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Rural Producer Organizations and Agricultural Innovation Development Policy & Practice

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1 Introduction

This synoptic note explores the role that Rural Producer Organizations (RPOs) play in agricultural innovation and Agricultural Research and Development (AR&D), and aims to provide 'food for thought' for the way forward in empowering RPOs.

First of all, the current context for agricultural development, innovation and AR&D, is briefly described (chapter 2). Then, based on real-life experiences of RPOs and research institutes, lessons learned (ch. 3) and key issues for empowering RPOs (ch. 4) are being presented. The case studies that have been used are summarized in the annex of this note (ch. 5).

Other cases, which are not summarized in the annex, are referred to by specifying the source of information between brackets. All references used for this note are listed at the end of the document (ch. 6 and 7).

2 Context

Agricultural development requires and depends on innovation, which can be defined as the successful application of knowledge with social and economic significance. Innovation as a process and outcome is crucial for development (World bank, 2006). For example, new agricultural technologies are considered to have been determinant for some major successes in Sub-Saharan African agriculture (Gabre-Madhin, 2001). AR&D therefore features prominently in agricultural development policies (see for example IFAP, 2004). Over the last two decades the context for agricultural development and innovation has changed which also affected AR&D institutions and RPOs.

Liberalization of the agricultural sector has opened up national and international markets for farmers and other rural entrepreneurs. Policies for agricultural development increasingly put chain development forward as the key to sustainable economic development. Liberalization also means the withdrawal of the state from providing goods and services and privatization of rural services. In AR&D systems the private sector focuses on cash crops and addresses farm households that have market links while subsistence crops and more general issues increasingly depend on the public sector (Steenhuijsen Piters et al., 2003). However, few AR&D services are purely public or private and various modalities for public-private cooperation have been developed (for an overview of modalities: Heemskerk and Wennink, 2005).

Other reforms in AR&D include: greater autonomy for AR&D organizations, decentralization of resources and decision-making power to entities, with an agro-ecological or product-specific mandate. Private (for-profit and non-profit) service providers increasingly integrate extension systems that become more pluralistic (Rivera and Alex, 2004). These AR&D reforms aim to strengthen farmer participation and enhance user-responsiveness and performance through managing service provision according to private enterprise principles (Chema et al, 2003). A variety of funding mechanism has been put in place to give users leverage over service provision (for cases: Heemskerk and Wennink, 2005).

Innovation and AR&D management is nowadays a multi-stakeholder process, where stakeholders' interests, including those of RPOs may diverge. RPOs cover a wide range of organizations that differ according to their origin, functions, level and scale of intervention. In essence RPOs are membership-based and member-led organizations that provide services to their members. Ongoing democratization of political systems, especially in Africa, and economical liberalization has seen the appearance of a variety of RPOs aside existing

commodity-based producer organizations. The emerging RPOs, which may benefit from support from international cooperation agencies, generally seek to access new markets or defend farmers' interest in policy making and implementation (Bosc et al., 2003).

3 Lessons learned from the cases

3.1 Existing and emerging stakeholder-linkages and interfaces

Various approaches have been developed at the field level for farmer participation in AR&D with the purpose of identifying farmers' needs, valorizing farmers' knowledge, and identifying critical factors for technology adoption. Farmers are being organized by AR&D service providers and/or RPOs in community-based groups in order to tap in local networks, and thereby enhance diffusion of technologies and reducing transaction costs for AR&D services. Other approaches include initiatives such as on-farm trials, exchange visits of trials and demonstrations, open days at research centers, and participation of both AR&D organizations and RPOs in agricultural shows.

At higher levels, RPOs are increasingly represented in advisory committees and board of directors of national AR&D organizations. RPO representatives thus orient AR&D programmes on the needs of their members and can point out policy and institutional conditions that hamper and/or facilitate innovation. RPOs are also sitting in district and provincial multi-stakeholder committees for managing AR&D programs with a zonal (agro-ecological) or crop/animal-specific mandate. These committees are responsible for priority setting, planning and resource allocation for (applied and adaptive) research and extension, and assessment of results. They often dispose of funds for selection of service providers on a competitive basis. Funds are supplied by governments and/or donors or originate from levies. AR&D services that are being provided through these programs target agricultural production and processing techniques. In the case of well-established commodity chains, markets demands are being taken in account through representation of processors and traders.

Nowadays other interfaces and institutional arrangements emerge between producers, processors, traders, even without the direct involvement of AR&D service providers, in projects for developing and/or upgrading chains for accessing new markets. The roles of actors involved are not a priori defined and innovation goes beyond technological issues (for cases: Trienekens et al., 2004). AR&D service providers see their role shift from a knowledge provider to a process facilitator and knowledge broker. Rural producers are represented but their level of organizations various.

3.2 Accessing knowledge and assuring its application

Farmers' experiential knowledge has always been a source of innovation and spreads through informal networks. In many cases though, private sector is increasingly becoming important through the provision of private goods and related technical advice. Also, Non Governmental Organizations (NGOs), often with donor support, provide services on specific topics. In practice, farmers compare these different sources of knowledge and use the most appropriate to them. Farmers and RPOs take advantage of the increasing diversity of knowledge and information sources (e.g. rural radio, mobile phone, internet) on a large range of topics, from technologies to markets.

Many RPOs consider basic conditions and adequate provision of rural services (e.g. input supply, credit and savings schemes, and marketing of products) other than AR&D services,

to be determinant for successful innovation. AR&D services seem to be sometimes of second importance to larger and more established RPOs. Although innovation (research and extension) features in the mission statements, in practice this is often less well organized. This is explained by the fact that many RPOs have initially been created to provide economic services to their members. RPOs though increasingly play a role in diffusing knowledge alongside traditional extension services through organizing networks of farmer groups, creating participating in agricultural shows, producing newsletters, organizing radio programs, etc. This facilitates sharing knowledge with other actors and stimulates interactive learning.

3.3 The innovation focus and process

The innovation focus and process differ according to institutional settings and the way RPOs have been established (for a typology of RPOs: Bingen and Serano, 2003). In commodity sectors (e.g. coffee, cocoa or cotton) and in established outgrowers' schemes (e.g. fruits, flowers), innovation often has a technological focus and tends to be driven by the private sector and specialized AR&D organizations (for other cases: Kangasniemi, 2002). Parastatels and private sector traditionally invest in capacity building of these RPOs for adequate handling of input supply, processing and marketing of products and relations with RPOs are purely contractual. Less attention goes to facilitating knowledge and information flows and interaction between stakeholders.

In developing chains or those that are being upgraded for accessing new markets, innovation is much more institutional and organizational (managerial). More weight is also given to basic conditions such as 'hard' and 'soft' infrastructure. Relations between chain actors often are to be developed and producers' knowledge of market demands and operational knowledge and information flows between chain actors are considered to be essential for overall chain performance. This makes innovation a co-managed process during which modalities for collaboration between chain actors change according to the challenges that are being faced.

In the case of general issue-oriented and multi-tiered RPOs and organizations that focus on farmer-led technology development, which emphasizes organizing grassroots groups and networking between groups and with rural service providers, innovation is often embedded in participatory approaches for resolving problems. Agricultural innovation is driven by farmers' needs and concerns general issues that are common to most farm households. Clearly defined strategies for capacity building and valuing investments that have been made for innovating are critical for ensuring positive impact on rural livelihoods (for Uganda case: Friis-Hansen et al., 2004).

3.4 Providing farmer-oriented and social inclusive AR&D services

Farmer groups are since longtime involved in AR&D services at the field level where service providers benefit from farmer knowledge and networks. Exchanging and sharing knowledge is increasingly organized through learning initiatives developed by AR&D organizations and/or by RPOs (for examples in Sub-Saharan Africa: Heemskerk and Wennink, 2004). These initiatives though tend to be limited to traditional AR&D actors (farmers, researchers and extension agents). Close links with capacity building services and market-linked private sector advance learning, give direction to the innovation process and thereby value innovation development.

Information and training programs are more and more jointly organized by RPOs and agricultural extension services to tackle the shortage of front-line agents. Funding is being assured through cost-sharing arrangements, which clearly enhance user leverage over services, and other mechanisms (e.g. external support for training, outsourcing, etc.). Ensuring the financial sustainability and genuine user-control over funding for continuing responsiveness of these services to members' needs are the main challenges. The increasing provision of AR&D services by the private sector also requires coordination with services provided by the public sector and RPOs themselves.

Chain-oriented (chain actors) and network-based (farmer communities) approaches for knowledge services combine two core strengths: chain orientation links producers and markets for orienting the innovation process (standards and norms) and keeps the producers 'sharp', while using local networks allow for socially embedded organization of knowledge diffusion and exchange. The chain-oriented approach also generates financial resources for funding service provision. Initiatives such as thematic groups, technical committees, etc. organized by RPOs themselves allow to link chain-development from a producers' perspective with decision-making fora on AR&D services at district, provincial and national level.

RPOs, especially in commodity sectors are increasingly represented in committees for managing AR&D services. In crop/animal-specific programmes, user-driven and genuine client-controlled funding mechanism (e.g. levies) and qualified representatives (e.g. technical staff) effectively orient services according to the needs of their members. The focus of this type of programs is clearly defined, research is being done more efficiently and results are more relevant (for cases: Kangasniemi, 2002). In zonal (agro-ecological) programs, there is a risk of scattering of research priorities without a clear strategic focus while competition between AR&D service providers may reduce efficiency (for cases: Wennink and Heemskerck, 2005). The level of user leverage over services depends on procedures (client control or not), communication and information flows within the RPOs on (technological) innovation issues, and RPO representatives' skills to aggregate demands and identify strategic priorities while taking in account the diversity of producers' needs and conditions.

Diversity raises the issue of social inclusive services for smallholders, women and HIV/AIDS affected households. Weak representation of these more disadvantaged groups due to cultural and institutional barriers remains a recurrent issue. Making services more inclusive is a joint responsibility of RPOs, governments and service providers. Some experiences from case studies:

- Strong community-rooted farmer groups as building blocks for RPOs, in combination with capacity building strategies, enhance voicing of grassroots members and thus facilitate upward participation and downward accountability.
- Membership registration and administration allow RPOs to grasp the socioeconomic diversity of their constituency and define acceptable criteria for characterizing groups and specifying needs for services.
- Farmers increasingly participate in district multi-stakeholder fora that link RPOs with rural services (e.g. AR&D, rural finance). Funding-control mechanisms give RPOs greater control over service provision. Locating demand-driven service provision at local government level enhances ownership and allows for taking in account diversity of farm households.
- Chain development projects in transforming (and urbanized) economies draw attention to other social groups such as seasonal laborers (production, processing, etc.), which reach beyond the 'traditional' clientele of AR&D services. Explicit social development policies

and 'outside' (non-partisan) organizations bring the different groups into the picture and can develop strategies in favor of the most disadvantaged groups.

4 The way forward: issues for empowering RPOs

4.1 Policy and strategies

- Agricultural innovation requires a favorable policy context and appropriate institutional settings. Stakeholders have (i) to create consensus on basic conditions and strategic orientations for innovation and (ii) to interact for learning purposes. RPOs therefore need to build alliances with actors within innovation and AR&D systems.
- Situations and conditions are highly diversified as well as the groups concerned, which go beyond producers and includes rural laborers. Strategies for empowering RPOs require knowledge on diversity: (i) the policy and institutional context; (iii) the provision of services by public and private sector; (iv) the assets and needs of rural households; and (v) types of RPOs (Berdegué et al., 2002; Chirwa et al., 2005).
- The increasing number of actors on the scene and often diverging interests makes governance a key issue in orienting innovation and designing AR&D systems. Support to AR&D must shift from management of AR&D organizations to (good) governance of the system.
- RPOs are to a limited extent involved in public sector AR&D led innovation. Nevertheless, public sector AR&D plays a key role: (i) it is linked with the international scientific community, (ii) ensures capacity building of actors, (iii) increasingly plays a role of knowledge broker, and (iv) keeps an eye on poverty-reduction goals.

4.2 Institutional development

- Multi-stakeholder platforms allow for orienting innovation as well as focusing AR&D on farmers' needs and market opportunities. Challenges are to (i) decentralize platforms for taking in account farmer diversity, (ii) design client-controlled and sustainable financing/funding mechanisms (e.g. legal framework), and (iii) open platforms to the private sector for integrating market demands and diversifying options for service provision.
- Agriculture innovation is an interactive, multi-actor process: sharing and exchanging knowledge for learning purposes is crucial. RPOs can take the lead in initiating platforms since they have the comparative advantage of being at the crossroad of chains and networks. They can make platforms and interfaces more farmer-inclusive and accountable.

4.3 Organizational strengthening and skill development

- Successful technological innovation is embedded in institutional and organizational innovation and requires closely linking of 'hard' and 'soft' development. This implies capacity strengthening of RPOs for managing relations, functions and operations within both chains and networks.
- Innovation is not limited to straightforward AR&D services; importantly it also extends to other services (e.g. credit and saving schemes, organization of input supply and product marketing). AR&D issues therefore need to be contextualized by RPOs, and identified and analyzed as such.
- Real leverage on AR&D service provision is enhanced through stakeholder-driven and client-controlled funding mechanisms, in which RPOs take a financial stake, as well as qualified RPO representatives. Skills needed include analysis of technological innovation

constraints within their context, aggregation of constraints at higher organizational levels, targeting services, and farmer-led M&E of services provided.

- Strategic orientation of innovation is critical for optimal resource allocation for AR&D; this goes beyond identifying technological priorities. Innovation experiences in chains show that RPOs need (i) to keep themselves informed on market demands (standards, regulations, etc.), but also emerging issues such as Intellectual Property Rights, and (ii) together with chain partners co-identify options for innovation and co-manage action-research.
- Farmer-led innovation is part and parcel of agricultural innovation. Farmers and RPOs need to adapt themselves to a changing context through collective processes that allow for learning from knowledge and experiences of their members, technical staff, etc. in order to continuously improve practices and processes. Operational communication with grassroots institutions and accessible institutional memories are key elements in strengthening RPOs.

4.4 Innovation for pro-poor agricultural development

- The emerging dichotomy between public and private AR&D, but also the prevailing discourse of market-orientation raises the issue of social exclusion/inclusion. Closer interaction/collaboration between different types of RPOs is required for making policies and creating institutions that address social inclusion and cross-cutting issues that concern all social groups.
- Social inclusion in innovation and AR&D systems means first of all organizing and voicing of smallholders, women, etc. in RPOs with strong grassroots institutions. To achieve this, they rely on capacity building by NGOs and public sector services, without them 'replacing' their voices.
- Client-controlled funding enhances user leverage over AR&D services if a clear, strategic and realistic focus has been defined (e.g. districts, origin-based products; van der Kop et al., 2006). Public funds to match contributions by smallholders, women organizations, etc. allow them to get control over services needed

5 Annex: cases

5.1 Orienting AR&D services for improving cotton production. The role of the federation of producers' unions (FUPRO) in Benin (Kouton et al., 2006)

FUPRO, the national federation of village producers' groups, district and provincial unions in Benin, participates in a national private-sector (cotton-specific) platform that allocates resources to public -sector cotton research and agricultural extension through a central fund, which is derived from cotton levies. The cotton research institute has two eco-regional antennas while agricultural extension services are represented in all provinces and districts. The annual program for cotton research is being decided upon in the national platform. Debate among stakeholders mainly focuses on financial issues and less on relevance of research proposals. The cotton producers' provincial unions in turn participate in zonal platforms for planning agricultural (applied and adaptive) research. In both cases representation and accountability are poorly organized and information rarely circulates at the provincial and district levels. District cotton producers' unions have strong, historical relationships with extension services and are developing links with the private sector. These relationships are characterized by receiving services rather than orienting services around members' needs. Extension focuses on cotton inputs (especially new pesticides), which are provided by the private sector. Relationships with district extension services depend on the financial resources of the district union (the volume of cotton produced and marketed). This allows unions to support operational costs of extension services that generally lack resources. Cotton producers consider innovation to be driven by the 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 are used to fund AR&D services is insufficiently exploited by producers' unions to make their members' point of view weigh more heavily in decision-making.

5.2 Linking actors for innovating potato production and marketing. ROPARWA and IMBARAGA initiatives in north-western Rwanda (Fané et al., 2006)

IMBARAGA, a farmer syndicate, and ROPARWA, a national network of POs and NGOs took the lead for improving input supply, AR&D services for potato production, and organizing the marketing of potatoes. IMBARAGA assisted local potato-producing associations to form federations that lobby for their interests and negotiate with the private sector. Cooperatives were created and storage facilities were built to organize multiplication of improved (registered) seed potatoes and improve access to inputs and marketing of produce. IMBARAGA and AR&D institutes also explored new ways to cooperate. IMBARAGA staff and researchers from agricultural research started on-farm trials. On a more extensive scale, the district agricultural extension service and IMBARAGA developed a farmer-to-farmer extension programme. Farmer extensionists are selected and trained to organize meetings of both community-based and potato-producing organizations. Producers were informed about market norms and standards with which technologies have to comply. An assessment of the farmer-to-farmer approach shows that lack of financial remuneration and weak linkages with research for knowledge input limits its impact. This is the start of a more pluralistic AR&D system that needs strong but decentralized coordination in order to clearly articulate the needs of different production chains and local development stakeholders.

5.3 Networking for agricultural innovation. The MVIWATA national network of farmers' groups in Tanzania
(Kaburire and Ruvuga, 2006)

MVIWATA is the first farmer led network with a national coverage in Tanzania. MVIWATA links local farmers' groups in networks to enhance farmer representation and advocacy. Community-based farmer groups form the building blocks and focus on self-reliance and collective action. Through training on leadership and communication they are capable of defending their members' interests and building partnerships with service providers. MVIWATA considers technological innovation to be successful only when farmers have access to services such as input supply, credit facilities and marketing. Farmers' groups are trained in participatory assessment of problems and identifying solutions that lead to a wide range of services being provided to members. Agricultural innovation is being promoted by organizing thematic workshops, visiting successful innovators, and by organizing exchange visits. The effectiveness of this approach is monitored through a learning approach, with the farmers' groups involved and their network meeting on a regular basis to discuss successes and failures. MVIWATA actively disseminates information on best practices in technological (agricultural practices), institutional (relations with service providers) and organizational (group dynamics) innovations by publishing booklets and broadcasting radio programs. MVIWATA feels that the overall poor quality of the communication infrastructure remains a major constraint. The lack of market opportunities for farmers is another significant obstacle to agricultural innovation.

5.4 Produce Foundations in Mexico. An innovative participatory approach and demand-driven technology innovation model
(Paredes and Moncada, 2000)

Produce Foundations were created in 1997 to establish linkages between agricultural producers, end-users of agricultural products, agricultural research and education institutions as a means of fostering the transfer and adoption of technological innovations. Produce Foundations and COFUPRO (the national coordinating organization) facilitate farmers' and end-users' participation, along with that of public and private sector in AR&D. The Foundations are created, led, and administered by producers in every state in Mexico, where they are incorporated as civil associations. The Foundations allocate funds and are administered under a government program. The Produce Foundations dispose of a trust fund, which has a mechanism for matching funds between the governments, producers, and the private sector. Formal linkages among public and private sector institutions are established. These linkages involve strategic alliances with research and educational institutions, as well as the National Council for Science and Technology (CONACYT). A greater number of research projects, which are more responsive to producers' needs, are being conducted. Beyond that, a valuable reservoir of earlier technological innovations is being made more accessible to producers through the linkages. The approach focus on end-users, emphasizes decentralized decision-making, and accesses funding from various sources. Its structure (with additional groupings along agro-ecological lines), in combination with the diversity in Mexico's agriculture, gives insight in which approaches work best under which circumstances.

5.5 Collaboration between farmers, research and industry. Experiences of Kutki cultivation at Ghese village in Chamoli district, Uttaranchal - India
(Nautiyal and Nautiyal, 2004; van der Kop, 2006)

The High Altitude Plant Physiology Research Centre (HAPPRC) has developed cultivation technologies for medicinal plant species. Its transfer to and adoption by farmers was the main objective of a scheme to promote the commercial cultivation of *Picrorhiza kurroa* (Kutki). HAPPRC began with the demonstration of cultivation techniques. The farmers were concerned about the economic returns; this compelled HAPPRC to search for marketing possibilities. This led to a tripartite agreement between HAPPRC, Dhawan International Company and the Gheshe farmers: (i) the farmers are required to cultivate the crops organically, to guarantee quality standards and only sell to the company; (ii) the company, which collects price information, guarantees a minimum purchase per growing season at a fixed minimum price; and (iii) the research institute provides technological assistance to farmers. The company will have exclusive rights to HAPPRC technology until cultivation increases to 50 hectares. HAPPRC will be free to transfer its technology to other companies when cultivation extends more than 50 hectares. HAPPRC will charge a fee which will be jointly borne by the company and the farmers' society on a 50:50 basis. The farmers registered a farmers' society to acquire a permit for commercial cultivation of Kutki. The tripartite agreement removed some of the bottlenecks in the cultivation of medicinal plants. A number of other issues, such as the need to strengthen the farmers' capacity to collect information on markets and negotiate with industry, are not covered by the agreement.

5.6 The FRUITFUL project. An integrated supply-chain information system for fruit produce between South Africa and the Netherlands
(Polderdijk et al., 2006)

South-African and Dutch research institutes and business partners collaborated for supply-chain performance to strengthen the market position of South-African fruit. Stakeholders were grouped into three existing fruit supply chains. Each of these chains functioned as a pilot supply chain with a research institute as the leading party. A multi-stakeholder participatory analysis of each chain took place for processes, exchange of information and for user requirements regarding improvement of the current situation. Problem areas were identified and prioritized per pilot chain, and solution alternatives were chosen and tested. It became clear that the climate was not suitable for an overarching centralized system and that the focus should be on interfacing existing facilities. The presence of the research institutes as independent parties removed distrust between competitive partners and restraints could be bridged. Bottlenecks for realizing fully integrated exchange of information did not lie on the technical side, but on the cost side and the 'human' side, e.g., education, procedures, mistrust, competition, institutional capacities, etc. The project worked towards a network-oriented structure with transparent chains, connected information systems and collaborative planning. In accordance with social development goals, it became clear that more attention should be paid to the disadvantaged and/or emerging stakeholders, such as smallholders and laborers in the pack houses. Managing an efficient supply-chain has certain requirements and these cannot be downscaled to suit new entrants from disadvantaged communities. The challenge is to raise the level of skills and knowledge of these people to allow them to participate as equals. Therefore a NGO was formed to facilitate and train members of these communities.

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