable du Service Agricole du District</i>
SACCO	Savings and Credit Cooperative
SNS	<i>Service National des Semences</i>
SUA	Sokoine University of Agriculture

TACRI	Tanzania Coffee Research Institute
TARP	Tanzania Agricultural Research Project
TCGA	Tanganyika Coffee Growers Association
UCP	<i>Union Communale des Producteurs</i>
UDP	<i>Union Départementale des Producteurs</i>
ZAEC	Zonal Agricultural Executive Committees
ZARFMT	Zonal Agricultural Research Fund Management Team
ZARDI	Zonal Agricultural Research and Development Institute
ZEC	Zonal Executive Committee
ZTC	Zonal Technical Committee



# 1 Introduction

## 1.1 Context

Over the last decade of the 20th century the agricultural sector in Sub-Saharan Africa has undergone fundamental reforms that create both opportunities and challenges for farmers to organize themselves and operate as organized entities within the agricultural sector. The ongoing democratization of political systems gives room for public debate, creates space for a clearer expression of citizens' demands and gives a more active role to civil society organizations. At the same time, participation by the civil society organizations contributes to democratization processes by empowering citizens in their relationship with the state. Farmers' organizations (FOs), whether formal or informal, have always played a role in the relationships between the state and rural society, though over time their roles have changed considerably. In colonial days the FOs (as market organizations) dealt with private enterprises, often without any direct interventions by the state, but in post-colonial days they became an instrument for the state to pursue its aims and mostly evolved into top-down managed organizations, while in the post-cold-war days FOs are converting to more bottom-up management, within the context of democratization and decentralization (Ela, 1990; Moyo, 2002). Organizing themselves around common interests and pooling their resources is a way for farmers to become real partners in rural development. FOs can then be consulted by the state and become participants, instead of just remaining an instrument for implementing state policies.

The increasing liberalization of national economies in Sub-Saharan Africa, and worldwide, opens up both national and international markets, and gives a more prominent role to private enterprises in input supply, service provision and marketing. The private sector traditionally considers FOs as trustworthy partners for enhancing the cost-effectiveness of operations through economy of scale. At the same time, this offers opportunities for farmers, processors and their organizations to establish links with private enterprises and gain better access to markets. Withdrawal by the state from providing goods and services and further privatization also creates possibilities for FOs to become service providers themselves, or share in the costs of service provision (Chirwa et al., 2005; IAC, 2004). Liberalization poses several challenges for FOs to:

- become capable and strong actors in shaping market relations;
- organize support services that allow members to access these markets; and
- avoid exploitation of their members, by preventing a 'divide and rule' private sector.

Decentralization and deconcentration of public services help devolve decision-making to the local level and give a prominent role to local institutions, including FOs. Development policies increasingly take account of local conditions and enhance ownership by local actors. In many African countries decentralization of governance turns local, district and regional governments into stakeholders in orienting service provision. This is considered essential for accelerated local development where elected local governments are accountable to their constituency (Ribot, 2002). Decentralization and deconcentration are processes that allow for stronger voicing of farmers' needs and the establishment of more demand-driven and accountable services. FOs certainly matter in these processes, since they represent a considerable part of the local government's rural constituency. At the same time, advancing local development also implies mobilizing financial resources, for which local governments increasingly solicit FOs.

The reform processes also result in an ongoing revision of the roles played by central and local administrations, public and private service providers, and rural society organizations, including non-governmental organizations (NGOs). These ongoing changes provide opportunities for FOs, but they also face the challenge of dealing with the other stakeholders in agricultural development, which have both complementary and conflicting interests (see Table 1.1).

Policies to increase agricultural productivity play a central role in poverty-reduction strategies. Agriculture is an important income source for rural households and thereby contributes to sustainable financing of social-sector services in rural areas (Irz et al., 2001). Innovation, essentially a beneficial change of practices and processes, plays an important role in developing agriculture as a sustainable basis for economic growth and income generation for rural households. Developing new technologies is considered to be a trigger for improving the incomes of farmer households and is at the basis of some major successes in Sub-Saharan African agriculture (Gabre-Madhin and Haggblade, 2001). Agricultural research and extension are key services for innovation – either public or private service providers can provide these, including farmers or FOs (known as 'formal' and 'informal' research and extension respectively). Knowledge is generated, made accessible as information and disseminated/shared through networks to help boost agricultural productivity. FOs are active partners in all stages of this process, as innovation emerges through interaction rather than the imposition of technology.

Public research and extension services increasingly focus on poverty alleviation through enhancing income generation. They adopt a wider livelihood perspective and integrate market-oriented thinking into their approach. They therefore need to provide information ranging from improved production technologies to enhanced opportunities for market access. In Sub-Saharan Africa, state financial support to the public sector is becoming increasingly constrained. The public agricultural service providers therefore increasingly function on a demand-driven basis to ensure effective service provision and to generate revenues. In this new setting, clients and users (including FOs), define their needs,

**Table 1.1: The interests of various stakeholders in FOs**

Stakeholders	Farm households	Private enterprises	NGOs	Public sector	
Specific areas of interest by stakeholders in FOs	Overall interests	Improved livelihoods	Increased profits, quantity and quality supply of products	Social welfare and sustainable development	Economic growth and poverty reduction
	Policy and decision-making processes	Voicing and enhanced participation		Empowerment and capacity strengthening	Representation for policy consultation
	Access to markets for inputs and products	Improved access to (new) markets	Cost-effective input supply and marketing of (new) products	Provision of market information	Improved market coordination
	Infrastructure development	Infrastructure development			Cost-sharing of infrastructure development
	Access to financial services	Improved access to credit supply and insurance products		Cost-effective provision of credit supply	
	Access to knowledge-for-innovation services	Improved access to, and accountability of, services	Cost-effective provision of information and training services	Cost-effective provision of information and training services	Cost-effective and cost-sharing of service provision
	Risk reduction	Improved access to social services		Cost-effective provision of social services	Cost-sharing of service provision

Adapted from Chirwa et al., 2005.

determine the services to be provided and have to account to their constituency in terms of efficiency and quality. Simultaneously, many private service providers in research and extension are emerging. NGOs often integrate social development objectives into their approaches, while private enterprises link research and extension to the private goods and services that they provide (Chema et al., 2003; Heemskerk et al., 2003; Rivera and Alex, 2004).

Besides formal research conducted by public research institutions, learning from research and experience by farmers or other stakeholders (i.e. informal research) within the sector or the agricultural production-value chain (APVC) is another important source of knowledge and information. Whether or not knowledge is applied (and therefore becomes an innovation) depends on the nature of that knowledge as well as other factors, such as the availability of financial services, facilities for business development, access to markets, etc. In other words, interactive learning and the policy and institutional environment often determine whether or not pure knowledge is transformed into actual innovations. These are key issues in the Agricultural Innovation System (AIS) concept (Hall et al., 2002; Feinson, 2003).

Farmers build on their own experience, learn from other actors, participate in the planning and monitoring of agricultural research and development (AR&D) services, and highlight factors relevant to innovation success or failure. The aforementioned reforms offer new opportunities but also pose challenges for FOs to go beyond technological innovation. This can be materialized through building and strengthening democratically functioning and economically viable organizations, managing their member-based organizations professionally, and partnering with other actors to share and exchange knowledge.

There are numerous types of FOs, e.g. commodity-based or community-based organizations; farmers' groups that focus on attracting outside resources, or self-help groups that rely on community forces; small, local groups or larger network organizations. FOs may operate at national and/or local levels, and may fulfill many functions such as:

- advocating and lobbying for political rights;
- representation on advisory bodies (e.g. district councils);
- providing technical or economic services (e.g. providing input or product marketing for access to local and national markets) to their members; and
- providing support for local development initiatives.

This challenges FOs to form political and service alliances with other FOs or development actors, to effectively establish and link with different organization levels, and to articulate functions according to these levels.

## 1.2 This bulletin

This bulletin describes and analyzes the current and potential roles of FOs in AIS and focuses on issues such as:

- feeding farmers' experiences into the system;
- directing knowledge-for-innovation services (research and extension) towards the problems and needs of FO members;
- identifying and implementing favourable conditions for agricultural innovation; and
- related capacity reinforcement.

Chapter 2 describes the context in which many FOs presently operate and the background of agricultural innovation; this introduces the case studies conducted by FO staff and members, together with KIT researchers in Benin, Rwanda and Tanzania, which form the centre-piece of this bulletin. Chapter 3 gives a summary of the methods used for conducting the studies and presents the framework for analysing the case study results, based on the AIS concept. The main results of the case studies are then summarized in Chapters 4 to 9. The cases presented concern cash-crop-related, as well as area-based, FOs and different levels of FO operations within the AIS. Chapter 10 presents the main research findings and formulates best practices and lessons learned (based on case study results). Chapter 11 identifies issues for enhancing the role of FOs in the AIS.

## 2 Background

### 2.1 Reforms in agricultural research and extension

For over two decades now, agricultural research and extension in many Sub-Saharan African countries have used participatory working methods. As a result, approaches towards research and extension have broadened and, in addition to informing clients and users about technologies, they have also incorporated capacity building of farmer groups in order to:

- adapt and disseminate (new) knowledge and technologies;
- organize processing and marketing operations; and
- manage natural resources;
- coordinate and manage local development projects.

These methodological developments have also broadened the perspective of research and extension beyond just the production and processing techniques per se (Rivera and Alex, 2004). Working relations at several levels are being further institutionalized: with multi-stakeholder decision-making platforms being created as part of institutional reforms. FOs are increasingly considered to be the farmers' legitimate representatives. New funding mechanisms separate operations for both resource allocation (financial and human) and research implementation with subsequent roles for service users (FOs) and service providers (Chema et al., 2003). This last development is also related to a revision of the appropriate roles of the public and private sectors in creating knowledge and disseminating information.

Redefining the roles of the public and private sectors in agricultural research and extension has given a more prominent role to the private sector in knowledge-for-innovation services. The private sector generally focuses on cash crops and income, and addresses farmer households with strong market links. The public sector remains in charge of services concerning food and subsistence crops that target smallholders and areas with weaker market linkages (de Steenhuijsen PETERS et al., 2003). The roles of the public sector, private enterprises and FOs in agricultural research for development are related to issues such as: integrating farmer households, FOs and local economies with markets, the appropriate functioning and regulation of these markets, as well as the assets and social capital of farmers and their organizations (Berdegué and Escobar, 2002).

However, few research and extension services are purely public or private, and shifts occur according to circumstances (e.g. degree of market integration, pressure on common natural resources, regulations on intellectual property rights). The general trend is to organize research and extension according to the degree of 'excludability' (possibilities for marketing) and 'substractability' (allowing individual consumption) of the goods and services involved (Chapman and Tripp, 2003). The relationships between the public and private sectors in service provision can take different forms, such as:

- full transfer of responsibility (pure privatization of public-sector organizations);
- contractual relationships (e.g. outsourcing of services); and
- public-private partnerships that underwrite a common goal and share resources (Hall et al., 2003).

These new relationships lead to a separation of the funding, planning and implementation of research and extension services in which the roles of public and private sectors and user organizations change in weight (Chema et al., 2003).

The state's withdrawal from the provision of private goods and services, deepening crises in the availability of public funding and the partial opening of the sub-sector to the private sector, all require public agricultural research and extension organizations to fundamentally change. The reforms focus on multi-stakeholder involvement, performance (oriented towards results or impact), enhanced user responsiveness and generating revenues from clients. Client orientation and demand-driven approaches for service provision are being institutionalized. These approaches are encouraged by new funding mechanisms (e.g. multi-stakeholder managed competitive funds for financing services, cost-sharing of operations through levies on commodities) and are facilitated by decentralizing research and extension systems (Heemskerk et al., 2003).

Decentralization of agricultural research is mainly taking place through deconcentration of research capacity and devolution of decision-making powers to local entities, often with an eco-regional mandate, and to national entities with a sector or programme-based mandate. The main implication of decentralizing agricultural research is a redistribution of the roles relating to the funding, planning and implementation of research between the research organization or centre, the private sector, user organizations (including FOs) and local government bodies. Decentralization also involves reviewing responsibilities for the various types of research: strategic and applied research are mostly coordinated at the national level and organized along the lines of disciplines or commodities, which are considered strategic for the national or rural economy; while adaptive research is managed at the local level and operates according to a systems approach within a given eco-region (Chema et al., 2003).

Managing AR&D is now, more than ever, a multi-stakeholder process where stakeholders' interests may diverge; consequently the needs for innovation vary and sources of knowledge and information are diverse. Research operates in a multi-tiered system and includes links with the extension services, which are

generally weak. Agricultural extension has also undergone decentralization reforms but, whereas the management of research often remains the responsibility of one organization, the management of extension frequently involves several entities and becomes quite complex. Extension systems, more than research, have also integrated private non-profit organizations, including FOs, and are generally more pluralistic (Rivera and Alex, 2004). This also implies a shift in the roles of central line departments, local governments, private enterprises, NGOs and FOs.

## 2.2 Rethinking agricultural innovation

Innovation and technology dissemination in the agricultural sector used to be organized as a linear and stepwise process: knowledge was acquired and/or generated via research, which was then disseminated by extension services in the form of information adapted to the needs of the end-users and, finally, users were expected to apply this new knowledge. The same pattern is being observed in the organization of research and extension around APVCs, along the lines of operations such as production, processing, packaging and storing. Both approaches, whether 'pushed' by the supply of knowledge or 'pulled' by the demand for information, put researchers at the centre of the innovation process and have a top-down focus on innovation and knowledge to be applied at production and farmer levels (Hall and Yoganand, 2002).

The recent reforms undertaken in agricultural research and extension all seek greater stakeholder involvement to strengthen client and user orientation and demand-driven management in order to enhance the impact of the services provided. In some cases, farmers/processors may even supply these services themselves. Besides the formal, national research and extension organizations of the public sector, private enterprises and FOs are now often increasingly involved in research and extension (e.g. farmers collaborating in planning and implementation of trials and demonstrations, representing farmers on boards, advisory councils, technical committees, etc.). Changes in stakeholder involvement in research and extension also illustrate the changing attitudes towards managing knowledge and information for agricultural development. During the 1990s, in line with this broad reorientation of agricultural research and extension, emphasis was placed on reorganizing the National Agricultural Research System (NARS)<sup>2</sup> by:

- reviewing the roles of the public and private sectors with respect to research;
- linking research organizations with (local, national and international) networks;
- improving the governance of the system (setting priorities, including the needs of farmers and accountability to both farmers and funding agencies); and
- strengthening linkages with extension.

<sup>2</sup> A NARS comprises all a country's organizations and institutions that are responsible for organizing, coordinating and implementing research with the explicit aim of contributing to agricultural development and the maintenance of the natural resource base (GTZ, 2004).

In this concept of promoting innovation through user involvement, FOs are instrumental in achieving economies of scale for adapting and disseminating new knowledge and information. But FOs must also be equal partners in research and extension services if participation is to go beyond consultative approaches.

Within the context of the NARS restructuring process, it became generally accepted that agricultural innovation requires a much more dynamic and complex interaction between stakeholders: roles can shift among participating actors, sources for acquiring and generating knowledge are diverse, and there are multiple networks for disseminating knowledge. The management of knowledge and information became the central issue, according to the newly developed Agricultural Knowledge and Information Systems (AKIS) concept. Effective interaction calls for functional linkages between stakeholders to ensure that knowledge is shared and information flows smoothly. By linking research, extension and training, AKIS aims to promote mutual learning and to generate, share, use and apply knowledge and information (FAO/World Bank, 2000). AKIS clearly allows farmers and their organizations to manage knowledge and information better.

This approach to agricultural innovation recently evolved further, based on industrial innovation studies. Instead of providing a 'blueprint' for designing systems to promote innovation, attention shifted towards understanding and explaining the successful generation and application of new knowledge. In addition to the AKIS focus on interaction and linkages, the National Innovation System (NIS) concept emphasizes learning processes and the socioeconomic contexts that are considered crucial for applying new knowledge, thus leading to actual innovation (i.e. including adoption). Institutional support to facilitate such learning (e.g. learning from others, learning by doing, learning through use) is therefore considered critical. Applying knowledge for development becomes the ultimate aim of the NIS, and puts the users in the driver's seat. However, innovations, particularly technical improvements, often only take place if specific socioeconomic conditions are met. Innovation therefore comprises technical, as well as organizational and institutional developments, also because interaction between actors is embedded in a socioeconomic context (Hall and Yoganand, 2002; Feinson, 2003). In this context (and this bulletin), an Agricultural Innovation System (AIS) is defined as a set of organizations and individuals that are involved in generating, disseminating, adapting and using knowledge and information of socioeconomic significance, as well as the policy and institutional context that governs the way such interactions and processes take place.

### **2.3 Diversity of farmers' organizations**

FOs exist because farmers have recognized the need and benefits of being organized for a particular purpose. Organizations are created through the initiative of the farmers themselves or are the result of outside influences. The latter is particularly true of FOs that were established in centrally planned

economies, or as a means to transfer goods and services from the central to a lower level and thereby obtain lower transaction costs. FOs are membership-based, i.e. they are composed of, as well as run by, farmers themselves. Most FOs used to be strongly rooted in traditional societies; they managed the relationships of their members within the society and mainly focused on redistributing resources (access to land and labour), reducing risks (organized savings and credit associations) and securing the basic conditions for sustainable farming (managing natural resources). However, modern FOs look both forward and outward; their main aim is to manage relationships with institutions outside the traditional society (Rondot and Collion, 2001). FOs that relate to agricultural research and extension are, generally speaking, mostly developed through outside influences and recently established organizations. A slight difference can be seen between ‘farmer’ and ‘producer’ organizations. In this context, the term *farmer* refers to persons managing land, labour, equipment, input and knowledge for agricultural production, while *producers* and their organizations are presumed to operate in markets with a commodity-based focus.

The first modern village FOs in Sub-Saharan Africa were created to better organize the production and marketing of cash crops such as tea, coffee and cotton. The trading of these commodities used to be the monopoly of traders or colonial trading companies, which, after independence, were replaced by parastatals<sup>3</sup>. The development of these early FOs under the guidance of state services followed the cooperative model (e.g. primary cooperative societies in Anglophone East Africa and village associations in Francophone West Africa). Membership of these cooperatives was compulsory and their management was controlled by the state. Cooperatives and associations became *de facto* part of the state structures and directly benefited from government support. However, in part due to political patronage and interference, many of these FOs soon became inefficiently managed institutions that later often collapsed under the influence of structural adjustment and economic liberalization (Bosc et al., 2002). But some survived and are currently engaged in reforms to become genuine membership-based organizations that function according to democratic principles. Other village FOs recently emerged through the initiative of farmers themselves, often with support from NGOs.

Four main types of village FOs can be distinguished according to their origins and aims (adapted from Diagne and Pesche, 1995):

- Farmers’ and other village interest groups created on the initiative of state services or non-profit private-sector entities; often still evolving under their supervision. They were often created during colonial times or just after independence, with a cooperative-like constitution and possibly a mix of economic and social objectives. They were developed according to prescribed and/or imported models, with outside interference in management. The coffee

<sup>3</sup> Parastatals are enterprises or organizations that are wholly or partially owned by the state. Although they may have a certain autonomy in management, the government defines the composition of the supervisory board and policy guidelines.

growers' cooperatives ('primary societies') in East Africa are an example; once the commodity sector concerned was liberalized and state assistance diminished, most of these groups had difficulties surviving.

- Producers' groups, which were organized by parastatals or private enterprises to handle the logistics for agricultural input supply and the marketing of export-destined cash crop products. They were often created after independence by parastatals that were cash-crop-based but had a rural development mission. These groups initially had economic objectives and were officially recognized. Village cotton producer groups in West Africa are an example; they were considered successful and survived, since revenues were guaranteed through strong market regulation by the state. Over time, such producer groups started integrating community development objectives into their mandate.
- Producers' groups, such as outgrowers' associations, but also FOs initiated with the assistance of externally funded agricultural diversification projects (promoting cash crops other than coffee, tea, cocoa, cotton, etc.), are more recent phenomena of producer groups with an economic objective. Outgrowers' associations are being created with the support of private enterprises and have a purely economic function. Associations of outgrowers in the horticultural sector (exporting cut flowers) in East African countries, such as Kenya, are an example.
- Community groups formed under village leadership with a strong community development focus. They attract funding and other support from outside. Some are firmly rooted in the village community with strong local leadership and they maintain themselves, even without outside support. Others are the results of outside interventions, for example in community-driven development programmes, and can barely survive once outside support stops.

As part of the process of political democratization and decentralization, but also as a result of economic liberalization, FOs have been created and have emerged at district, provincial and national levels. They are the result of two major, often closely linked processes (Diagne and Pesche, 1995; Bosc et al., 2002):

- A top-down process in which the state plays an important role, with the aim of improving agricultural input supply and product marketing at other levels (i.e. other than the village); often as part of sector-wide reforms. These organizations (often called 'cooperative unions' or 'producers' unions' of the aforementioned farmers' and producers' groups for export-destined cash crops) are generally well-structured, organized around commodities and have an economic focus. They aim to provide management support and reinforce capacities of member village farmers' and producers' groups (e.g. primary societies and village producers' groups).
- A more bottom-up process, through which organizations (federations, syndicates, etc. of farmers, producers, community groups or outgrowers' associations) have been created at the initiative of farmers themselves, with the aim of defending farmers' interests in policy development and implementation. Establishment has often benefited from support by international cooperation agencies. These types of FOs represent a mix of commodity-based and community-based organizations and may be more

loosely organized. Outgrowers' associations in sectors that are both labour and capital intensive, such as the export-oriented horticultural sector, that have mainly large holders as members, may also create syndicate-like organizations.

District, provincial and national organizations often fulfil a wide range of functions, such as:

- defending and lobbying to promote the interests of members (participation in policy-making decisions);
- providing technical and economic services to members (managing knowledge and information support, credit and input supply, processing and marketing of products); and
- contributing to local development for the benefit of their members' community (co-funding of health and education infrastructures and services).

These roles are very much related to the intervention levels, are often complex and change according to the social and economic context. Contrary to those established during the period after independence, the newly created organizations (federations, syndicates, etc.) do not follow prescribed organizational trajectories and present a diversity of legal forms (Bosc et al., 2002 and 2003).

#### **2.4 Links between agricultural research, extension and farmers' organizations**

Participatory approaches towards research and extension aim to identify farmers' needs, develop appropriate answers with farmers, valorize farmers' knowledge and inventory critical conditions and factors for disseminating and applying new knowledge (e.g. the farming-system approach, research-development, participatory technology development, etc.). Four basic modes of participation for linking farmers and researchers (or extension agents) can be distinguished (Boyd et al., 1999a; Sutherland, 1999):

- Contractual, whereby work is divided between farmers and research service providers without much interaction in terms of knowledge and information.
- Consultative, with key decisions still being taken by researchers.
- Collaborative, involving real interaction through joint learning that leads to joint decision-making.
- Collegiate (partnership), letting farmers make the final decisions on which research and extension services are needed and how they should be implemented.

At village level, working relations between farmers and researchers/advisers in reality often include elements of both consultative and collaborative working relationships. Collegiate working relations assume that farmers have both the power and means to take decisions.

Individual farmers have always been involved in agricultural research and extension, but organized farmers are now considered an important means of exchanging and transferring knowledge, and thereby reducing transaction

costs and creating synergy. Numerous experiences exist with farmers' groups at the village level: farmer research groups (FRGs: farming systems approach), contact groups (CGs: Training and Visit approach), farmer field schools (FFSs: learning by doing approach), etc. (Heemskerk and Wennink, 2004b; see Table 2.1).

**Table 2.1: Examples of links between FOs, agricultural research and extension**

		Interfaces	Planning	Implementation	M&E
Local level FOs	Farmers', other interest groups and producer groups	FRGs, FEGs and FFSs	Priority setting for research and extension	Trials, demonstrations and training	Field visits of trials and demonstrations
	Community-based groups	Community groups	Priority setting for extension (and research)	Demonstrations, training (and trials)	
Provincial/district level FOs	Cooperative unions	Committees of commodity research centres	Priority setting, planning and resource allocation (levies)	Training by public and private sector	Open days at research centres
		Farmers' study groups		Workshops	
	Federations and syndicates	Committees of eco-regional research centres	Priority setting, planning and resource allocation (competitive funds)	Training by public sector and NGOs	Open days at research centres
		Farmers' study groups		Workshops	
National level FOs	Cooperative unions	Advisory committee	Strategic planning		Board and committee meetings
	Federations and syndicates	Board of directors	Budgeting		

Adapted from Wuyts-Fivamo, 1996.

FOs are generally involved in institutionalized participatory processes for managing agricultural research and extension at both the national and provincial levels (see Table 2.1). Increasing numbers of research and extension organizations have opened up their boards, advisory councils or similar bodies to FO representatives. Multi-stakeholder management committees for research programmes have been created at both the national (commodity or sector programmes) and provincial levels (eco-regional programmes). Commodity-based producers' unions are particularly involved in product-specific research and extension programmes for cash crops such as cotton, coffee, tea or tobacco. At these levels, FOs have the opportunity to direct research and extension services through the constituency that mandates them, and to identify policy and institutional conditions that facilitate innovation (Collion and Rondot, 1998). Participation at these levels concerns:

- problem analysis and priority setting for research and extension activities;

- planning activities, including allocating resources for specific activities, with FOs having true leverage over these activities if resources originate from them (e.g. levies on commodities) or are provided with decision-making powers through intermediate mechanisms arranged by the international cooperation agencies that provide the financing (e.g. competitive funds); and
- monitoring and evaluation (M&E) and accountability, by assessing the outputs and impacts of activities as well as the efficiency with which these have been achieved. Accountability mechanisms are most likely to develop when FOs provide the resources for research and extension.

Increased farmer participation and the emergence of unions, syndicates and federations create opportunities for these organizations to provide knowledge-for-innovation services to their members, especially technology dissemination in response to the persistent lack of field personnel and operating resources of national agricultural extension services. Many experiences of farmer-to-farmer extension have been reported, as well as farmers' research approaches at the field level (Van Veldhuizen et al., 1997). Providing agricultural information through an extension and advisory system that is being managed by a FO requires:

- financial means (mobilization of funds and cost-recovery mechanisms) and human resources (trained technicians);
- appropriate management of finances (accountability procedures);
- personnel (technicians, administrators and accountants with up-to-date attitudes and skills); and
- strong links and interaction with research (strategic and applied).

These requirements frequently strain the organizational viability of often relatively young and inexperienced FOs (Stockbridge et al., 2003). An option for FOs is therefore to link up with public and private sector research and extension organizations by establishing voluntary village FRGs and FEGs, as well as by using the media (radio programmes, television, farming journals, etc.) to enhance the cost-effectiveness of existing services (IFAP, 1995).

## 2.5 The role of farmers' organizations in agricultural innovation

The AIS concept includes functions that are to be ensured by the system as a whole in order to generate innovations and to facilitate their use. These functions are essential in making sure that the entire system works, i.e. development, diffusion and effective use of knowledge. So-called key 'basic' and 'support' functions can be distinguished (modified from Johnson, 2001):

- *Basic functions* are related to the innovation process itself, and include:
  - identifying problems and needs for innovation; and
  - creating knowledge (research) and supply information (research and extension) for solving problems and responding to needs.
- *Support functions* facilitate the effective use of new knowledge, and include:
  - guiding the direction of the innovation process (e.g. information on consumer preferences, standards and regulations, food safety norms, etc.);

- facilitating the exchange and sharing of knowledge (for learning purposes);
- supplying resources (e.g. funding of research and extension) and incentives (with the perspective of attractive returns on investments made and attenuating risks) for innovation; and
- providing complementary services and a favourable environment (e.g. infrastructure for marketing, buffer mechanisms and insurance schemes to reduce risks, etc.).

FOs can fulfil several roles and thereby contribute to the functions for agricultural innovation (discussed above) and enhance its effectiveness (modified from Hussein, 2001 and Bosc et al., 2003) through:

- Voicing the problems and needs of farmers in directing knowledge-for-innovation services (e.g. research, extension and training). Commodity-based producers' organizations with their own financial resources are in a position to organize and/or outsource some of these services themselves, while community-based organizations may, to some extent, offer such services on a more voluntary basis.
- Organizing the exchange and sharing of knowledge among members, as well as with other stakeholders (e.g. initiating multi-stakeholder platforms). Through their economic roles FOs are often well-informed about markets, which helps them define the overall direction and thrust of innovation.
- Providing economic services (e.g. input supply and product marketing) and organizing financial services (e.g. outsourcing savings and credit schemes, and providing insurance) to their members, which facilitates investments and attenuates risks.
- Coordinating the services provided to their members and ensuring complementarity (of knowledge as well as economic services). This means establishing functional relationships between different FOs (i.e. 'bridging') and with other actors ('linking') that operate within the sector or region (Heemskerk and Wennink, 2004b).
- Contributing to community-oriented social services (e.g. education and health) for their members and infrastructure development (e.g. rural roads, storage and processing facilities) that facilitate stronger members' and non-members' entrepreneurial capacities.
- Representing farmers and participating in policy and decision-making processes for creating conditions and building institutions that foster innovation.

Village FOs, even when initially created with primarily economic aims, have always played a role in agricultural research and extension. Commodity-based producers' groups, which were established under the supervision of state technical services or a parastatal, have been important in disseminating information on production and processing technologies – in principle they provide a clear focus for innovation. At the other end of the spectrum, community-based groups that operate around natural resource management, local development issues etc., often created and supported by the non-profit private sector, and even farmers' groups, which are more heterogeneous than

producers' groups, generally have a much broader array of interests (Boyd et al., 1999a and b). However, both types of village FOs are strongly rooted in rural communities and provide informal but well-established networks for exchanging knowledge and information. As organized entities they have clear advantages in pooling knowledge, aggregating demand and disseminating information (Collion and Rondot, 1998).

Differences in FO origins, memberships and purposes, make prioritization and aggregation of members' knowledge service needs a complex process at provincial and national levels. Commodity-based cooperative unions have a 'natural' focus, while identifying priorities that are often linked to required facilities for credit and input supply. They may also have the necessary funds to direct or provide research and extension themselves. Federations and syndicates represent a much larger array of interests and focusing on priorities may therefore become 'artificial'. They often depend on public sector or donor funding for access to knowledge services (Carney, 1996; Boyd et al., 1999a and b). Funding mechanisms (e.g. multi-stakeholder managed competitive funds, cost-sharing arrangements through levies, etc.) and the related leverage mechanisms ultimately define the power for FOs to really guide services and determine the roles they can play in innovation.

## **2.6 Challenges for farmers' organizations in agricultural innovation**

FOs find themselves in dynamic multi-stakeholder settings that create both opportunities and challenges (see Table 2.2). Opportunities have often been seized by FOs and, in some way, they represent the present 'state of the art', but they also pose new challenges.

Agricultural services are most likely to contribute to rural development if they address the genuine farmer-felt needs and develop innovations that take account of farmers' experiences and circumstances. Farmers have been improving agricultural practices ever since they started farming and therefore they are not mere passive users of new technology. Farmers' knowledge has been widely applied to achieve innovation but little is known of the institutional aspects of building on farmer innovation and making it available for larger networks of researchers and farmers. FOs therefore need to be well-informed of farmer innovation capacity, which means that strong links with grass-roots groups are essential and learning organization reflexes are required (Heemskerk and Wennink, 2004b).

Links between farmers, agricultural research and extension can be very diverse according to the service decentralization level, the core functions of the FOs involved and the funding mechanisms applied (Boyd et al., 1999a). FO participation in research and extension management makes these services more responsive to farmers' needs and appropriate to the overall AR&D context if links are formalized, while 'agenda setting' goes beyond mere priority-setting procedures and takes into account the farmers other main concerns (Collion and Rondot, 1998; Hussein, 2001). Functional links that are based on farmer-

**Table 2.2: Ongoing agricultural sector reforms, opportunities and challenges for FOs**

Ongoing reforms	Opportunities	Challenges
Institutionalization of participation in agricultural services	Integration of farmers' knowledge and experiences	Strengthen the learning capacity of FOs
	Farmers' priority setting for research and extension services	Gain real leverage power on service providers
Economic liberalization and privatization of services	Wider range of (private) service providers	Access to various knowledge and information sources
	Strong links between commodity-based FOs and the private sector	Enhance equitable representation of women, smallholders and resource-poor farmers
Decentralization of governance and deconcentration services	Decision-making at lower governance and service levels	Link with (local) actors to develop partnerships for innovation
	More client-oriented and demand-driven (public) services	Develop (external and internal) accountability mechanisms
Political democratization	FOs are now key stakeholders (policy formulation and implementation)	Withstand political pressures and keep focused on farmers and FOs' objectives
		Avoid institutional overload of FOs (develop core functions)

Adapted from Carney, 1996.

centred and farmer-accountable partnerships with appropriate funding mechanisms can also contribute significantly to 'revitalising' public-sector services (IFAP, 1995).

The range of knowledge and information sources for FOs is much larger than that of public agricultural research and extension organizations. Farmers also deal with operators in APVCs (input providers, processors, traders, consumers, etc.) as well as interest groups and local development leaders (local governments, lobby organizations for nature conservation, etc.) with whom they have to interact in order to articulate interests and collaborate to achieve innovation (Hussein, 2001). Links with these stakeholders widen the knowledge scope and provide information on market access, safety norms, environmental regulations, etc. that can guide, and even trigger, further innovation.

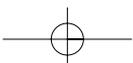
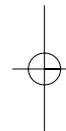
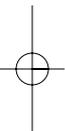
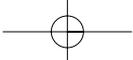
New FO networks have generally emerged within a context of democratization. They adopt a wide range of purposes to respond to members' needs in an environment where the public sector retreats, but the privatization of goods and service provision continues. Commodity-based unions develop links with the private sector and have internally generated resources to fund public service

provision. However, most federations and networks are less well endowed, which affects their ability to build links with both the private and public sectors (Hussein, 2001). These organizations often regroup member organizations that cover a wide spectrum of farmer households; they then have to deal with diverging interests and should clearly articulate these within a well laid-out strategy for the benefit of their members.

Farmer participation in such links ranges from setting priorities, project planning and funding to providing research and extension services. Separating AR&D funding and implementation opened the way to an array of new funding mechanisms (competitive funding, levies on commodities, local taxes, etc.), each with their own planning and M&E instruments, and thus providing more power and means (Collion and Rondot, 1998). The common denominator is the fact that contractual relationships begin to develop between clients and service providers. This is a strong incentive for both FOs and agricultural service providers to develop joint participatory M&E instruments and to reinforce accountability procedures.

Economic liberalization offers opportunities for FOs to emerge as operators in APVCs and develop linkages with private-sector actors. However, market access for agricultural products requires policy and institutional conditions that are set by national and local governments (e.g. infrastructure development, tax regulations, etc.). Setting the agenda for innovation in general, as well as for knowledge-for-innovation services, therefore needs to be clearly articulated and complemented by FOs lobbying for the implementation of favourable (national and local) policies.

Finally, FOs are now recognized as major stakeholders in agricultural policy formulation and implementation. They are heavily burdened with participating in all kinds of consultative processes, particularly at national and provincial levels. In addition to the traditional project implementation by state services, NGOs, consultancy firms and FOs are currently also being considered by development agencies as potential project managers and implementers. In total this may overload FOs and put an enormous strain on their organizational resources; it risks making them more donor-oriented rather than member-oriented. FOs therefore face the challenge to clearly identify core functions according to their overall institutional context, levels of operation and their members' demands for services (Chirwa et al., 2005).



## 3 Methodology of the case studies

### 3.1 Research objectives

The research presented in this bulletin has three objectives. Firstly, it aims to assess the role of FOs in agricultural innovation in selected Sub-Saharan African countries where the agricultural sector has undergone significant reforms over the last decade. Emphasis is being placed on links between FOs and other key actors involved in innovation and on the contributions that FOs make to innovation. Secondly, research has also identified the problems and constraints that hamper FOs in fulfilling their role in innovation; potential solutions were developed, together with partner FOs. Since the research in this study was conducted in partnership with FOs, each of these defined their specific focus for gathering and analyzing information concerning these two objectives. Thirdly, the review of research results helped identify best practices and lessons learned from real-life situations. These provide a basis for developing recommendations to enhance the role of FOs in agricultural innovation that addresses both practitioners and policy makers.

### 3.2 Approach

The research undertaken in Benin, Rwanda and Tanzania in 2004 used a case study approach. This is a qualitative and empirical method that investigates FOs in their real life situations. Teams composed of FO staff and resource personnel from agricultural research and extension organizations conducted case studies, with support from KIT experts. These teams selected research tools (identification of key actors; inventory and analysis of links; assessment of FO capabilities) and checklists (interviews with key actor representatives), to gather and analyze information. Research results were discussed and verified in local workshops for FO members, government officials, FO staff and research teams.

### 3.3 Analytical framework

The AIS concept provides a framework for gathering and analysing information by distinguishing the following aspects (adapted from CTA/UNU-Intech/KIT, 2005):

- The *policy, social and economic environment*, which is the overall setting that shapes institutions and facilitates interactions between FOs and other key innovation actors. The case study reviews particularly focus on: the

institutional setup of agricultural research and extension (in a decentralized context); funding mechanisms for these services; emergence of the private sector; and the membership basis of the FOs (integration of farmer households into market economies).

- The *key actors* are the FOs and those public-sector organizations and private enterprises that provide knowledge, information and technologies, and link/interact with FOs. Their interests and methods for providing goods and services that contain knowledge and information are described. Information on FOs concerns their main characteristics, such as type of organization, core functions, organizational structure, systems and procedures, and the diversity of their member constituency.
- The *links that exist between the key actors* at different levels. It is often these interfaces that set the main directions for innovation, prioritize problems and needs for research and extension services, plan activities and account for the results of such services. Links can be analyzed according to: farmer representation; leverage for directing services; planning procedures; participation mode of farmer representatives; and accountability mechanisms. Specific issues include: the role of farmers' knowledge; socioeconomic diversity among farmers; and managing information flows.
- For all key actors, and notably the *FOs' contributions to different functions in agricultural innovation* have been identified. There is an abundant amount of literature available concerning the functions that can be distinguished for innovation. The case studies defined so-called key 'basic' and 'support' functions (modified from Johnson, 2001; see chapter 2.5).
- *AIS performance* is assessed in terms of innovations generated (Tanzania case studies) or the existence and function-level of links (Benin and Rwanda case studies). Strengthening these links and enhancing the capabilities of all actors can improve performance. The problems and constraints that FOs face in linking with other key actors or generating innovations, and the capabilities that need to be strengthened, were therefore identified.

The review of the case study results allowed the research teams to identify best practices and lessons learned. Best practices are outstanding results in a particular situation; they show great potential for other situations, either applied directly or in adapted form. Lesson learned are defined as knowledge gained through experience that is applicable and, when shared, can be beneficial in other situations and circumstances.

### 3.4 Case studies

#### BENIN

The first Benin case study concerns the national federation of village POs (producers' organizations), plus district and provincial producers' unions in Benin (*Fédération des Unions des Producteurs du Bénin*, FUPRO). The village POs were originally created by a parastatal to handle the input supply and marketing of cotton, but also to promote other production and marketing chains. District, provincial unions and FUPRO give management support to

these village POs and represent them in fora with both public-sector and private-sector entities. FUPRO initiated the study to analyze links between its member organizations and agricultural research and extension services, and to formulate ways to enhance participation by their members in these services. The study focuses on cotton research that is largely financed by levies on the cotton sold.

A second comparable case study was conducted at district level with support from FUPRO. This concerns three district producers' unions in northern Benin: two are FUPRO members, and organized around cotton production and marketing (Kalalé and Boukoumbé district unions, UCPs) plus one district union of cashew growers (ACooBéPA of Ouèssè/Tchaourou districts). The district cashew growers' union was created with support from an NGO-managed project to organize input supply (mainly seeds and seedlings), development and dissemination of improved production technologies, and marketing of cashew crops. This second Benin case study focused on their links with research and extension services, plus other knowledge and information sources for innovation, and the capabilities needed to reinforce these links.

#### RWANDA

The Rwanda case study involves FOs (affiliated to IMBARAGA) and their implication in improving potato production and marketing in Rwanda (Ruhengeri and Gisenyi provinces). The Rwanda national network of FOs (*Réseau des Organisations Paysannes au Rwanda*, ROPARWA) and the national agricultural research organization (*Institut des Sciences Agronomiques du Rwanda*, ISAR) requested this study to analyze problems relating to potato production and marketing, and to propose future activities for enhancing innovation. A team of students from the International Centre for development-oriented Research in Agriculture (ICRA), in Montpellier conducted the study, as part of their training curriculum. During fieldwork in Rwanda the team elaborated a typology of potato producers, identified the key stakeholders in potato production and marketing, analyzed their links, organized workshops and recommended targeted AR&D activities.

#### TANZANIA

The two Tanzanian case studies concern the functioning of a national network of farmer groups, MVIWATA (in the Morogoro and Mvomero districts of the Morogoro region and the Kongwa district of the Dodoma region), and one of its member organizations, MVIWAMO (in the Monduli district of the Arusha region). Both organizations are examples of 'farmer networks'. They both aim to promote initiatives for self-reliance and collective action by reinforcing local capacities for networking and representation. The two case studies present the way in which the networks perceive their role and operate in promoting agricultural innovation. Specific objectives included: identifying best practices used by network members to develop and disseminate agricultural innovation

technologies and feed them into a large network, the major achievements realized by farmers, and the barriers that they encountered.

The Tanzania Department of Research and Training (DRT) prepared a paper on its view of the role played by FOs in agricultural research and extension, which is also included in this bulletin. The paper is partially based on a recent study into farmer empowerment and provides a basis for establishing so-called district 'farmer fora' for an agricultural sector support programme. The paper presents the agricultural research viewpoint on FOs and farmer networks in Tanzania, such as MVIWATA and MVIWAMO.